PROJECT MANUAL

FOR

Heroes Plaza

Address
1 S Water St
Mobile, Alabama 36602

Project # PR-022-22

May 1, 2023

City of Mobile
Architectural Engineering Department
205 Government Plaza
P.O. Box 1827
Mobile, Alabama 36633-1827

Bid Date:_____ **Set Number:**_____

INDEX TO DOCUMENTS

SECTION DOCUMENT NAME

SECTION 00100
INVITATION TO BID

You are invited to submit a sealed bid for construction of the following facility:

PROJECT NAME: Heroes Plaza
PROJECT LOCATION: 1 South Water Street, Mobile, Alabama 36602
PROJECT NUMBER: PR-022-22

1 BID DATE:

A. Sealed Bids will be received and clocked in until 2:15 PM local time, the 24th day of May, 2023. Bidders shall insert sealed Bids into a receptacle, marked "City of Mobile Bids", located in the elevator lobby outside the office of the City Clerk Office, 9th Floor South Tower, Government Plaza, 205 Government Street, Mobile, Alabama 36602.

B. All Bids not clocked in at the City Clerk's Office prior to the time specified, or Bids received after the specified time, will be automatically rejected and returned immediately, unopened.

C. Bids will be publicly opened and read at 2:30 PM local time, in the Atrium Lobby of Government Plaza.

2 SPECIFICATIONS AND DRAWINGS:

A. Specifications and Drawings are on file and may be examined and obtained from the following location: https://www.cityofmobile.org/bids/

B. Bidders shall use complete sets of Bid Documents in preparing their bid. Neither the Owner nor Architect/Engineer assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.

C. **Addenda will be issued via e-mail to all Pre-Bid Conference attendees.**

D. **This is a tax exempt project and shall be certified by the requirements of the Alabama Department of Revenue. Bidders shall NOT include sales and use taxes with their bid amounts. Bidders shall complete the Sales Tax Form C-3A and include it as an attachment to their Bid Form (see Section 00400).**

E. Bidders must be pre-qualified before submitting a bid (see Section 01400 for requirements).

F. Product Substitutions must be pre-approved before the bid (see Section 01400 for requirements).

G. Subcontractors must be pre-qualified before submitting a bid (see section 01400 for requirements).

3 BID SURETY: Required on Bids $10,000.00 or more

A. A Cashier's Check drawn on a bank registered to do business in the State of Alabama and which is a member of the Federal Deposit Insurance Corporation, or a Bid Bond payable to Owner, City of Mobile, in the amount of 5% of the Base Bid, but in no event more than $10,000.00 is required to accompany Bid.

B. Bid Bond must be issued by a Surety licensed to do business in the State of Alabama. Bidder shall require the attorney in fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

C. No Bid may be modified, withdrawn, or canceled for a period of sixty (60) days after the time designated above for receipt of bids.

D. The City of Mobile will have sixty (60) days from the bid opening date to award contract.

4 SURETY QUALIFICATIONS:

A. A Surety authorized to do business in the State of Alabama must issue Bonds.

B. If the Base Bid is $50,000 or more, the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best Key Rating Guide Property-Casualty published by Alfred M. Best Company, Inc.

5 IRREGULARITIES AND REJECTION:

A. The City of Mobile reserves the right to waive irregularities in the Bid and in Bidding, and to reject any or all Bids.

6 BIDDER QUALIFICATIONS:

A. Bids for Work costing $50,000 or more must be licensed pursuant to current Alabama law and of classifications compliant with the State of Alabama Licensing Board for General Contractors. Note that if the contract amount is $10,000 or greater, both a Performance Bond and a Labor and Material Payment Bond shall be required. **Before Bidding, Contractor shall verify their license classification of their General Contractors license with the State of Alabama Licensing Board for General Contractors to verify classification is acceptable to perform 51% of the Scope of Work.**

B. In case of a joint venture of two or more Contractors, the amount for the bid shall be within the maximum bid limitations as set by the State of Alabama Licensing Board for General Contractors of at least one of the partners to the joint venture.

7 NON-RESIDENT CONTRACTORS:

A. Except for contracts funded in whole or part with funds received from a federal agency, preference shall be given to resident Contractors on the same basis as the nonresident Contractor's state awards contracts to Alabama Contractors bidding in similar circumstances.

B. Nonresident Bidders shall, prior to submitting a bid, be registered with the Alabama Secretary of State and the Alabama Department of Revenue. Provide the Secretary of State Business "Entity ID Number" on the Bid Form in the space provided.

8 PRE-BID CONFERENCE:

A. A Pre-Bid Conference shall be held on May 17, 2023, **at the Arthur R. Outlaw Convention Center Marquee Sign,1 South Water Street**, at 9:00 AM local time. The conference will include a walkthrough of the site location. Social distancing practices shall be observed, including wearing of face coverings/masks by all participants. A representative of the Bidder is encouraged to be present at the meeting. However, if no representative can be present in person, the Bidder shall contact the Project Manager at 251-342-1070, at least 24 hours prior to the meeting, in order to coordinate attendance of the meeting by conference call.

Visit the site prior to submitting a Bid and include all costs associated with the project in their Bids.

B. Minutes of this conference will be made as an Addendum for the project.

9 BID SUBMITTAL:

A. Bids must be submitted on copies of the Bid Forms furnished in the bidding documents.

B. Bid, with Bid Security, Sales Tax Form C-3A, City of Mobile Subcontracting and Major Supplier Plan and other supporting data specified, shall be contained in a sealed, opaque envelope, approximately 9x12 inches or larger and be marked on the outside with the words "**SEALED BID FOR Hero Plaza , Project No. PR-022-22".**

C. The Bid envelope shall be clearly addressed to the Owner as indicated on the Bid Form and include the bid date, the name, address and State License number and classification of the Bidder issued by the State of Alabama Licensing Board for General Contractors.

D. All Bids of $50,000 or more must include the bidder's State of Alabama General Contractor's License information written on the outside of the bid envelope. Any bid submitted without such license information may be rejected and returned to the bidder unopened.

E. In addition, in large letters on both front and back of envelope, write the following: **DO NOT OPEN UNTIL TWO-THIRTY PM, May 24, 2023**.

F. For a bid to be valid it shall be delivered at designated location prior to time and date for receipt of Bids indicated in INVITATION TO BID, or prior to any extension thereof issued to Bidders. After that time no Bid will be received or withdrawn.

G. When sent by mail, preferably special delivery, express service, or registered mail, the sealed Bid, marked as indicated above, shall be enclosed in another envelope for mailing such that the exterior mailing container or envelope may be opened without revealing the contents of the Bid. It is the Contractors responsibility to assure delivery of the bid to the City Clerk's Office prior the time and date established.

10 EQUAL OPPORTUNITY:

A. The City of Mobile, Alabama is an Equal Opportunity Employer and requires that all Contractors comply with the Equal Employment Opportunity laws and the provisions of the Bid Documents in this regard.

B. The City of Mobile also encourages and supports the utilization of Minority Business Enterprises on these and all other publicly solicited Bids, and shall be in compliance with the City of Mobile's Minority Utilization Plan as adopted by the City Council.

C. Contractor shall provide an appropriately completed copy of the "City of Mobile Subcontracting and Major Supplier Plan" in the envelope with their Bid Form. Form shall document DBE Subcontractors participating in the project and, should the total % of DBE participation not meet the 15% minimum, all efforts to obtain DBE Subcontractors shall be documented on or attached to the DBE Form when submitted. During construction, contractors are required to submit a "DBE Utilization Report" with every Pay Application.

D. Contractors should contact the City of Mobile, Supplier Diversity Manager for assistance with DBE Subcontractor information and any questions regarding the DBE Compliance Forms. Contact Archnique Kidd at 251-208-7967.

E. A Directory of DBE Vendors can be found at the following location: https://workwith.cityofmobile.org/

11 ADDITIONAL BIDDING PROCEDURES:

A. Refer to the complete information in the Bid Documents prior to submitting a bid. Additional Bidding Procedure information is contained therein, particularly in the specification Section 00200 “Instructions to Bidders - AIA Document A701” and in the specification Section 00300 “Supplementary Instructions to Bidders”.

12 STATE OF ALABAMA IMMIGRATION ACT

“The State of Alabama, under the Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Alabama Code Section 31-13-1, et. Seq., requires:

A. That the Contractor shall be enrolled in the E-Verify Program, shall participate in that Program during the performance of the contract, and shall verify the immigration status of every employee who is required to be verified, according to the applicable federal rules and regulations; and

B. That it will attach to the contract the company’s documentation of enrollment in E-Verify.

C. The subcontractor must also enroll in the E-Verify Program prior to performing any work on the contract and shall attach to its sworn affidavit documentation establishing that the subcontractor is enrolled in the E-Verify Program.

13 PUBLIC CONTRACTS WITH ENTITIES ENGAGING IN CERTAIN BOYCOTT ACTIVITIES

A. By signing this contract, Contractor further represents and agrees that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.

14 FEDERAL CONDITIONS

A. This project is funded by HUD through the CDBG Program and has specific regulations and requirements. These requirements include, but are not limited to, the information included in Section 00800 Supplementary Conditions (Federal Conditions).

B. Job site postings, including the Notice to All Employees working on Federal or Federally Financed Construction Projects and the EEO (Equal Employment Opportunity) poster, will be required to be maintained and shall be in a location accessible to all employees.

C. Employee interviews for Davis-Bacon wage compliance will be conducted with the assistance of the Project Manager, as coordinated with the Contractor. Certified Payrolls are required. Contractors may become more familiar with these procedures by viewing “A Contractor’s Guide to Prevailing Wage Requirements for Federally-Assisted

Construction Projects", on-line at
http://portal.hud.gov/hudportal/documents/huddoc?id=DOC12590.pdf

15 FEDERAL CONDITIONS

A. This project is covered by the Davis Bacon and Related Acts (DBRA). See Section 00800 Federal Conditions.

END OF SECTION 00100

SECTION 00200
INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

A. This section includes the INSTRUCTIONS TO BIDDERS, AIA Document A701 to be utilized with the Owner's most recent modifications and which shall be used in conjunction with the entire Bid Documents and Section 00300 SUPPLEMENTARY INSTRUCTIONS TO BIDDERS for this project.

DRAFT

AIA® Document A701™ – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

« »
« »
« »

THE OWNER:
(Name, legal status, address, and other information)

«City of Mobile »« »
«PO Box 1827 »
«Mobile, Alabama 36633-1827 »
« »

THE ARCHITECT:
(Name, legal status, address, and other information)

«TSW Design»« »
«1447 Peachtree Street NE, Suite 850»
«Atlanta, GA 30309»
«470-751-2438»

THE ENGINEER:
(Name, legal status, address, and other information)

«Volkert, Inc.»« »
«1110 Montlimar Dr. Suite 1050 »
«Mobile, Alabama 36609 »
« »

TABLE OF ARTICLES

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents. A Bidder must be licensed by the State Licensing Board for General Contractors if the amount for the Contract exceeds the amount established by said Board.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work. A Sub-bidder performing Work must be licensed by the State Licensing Board for General Contractors if the Sub-bidders' contract amount exceeds that established by said Board.

1.10 A non-resident Bidder or Sub-bidder is one who

a. Is neither organized nor existing under the laws of the State of Alabama
b. nor maintains its principal place of business in the State of Alabama.

A non-resident contractor who has maintained a permanent branch office within the State of Alabama for at least five (5) continuous years shall not thereafter be deemed to be a non-resident contractor so long as such contractor continues to maintain a branch office within Alabama.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

.1 the Bidder has read and understands the Bidding Documents;

.2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;

.3 the Bid complies with the Bidding Documents;

.4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;

.5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and

.6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

§ 2.2 The Bidder is licensed by the State Licensing Board for General Contractors and the amount Bid does not exceed the Bid Limit stipulated in the Bidder's License and by the City of Mobile.

§ 2.3 Each and every Contractor belonging to or comprising a part of any entity that is bidding as a joint venture or association involving two or more contractors is licensed by the State Licensing Board for General Contractors and that the amount Bid does not exceed the Bid limit stipulated in at least one of their licenses.

§ 2.4 Any non-resident Bidder is authorized by the Secretary of State of Alabama and is registered with Alabama Department of Revenue to transact business in Alabama.

§ 2.5 Joint Ventures or Associations of Contractors, whether the same are Bidders or Subcontractors of Bidders, will remain in existence until all insurance and warranty requirements for the Project have been fulfilled.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least five (5) calendar days prior to the date for receipt of Bids.

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.2.4 The Contract Drawings and Specifications are intended to cooperate and agree, but should conflicts or difference be found to exist between the requirements within either and clarification has not been obtained in accordance with the above procedure prior to Bidding, then the most costly and/or restrictive interpretation by the decision of the Architectural Engineering Department Director will be final.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least fifteen (15) calendar days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.3.6 See Division One Section "Substitution Procedures", if included in Specification.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than two (2) days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents. No bid will be considered unless made out and submitted on a copy of the Bid Form, Section 00410. Additional Bid Forms will be furnished to prospective Bidders upon request.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

Unit Prices: Supply requested Unit Prices where shown on the Bid Form, Such Unit Prices shall be used to adjust the Contract Amount where the quantities shown on the Drawings and/or Specifications do not reflect amounts required for completion of the work. Where Completion of the Work requires quantities in excess of those shown on the drawings and specifications, unit prices shall be used to compute an extra payment to the Contractor. Where completion of work required quantities less than those on the Drawings and/or specifications, unit prices shall be used to compute a credit to the Owner.

Contingency Allowance: As shown on the Bid Form, Contractor shall add the amount of the contingency allowance to the Base Bid to derive the Total Bid. The contingency allowance shall cover cost of material, labor, overhead, profit

and other expenses for complete installation of items of additional work as required for a complete functional project. The contingency allowance shall be used to fund unforeseen conditions not covered in the construction documents and shall be subject to the provisions of change orders. Upson the completion of work any unused portion of the contingency allowance shall be credited to the Owner by change order.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security if so required in the Bidding Documents:
(Insert the form and amount of bid security.)

«The Bidder shall provide a Bid Security in the form of a cashier's check drawn on a bank registered to do business in the State of Alabama and which is a member of the Federal Deposit Insurance Corporation, or a Bid Bond. Bid Security is required for bids exceeding $10,000.00. Bid Security shall be in the amount of 5% of the TOTAL BID, but in no event more than $10,000.00.»

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected.

§ 4.2.5 Bonds must be issued by a Surety authorized to do business in the State of Alabama. A Performance Bond and a Labor and Material Payment Bond are required for projects exceeding $10,000.00. If the project cost is $50,000.00 or more, the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best's Key Rating Guide Property-Casualty published by Alfred M. Best Company, Inc.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:
(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

«Submission of Bid shall be as stated in Section 00100, Invitation to Bid, Paragraph 9, titled "Bid Submittal".»

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted and will be returned unopened.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 The Owner shall accept Alternates in the order listed on the Bid Form to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, within three (3) calendar days or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- **.1** a designation of the Work to be performed with the Bidder's own forces;
- **.2** names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- **.3** names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.
- **.4** The name of the Project Superintendent and Project Manager together with the resume of qualifications of each;
- **.5** Nonresident Contractor shall submit a letter from an attorney as required by Subparagraph 11.1.2 below and;
- **.6** Engineering Firm or Testing Laboratory for testing as specified.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

§ 6.3.5 The Contractor shall, within ten (10) calendar days of receiving Contract Forms for signature, furnish to the Owner the following items, along with the signed contract, or the Bid Security will be forfeited automatically without further delay:

.1 A Signed Construction Contract;
.2 Performance Bond and Labor and Material Payment Bond (originals) on all Bids over $10,000.00;
.3 Certificate of Insurance and copy of Builder's Risk Policy (original), as identified in the specifications;
.4 Schedule of Values; and
.5 Federal Immigration Law Compliance: E-Verify enrollment documentation.

§ 6.3.6 The Bid Check or Bond of the three (3) lowest Bidders will not be returned until after the Construction Contract is executed.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

§ 7.1.4 A Surety authorized to do business in the State of Alabama shall issue Performance Bond and Labor and Material Payment Bond, as required by the Contract Documents. If the project cost is $50,000.00 or more, the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best's Key Rating Guide Property-Casualty, published by Alfred M. Best Company, Inc.

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than ten (10) calendar days from receiving the Construction Contract forms for signature.

§ 7.2.2 The bonds shall be written on City's Performance Bond and Labor and Material Payment Bond forms.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

§ 8.1.1 AIA Document A101, Standard Form of Agreement Between Owner and Contractor where the Basis of Payment is a stipulated sum will be edited electronically and include the standard signatures as required by the City of Mobile.

ARTICLE 9 NONDISCRIMINATION

§9.1.1 Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, *inter alia*, that all contractors performing work for the City of Mobile not discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities. Contractor shall provide a completed copy of the City of Mobile Subcontracting and Major Supplier Plan with the Bid Form, for bids of $250,000.00 or greater.

ARTICLE 10 USE OF DOMESTIC PRODUCTS

§ 10.1.1 Section 39-3-1 Code of Alabama provides that the Contractor agrees, in the execution of this contract, to use material supplies and products manufactured, mined, processed or otherwise produced in the United States or its territories, if available at reasonable prices, and that breach of this agreement by the Contractor shall result in the assessment of liquidated damages in an amount not less than $500 nor more than 20 percent of the gross amount of the contract price.

§ 10.1.2 Section 39-3-4, Code of Alabama provides that the Contractor for a municipal construction project, financed by the State of Alabama or any political subdivision thereof, is required to use steel produced within the United States. If the Contractor violates the requirement to use domestic steel, this contract will automatically be revoked and the contractor shall not be entitled to any set-off or recoupment for labor or materials used up to the time of revocation.

ARTICLE 11 PREFERENCE TO RESIDENT CONTRACTORS

§ 11.1.1 Except for contracts funded in whole or in part with funds received from a federal agency, preference shall be given to Alabama resident contractors, and a nonresident bidder domiciled in a state having laws granting preference to local contactors shall be awarded the contracts only on the same basis as a the nonresident bidder's state awards contracts to Alabama contractors bidding under similar circumstances. In the letting of public contracts in which any state, county or municipal funds are utilized, resident contractors in Alabama, be they corporations, individuals or partnerships, are to be granted preference over nonresidents in awarding of contracts in the same manner and to the same extent as provided by the laws of the state of domicile of the nonresident.

§ 11.1.2 A successful nonresident bidder shall include in his post bid submittals a written opinion of an attorney at law licensed to practice law in such nonresident bidders' state of domicile, as to the preferences, if any or none, granted by the law of that state to its own business entities whose principal places of business are in that state in the letting of any or all public contracts.

ARTICLE 12 PRE-BID REQUIREMENTS

§ 12.1 STATE OF ALABAMA CONTRACTORS LICENSE

§ 12.1.1 If the Project total bid amount is $50,000 or more, a license issued by the State of Alabama Licensing Board for General Contractors is required prior to submitting a bid and the licensed classification and bid limits must cover the type of work in this project. See Invitation to Bid, Section 6 "Bidder Qualifications".

§ 12.2 A NONRESIDENT BIDDER

§ 12.2.1 Every bidder shall be registered with the Department of Revenue and with the Alabama Secretary of the State prior to bidding. The Secretary of State's "Business Entity ID" registration number shall be included on the bid form.

ARTICLE 13 POST-BID REQUIREMENTS

§ 13.1 CITY CONTRACTOR'S LICENSE

13.1.1 A City of Mobile Contractors License is required and must be current before the Contractor signs the Contract. Contractor must qualify and post $10,000.00 Surety Bond with the Land Use/Code Administration Department before a Contractors License will be issued by the Revenue Department. Information on the City Contractors License may be obtained by writing or calling:

Land Use/Code Administration
P. O. Box 1827
Mobile, Alabama 36633-1827
Phone: 251.208.7421

Revenue Department
P. O. Box 1827
Mobile, Alabama 36633-1827
251.208.7461

13.2 E-VERIFY DOCUMENTATION

§ 13.2.1 The Contractor agrees that it shall comply with all of the requirements of the State of Alabama Immigration Law (Act. No. 2011-535 as amended by Act. No. 2012-491, Alabama Code (1975) Section 31-13-1, et. Seq., See Section 31-13-9), and the provisions of said Law, including all penalties for violation thereof, are incorporated therein.

13.3 PUBLIC CONTRACTS WITH ENTITIES ENGAGING IN CERTAIN BOYCOTT ACTIVITIES

§ 13.3 The Contractor represents and agrees that it is not currently engaged in, nor will engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.

SECTION 00300

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

THE ATTENTION OF ALL BIDDERS IS CALLED TO THE FOLLOWING INSTRUCTIONS AND CONDITIONS:

I. BIDDING DOCUMENTS:

A. Bidders may obtain complete sets of Bid Documents and Specifications (Project Manual) from the Department of Architectural Engineering as listed in the Invitation to Bid.

B. Bidders shall use the complete set of documents in preparing their bid. The City of Mobile assumes no responsibility for errors or misinterpretations resulting from use of an incomplete set of documents.
Bidders shall use the complete set of documents in preparing their bid. Neither the City of Mobile nor the Engineer (Architect) assume responsibility for errors or misinterpretations resulting from use of an incomplete set of documents.

Ii. INTERPRETATION OF BID DOCUMENTS:

A. Bidders shall carefully study and compare the Bidding Documents and compare various components of the Bidding Documents with each other, shall examine the site and local conditions and shall at once report to the Project Manager any errors, inconsistencies or ambiguities discovered.

B. Bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Project Manager by 3:00 PM at least five (5) calendar days prior to the date for receipt of Bids. E-mail requests are required and should be addressed to gregg.blaize@cityofmobile.org. Interpretations, corrections and changes to the Bidding Documents will be made by a formal, written Addendum. Interpretations, corrections and changes to the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely on them.

C. Any discrepancy not resolved prior to Bidding shall be bid by the Contractor to provide for the most costly and/or restrictive interpretation of the documents.

Iii. BIDDING PROCEDURES:

A. No Bid will be considered unless made out and submitted on a copy of the Bid Form as set forth by the Bid Documents.

B. All blanks on the Bid Form shall be legibly executed in a non-erasable medium.

C. Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

D. Interlineations, alterations and erasures must be initialed by the signer of the Bid.

E. All requested Alternates, Unit Prices and Allowances shall be bid as indicated on the Bid Form and the Bid Documents.

F. Addenda shall be considered as a part of the Bid Documents and those issued prior to the opening of Bids shall be acknowledged on the Bid Form and any adjustment in cost shall be included in the Contract Sum.

4. BID SECURITY:

A. A Cashier's Check drawn on a bank registered to do business in the State of Alabama and which is a member of the Federal Deposit Insurance Corporation, or Bid Bond payable to Owner, City of Mobile, in the amount of 5% of the Base Bid, but in no event more than $10,000.00, must accompany bid. By submitting a Bid Security, the Bidder pledges to enter into a Contract with the City of Mobile on the terms stated in the Bid, and will, if required, furnish bonds covering faithful performance of the Contract and required insurance certificate. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds or insurance or any other required document, the amount of the Bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

B. Bid Bond shall be valid for a minimum of sixty (60) days from the date of the Bid. The Owner reserves the right to retain the security of all Bidders until the successful Bidder enters into the Contract or until (60) days after Bid opening, whichever is sooner.

C. Bonds must be issued by a Surety licensed to do business in the State of Alabama. If the project cost is more than $50,000.00 the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best's Key Rating Guide Property-Casualty published by Alfred M. Best Company, Inc.

D. Power of Attorney is required for all Bonds.

E. The Surety company shall be required to execute AIA Document G-707, "Consent of Surety to Final Payment" prior to Final Payment of retainage being made to the Contractor.

5. EXAMINATION OF DOCUMENTS AND SITE WORK:

A. Before submitting a Bid, Bidders should carefully examine the Bid Documents, visit the site of the Work, including attendance at the MANDATORY Pre-Bid conference, fully inform themselves as to existing conditions and limitations, and include in the Bid a sum to cover the cost of all items included in the Contract and necessary to perform the Work. The submission of a Bid will be considered as conclusive evidence that the Bidder has made such examination.

6. SUBMISSION OF BIDS:

A. Bid, with Bid Security, Sales Tax Form C-3A, City of Mobile Subcontracting & Major Supplier Plan and other supporting data specified, shall be contained in a

sealed, opaque envelope, approximately 9 x 12 inches or larger and be marked on the outside with the words "SEALED BID FOR HEROES PLAZA-PR-022-22", the Bid Date, and Contractor's name, address, and City of Mobile Business License number. And, if bidding in an amount $50,000 or greater, the State of Alabama General Contractor's License number and classification of the Bidder issued by the State of Alabama Licensing Board for General Contractors shall be written on the envelope.

B. Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date specified in the Invitation to Bid, or as modified by Addendum, will not be considered. Late Bids will be returned to the Bidder unopened.

C. The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

D. Oral, telephonic, facsimile or other electronically transmitted bids will not be considered.

7. MODIFICATION OR WITHDRAWAL OF BIDS:

A. A Bid may not be modified, withdrawn, or canceled by the Bidder for a period of sixty (60) days following the time and date designated for receipt of bids, and each Bidder so agrees in submitting a Bid.

8. CONSIDERATION AND AWARD OF BIDS:

A. At the discretion of the City, the properly identified Bids received on time will be publicly opened and will be read aloud.

B. The City shall have the right to reject any and all Bids. A Bid not accompanied by a required Bid security or a Bid which is in any way incomplete or irregular is subject to rejection.

C. It is the intent of the City to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The City shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the City's judgment, is in the City's best interest.

D. The award shall be based on the lowest Total Bid for the Base Bid and any allowances, plus any alternates and/or options that may be accepted, as listed on the Bid Form.

9. PROOF OF COMPETENCY OF BIDDER:

A. Bidders may be required to furnish evidence satisfactory to the City of Mobile that they have sufficient means and experience in the types of work called for to assure the completion of the Contract in a satisfactory manner.

10. SIGNING OF CONTRACT:

A. The Standard Agreement between the City of Mobile and the Contractor, included herein, shall serve as the Agreement between the City and the Contractor.

B. The Bidder to whom the Contract is awarded shall, within ten (10) calendar days of receiving the Contract Forms, properly execute and deliver to the Owner, the following items with the signed Agreement:
    (1). Performance Bond and Labor and Material Payment Bond (originals);
    (2). Certificate of Insurance (original) with endorsements to City of Mobile;
    (3). Evidence of enrollment in the E-Verify program.
    (4). Other documentation as required by the Contract Documents.

C. Failure or refusal to sign the Agreement or to provide Certificates of Insurance in a form satisfactory to the City of Mobile, E-Verify verification, or other required documentation, shall subject the Bidder to immediate forfeiture of Bid Security.

D. On all documents: City of Mobile Business License, the Alabama Secretary of State Business Identity, the Alabama Secretary of State Certificate of Authority (out of state contractors), E-verify documentation, and ACORD Insurance Form, the Contractor's name shall be EXACTLY the same.

11. NONDISCRIMINATION:

A. Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, inter alia, that all contractors performing work for the City of Mobile not discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities.

12. AMERICANS WITH DISABILITIES ACT (ADA):

A. Bidders shall comply with the provisions of the Americans with Disabilities Act (ADA) of 1990 which prohibits discrimination against individuals with disabilities.

13. USE OF DOMESTIC PRODUCTS:

A. Section 39-3-1, Alabama Code, 1975, provides that the Contractor agree, in the execution of this Contract, to use materials, supplies and products manufactured, mined, processed or otherwise produced in the United States or its territories, if available at reasonable prices, and that breach of this Agreement by the Contractor shall result in the assessment of liquidated damages in an amount not less than $500.00 nor more than twenty (20) percent of gross amount of the Contract Price.

14. NON-RESIDENT (OUT OF STATE) CONTRACTORS:

A. Preference to Resident Contractors: Section 39-3-5, Code of Alabama, 1975, provides that a non-resident (out of State) bidder domiciled in a state which grants a preference to local Contractors is to be awarded a public contract on the same basis as the non-resident bidder's state awards contracts to Alabama bidders. Alabama bidders are given a preference to the same extent that a non-resident bidder receives a preference in his home state. A non-resident

bidder must include with any written bid documents a written opinion of an attorney licensed to practice in the non-resident bidder's state declaring what preferences, if any, exists in the non-resident's state.

B. Certificate of Authority: All non-resident (out of State) bidders shall be registered with the Alabama Secretary of State and the Alabama Department of Revenue prior to submitting a Bid. Provide the Secretary of State Business "Entity ID Number" on the Bid Form in the space provided.

15. ALABAMA IMMIGRATION ACT:

A. The State of Alabama Immigration Law (Act No. 2011-535 as amended by Act No. 2012-491), requires that Contractors not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. In addition, Contractors are required to enroll in the federal E-Verify program and submit verification of enrollment to the City of Mobile within ten (10) days of receiving the contract forms (see Section 00600).

16. CITY OF MOBILE BUSINESS LICENSE:

A. A City of Mobile Business License is required and must be current at time of contract award and throughout contract period.

17. CITY OF MOBILE CONTRACTOR'S BUSINESS LICENSE:

A. A City of Mobile Contractor's Business License is required and must be current when contractor signs the contract and throughout contract period.

B. Contractor must qualify and post a $10,000 surety bond with the Land Use/Code Administration Department before a Contractor's Business License will be issued by the Revenue Department. Information on the City Contractor's License may be obtained by writing or calling:

Land Use/Code Administration
P.O. Box 1827
Mobile, Alabama 36633-1827
Phone: 251-208-7421

Revenue Department
P.O. Box 1827
Mobile, Alabama 36633-1827
Phone: 251-208-7461

18. CITY OF MOBILE BUILDING PERMIT:

A. A City of Mobile Building Permit/Electrical Permit/Plumbing Permit/HVAC Permit/Whatever Permit is required and shall be obtained from the Land Use/Code Administration Department, but at no cost to the Contractor.

B. Contractor is responsible for ensuring that all inspections are successfully performed in accordance with City of Mobile regulations.

19. CONSTRUCTION SCHEDULE AND ACCESS:

A. The project shall be completed within Three Hundred Sixty- Five (365) calendar days from the date

indicated by the Notice to Proceed.

B. At all buildings that will remain in use throughout the Construction period, the Contractor is directed to coordinate all areas of work and scheduling of work with the Owner. Within five days of the bid opening, the Apparent Low Bidder shall meet with the Owner to discuss Owner scheduling and priorities. Apparent Low Bidder shall then provide a proposed schedule within 5 calendar days of the initial meeting for Owner review and approval.

D. The Contractor may be allowed additional construction days due to inclement conditions ("rain days") only as such are appropriately documented and are in excess of the NOAA/National Weather Service average (previous 5 years) for the given month. A "rain day" is defined as more than a "trace" (0.10") of rain falling within a given 24 hour period. The Contractor shall provide documentation and formally request any "rain days" they feel are legitimately due. Documentation shall be submitted to the Project Manager, in writing, within ten (10) calendar days of the rain event. Claim shall include documentation of trades adversely impacted and the impacted activities of each trade.

20. SITE CONSIDERATIONS:

A. It is the Contractor's responsibility to carefully remove and store any items not permanently installed within the work areas. We strongly recommend that the Contractor photograph, videotape or in some manner document any features to be removed and their condition, prior to removal.

B. Noise and strong smells shall be isolated or kept to a minimum when adjacent portions of the site are occupied.

C. Contractor shall be responsible to leave the work area and adjacent site clear of equipment and debris, etc. at the end of each work day. All final cleaning is the responsibility of the Contractor and shall be executed prior to acceptance for reuse of any portion of the site.

D. A dumpster and lay down area for Contractor materials and staging may be located at the site and located per the direction of the Owner. The Contractor is responsible for the removal of the dumpster, any storage containers and any security fencing, temporary erosion control (BMPs), etc. as soon as practical after their use by the Contractor or the work is complete.

21. SALES AND USE TAX EXEMPTION:

A. As per the State of Alabama ACT 2013-205, the Alabama Department of Revenue (ADOR) has been granted the authority to issue a "Certificate of Exemption from Sales and Use Tax for Governmental Entities" on construction projects. Therefore, this project shall qualify for State of Alabama Sales and Use Tax Exemptions under this ACT. It is the responsibility of the Bidder to confirm the potential tax exempt status of their bid with the ADOR and include any such savings in their bid, as well as accounting for same on their bid form attachment Sales Tax Form C-3A.

B. The full text of ACT 2013-205 is available on the State of Alabama Building Commission web-site at www.bc.alabama.gov .

22. SUBMISSION OF LIEN WAIVERS AND DBE COMPLIANCE, UTILIZATION REPORTS:

A. At each monthly Application for Payment submitted to the owner, the Contractor shall provide completed "City of Mobile DBE Compliance, Utilization Reports" and lien waivers, including those from Subcontractors and material suppliers.

23. NOTICE OF COMPLETION:

A. For Contracts $50,000 or greater:
Contractor shall provide proof of publication of Advertisement of Completion for four consecutive weeks in a local newspaper, as required in the Title 39, Section 39-1-1, Subsection (f), of the Code of Alabama. This Advertisement shall not begin until the Project has been accepted by the City of Mobile.

B. Notice of Completion advertisement shall read as follows:

STATE OF ALABAMA

COUNTY OF MOBILE

NOTICE OF COMPLETION

In accordance with Chapter 1, Title 39, Code of Alabama, 1975, NOTICE IS HEREBY given that (Contractor Name) has completed the contract for City of Mobile, Hero Plaza – PR-022-22, Mobile, Alabama 36602. All persons having any claims for labor, material or otherwise in connection with this project should immediately notify the Architectural Engineering Department, City of Mobile, P.O. Box 1827, Mobile, Alabama 36633-1827.

C. Advertisement shall not begin until the Project has been accepted by the City of Mobile as Substantially Complete.

24. CONTRACTOR WARRANTY AND CERTIFICATION:

A. Upon completion of the contract, the Contractor shall certify under oath that all bills have been paid in full.

B. Contractor shall provide a one year Labor and Materials Warranty on company letterhead in addition to other warranties required by the Bid Documents.

25. LIQUIDATED DAMAGES

A. A time charge equal to Two Hundred Fifty Dollars ($250.00) per calendar day will be made against the Contractor for the entire period that any part of the Work remains uncompleted, or any required closeout documents are not acceptably submitted, for more than thirty (30) calendar days after the time specified for the Substantial Completion for the Work, the amount of which shall be deducted by the owner, and shall be retained by the Owner out of monies

otherwise due the Contractor in the final payment, not as a penalty, but as liquidated damages sustained.

END OF SECTION

SECTION 00400

BID FORM

Copies of the following Bid Forms shall be used. Bids submitted on alternate forms may be rejected. Fill in all blank spaces with an appropriate entry. Bid Form must be signed by an officer of the company and notarized.

TO: City of Mobile, 205 Government St., P.O. Box 1827, Mobile, AL, 36633

REF: PROJECT NO.: PR-022-22
PROJECT NAME: Heroes Plaza
PROJECT LOCATION: 1 S Water Street
Mobile, Alabama, 36602

In compliance with the Bid Documents and having carefully and thoroughly examined said documents for the subject Work prepared by the City of Mobile, Architectural Engineering Department, Volkert, Inc. and TSW dated May 1, 2023 (CAUTION: before submitting any bid it is the Bidder's responsibility to check with the Architectural Engineering Department for all Addenda or special instructions that may impact the Bid) thereto, receipt of which is hereby acknowledged, the premises and all conditions affecting the Work prior to making this Proposal, the Undersigned Bidder, hereby

COMPANY NAME:_____

ADDRESS:_____**PHONE**_____

ALABAMA GENERAL CONTRACTOR LICENSE NO. _____

CITY OF MOBILE BUSINESS LICENSE NO._____

SECRETARY OF STATE OF ALABAMA BUSINESS IDENTITY NO._____

SECRETARY OF STATE OF ALABAMA ACCOUNT NO._____

(Note: Secretary of State Account Number shall be filled in only by non-resident bidders)

(Check one) [ ] A Corporation [ ] A Partnership [ ] An Individual Doing Business

hereby proposes to furnish all labor, materials, tools, equipment, and supplies and to sustain all the expenses incurred in performing the Work on the above captioned Project in accordance with the terms of the Contract Documents, and all applicable laws and regulations for the sum listed below. The initial term of the Contract shall extend for Three Hundred Sixty- Five (365) calendar days from the date of the Notice to Proceed.

Base Bid: **$**_____

Contingency Allowance: **+** **$**50,000.00

Total Base Bid: **$_____.00**
(Fill in here and in Total Bid below)

TOTAL BASE BID: _____

_____Dollars, ($ **_____.00**)
(Amount in Words) (Amount in Figures)

(Note: Show amount in both words and figures. In case of discrepancy, the amount in words shall govern). **Bids shall be provided in whole dollar amount with no cents.**

CONTINGENCY ALLOWANCE: The lump sum Contingency Allowance shall be included in the Total Bid for work related to unforeseen conditions as approved by the Owner.

BID SECURITY: The undersigned Bidder agrees that the attached Bid Security, as a Cashier's Check drawn on a bank registered to do business in the State of Alabama and which is a member of the Federal Deposit Insurance Corporation, or a Bid Bond, made payable to the City of Mobile, in the amount of 5% of the bid amount, but in no event more than $10,000, as the proper measure of liquidated damages which the City will sustain by the failure of the undersigned to execute the Contract. Said Bid Security shall become the property of the City of Mobile as liquidated damages as specified in the Contract Documents.

AMERICANS WITH DISABILITIES ACT (ADA): The undersigned Bidder agrees to fully comply with all requirements of the Americans with Disabilities Act of 1990 and the Amendment Act.

NONDISCRIMINATION: Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, *inter alia*, that all contractors performing work for the City of Mobile not discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities.

SIGNATURE: If the undersigned Bidder is incorporated, the entire legal title of the company followed by "a corporation" should be used. If Bidder is an individual, then that individual's full legal name followed by doing business as (d/b/a) and name of firm, if any, should be used. If Bidder is a partnership, then full name of each partner should be listed followed by "d/b/a" and name of firm, if any.

Ensure that name and exact arrangement thereof is the same on all forms submitted with this Bid. If a word is abbreviated in the official company name, such as "Co.", then use that abbreviation. If not abbreviated in the official name, spell out.

Bidder agrees not to revoke or withdraw this Bid until sixty (60) calendar days following the time and date for receipt of bids. If notified in writing of the acceptance of this Bid

within this time period, Bidder agrees to execute a Contract based on this Bid on the proscribed form within ten (10) calendar days of said notification and to furnish Performance Bond and Materials and Payment Bond as specified.

COMPANY NAME:_____
(Printed or Typed)

BY:_____
(Signature of Company Officer)

COMPANY OFFICER:_____
(Printed or Typed)

TITLE_____ **DATE**_____**, 2023**
(Printed or Typed)

Sworn to and subscribed before me this _____ day of _____2023

_____
Notary Public

Attachments:
1. Bid Security, with Power of Attorney
2. Secretary of State Authorization (Out of state bidders only)
3. Sales Tax Form C-3A
4. Supplier Diversity Subcontracting & Major Supplier Plan

END OF BID FORM

ACCOUNTING OF SALES TAX
ATTACHMENT TO BID FORM SECTION 00400
SALES TAX FORM C-3A

To: City of Mobile **Date:**_____

Name of Project: Heroes Plaza
Project Number: PR-022-22

SALES TAX ACCOUNTING

Pursuant to Act 2013-205, Section 1(g) the Contractor accounts for the sales tax NOT included in the bid proposal form as follows:

	ESTIMATED SALES TAX AMOUNT
OPTION ONE BASE BID:	$_____

Failure to provide an accounting of sales tax shall render the bid non-responsive. Other than determining responsiveness, sales tax accounting shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder.

Legal Name of Bidder_____

Mailing Address_____

***By (Legal Signature)**_____

*Name (type or print)_____ (Seal)

*Title_____

Telephone Number_____

OFFICE OF SUPPLIER DIVERSITY

CITY OF MOBILE

Subcontracting and Major Supplier Plan

Contact Office of Supplier Diversity for questions on completing this form.
Via emai:Archnique.kidd@cityofmobile.org
251.208.7967
205 Government Street, 5th Floor

Bidders and Proposers – Please complete and submit these forms as required by your City of Mobile Bid or Proposal Specification.

If you are submitting a proposal in response to a Request for Qualifications, Request for Proposal, or other solicitation ("Solicitations") issued by the City of Mobile, the bid specification may require you to utilize disadvantaged business enterprise ("DBE") subcontractors and suppliers. If DBE participation is required, you must complete and submit these forms with your proposal. If required, failure to submit this form will render your bid non-responsive. NOTE: To satisfy participation requirements for a federally funded project, you must utilize DBEs certified through the Alabama Unified Certification Program.

If DBE participation is required, and you fail to satisfy the participation requirement, you must show that you made a good faith effort to include such participation; you will be required to submit DBE Compliance Form 2 and include additional information if needed. When so required, failure to address adequately the good faith effort factors on Form 2 will render your bid or proposal non-responsive. The "good faith effort" factors on Form 2 are not intended to be a mandatory, exhaustive, or exclusive.

You are encouraged to work with the City of Mobile Supplier Diversity Manager when preparing this form. Please consult with the City Supplier Diversity Manager for a list of eligible DBEs. The "good faith effort" factors on **Form 2** are not intended to be mandatory, exhaustive, or exclusive; they are a tool to help you, and the City of Mobile, determine whether you made efforts which, by their scope, intensity, and appropriateness to the objective, would reasonably be expected to fulfill the participation requirement.

About **"DBEs"**: Disadvantaged business enterprise or DBE means a for-profit small business concern (1) That is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and (2) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

About **"Good Faith" Effort**: Good faith efforts means efforts to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement. The City of Mobile expects contractors holding large contracts to recruit and engage DBEs to be a part of their team.

Failure to submit this form, when so required by the bid or proposal specification, will render your bid non-responsive.

Contact Office of Supplier Diversity for questions on completing this form.
Via emai:Archnique.kidd@cityofmobile.org
251.208.7967
205 Government Street, 5th Floor

FORM 1: Background and Plan

Section I. Information about your company

Company	
Address	
Telephone	
E-Mail	

RFP/RFQ Solicitation Number	
Project Description	
Is your company a DBE company?	Yes ☐ No ☐
Work force demographics	Male _____ Female _____ Minority _____ Non-minority _____ SDVO _____ Total #of Employees _____

Subcontractor/Major Supplier Plan submitted by:

Printed Name: _____

Signature: _____ Date: _____

Title: _____

The following employee will be designated as the **DBE Liaison** for all communication regarding DBE participation including documentation for DBE participation and maintenance of records of Good Faith Efforts for this contract award:

Name: _____ Title: _____

Email: _____ Phone: _____

Contact Office of Supplier Diversity for questions on completing this form.
Via emai:Archnique.kidd@cityofmobile.org
251.208.7967
205 Government Street, 5th Floor

FORM 1: Background and Plan (Cont'd

Section II. Subcontractors/Major Vendors Supplier Plan submitted by:

Please Print Company_____ Your Bid/Proposal Amount $_____ Date:

_____/ _____/_____ Description_____

Name of Bidder/Proposer: _____

I intend to use the following subcontractors: (Attach additional pages if necessary)

Subcontractor or Major Supplier	Phone	Scope of Work to be performed	$$ Value to be Performed	% Of Your Bid Amount	DBE?	Official Verification Only

Form 2: Good Faith Effort Documentation

Name of Bidder: _____

Contact Person: _____ Phone_____ Email_____

Please complete this form if you are unable to identify DBE subcontractors or suppliers to reach 15% of the value of your bid.

YES (□)	NO (□)	Did you do these suggested areas for DBE recruitment and engagement
		PRE-BID MEETING(S): The bidder attended all pre-bid meetings scheduled by the City to inform DBEs of contracting and subcontracting opportunities.
		CMDBE/ALDOT DBE LIST(S): The bidder utilized the Office of Supplier Diversity's list or lists of certified through the Alabama Department of Transportation UCP DBE Listing
		SMALL CONTRACT(S): The bidder selected specific portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals (including breaking down contracts into smaller units to facilitate DBE participation). Consider support services, including insurance, accounting, temporary labor, and transportation, landscaping, and janitorial as potential areas for DBE use.
		FOLLOW-UP: The bidder followed-up initial indications of interest by DBEs by contacting those DBEs to determine with certainty if they remained interested in bidding.
		GOOD FAITH NEGOTIATIONS: The bidder negotiated in good faith with interested DBEs and did not reject DBEs as unqualified without sound business reasons based on a thorough investigation of their capabilities. Bidders are not expected to engage unqualified subcontractors or subcontractors whose pricing, after negotiation, remains excessive or unreasonable. (Please document qualification deficiencies or unreasonable pricing if it prevented your engagement of specific DBE subcontractors.)
		ADVERTISEMENT: The bidder advertised in general circulation and/or trade association publications concerning subcontracting opportunities and allowed DBEs reasonable time to respond.
		INTERNET ADVERTISING: The bidder advertised DBE and/or subcontracting opportunities in the newspaper or other internet portals that are accessible to DBEs and/or potential subcontractors.

		INFORMATION: The bidder provided interested DBEs with adequate information about the plans, specifications and requirements of the subcontract.
		WRITTEN NOTICE(S): The bidder/proposer took the necessary steps to provide written notice in a manner reasonably calculated to inform DBEs of subcontracting opportunities and allowed sufficient time for them to participate effectively.
		COMMUNITY RESOURCES: The bidder/proposer used the services of available community organizations, small and/or disadvantaged business assistance offices and other organizations that provided assistance in the recruitment and placement of DBE firms.

CONTRACT RECORDS:

The bidder/proposer has maintained the following records for each DBE that has bid on the subcontracting opportunity:

1. Name, address, email address and telephone number
2. A description of information provided by the bidder/proposer or subcontractor; and
3. A statement of whether an agreement was reached, and if not, why not, including any reasons for concluding that the DBE was unqualified to perform the job.

Section 2(B)

_____ There are not ways to break out 15% of the value of this contract for subcontractors / suppliers. Provide further detail in Section2(c) if the inability to break-out 15% of the value of the contract was the reason, or a reason, you could not meet the participation requirements.

_____ Could not find sufficient DBEs to provide subcontracting or supplier services.

_____ DBEs were available but did not have sufficient qualifications or experience to meet the needs of this contract.

Please indicate additional efforts you have taken to recruit and engage DBEs. _____

_____

_____

SECTION 00500

STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

PART 1 GENERAL

A. This section includes the STANDARD FORM OF AGREEMENT BETWEEN OWNER and CONTRACTOR, AIA Document A101, wherein the basis of payment is a Stipulated Sum; the document has been electronically modified to meet the Owner's requirements and shall be used for the Project.

DRAFT

AIA® Document A101™ – 2017

Standard Form of Agreement Between Owner and Contractor

where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

«City of Mobile »« »
«P. O. Box 1827 »
«Mobile, Alabama 36633-1827 »
« »

and the Contractor:
(Name, legal status, address and other information)

« »« »
« »
« »
« »

«City of Mobile Business License Number: »
«Secretary of State Registration Number: »

for the following Project:
(Name, location and detailed description)

«. Hero Plaza Phase I, 1 S Water St Mobile, Alabama 36602

The Architect:
(Name, legal status, address and other information)

«
Architectural Engineering Department
P. O. Box 1827
Mobile, Alabama 36633-1827»

The Engineer:
(Name, legal status, address, and other information)

«Volkert, Inc.»« »
«1110 Montlimar Dr. Suite 1050 »
«Mobile, Alabama 36609 »
« »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others (See attachment Exhibit A).

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[« X »] A date set forth in a notice to proceed issued by the Owner.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[« X »] Not later than « » («») calendar days from the date of the Notice to Proceed for commencement of the Work.

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » ($ »), subject to additions and deductions as provided in the Contract Documents.

Base Bid
Contingency Allowance: $50,000.00
Total Contract Sum:

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Contingency Allowance	$

Contingency Allowance: Fifty Thousand and 00/100 Dollars ($50,000.00)

A. Contingency Allowance shall cover cost of material, labor, overhead, profit and other expenses for complete installation of items of additional work as required for a complete, functional project.
B. Contingency Allowance shall be used for unforeseen conditions not covered in the construction documents.
C. All extra work under this section must be authorized by the Owner, in writing, prior to materials or undertaking work.
D. Upon completion of the Work, the unused portion of the Allowance shall be credited back to the Owner in the form of a Change Order.
E. Allowances are subject to the same provision of AIA 201 Article 7.3.7.

§ 4.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)
		$ $

§ 4.5 Liquidated damages:
(Insert terms and conditions for liquidated damages, if any.)

«A time charge equal to One Thousand and 00/100 Dollars ($1,000.00) per calendar day will be made against the Contractor for the entire period that any part of the Work remains uncompleted or any required closeouts documents are not acceptably submitted for more than thirty (30) days after the date specified for the substantial Completion of the Work, the amount of which shall be deducted by the owner, and shall be retained by the Owner out of monies otherwise due the Contractor in the final payment, not as a penalty, but as liquidated damages sustained. »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the 25th of the month.

« »

§ 5.1.3 Provided that an Application for Payment in acceptable format is received by the Architect not later than the first «1st » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the tenth «10th » day of the «following » month. If an Application for Payment in acceptable format is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than «forty » («40 ») days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This accepted schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201, General Conditions of the Contract for Construction (including Owner's then-current modifications), and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

.1 That portion of the Contract Sum properly allocable to completed Work;

.2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing and insured as specified;

.3 Completed work shall be determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.6.3 Any Progress Payment shall include partial release of liens for material and labor for previous application for payment amount approved and paid. The DBE Utilization Report shall be included with the pay application.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

«Five percent (5%) of the first fifty percent (50%) of the completed work and after fifty percent (50%) completion has been accomplished, no further retainage shall be held from the original Contract Sum. Increases in the contract sum by Change Order shall also be subject to retainage.»

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

«N/A »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

«The net amount of the Retainage shall be equal to two and one half percent (2.5%) of total Contract Sum, as increased or decreased by Change Order. »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final monthly progress payment, constituting the entire unpaid balance of the Contract Sum, less retainage, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201 (including Owner's then-current modifications which may be obtained from the Owner or, alternatively, a copy of which is incorporated in the Project Manual and incorporated by reference herein as a part thereof), and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a Certificate of Substantial Completion has been issued by the Architect/Owner and the project accepted.

§ 5.2.2 The Owner's final payment to the Contractor of retainage shall be made as follows:

« The final two and one half percent (2.5%) of the total Contract Sum retained will not be paid until proof of publication is submitted and all written claims paid in full. Contractor to submit the following:
•Contractor's Affidavit of Payment of Debts and Claims (AIA form G706, included in contract documents) with
a.) Contractor's Release or Waiver of Liens
b.) Releases or Waivers of Liens from Subcontractors and Material and Equipment Suppliers;
•Contractor's Affidavit of Release of Liens (AIA form G706A, included in contract documents);
•Consent of Surety, if any, to final payment (AIA form G707, included in contract documents);
•Any additional close out requirements per the contract documents; and
•Notarized Affidavit of Notice of Completion advertisement from publisher.

Contractor shall provide proof of publication of Notice of Completion in a local newspaper once per week for four (4) consecutive weeks, as required in the Title 39, Section 39-1-1, Subsection (f), of the Code of Alabama quoted below. "The Contractor shall, immediately after the completion of the contract, give notice of Completion by an advertisement in a newspaper of general circulation published within the city or county in which the work has been done, for a period of four (4) consecutive weeks. A final settlement shall not be made upon the contract until the expiration of thirty (30) days after the completion of the notice. Proof of publication of the notice shall be made by the contractor to the authority by whom the contract was made by affidavit of the publisher and a printed copy of the notice published. If no newspaper is published in the county in which the work is done, the notice may be given by the contract." (Acts 1927, No. 39, 9.37; Acts 1935, No. 39, 9. 70; Code 1940, T. 50, Section 16; Acts 1983, No. 83-737, 9.1203; Acts 1989, No. 89-650m 9. 1284, Section 1; Acts 1994, No. 94-207, p, 270, Section 1; Acts 1997, No. 97-225, p. 348, Section 1.)

The Notice of Completion shall read as follows:

STATE OF ALABAMA
COUNTY OF MOBILE
NOTICE OF COMPLETION

In accordance with Chapter I, Title 39, Code of Alabama, 1975, NOTICE IS HEREBY given that (Goram Air Conditioning Company, Inc.) has completed the contract for (Arthur R. Outlaw Convention Center- Mechanical Upgrades). All persons having any claims for labor, material or otherwise in connection with this project should immediately notify the Architectural Engineering Department, City of Mobile, P. O. Box 1827, Mobile, Alabama 36633-1827.

Publication of the Notice of Completion shall not begin until the Project has been accepted as Substantially Complete by the City of Mobile. »

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Engineer will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

«N/A »

§ 6.2 Binding Dispute Resolution

For any Claim, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« X »] Litigation in a court of competent jurisdiction

§ 6.3 Governing Law and Venue

This Agreement shall be governed by the laws of the State of Alabama, and the appropriate venue of any actions arising out of this Agreement shall be a court of proper jurisdiction in Mobile, Alabama.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201, General Conditions of the Contract for Construction, including Owner's then-current modifications, a copy of which is incorporated in the contract documents and incorporated by reference herein as a part thereof..

7.1.1 **TERMINATION OF CONTRACT**
The Owner or Contractor may terminate the contract upon thirty (30) days written notice. Notice from the Owner shall be mailed to the address provided by the Contractor on this form. Notice to the City shall be addressed (fill in address). The City shall not be liable for payment to the Contractor for lost profit or damages as the result of its termination of the contract.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201, General Conditions of the Contract for Construction, including Owner's then-current modifications, a copy of which is incorporated in the contract documents and incorporated by reference herein as a part thereof.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents. A copy of such amended, revised or supplemental provision is incorporated in the contract documents and hereby incorporated by reference herein as a part thereof.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

«Director, Architectural Engineering Department »
«P. O. Box 1827 »
«Mobile, Alabama 36633-1827 »

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

« »
« »
« »**§ 8.4** Neither the Owner's nor the Contractor's representative shall be changed without ten (10) days' prior notice to the other party.

§ 8.5 Insurance and Bonds
§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth below:
The Contractor shall purchase and maintain from a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
.4 Claims for damages insured by usual personal injury liability coverage;
.5 Claims for damages, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
.7 Claims for bodily injury or property damage arising out of completed operations; and
.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18 of the General Conditions of the Contract for Construction.

The Contractor shall take out and maintain during the life of the Contract no less than the following amounts of insurance with the City of Mobile named as an additional insured. Contractor shall submit a Certificate of Insurance. Insurance companies listed as the "Companies Affording Coverage" shall be authorized by the Secretary of the State of Alabama. Insurance produced out of the State of Alabama must be signed or counter signed by a licensed Agent of Alabama, with the Agent's name, address and telephone number typed or printed on the face of the Certificate of Insurance.

.1 Workmen's Compensation Insurance: - Statutory-amount and coverage as required by all applicable laws, rules or regulations of the State of Alabama and the United States of America, Including the U. S. Longshore and Harbor Workers Act and the Jones Act, if applicable.

.2 Employee's Liability Insurance shall be provided for limits of liability not less than:

A.	Bodily Injury by Accident	$1,000,000 each accident
B.	Bodily Injury by Disease	$1,000,000 each employee
C.	Bodily Injury by Disease	$1,000,000 each policy

.3 United States Longshoreman's Harbor Worker's Act.

.4 Jones Act Coverage (if applicable) placed either in the Workers Compensation or through the Marine General Liability.

.5 The Contractor shall provide Broad Form (commonly termed Comprehensive) General Liability Insurance (including premises-product-completed operations, independent contractors, and blanket contractual liability), specifically covering the obligations assumed by the Contractor for limits of liability not less than:

A.	Bodily Injury	$1,000,000 each person $1,000,000 each occurrence
B.	Property Damage	$1,000,000 each occurrence; or
C.	Bodily Injury and Property Damage	$1,000,000 combined single limit

.6 Such comprehensive policy shall include the following:

A. All liability of the Contractor, for the Contractor's Direct Operations.
B. Subcontractor's Operations.
C. Completed Operations Cover, thereby meaning any loss which shall occur after the contract has been completed, but which can be traced back to the Contract.
D. General Aggregate Limit of $2,000,000 shall apply on a "Per Project" Basis.
E. Contractual Liability, meaning thereby; any risk assumed by the Contractor under Hold Harmless Agreements or any other assumption of liability, but specifically items 11.1.1.8.3G herein below
F. Broad Form Property damage Coverage, including Completed Operations.
G. Personal Injury Liability, with employee's exclusions removed.
H. Explosion and Collapse Hazard:
Included or X Not Applicable.
I. Underground Hazard:
Included or X Not Applicable.

J. Marine General Liability shall include Premises and Operations, Personal and Advertising Injury, Products and Completed Operations, Protection and Indemnity including vessel and crew (if applicable).

K. Deletion of watercraft exclusion with respect to non-owned vessels and contractual Liability for watercraft exposure not covered by Protection and Indemnity policy.

L. The Marine General Liability policy must include an endorsement to cover "Sudden And Accidental Pollution."

.7 The Contractor shall carry for himself and shall require that all Subcontractors and all Owners of Automobiles or trucks rented or hired on the contract carry, until the Contracts is completed, Comprehensive Automobile Liability Coverage for Bodily Injury and property. Damage for any auto in amounts not less than the minimum amounts as indicated. The Contractor and Subcontractor shall also carry for themselves insurance for all non-owned and hired automobile at the limits of liability as indicated below:

A.	Bodily Injury	$1,000,000 each person $1,000,000 each occurrence
B.	Property damage	$1,000,000 each occurrence; or,
C.	Bodily Injury and Property damage	$1,000,000 combined single limit

.8 Umbrella/Excess Liability: $2,000,000 combined single limit each occurrence for bodily injury and/or property damage

.9 Builder's Risk Coverage (Property Insurance): The Contractor shall carry for the Owner, himself, and all Subcontractors a Builder's Risk Policy to cover the full amount of the Contract during construction, fabrication or erection of any equipment.

A. The Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors, Sub-subcontractors, and the Design Professionals in the Project.

B. Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

C. If the property insurance requires deductibles, the Contractor shall pay costs not covered because of such deductibles. Deductibles shall be limited to a maximum of $2,500.00 unless the loss is caused by windstorm; then deductible shall be a maximum of three percent (3%) of the insured value.

D. This property insurance shall cover the full value of equipment, material, and other portions of the Work stored off the site, and also portions of the Work in transit. There shall be no limits on the value of loss per occurrence.

E. A named storm endorsement is required. The deductible shall be a maximum of three percent (3%) of the insured value.

.10 A Surety authorized to do business in the State of Alabama shall furnish the required Insurance.

.11 The standard ACORD™ format shall be provided. The ACORD™ Certificate must be signed or countersigned by a Licensed Resident Agent of the State of Alabama and the agent's name, address and telephone number must appear on the face of the certificate.

.12 The Surety must have a minimum rating of A/Class VI as reported in the latest issue of Best's Key Rating Guide Property-Casualty, published by Alfred M. Best Company, Inc. if the bid price exceeds $50,000.00.

.13 "In Rem" endorsement.

The insurance shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

Certificates of insurance acceptable to the Owner shall be filed with the Owner within ten (10) calendar days from date of issuance of contract forms for execution. Contractor shall deliver to the City of Mobile, certificates of insurance certifying the existence and limits of the insurance coverages along with separate policy endorsements. Contractor shall also be responsible for delivering policy renewal certificates to the City of Mobile, and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies shall contain a provision that coverages afforded under the policies will not be cancelled subject to non-renewal nor

material change, or allowed to expire without at least thirty (30) days' (except ten (10) days from non-payment) prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the time. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

All policies of insurance, except worker's compensation, shall be endorsed to provide that all such insurances are primary and non-contributing with any other insurance maintained by the City of Mobile and endorsed to waive rights of subrogation in favor of the City of Mobile.

The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 8.5.2 The Contractor shall provide bonds as set forth below:
Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder.

Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

The Labor and Material Payment Bond and the Performance Bond shall each be for one hundred percent (100%) of the Contract Sum.

1. Bond shall be submitted with the executed agreement on provided form(s).

2. Power of Attorney is required for both bonds.

3. A Surety authorized to do business in the State of Alabama shall furnish both bonds.

4. A Surety licensed to do business in the State of Alabama must execute the bonds.

5. The Surety must have a minimum rating of A/Class VI as reported in the latest issue of Best's Key Rating Guide Property-Casualty, published by Alfred M. Best Company, Inc., if the bid price exceeds $50,000.00.

6. The Surety company shall be required to execute AIA Document G-707, "Consent of Surety to Final Payment" prior to Final Payment being made to the Contractor.

§ 8.6 Indemnification:
The Contractor shall indemnify, defend and hold harmless City and its officers, elected officials, agents, representatives, and employees in respect of any and all claims, injuries, losses, diminution in value, damages, liabilities, whether or not currently due, and related expenses (including without limitation, settlement costs and any legal or other expenses for investigating or defending any actions or threatened actions) arising from or in connection with the contractor's performance under this agreement, including but not limited to, environmental laws, regulations, orders and decrees of whatever character or nature and damage or injury to persons or property. Contractor hereby confirms and agrees that Contractor is not a 'design professional' as defined in Alabama Act 2021-318, and not required to carry professional liability insurance for the performance or obligations of this contract.

§ 8.7 Other Provisions:
«Contractor shall provide a minimum one (1) year warranty from the date of substantial completion of all Labor and Materials for the Work covered by this contract, unless otherwise specified. Labor and Material warranties required

by other sections of the construction document shall not conflict with this provision. The most stringent warranty provision shall apply. »

§ 8.8 Force Majeure:
In the event that either party hereto shall be delayed or hindered in or prevented from the performance of any act required hereunder by reason of strikes, lockouts, labor troubles, inability to procure materials, failure of power, restrictive governmental laws or regulations, riots, insurrection, war, Act of God, or other reason of a like nature not the fault of the party delayed in performing work or doing acts required under the terms of this Agreement, then performance of such act shall be excused for the period of the delay and the period for the performance of any such act shall be extended for a period equivalent to the period of such delay.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A201, General Conditions of the Contract for Construction, including Owner's then-current modifications, a copy of which is incorporated in the contract documents and incorporated by reference herein as a part thereof.

.3 Drawings

Number	Title	Date

.4 Specifications

Section	Title	Date
Section 011000	Summary of Work	
Section 012000	Price and Payment Procedures	
Section 012200	Unit Prices	
Section 012500	Substitution Procedures	
Section 013000	Administrative Requirements	
Section 013216	Construction Progress Schedule	
Section 014000	Quality Requirements	
Section 015000	Temporary Facilities and Controls	
Section 017000	Execution and Closeout Requirements	
Section 017419	Construction Waste Management and Disposal	
Section 017800	Closeout Submittals	
Section 017900	Demonstration and Training	

.5 Addenda, if any:

Number	Date
Addendum #1	
Addendum #2	
Addendum #3	
Addendum #4	
Addendum #5	

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.6 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

§ 9.2
Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
N/A			

§ 9.2.1 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

«BIDDING AND CONTRACT REQUIREMENTS

Section 00100	Invitation to Bid
Section 00200	Instructions to Bidders-AIA Document A701-2018
Section 00300	Supplementary Instructions to Bidders
Section 00400	Bid Form
	Accounting of Sales Tax Form C-3A
	Supplier Diversity Subcontracting and Major Supplier Plan
Section 00500	Standard Form of Agreement Between Owner and Contractor AIA Document A101
Section 00600	Bonds, Certificates and Affidavits
	Performance Bond
	Labor and Material Payment Bond
	E-Verify Documentation (Sample)
	Application and Certificate for Payment-AIA Document G702and G703 with DBE Utilization Report
	Certificate of Substantial Completion-AIA Document G704
	Contractor's Affidavit of Payment of Debts and Claims-AIA Document G706
	Contractor's Affidavit of Release of Liens-AIA Document G706A
	Consent of Surety to Final Payment-AIA Document G707
	Request for Taxpayer Identification Number and Certification W9 Tax Form and City of Mobile Vendor Information Form
Section 00700	General Conditions of the Contract for Construction-AIA Document A201»

§ 9.2.2 Best Management Practices (BMPs):
The Contractor shall be responsible for providing, implementing and maintaining BMPs for sediment and erosion control in full compliance with all applicable Local, State and Federal Codes and Ordinances

throughout the contract period. All Work shall be in accordance with the Clean Water Act; the Alabama Water Pollution Control Act; the current version of the Alabama Handbook for Erosion Control, Sediment Control Stormwater Management on Construction sites and Urban Areas; and the current version of the Mobile, Alabama City Code Chapter 17 Stormwater Management and Flood Control. All Waste water with oils, grease, paint, mortar, etc., shall be properly contained and disposed of.

§ 9.2.3 Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, *inter alia*, that all contractors performing work for the City of Mobile not discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities.

§ 9.2.4 By signing this contract, the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

§ 9.2.5 Public Contracts with Entities Engaging in certain Boycott Activities:
By signing this contract, the Contractor further represents and agrees that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.

§ 9.2.6 Severability Clause:
In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Agreement, but this Agreement shall be construed as if such invalid or illegal or unenforceable provision had never been contained herein. Upon such determination that any term or other provision is invalid, illegal or unenforceable, the court or other tribunal making such determination is authorized and instructed to modify this Agreement so as to effect the original intent of the parties as closely as possible so that the transactions and agreements contemplated herein are consummated as originally contemplated to the fullest extent possible.

§ 9.2.7 Non-Agency Clause:
Contractor, in the performance of its operations and obligations hereunder, shall not be deemed to be an agent of City but shall be deemed to be an independent Contractor in every respect and shall take all steps at its own expense, as City may from time to time request, to indicate that it is an independent Contractor. City does not and will not assume any responsibility for the means by which or the manner in which the services by Contractor provided for herein are performed, but on the contrary, Contractor shall be wholly responsible therefore.

9.2.8 **Breach of Contract**. The failure of the CONTRACTOR to comply with any of the provisions, covenants or conditions of this CONTRACT, **or fails to** adequately perform the services required hereunder within the time limits specified herein, shall be a material breach of this CONTRACT. In the further event that City shall engage the services of an attorney to protect or to enforce its rights with respect to said breach or apparent breach, then and in those events, Contractor agrees to pay and to reimburse any and all reasonable attorneys' fees and expenses which City may incur with respect to City's enforcement of this Agreement; regardless of whether said attorneys' fees and costs shall be incurred in connection with any litigation or in connection merely with advice and representation provided without litigation. In such event, in addition to any other remedies available at law, in equity, or otherwise specified in this CONTRACT, the CITY may:

a. afford the CONTRACTOR written notice of the breach and ten (10) calendar days or such shorter time that may be specified in this CONTRACT within which to cure the breach;
b. discontinue payment to the CONTRACTOR for and during the period in which the CONTRACTOR is in breach; and
c. offset those monies disallowed pursuant to the above, against any monies billed by the CONTRACTOR but yet unpaid by the CITY.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

This Agreement entered into as of the day and year first written above.

City of Mobile	Legal Name of Party to Contract: Contractor:
OWNER *(Signature)*	**CONTRACTOR** *(By Signature)*
William S. Stimpson, Mayor *(Printed name and title)*	*(Printed name and title)*

ATTEST:

_____
City Clerk

STATE OF ALABAMA
COUNTY OF MOBILE
Before me, the undersigned a Notary Public in and for said County and State, personally appeared _____ as _____ of _____ and after being duly sworn, did depose and say that he, as such officer and with full authority, signed the above and foregoing voluntarily as the act of said corporation on the day the same bears date.
Sworn to and subscribed for me this _____ day of _____, 20_____.

_____
NOTARY PUBLIC
My Commission Expires: _____

SECTION 00600

BONDS, CERTIFICATES AND AFFIDAVITS

PART 1 GENERAL

This section includes the Bond Forms and Certificates that are to be used on this Project. No other forms will be accepted. Forms may be obtained from the Architectural Engineering Department, City of Mobile, telephone number 251-208-7454.

1.1 FORMS

A. PERFORMANCE BOND. Owner's modified Performance Bond form.

B. LABOR AND MATERIAL PAYMENT BOND. Owner's modified Payment Bond form.

C. E-Verify Documentation (Sample)

D. APPLICATION AND CERTIFICATION FOR PAYMENT - AIA Document G702 and AIA Document G703 and DBE Utilization Report

E. CERTIFICATE of SUBSTANTIAL COMPLETION – AIA Document G704-2017

F. CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS - AIA Document G706

G. CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS - AIA Document G706A.

H. CONSENT OF SURETY TO FINAL PAYMENT - AIA Document G707

I. Request for Taxpayer Identification Number and Certification, W-9 Form, and City of Mobile Vendor Information Form

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner or other Party shall be considered plural where applicable.

KNOW ALL MEN BY THESE PRESENTS: That the Contractor, _____, _____,_____, hereinafter called the Principal, and _____ _____, hereinafter called the Surety, are held and firmly bound unto the **City of Mobile, P. O. Box 1827, Mobile, AL 36633**, hereinafter called the Owner, in the penal sum of _____ and xx/100 Dollars ($_____.00) for payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns for the faithful performance of a certain written Contract dated the _____ day of _____, 2023 entered into between the Principal and the City of Mobile for furnishing all labor, material, equipment and insurance and performing all Work required to properly complete City of Mobile, Heroes Plaza (PR-022-22) 1 S Water Street, Mobile, Alabama, a copy of which said Contract is incorporated herein by reference and is made a part hereof as if fully copied herein.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall faithfully perform the terms and conditions of the Contract in all respects on its part and shall fully pay all obligations incurred in connection with the performance of such Contract on account of labor and materials used in connection therewith, and all such other obligations of every form, nature and character, and shall save harmless the Owner from all and any liability of every nature, kind and character which may be incurred in connection with the performance or fulfillment of such Contract or other such and liability resulting from negligence or otherwise on the part of such Principal and further save harmless the Owner from all cost and damage which may be suffered by reason of the failure to fully and completely perform said contract and shall fully reimburse and repay the Owner for all expenditures of every kind, character, and description which may be incurred by the Owner in making good any and every default which may exist on the part of the Principal in connection with the performance of said Contract; and further that the Principal shall pay all lawful claims of all persons, firms, partnerships, or corporations for all labor performed and material furnished in connection with the performance of the Contract, and that the failure to do so with such persons, firms, partnerships or corporations shall give them a direct obligation; and provided, however, that no suit, action, or proceedings by reason of any default whatever shall be brought on this bond after two years from the date on which the final payment on the Contract falls due, and provided, further, that if any alterations or additions which may be made under the Contract, or in the work to be done under it, or the giving by the Owner of any extensions of time for the performance of the Contract or any other forbearance being expressly waived. This obligation shall remain in full force and effect until the performance of all covenants, terms and conditions herein stipulated and after such performance, it shall become null and void.

In addition to any other legal mode of service, service of summons, and other process in civil actions brought in Mobile County may be had on the Contractor or the Surety on the bond by leaving a copy of the summons and complaint or other pleading or process with the Mayor of the City of Mobile which shall bind the principal Contractor and Surety to the mode of service above described and that the service shall be the same as personal service on the contractor or surety. This Bond is given pursuant to the terms of Alabama Code, Title 39-1-1, et. al., As Amended.

EXECUTED IN FOUR (4) COUNTERPARTS.

SIGNED, SEALED AND DELIVERED this ____ day of _____, 2023.

CONTRACTOR AS PRINCIPAL
Company: _____
(Corporate Seal)

By: _____
(Signature)
Name and Title: _____

SURETY
Company:_____
(Corporate Seal)

By: _____
(Signature)
Name and Title: _____

Resident Agent: _____
(Signature)
Name and Title: _____
Company Name:_____
Address: _____
_____
Phone and Fax: _____

Owner's Representative: Cassie Boatwright
REAM Director
PO Box 1827
Mobile, AL 36633
251-208-7454

LABOR AND MATERIAL PAYMENT BOND

Any singular reference to Contractor, Surety, Owner or other Party shall be considered plural where applicable.

KNOW ALL MEN BY THESE PRESENTS: That the Contractor**,** _____, _____, _____ , as Principal, and _____ _____, as Surety, are held and firmly bound unto the **City of Mobile, P. O. Box 1827, Mobile, AL 36633** (hereinafter called the "Obligee") in the penal sum of _____ and xx/100 ($_____.00) lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has entered into a certain Contract with said Obligee, dated the ____ day of _____, 2023 (hereinafter called the "Contract") for furnishing all labor, material, equipment and insurance and perform all work required to properly complete City of Mobile, Heroes Plaza (PR-022-22) 1 S Water Street, Mobile, Alabama, which**, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH** that if said Principal and all subcontractors to whom any portion of work provided for in said Contract is sublet and all assignees of said Principal and of such subcontractors shall promptly make payments to all persons supplying him or them with labor, materials or supplies for or in the prosecution of the work provided for in such Contract, or in any amendment or extension of or additions to said Contract, and for the payment of reasonable attorney's fees, incurred by the claimant or claimants in suits on each bond, then the above obligations shall be void; otherwise to remain in full force and effect.

PROVIDED, however, that this bond is subject to the following conditions and limitations.

(a) Any person, firm or corporation that has furnished labor, materials or supplies for or in the prosecution of the work provided for in said contract shall have a direct right of action against the Principal and Surety on this bond, which right of action shall be asserted in a proceeding instituted in the County in which the work provided for in said Contract is to be performed or in any county in which said Principal and Surety does business. Such right of action shall be asserted in a proceeding instituted in the name of the claimant or claimants for his or their use and benefit against said Principal and Surety or either of them (but not later than one year after the final settlement of said Contract) in which action such claim or claims shall be adjudicated and judgment rendered thereon.

(b) The Principal and Surety hereby designate and appoint **_____ Attorney-In-Fact,** as the agent of each of them to receive and accept service of process or other pleading issued or filed in any proceeding instituted on this bond and hereby consent that such service shall be the same as personal service on the Principal and/or Surety. In addition to any other legal mode of service, service of summons, and other process in civil actions brought in Mobile County may be had on the Contractor or the Surety on the bond by leaving a copy of the summons and complaint or other pleading or process with the Mayor of the City of Mobile which shall bind the principal Contractor and Surety to the mode of service above described and that the service shall be the same as personal service on the contractor or surety.

(c) The Surety shall not be liable hereunder for damage or compensation recoverable under any Workmen's Compensation or Employer's Liability Statute.

(d) In no event shall the Surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than two years after the final settlement of said Contract.

(e) This bond is given pursuant to the terms of Alabama Code, Title 39-1-1, et. al., As Amended.

EXECUTED IN FOUR (4) COUNTERPARTS.

SIGNED, SEALED AND DELIVERED this ____ day of _____, 2023

CONTRACTOR AS PRINCIPAL
Company: _____
(Corporate Seal)

By: _____
(Signature)

Name and Title:
_____

SURETY
Company: _____
(Corporate Seal)

By: _____
(Signature)

Name and Title:_____

Resident Agent: _____
(Signature)
Name and Title: _____
Company Name: _____
Address: _____
_____
Phone and Fax: _____

Owner's Representative: Cassie Boatwright
REAM Director
PO Box 1827
Mobile, AL 36633
251-208-7454

APPLICATION AND CERTIFICATION FOR PAYMENT

AIA DOCUMENT G702 PAGE ONE OF PAGES

TO OWNER City of Mobile
P. O. Box 1827
Mobile, Alabama 36633-1827

PROJECT:

APPLICATION NO:

Distribution to:
☐ OWNER
☐ ARCHITECT
☐ CONTRACTOR
☐
☐

PERIOD TO:

FROM CONTRACTOR:

VIA ARCHITECT:

PROJECT NO:

CONTRACT FOR:

CONTRACT DATE:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM		$
2. Net change by Change Orders		$
3. CONTRACT SUM TO DATE (Line 1 ± 2)		$
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)		$
5. RETAINAGE:		
a. _____ % of Completed Work (Column D + E on G703)	$	
b. _____ % of Stored Material (Column F on G703)	$	
Total Retainage (Lines 5a + 5b or Total in Column I of G703)		$
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)		$
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)		$
8. CURRENT PAYMENT DUE		$
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)		$

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		
Total approved this Month		
TOTALS		
NET CHANGES by Change Order		

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of: County of:
Subscribed and sworn to before me this day of
Notary Public:
My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED . . . . . $ _____

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and onthe Continuation Sheet that are changed to conform with the amount certified.)
ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CONTINUATION SHEET

AIA DOCUMENT G703

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
	GRAND TOTALS								

Users may obtain validation of this document by requesting of the license a completed AIA Document D401 - Certification of Document's Authenticity

OFFICE OF SUPPLIER DIVERSITY

CITY OF MOBILE

DBE Compliance

DBE UTILIZATION REPORT

Return to Office of Supplier Diversity
Via email: archnique.kidd@cityofmobile.org
or
P.O. Box 1948
Mobile, AL 36633

CONTRACTOR:	**Certified DBE:** YES NO	**Contract Start Date:**
DESCRIPTION:		**Estimated Completion Date:**

This report is for the month of: (CHECK ONE):

JAN	APR	JULY	OCT
FEB	MAY	AUG	NOV
MARCH	JUNE	SEPT	DEC

FINAL _____

Original Contract Amount	**Total Amount of Contract Changes (change orders or amendments)**	**Final Contract Amount (include contract changes)**	**Payments to Date from City of Mobile**	**OFFICE USE ONLY (Verification)**
$	$	$	$	

Instructions: List all DBEs utilized on the contract, whether or not the firms were originally listed for DBE goal credit. List actual amount paid to each DBE firm. If the established Percentage is not being met, please include a narrative description of the progress being made in DBE participation.

DBE SUBCONTRACTOR	**DBE DESCRIPTION OF WORK**	**DBE SUBCONTRACT AMOUNT**	**DBE PAYMENTS THIS REPORT**	**PAYMENTS TO DATE**	**OFFICE USE ONLY (Verification)**
		$	$	$	
		$	$	$	
		$	$	$	
		$	$	$	
TOTALS		$	$	$	

I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT. SUPPORTING DOCUMENTATION IS ON FILE AND IS AVAILABLE FOR INSPECTION BY CITY OF MOBILE OFFICE OF SUPPLIER DIVERSITY PERSONNEL AT ANY TIME.

PRINT NAME: _____

SIGNATURE: _____, _____ ___/___/____
(Title) (Date)

AIA® Document G704™ – 2017

Certificate of Substantial Completion

PROJECT: *(name and address)*	CONTRACT INFORMATION:	CERTIFICATE INFORMATION:
Contract #	Contract For: Construction Date:	Certificate Number: 001 Date:
OWNER: *(name and address)* City of Mobile - AE Department P. O. Box 1827 Mobile, Alabama 36633	**ARCHITECT:** *(name and address)*	**CONTRACTOR:** *(name and address)*

The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate.
(Identify the Work, or portion thereof, that is substantially complete.)
Work of the Contract for Construction.

ARCHITECT *(Firm Name)*	SIGNATURE	PRINTED NAME AND TITLE	DATE OF SUBSTANTIAL COMPLETION

WARRANTIES
The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:
(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)

WORK TO BE COMPLETED OR CORRECTED
A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:
(Identify the list of Work to be completed or corrected.)
See attached punch list.

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. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within ( ) days from the above date of Substantial Completion.

Cost estimate of Work to be completed or corrected: $

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:
(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)
Per the Contract Documents, the Contractor shall be responsible for damages to the Work and providing all Insurance required under the AIA A101-Agreement Between Owner and the Contractor for a Stipulated Sum, Article 8.5.1, until Final Payment. The Contractor shall also be responsible for labor and materials as required to provide repairs to the work for one calendar year following the substantial completion date. The Owner shall be responsible for general security, heat, and utilities at the facility.

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

CONTRACTOR *(Firm Name)*	SIGNATURE	PRINTED NAME AND TITLE	DATE
City of Mobile		Cynthia L. Klotz, AIA, Assistant Director	
OWNER *(Firm Name)*	**SIGNATURE**	**PRINTED NAME AND TITLE**	**DATE**

AIA® Document G706™ – 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)*	**ARCHITECT'S PROJECT NUMBER:**	OWNER: ☐ ARCHITECT: ☐
	CONTRACT FOR: General Construction	CONTRACTOR: ☐
TO OWNER: *(Name and address)*	**CONTRACT DATED:**	SURETY: ☐ OTHER: ☐

STATE OF:
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 materials 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 or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose

Indicate Attachment ☐ Yes ☒ No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.
3. Contractor's Affidavit of Release of Liens (AIA Document G706A).

CONTRACTOR: *(Name and address)*

BY: _____
(Signature of authorized representative)

_____
(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

AIA® Document G706A™ – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*	**ARCHITECT'S PROJECT NUMBER:**	OWNER: ☐
		ARCHITECT: ☐
	CONTRACT FOR: General Construction	CONTRACTOR: ☐
TO OWNER: *(Name and address)*	**CONTRACT DATED:**	SURETY: ☐
		OTHER: ☐

STATE OF:
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 HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.

2. Separate Releases or Waivers of Liens from Subcontractors and material 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)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

AIA® Document G707™ – 1994

Consent Of Surety to Final Payment

PROJECT: *(Name and address)*	**ARCHITECT'S PROJECT NUMBER:**	OWNER: ☐
	CONTRACT FOR: General Construction	ARCHITECT: ☐
		CONTRACTOR: ☐
TO OWNER: *(Name and address)*	**CONTRACT DATED:**	SURETY: ☐
		OTHER: ☐

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,

hereby 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 month followed by the numeric date and year.)

_____
(Surety)

_____
(Signature of authorized representative)

Attest:
(Seal):

_____
(Printed name and title)

Form **W-9**
(Rev. December 2011)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)

Business name/disregarded entity name, if different from above

Check appropriate box for federal tax classification:
☐ Individual/sole proprietor ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ►

☐ Other (see instructions) ►

☐ Exempt payee

Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

City, state, and ZIP code

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number
☐☐☐ – ☐☐ – ☐☐☐☐

Employer identification number
☐☐ – ☐☐☐☐☐☐☐

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

Sign Here | **Signature of U.S. person** ► | **Date** ►

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

CITY OF MOBILE, AL
VENDOR INFORMATION FORM

Company Information:

1. City Vendor Number:

2. Name of Company:

3. Company D.B.A. Name, if any:

4. Mailing Address:

5. Remittance Address:

6. Telephone:

7. Fax

8. Main Email:

Primary Contact:

9. Contact Name and Title:

10. Contact Phone:

11. Contact Fax:

12. Contact Email:

Alternate Contact (if applicable):

13. Alt. Contact Name and Title:

14. Alt. Contact Phone:

15. Alt. Contact Fax:

16. Alt. Contact Email:

City of Mobile Business License Information:

17. City of Mobile Business License No. (if required):

Please attach additional sheets if necessary.

E-Verify

Company ID Number:

Approved by:

Employer	
Name (Please Type or Print)	
Signature	Date
Department of Homeland Secu[illegible] Division	
Name (Please Type or P[illegible]	Title
Signature	Date

E-Verify

Company ID Number:

Information Required for the E-Verify Program **Information relating to your Company:**	
Company Name	
Company Facility Address	
Company Alternate Address	
County or Parish	
Employer Identification Num	
North American Industry Classification Systems Code	
Parent Company	
Number of Employees	
Number of Sites Verified for	

SECTION 00700

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION,
AIA DOCUMENT A201 - 2007

PART 1 GENERAL

This section includes the GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, AIA Document A-201, that is to be used for this Project. The document has been electronically modified to meet the City of Mobile's requirements and shall be used for the project.

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)
City of Mobile
Architectural Engineering Department
P. O. Box 1827
Mobile, Alabama 36633-1827

THE ARCHITECT:
(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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~~(Topics and numbers in bold are section headings.)~~
(Numbers and Topics in Bold are Section Headings)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, Project Manual, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 ~~The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.~~

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the ~~site.~~ site, as may be required. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 ~~Unless otherwise provided in the Contract Documents, the~~ The Owner shall furnish to the Contractor ~~one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.~~up to ten copies of the drawings and specifications as required for Contractor's execution of the Work. Any additional sets of documents that the contractor desires for construction of the Project will be issued to contractor at actual printing and handling costs.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

3.3.4 Three (3) days after the opening of the Bids, the Contractor shall furnish for written approval, an outline of the education, experience and character of the Contractor's project manager, superintendent and engineer. Any future substitution must have prior written approval of the Architect.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to ~~them.~~them.

3.4.4 The Contractor's or his Subcontractor's supervisors and workmen engaged on special work or skilled Work in any supervisory position or trade shall be qualified and have had sufficient education, training and experience as a recognized professional or master mechanic in such Work to perform it properly and satisfactorily as prescribed in the Contract Documents.

3.4.5 Any project manager, superintendent, engineer, foreman or workman employed by the Contractor or by a subcontractor who, in the sole opinion of the Architect, does not perform his Work in a proper and skillful manner or becomes party to disrespectful, intemperate, disorderly, intoxicated, or dishonest behavior, or uses foul language, fights, commits criminal act(s) falsifies records and construction, covers-up faulty Work or materials, does not comprehend or follow instructions, does not get along with the Architect or Owner's representative, or is otherwise objectionable, shall, at the written request by the Architect, be discharged 24 hours by the Contractor or Subcontractor employing such project manager, superintendent, engineer, foreman or workman, and shall not be employed again or any portion of the Work without the written consent of the Architect.

3.4.6 Should the Contractor fail to remove such person or persons specified in Article 3.4.5 hereinabove or fail to furnish suitable and sufficient machinery, equipment, materials or qualified labor force for the proper execution of the Work, the Architect may withhold all payments which are or may become due the Contractor or may suspend the Work until such orders are complied with.

3.4.7 Contractor shall abide by provisions of Section 14-1 and Section 14.2, Code of the City of Mobile, originally adopted December 10, 1991. Prohibiting Discrimination in Employment by Contractors, Subcontractors and Vendors performing Work and providing materials and supplies for the City of Mobile. A copy of said Code is located in the City's Projects Architectural Engineering Department. Certification of compliance with this requirement shall be made for all persons involved in the Work by the signature of the General Contractor on the Bid Form (Section 00410).

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 ~~PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS~~
PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure ~~and pay for the building permit as well as for~~ City of Mobile building permit without cost, and shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

3.7.1.1 The Contractor shall secure building and other permits customarily obtained from the City of Mobile at no cost.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 ~~Allowances~~ allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 ~~Whenever~~ whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, ~~promptly~~ within ten (10) business days after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals

upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents ~~in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule,~~ with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect without action. Wherever Shop Drawings are required in these Specifications, Shop Drawings shall be submitted for approval before materials are fabricated. Drawings shall show complete details. The General Contractor shall check and approve them either in writing or by stamp before forwarding to the Architect. The Architect will mark copies "Approved" if correct; or, "Approved As Noted" if only minor corrections are necessary. If major corrections are necessary they will be noted on the Shop Drawings and they will be returned to the Contractor for correction and resubmission. Submit four (4) copies for Architect's and Owner's use plus the number of copies the contractor requires for his own use.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design 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 the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor

shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity ~~that~~ which would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be

liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

3.19 As applicable, the Contractor shall be responsible at the appropriate time during construction of the Project to have all permanent meters installed (electrical, water, gas, etc.) and all utilities connected prior to the time of Final Inspection. The Contractor shall pay all utilities costs until the Project is accepted by the City of Mobile.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number. "Architect" may also designate the Licensed Designer of the Project and may be an Engineer or Landscape Architect.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative ~~during construction until the date the Architect issues the final Certificate for Payment.~~ (1) during construction (2) until all conditions necessary for the final completion and payment have been fulfilled and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Section 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract ~~Documents.~~Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 ~~Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract,~~ The apparent low bidder, within (3) days after bids are opened shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the ~~14 day~~ 14 day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. ~~If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.~~

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation ~~shall~~ may be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. ~~If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.~~

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents. The total of all Change Orders on each contract shall not exceed ten percent (10%) of the contract price for each project and shall be subject to at least one of the following criteria:

.1 Minor changes for a total monetary value less than required for competitive bidding under the State Competitive Bid Laws.

.2 Changes for matters relatively minor and incidental to the original contract necessitated by unforeseen circumstances arising during the course of the Work.

.3 Emergencies arising during the course of the Work on the Contract.

.4 Changes or Alternates provided for in the original bidding where there is no difference in price on the Change Order from the original best bid on the Alternate.

.5 Changes of relatively minor items not contemplated when the plans and specifications were prepared and the project was bid which are in the public interest.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

.1 The change in the Work;

.2 The amount of the adjustment, if any, in the Contract Sum; and

.3 The extent of the adjustment, if any, in the Contract Time.

.4 There shall be attached to each Change Order a signed statement from the Architect containing the following:

A. A statement of what the Change Order covers and who instituted the Change Order and why it is necessary or desired.

B. A statement setting forth the reasons for using the Change Order method rather than taking new competitive bids.

C. A statement that all prices have been reviewed and found reasonable, fair and equitable and recommending approval of the same.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes

in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

.2 Unit prices stated in the Contract Documents or subsequently agreed upon;

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices ~~shall~~ may be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an ~~amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount.~~ allowance of 10% mark-up on Subcontractor's direct cost (actual cost of Labor & Materials) and 15% mark-up on a Contractor's direct (actual cost of Labor & Materials). In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, ~~whether incorporated or consumed;~~ actually incorporated or consumed in the work;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented ~~from~~ by the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be

reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

.1 No Work shall commence and no materials ordered until the Owner issues the written Notice to Proceed.

.2 The Work shall be commenced within ten (10) days of the date of a written Notice to Proceed.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the ~~Owner pending mediation and arbitration;~~ Owner; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

8.4 LIQUIDATED DAMAGES

8.4.1 Time is the essence of the Contract. Any delay in the completion of the Work as provided for in the Contract Documents will cause inconvenience to the public and loss and damage to the Owner in interest, and in additional administrative, architectural, inspection, and supervision charges.

Therefore, a time charge equal to $250.00 per calendar day will be made against the Contractor for the entire period that any part of the Work remains uncompleted or any required closeouts documents are not acceptably submitted for more than 30 days after the time specified for the Substantial Completion of the Work, the amount of which shall be deducted by the Owner, and shall be retained by the Owner out of monies otherwise due the Contractor in the final payment, not s a penalty, but as liquidated damages sustained.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

.1 Unit Prices and Allowances, if stated in the Contract Documents, shall be identified within the Schedule of Values.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 ~~At least ten days before the date established for each progress payment, the~~ The Contractor shall submit to the Architect ~~an itemized Application for Payment prepared in accordance with the~~ on the first of each month; for Work done through the 25th of the preceding month, four (4) original, itemized Applications for Payment for Work completed in accordance with the accepted schedule of values, if required under Section ~~9.2,~~ 9.2., for completed portions of the Work. Such application shall be ~~notarized, if required,~~ notarized and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such ~~as~~ copies of requisitions from ~~Subcontractors~~ subcontractors and material suppliers, and shall reflect retainage ~~if provided for in the Contract Documents~~ and documents as follows:

.1 Until the final payment is made, the Owner shall pay ninety-seven and one half percent (97.5%) of the amount due the Contractor on account of progress payments (note: the 2-1/2% retainage is calculated by withholding the first 5% of the first 50% of the work completed); and

.2 The Contractor shall provide documentation substantiating that test, inspections and approvals for portions of Work included in an Application for Payment and required by the Contract Documents, or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction were made at the appropriate time.

§ 9.3.1.1 ~~As provided in Section 7.3.9, such~~ Such applications may include requests for payment on account of changes in the ~~Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.~~ Work, which have been authorized and approved by properly executed Change Order(s).

§ 9.3.1.2 ~~Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.~~ Such applications may Include requests for payment on account of changes in the Work, which have been authorized and approve by properly executed Change Order(s).

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a separate contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the

Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the ~~Architect or awarded by binding dispute resolution,~~ Architect, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time ~~shall~~ may be extended appropriately and the Contract Sum ~~shall~~ may be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such ~~Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.~~ Work.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed

to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final ~~payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.~~payment, (5), contractors Affidavit of Release of Liens, (6) separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers (7) written warranty on Contractor's letterhead covering materials and labor for one year, and (8) the advertisement of completion. The Contractor shall provide proof of publication of Advertisement of completion in a local newspaper for four (4) consecutive weeks, as required in Title 39, Section 39-1-1, Subsection (f), of the Code of Alabama. The final 2.5% retained will not be paid until proof of publication is submitted and all written claims paid in full. This advertisement shall not begin until the City of Mobile has accepted the Project.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the ~~Contractor or by issuance of Change Orders affecting final completion,~~ Contractor, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, 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 for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

.1 ~~liens,~~ Claims, security interests or encumbrances arising out of the Contract and unsettled;

.2 failure of the Work to comply with the requirements of the Contract Documents; or

.3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall comply with all Federal, State and Local law regarding safety including the requirements of the Occupational Safety and Health Act of 1970, Public Law #91-596, latest revision. Contractor shall take all other reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

.1 employees on the Work and other persons who may be affected thereby;

.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and

.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

.4 The Contractor shall be responsible for damage done to buried cables and other utilities by its equipment and shall contact the appropriate offices prior to construction for information depth, etc., of utilities in the area.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and ~~loss (other than damage or loss insured under property insurance required by the Contract Documents)~~ loss) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and ~~start-up.~~start-up, except to the extent that any such delay is attributable to the Contractor's objection to the persons or entities whom Owner shall have furnished to perform the task of removal of safe containment of such material or substance.

§ 10.3.3 ~~To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.~~

§ 10.3.4 The Owner shall not be responsible ~~under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.~~for materials or substances brought to the site by the Contractor regardless of whether such materials or substances were required by the Contract Documents.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence or wantonness on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner ~~shall indemnify~~ may reimburse the Contractor for all reasonable cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency ~~shall~~ may be determined only as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage;

.5 Claims for damages, ~~other than to the Work itself,~~ because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Claims for bodily injury or property damage arising out of completed operations; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

The Contractor shall take out and maintain during the life of the Contract no less than the following amounts of insurance with the Owner named as an additional insured. Contractor shall submit a Certificate of Insurance and a supplemental Attachment for Certificate of Insurance 25-2 (7/90), AIA Document G715, Insurance companies listed as the "Companies Affording Coverage"

shall be authorized by the Secretary of the State of Alabama. Insurance produced out of the State of Alabama must be signed or counter signed by a Resident Agent of Alabama, with the Resident Agent's name, address and telephone number typed or printed on the face of the Certificate of Insurance.

.1 Workmen's Compensation and Employer's Liability Insurance: - Statutory-amount and coverage as required by law of place in which the Work is performed.

.2 Employee's Liability Insurance shall be provided for limits of liability not less than:

A.	Bodily Injury by Accident	$1,000,000 each accident
B.	Bodily Injury by Disease	$1,000,000 each employee

.3 The Contractor shall provide Broad Form (commonly termed Comprehensive) General Liability Insurance (including premises-product-completed operations) for limits of liability not less than:

A.	Bodily Injury	$1,000,000 each person $1,000,000 each occurrence
B.	Property Damage	$1,000,000 each occurrence; or
C.	Bodily Injury & Property Damage	$1,000,000 combined single limit

4. Such comprehensive policy shall include the following:

A. All liability of the Contractor, for the Contractor's Direct Operations.
B. Subcontractor's Operations.
C. Completed Operations Cover, thereby meaning any loss which shall occur after the contract has been completed, but which can be traced back to the Contract.
D. Contractual Liability, meaning thereby; any risk assumed by the Contractor under Hold Harmless Agreements or any other assumption of liability, but specifically Items 11.1.1.8.3G herein below
E. Broad Form Property damage Coverage, including Completed Operations.
F. Personal Injury Liability, with employee's exclusions removed.
G. The Contractor shall indemnify and save harmless the Owner against all loss, cost, or damaged on account of injuries to persons or property occurring in the performance of the Contract, including all reasonable attorney's fees incurred by the Owner, on account thereof.
H. Explosion and Collapse Hazard:
Included or ☒ Not Applicable.
I. Underground Hazard:
Included or ☒ Not Applicable.

5. The Contractor shall carry for himself and shall require that all Subcontractors and all Owners of Automobiles or trucks rented or hired on the contract carry until the Contract is completed. Comprehensive Automobile Liability Coverage for Bodily Injury and property Damage in amounts not less than the minimum amounts as indicated. The Contractor and Subcontractor shall also carry for themselves insurance for all non-owned and hired automobile at the limits of liability as indicated below:

A.	Bodily Injury	$1,000,000 each person $1,000,000 each occurrence
B.	Property damage	$1,000,000 each occurrence; or,
C.	Bodily Injury & Property damage	$1,000,000 combined single limit

6. Excess Liability: $2,000,000 limit

7. Builder's Risk Coverage. The Contractor shall carry for the Owner, himself, and all Subcontractor's a Builder's Risk Policy to cover the full amount of the Contract during construction, fabrications or erection of any equipment.

8. A Surety authorized to do business in the State of Alabama shall furnish the required insurance.

9. The ACCORD™ Certificate must be signed or countersigned by a Licensed Resident Agent of the State of Alabama and the agent's name, address and telephone number must appear on the face of the certificate.

10. The Surety must have a minimum rating of A/Class VI as reported in the latest issue of Best's Key Rating Guide Property-Casualty, published by Alfred M. best Company, Inc., if the bid price exceeds $50,000.00

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's ~~consultants~~ Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 ~~Unless otherwise provided, the Owner~~ The Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional ~~deductibles.~~ deductibles (See 11.1.1 Supplement Builder's Risk Coverage). Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the ~~Owner~~ Contractor shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

~~**§ 11.3.1.5** Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.~~

~~**§ 11.3.2 BOILER AND MACHINERY INSURANCE**~~

~~The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.~~

~~**§ 11.3.3 LOSS OF USE INSURANCE**~~

~~The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.~~

~~**§ 11.3.4** If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.~~

~~**§ 11.3.5** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.~~

~~**§ 11.3.6** Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable~~

~~conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.~~

~~§ 11.3.7 WAIVERS OF SUBROGATION~~

~~The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.~~

~~§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.~~

~~§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.~~

~~§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.~~

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The ~~Owner shall have the right to require the Contractor to~~ Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising ~~thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.~~thereunder.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

11.4.3. The Labor and Material Payment Bond and Performance Bond shall each be for one hundred percent (100%) of the Contract price if the Contract Price is greater than $10,000.00

1. Cost of the bonds shall be included in the bid.

2. Bonds shall be submitted with the executed agreement on provided form(s).

3. Power of Attorney is required for both bonds.

4. A Surety authorized to do business in the State of Alabama shall furnish both bonds.

5. A Surety licensed to do business in the State of Alabama must execute the bonds.

6. Each bond must be signed or countersigned by a Resident Agent of the State of Alabama.

7. The Surety must have a minimum rating of A/Class VI as reported in the latest issue of Best's Key Rating Guide Property-Casualty, published by Alfred M. Best Company, Inc., if the bid price exceeds $50,000.00.

8. The Surety company shall be required to execute AIA Document G-707, "Consent of Surety to Final Payment" prior to Final Payment being made to the Contractor.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the ~~place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.~~

State of Alabama.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

13.2.3 No assignment of the Contract shall be made without the written permission of Surety providing bonding and the City of Mobile.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public

authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

13.5.7 Test, inspections or approvals made in addition to the Architects normal design and contract administration services caused by the Contractor shall be paid for by the Contractor. The normal service schedule is contained in Article 2.8.1 of AIA B102-2007 as amended by the Owner and is available to Contractor on request.

13.5.8 The Contractor must call the Urban Development Department of the City of Mobile for their inspections and approval at the times required by the Urban Development Department, as well as notify the Architect, Consulting Engineer, and/or Test Laboratory, for inspection and approval of sub-grade conditions, under slab and footing Conditions, vapor barrier placement, reinforcing steel placement, all structural connections, electrical, mechanical, etc. None of the above will be accepted that have been covered up before receiving approval of the Architect or his Consultant.

§ 13.6 INTEREST

~~Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.~~

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

13.8 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.8.1 As between the Owner and Contractor:

1. Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;

2. Between Substantial Completion and Final Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to the final payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all event snot later than the date of issuance of the final Certificate for Payment; and

3. After Final Payment. As to acts or failures to act occurring after the relevant date of the final Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Section 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Section 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Section 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

13.9 SUBSTITUTION OF MATERIALS AND EQUIPMENT

13.9.1 Whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturer's or vendor's names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturers or vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance and function. It shall not be purchased or installed by the Contractor without the Architect's written approval.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work ~~executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.~~ executed.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time ~~shall~~ may be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of ~~such termination, along with reasonable overhead and profit on the Work not executed.~~termination.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated ~~by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated~~ within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant ~~first recognizes~~ acting with due diligence, reasonable should have first recognized the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Architect and the other party.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the ~~Work.~~ Work giving rise to such claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been

rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The ~~Initial Decision Maker~~ Architect will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the ~~Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion,~~ Architect reasonably concludes that, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons ~~therefor;~~ therefore; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties ~~but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.~~

~~**§ 15.2.6** Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.~~

~~**§ 15.2.6.1** Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.~~

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall not be subject to mediation as a condition precedent to binding dispute resolution.

~~**§ 15.3.2** The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in~~

writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

SECTION 000110

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END OF SECTION

SECTION 007200

GENERAL CONDITIONS

PART 1 GENERAL

1.01 REFERENCES

A. OWNER'S REPRESENTATIVE
   1. All references to "Landscape Architect", "Engineer", "Owner", "Architect", or "Owner" in General Conditions, drawings or in specifications are deemed to mean the Project Manager and/or "Owner's Representative", as designated by the City.

B. Refer to 01 4000 "Quality Requirements" for Contractor's Quality Control (CQC) Plan, Testing and Inspection Services, and Mock Up Requirements

C. Refer to 01 17000 "Execution and Closeout Procedures" for preinstallation meetings requirements.

1.02 GENERAL

A. OAC MEETINGS
   1. OAC Meetings will be held 2 times per month on a regular schedule. Refer to 013000 for Administrative requirmetns.

B. CONSTRUCTION SCHEDULE
   1. The contractor shall maintain a construction schedule for the duration of the project and update monthly before the last OAC meeting.
   2. This project includes long lead time items such as specialty fabrications, furnishings, and equipment. Contractor's schedule shall anticipate required lead times for all equipment and furnishings.

C. LIQUIDATED DAMAGES
   1. It is acknowledged that the Contractor's failure to achieve substantial completion of the Work within the Contract Time provided by the Contract Documents will cause the City to incur substantial economic damages and losses of types and in amounts which are impossible to compute and ascertain with certainty as a basis for recovery by the City of actual damages, and that liquidated damages represent a fair, reasonable and appropriate estimate thereof. Accordingly, in lieu of actual damages for such delay, the Contractor agrees that liquidated damages may be assessed and recovered by the City as against Contractor and its Surety, in the event of delayed completion and without the City being required to present any evidence of the amount or character of actual damages sustained by reason thereof; therefore Contractor shall be liable to the City for payment of liquidated damages in the amount of Five Hundred Dollars ($500) for each day that Substantial Completion is delayed beyond the Contract Time as adjusted for time extensions provided by the Contract Documents. Such liquidated damages are intended to represent estimated actual damages and are not intended as a penalty, and Contractor shall pay them to City without limiting Owner's right to terminate this agreement for default as provided elsewhere herein

D. TEMPORARY PROJECT SIGNAGE
   1. The contractor shall provide a quantity of 3 48" tall x 72" wide full color construction banners to be mounted to the construction fencing or as a stand alone sign and suitably durable to last the duration of the project. Landscape architect shall provide the graphics for use in production of the sign.

E. EROSION, SEDIMENTATION AND POLLUTION CONTROL MAINTENANCE
   1. The contractor shall install and maintain stormwater erosion control measures to prevent erosion within the project area per the plans, as directed by the public works director, and in accordance with local regulations. The contractor shall provide any additional measures necessary to stabilize the site throughout final completion at no additional cost to the owner. This work may include but is not limited to: temporary grading, stone, establishing temporary berms, temporary grassing, temporary sodding, mulching, deploying erosion mats, hay bales, coconut rolls, silt ponds, inlet protection, and silt fence.

2. No payment will be made for any portion of the project for which temporary erosion, sedimentation and pollution controls are not properly maintained. Any fines or delays for non-compliance of erosion control measures levied by any agency will be the responsibility of the Contractor.

F. WEATHER DAYS

1. The following inclement weather calendar days include rain days and mud days and shall be anticipated and included in the contractual time period given for project completion. A rain day is any complete day where rain or incliment weather halts constrcution work or the amount of rain exceeds 1/2" at the site. A mud day defined as 1 day after a rain day where the conditions on the site are not conducive to resuming constrcution operations. The Contractor's request for additional time due to weather shall only be granted for days beyond those listed below considering the full term of the contract. The burden of proof and documentation for such request for additional time shall rest solely upon the Contractor. Requests shall be documented in a log and submitted to the City in writing monthly . The log will at a minimum list the date, inches of rain, and any mud days if applicable.
2. January 8 days
3. February 8 days
4. March 8 days
5. April 7 days
6. May 9 days
7. June 12 days
8. July 12 days
9. August 12 days
10. September 10 days
11. October 7 days
12. November 7 days
13. December 8 days

G. APPROVED VENDORS

1. All references to “vendors”, "approved manufacturers", and are included for description of quality and content of the designated equipment/materials as basis of design. Equivalent items may be accepted if they meet all standards of quality and purpose for the intended use, as determined by the City. All costs associated with providing required testing or documentation for complete evaluation of proposed equivalents shall be the contractors’ responsibility.

H. LANGUAGE

1. There shall be at least one person in a position of responsibility representing the Contractor on the active construction site at all times, that is capable of translating from English to the language used by the workforce.

I. SCHEDULE OF VALUES

1. Contractor, after award of contract, shall submit a Schedule of Values, identifying costs for meaningful areas of the Work, such that progress payments can be easily evaluated, as determined by the City. The schedule of values shall be broken down using CSI Master Format by Division. Change orders shall be listed seperately in broken down into CSI Master Format by Division.

J. CONTRACTOR LICENSE

1. Bidder must be licensed by the Stateto be a General Contractor and hold any required local business license to work in the City.

K. EXPERIENCE

1. The following subcontractors shall have a minimum of 5 years demonstrated experience performing similar types of work with the highest quality of workmanship.
   a. Specialty paving
   b. Architectural Concrete

c. Masonry
d. Steel fabrications (handrails and trellis structures)
e. Water water feature
f. Cast stone/Concrete
g. Shade structure

L. LIST OF SUBCONTRACTORS
1. Contractors should submit a full list of subcontractors and documentation of their experience (if required) with the bid. Any changes during construction must be approved, in advance, by the City.

M. FINAL ACCEPTANCE
1. All references to guarantee, warranty or payments that are commencing upon “Final Approval”, “Final Certificate for Payment”, or “Substantial Completion” or other similar wording shall commence upon Final Acceptance of the Work by the City.

N. COORDINATION
1. The General Contractor is responsible for becoming familiar with the requirements of all construction documents, which includes drawings, bid and contract documents, specifications, and all addenda.
2. The General Contractor is responsible for providing subcontractors all necessary information and drawings including related and/or adjacent items that might impact their work.

O. PREINSTALLATION MEETINGS
1. Contractor shall schedule preinstallation meetings for the following items:
a. Demolition
b. Restroom Building
c. Seeded aggregate walls and paving
d. Playgrounds
e. Interactive water feature
f. Lighting (pendant lighting in historic park area)
g. Landscaping (fine grading, boulders, and bioretention areas)

P. CONSTRUCTION LAYOUT
1. The Contractor is responsible for all construction layout and control for the project. Layouts of construction items must consider all elements of the Work adjacent and/or in close proximity. The Contractor shall proceed with construction layout in such a manner that discrepancies between construction items, existing built features and site conditions that conflict with the plans may be examined by the Owner’s Representative prior to construction of items in conflict. Failure to notify the Owner’s Representative of conflicts prior to constructing items will result in all remedial actions being paid for by the Contractor including but not limited to additional materials, re-inspection fees, professional service fees and survey cost by all parties to the projects.

Q. PAVING OPERATIONS
1. Contractor is responsible for all traffic control materials and/or personnel, and for contact and coordination of all work with City representatives.

R. PHOTOGRAPHIC DOCUMENTATION OF EXISTING CONDITIONS
1. The Contractor shall clearly document site conditions prior to the start of the project by use of digital video recording (DVR) and still photographs.
2. The cost of all photographic Documentation shall be included in the price of the project.
3. The project DVRs and still photographs shall be taken from identifiable reference points at the work site.
4. The Contractor shall ensure that any areas of sensitivity such as historic areas, streets, sidewalks or areas surrounding existing structures are adequately documented.

S. AS-BUILT DRAWINGS AND DOCUMENTATION

1. The Contractor is responsible for surveying and submitting as-built documents. The Contractor will submit these documents directly to the City after they are reviewed by the Owners Representative. All as-built drawings must be sealed by an Engineer or Surveyor registered in the State. The as-built documents may include, but are not limited to: Topography, hardscapes, walls, easements, property lines, structures, fixtures, buildings, storm drainage pipes and structures, utilities, bioretention stormwater management ponds, bioslopes, etc.
2. The as-built drawings must be in a format to allow the Designer to perform an as-built hydrology study and to confirm acceptable as-built conditions, that the Designer will submit to the City to accompany the as-built package. If the hydrology study of the as-built conditions determines that any of the elements were not properly constructed, the Contractor is responsible at no cost to the City for correcting any deficiencies in order to ensure the final constructed product meets the requirements of the design intent. Contractor shall be responsible for compensating Designer for all re-analysis costs if more than two as-built surveys must be analyzed.
3. The as-built documents shall be incorporated into the final closeout package.

T. RIGHTS OF WAY AND EASEMENTS
1. The City shall obtain all permanent rights off way and easements required for the project unless otherwise specified.

U. PROJECT MANAGEMENT REQUIREMENTS
1. The Contractor shall use the web-based project management software “Procore” or a platform with similar functionality and provide the City and consultant team members with additional logins and licenses as needed.
2. The contractor shall organize and lead a bi-monthly OAC meeting in person and using video conferencing to review project progress.

V. RETAINAGE
1. Retainage will be kept at 10% for the duration of the contract.

W. INSPECTION REPORTS
1. The contractor shall be responsible for coordinating and paying for all testing and inspections.
2. Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

PART 2 PRODUCTS

2.01 MATERIALS

A. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.
1. Nonwoven Geotextile Fabric: use the following minimum standard unless otherwise specified:
   a. Weight (typical): astm d5261; 8 oz/yd² (271 g / m²)
   b. Grab tensile: astm d4632; 225 lbs(1 kn)
   c. Grab elongation: astm d4632; 50%
   d. Trapezoid tear strength: astm d4533; 90 lbs(0.4 kn)
   e. Thickness: astm d5199; 100 mils (2.5 mm)
   f. Cbr puncture resistance: astm d6241; 600 lbs. (2.90 kn)
   g. Permittivity: astm d4491; 1.26 sec -1
   h. Permeability: astm d4491; 0.3 cm/sec
   i. Water flow: astm d4491; 80-90 gpm/ft² (4074 l/min/m²)
   j. A.o.s: astm d4751; 80 u.s. Sieve (.18 mm)
   k. UV resistance: astm d4355; 70% per 500 hrs

END OF SECTION

SECTION 011000

SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: Hero Plaza

B. Owner's Name: City of Mobile, AL.

C. Architect's Name: TSW.

D. Additional Project contact information is specified in Section 000103 - Project Directory.

E. The Project consists of the construction of _____.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a stipulated sum as described in the Owner Contractor agreement.

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of work is indicated on drawings and includes but is not limited to demolition of existing site elements adjacent to and touching the Moble Convention Center, installatoin of hardscape, landscape, utilities, drainage, driveways, parking areas, lighting, multimiedia system, furniture, and rennovation, upgrades, and recommissioning of the existing fountain. The euqipment in the pump room located under the south grand staircase will be upgraded and additional lighting and electrical control panels will be added.

B. Work will require coordination with an artist under seperate contract with the Owner who will install bronze statues onto precest concrete plynths furnished and installed by the contractor.

C. The scope of work includes delegated design work to be provided by the Contractor as part of the bid includes:

1. Waterproofing for the existing and new fountain basins to be constructued that is fully coordinated and compatable with the proposed design aesthetic. This work will include examination of the existing basin and certification that is in working condition
2. Automated underground irrigatoin system that is compatible with the landscape design.

D. The scope of work includes provision for mockups that set standards for construction quality and finishes.

1.04 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.

B. Owner intends to occupy the Project upon Substantial Completion.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

D. Schedule the Work to accommodate Owner occupancy.

1.05 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.

B. Provide access to and from site as required by law and by Owner:

1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
2. Do not obstruct roadways, sidewalks, or other public ways without permit.

C. Utility Outages and Shutdown:

1. Limit disruption of utility services to hours the building is unoccupied.
2. Prevent accidental disruption of utility services to other facilities.

END OF SECTION

SECTION 012000

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Change procedures.

C. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.

B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.

C. Forms filled out by hand will not be accepted.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: 30 days or Submit at intervals stipulated in the Agreement.

B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.

C. Forms filled out by hand will not be accepted.

D. Execute certification by signature of authorized officer.

E. Submit one electronic and three hard-copies of each Application for Payment.

F. Include the following with the application:
   1. Transmittal letter as specified for submittals in Section 013000.
   2. Construction progress schedule, revised and current as specified in Section 013000.
   3. Curretn construction photographs showing the extent of the work completed to by the date of the pay application.

1.04 MODIFICATION PROCEDURES

A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor in writing.

B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   2. Promptly execute the change.

C. For changes for which advance pricing is desired, Architect will issue a document that 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 shall prepare and submit a fixed price quotation within ____ days.

D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.

E. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.05 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:

1. All closeout procedures specified in Section 017000.

END OF SECTION

SECTION 012200

UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. List of unit prices, for use in preparing Bids and any change orders that may arise during the course of the project. The list of unit prices represents select items that are part of the Bid and does not constitute a complete list of work to be completed.

B. Measurement and payment criteria applicable to Work for each unit price item.

1.02 RELATED REQUIREMENTS

A. Section 012000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 COSTS INCLUDED

A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

B. The unit price shall be based on the quantity of work to be performed in the contract, and shall be the basis for any requests for change orders form the Contractor.

1.04 PAYMENT

A. Payment for change order work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

B. Payment will not be made for any of the following:
   1. Products determined as unacceptable before or after placement.
   2. Loading, hauling, and disposing of rejected Products.

1.05 DEFECT ASSESSMENT

A. Replace Work, or portions of the Work, not complying with specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct one of the following remedies:
   1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Architect.
   2. The defective Work will be partially repaired to the instructions of the Architect, and the unit price will be adjusted to a new unit price at the discretion of Architect.

C. The authority of Owner to assess the defect and identify payment adjustment is final.

1.06 SCHEDULE OF UNIT PRICES

A. A schedule of unit prices required with the bids is included with the drawings.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
      a. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it has a similar design, aesthetic apearance, meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. No specific form is required. Contractor's Substitution Request documentation must include the following:
      a. Project Information:
         1) Official project name and number, and any additional required identifiers established in Contract Documents.
      b. Substitution Request Information:
         1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
         2) Indication of whether the substitution is for cause or convenience.
         3) Issue date.
         4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
         5) Description of Substitution.
         6) Reason why the specified item cannot be provided.
         7) Differences between proposed substitution and specified item.
         8) Description of how proposed substitution affects other parts of work.
      c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
         1) Physical characteristics.
         2) In-service performance.

3) Expected durability.
4) Visual effect.
5) Warranties.
6) Other salient features and requirements.
7) Include, as appropriate or requested, the following types of documentation:
(a) Product Data:
(b) Samples.
(c) Certificates, test, reports or similar qualification data.
(d) Drawings, when required to show impact on adjacent construction elements.

d. Impact of Substitution:
1) Savings to Owner for accepting substitution.
2) Change to Contract Time due to accepting substitution.

D. Limit each request to a single proposed substitution item.
1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
1. Owner will consider requests for substitutions only if submitted at least 14 days prior to the date for receipt of bids.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Architect will consider requests for substitutions only within 15 days after date of Agreement.

3.04 RESOLUTION

A. Architect will notify Contractor in writing of decision to accept or reject request.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

B. The contractor will be responsiblefor reimbursing the Owner and the Architect for any costs associated with review of submittal or incorporation of changes into the contract documents.

3.06 CLOSEOUT ACTIVITIES

A. See Section 017800 - Closeout Submittals, for closeout submittals.

END OF SECTION

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.
B. Electronic document submittal service.
C. Preconstruction meeting.
D. Progress meetings.
E. Construction progress schedule.
F. Progress photographs.
G. Submittals for review, information, and project closeout.
H. Number of copies of submittals.
I. Requests for Interpretation (RFI) procedures.
J. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 016000 - Product Requirements: General product requirements.

1.03 REFERENCE STANDARDS

A. AIA G716 - Request for Information; 2004.
B. AIA G810 - Transmittal Letter; 2001.

1.04 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
B. Make the following types of submittals to Architect:
    1. Requests for Interpretation (RFI).
    2. Requests for substitution.
    3. Shop drawings, product data, and samples.
    4. Test and inspection reports.
    5. Design data.
    6. Manufacturer's instructions and field reports.
    7. Applications for payment and change order requests.
    8. Progress schedules.
    9. Coordination drawings.
    10. Correction Punch List and Final Correction Punch List for Substantial Completion.
    11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email. Platforms similar in function to Ebuilder or Newforma are acceptable.
    1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction

punchlist, and any other document any participant wishes to make part of the project record.
2. Contractor and Architect are required to use this service.
3. It is Contractor's responsibility to submit documents in allowable format.
4. Subcontractors, suppliers, and Architect's consultants are to be permitted to use the service at no extra charge.
5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Cost: The cost of the service is to be paid by Contractor; include the cost of the service in the Contract Sum.

C. Submittal Service: The selected service is:

D. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.

E. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 PRECONSTRUCTION MEETING

A. Contractor shall schedule meeting after Notice of Award.

B. Attendance Required:
1. Owner.
2. Architect.
3. Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Submission of initial Submittal schedule.
6. Designation of personnel representing the parties to Contract, the Convention Center, and Architect.
7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
8. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS (OAC)

A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.

B. Make arrangements for meetings, provide meeting space, remote meeting services such as Microsoft Teams, Zoom or similar, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required:
1. Contractor.
2. Owner.

3. Architect.
4. Contractor's superintendent.
5. Major subcontractors relevant to the immediate construction scope as necessary.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of RFIs log and status of responses.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Maintenance of quality and work standards.
11. Effect of proposed changes on progress schedule and coordination.
12. Other business relating to work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
1. Include written certification that major contractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

3.05 PROGRESS PHOTOGRAPHS

A. Submit photographs with each application for payment, taken not more than 3 days prior to submission of application for payment.

B. Photography Type: Digital; electronic files.

C. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to Architect.

D. In addition to periodic, recurring views, take photographs of each of the following events:

E. Take photographs as evidence of existing project conditions.

F. Views:
1. Provide non-aerial photographs from four cardinal views at each specified time, until date of Substantial Completion.
2. Consult with Architect for instructions on views required.
3. Provide factual presentation.
4. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

3.06 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the

same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1. Prepare a separate RFI for each specific item.
2. Prepare in a format and with content acceptable to Owner.
   a. Use AIA G716 - Request for Information .
3. Prepare using software provided by the Electronic Document Submittal Service.

D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
   a. Approval of submittals (use procedures specified elsewhere in this section).
   b. Approval of substitutions (see Section - 016000 - Product Requirements)
   c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
   d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).

E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Discrete and consecutive RFI number, and descriptive subject/title.
3. Issue date, and requested reply date.
4. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. Review Time: Architect will respond and return RFIs to Contractor within 10 calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.

3.07 SUBMITTAL SCHEDULE

A. Submit to Architect for review a schedule for submittals in tabular format.
1. Submit at the same time as the preliminary schedule specified in Section - 013216 - Construction Progress Schedule.
2. Coordinate with Contractor's construction schedule and schedule of values.

3. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.

3.08 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.
   4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

3.09 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.10 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.11 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.12 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a separate transmittal for each item.
   2. All submittals will clearly identify any diviations from the contract documents.

3. Approval of submittals bearing incorrect information, information that is inconsistent the contract documents, or errors does not absolve the Contractor from the responsability of providing and installing the correct product and design.
4. Transmit using approved form.
    a. Use Form AIA G810.
5. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
6. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
7. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
    a. Deliver submittals to Architect at business address.
8. Schedule submittals to expedite the Project, and coordinate submission of related items.
    a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
    b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
9. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
10. When revised for resubmission, identify all changes made since previous submission.

B. Product Data Procedures:
1. Submit only information required by individual specification sections.
2. Collect required information into a single submittal.
3. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Do not reproduce Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Samples Procedures:
1. Transmit related items together as single package.
2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

3.13 SUBMITTAL REVIEW

A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.

B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.

C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.

D. Architect's and consultants' actions on items submitted for review:
1. Authorizing purchasing, fabrication, delivery, and installation:
    a. "Approved", or language with same legal meaning.
    b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
        1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
    c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
2. Not Authorizing fabrication, delivery, and installation:

E. Architect's and consultants' actions on items submitted for information:

1. Items for which no action was taken:
   a. "Received" - to notify the Contractor that the submittal has been received for record only.
2. Items for which action was taken:
   a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

SECTION 013216
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preliminary schedule.

B. Construction progress schedule, bar chart type.

1.02 SUBMITTALS

A. Within 10 days after date of Agreement, submit preliminary schedule.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.

1.03 SCHEDULE FORMAT

A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

B. Sheet Size: Multiples of 8-1/2 x 11 inches.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 BAR CHARTS

A. Include a separate bar for each major portion of Work or operation.

B. Identify the first work day of each week.

3.03 REVIEW AND EVALUATION OF SCHEDULE

A. Participate in joint review and evaluation of schedule with Architect at each submittal.

B. Evaluate project status to determine work behind schedule and work ahead of schedule.

C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.04 UPDATING SCHEDULE

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

C. Annotate diagrams to graphically depict current status of Work.

D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Submit reports required to support recommended changes.

3.05 DISTRIBUTION OF SCHEDULE

A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

SECTION 01 3233

PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for the following:
1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
4. Preconstruction video recordings.

B. Related Requirements:
1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
3. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.03 INFORMATIONAL SUBMITTALS

A. Qualification Data: For photographer.

B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph and video recording. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

C. Digital Photographs: Submit image files within three days of taking photographs.
1. Digital Camera: Minimum sensor resolution of 8 megapixels.
2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:
   a. Name of Project.
   b. Name and contact information for photographer.
   c. Name of Contractor.
   d. Date photograph was taken.
   e. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
   f. Unique sequential identifier keyed to accompanying key plan.

D. Video Recordings: Submit video recordings within seven days of recording.
1. Submit video recordings in digital video disc format acceptable to Architect by posting to Project Web site.
2. Identification: With each submittal, provide the following information:
   a. Name of Project.
   b. Name and address of photographer.
   c. Name of Architect.
   d. Name of Contractor.
   e. Date video recording was recorded.
   f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
   g. Weather conditions at time of recording.

3. Transcript: Prepared on 8-1/2-by-11-inch (215-by-280-mm) paper, punched and bound in heavy-duty, three-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as corresponding video recording. Include name of Project and date of video recording on each page.

1.02 QUALITY ASSURANCE

A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.03 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

B. Digital Video Recordings: Provide high-resolution, digital video disc in format acceptable to Architect.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer to take construction photographs.

B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.

D. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
1. Flag construction limits before taking construction photographs.
2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

E. Periodic Construction Photographs: Take 20 photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

F. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial

Completion for submission as project record documents. Architect will inform photographer of desired vantage points.

a. Do not include date stamp.

3.2 CONSTRUCTION VIDEO RECORDINGS

A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings.

B. Recording: Mount camera on tripod before starting recording unless otherwise necessary to show area of construction. Display continuous running time and date. At start of each video recording, record weather conditions from local newspaper or television and the actual temperature reading at Project site.

C. Preconstruction Video Recording: Before starting demolition, record video recording of Project site and surrounding properties from different vantage points, as directed by Architect.

1. Flag construction limits before recording construction video recordings.

1. Show existing conditions adjacent to Project site before starting the Work.
2. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of demolition.
3. Show protection efforts by Contractor.

END OF SECTION

SECTION 014000

QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Quality assurance.

C. References and standards.

D. Testing and inspection agencies and services.

E. Contractor's design-related professional design services.

F. Control of installation.

G. Mock-ups.

H. Tolerances.

I. Defect Assessment.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittal procedures.

1.03 REFERENCE STANDARDS

A. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation; 2017.

B. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2019.

C. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2021.

D. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.

E. IAS AC89 - Accreditation Criteria for Testing Laboratories; 2020.

1.04 DEFINITIONS

A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.

1. Design Services Types Required:
    a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor’s sole responsibilities for construction means, methods, techniques, sequences, and procedures.
    b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.

B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.05 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:

1. Temporary sheeting, shoring, or supports.
2. Temporary scaffolding.
3. Temporary bracing.
4. Temporary foundation underpinning.

5. Temporary hoist(s) and rigging.
6. Investigation of soil conditions to support construction equipment.

1.06 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

B. Base design on performance and/or design criteria indicated in individual specification sections.

C. Scope of Contractor's Professional Design Services: Provide for the following items of work:
1. Automatic Underground Irrigation System Design.
2. Fountina waterproofing Design.
3. Tensile Membrain Structure Design.
4. Structural Design of Formwork: As described in Section 031000 - Concrete Forming and Accessories.
5. Concrete Mix Design: As described in Section 033000 - Cast-in-Place Concrete. No specific designer qualifications are required.
6. Structural Design of Metal Fabrications: As described in Section 055000 - Metal Fabrications.

1.07 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

1.08 QUALITY ASSURANCE

A. Testing Agency Qualifications:
1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
2. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.

B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.09 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.10 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.

B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

C. Contractor Employed Agency:

PART 3 EXECUTION

2.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

2.02 MOCK-UPS

A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.

B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.

C. Notify Architect fifteen (15) working days in advance of dates and times when mock-ups will be constructed.

D. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.

E. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

F. Architect will use accepted mock-ups as a comparison standard for the remaining Work.

G. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

2.03 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 Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

2.04 TESTING AND INSPECTION

A. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests/inspections specified.

B. Limits on Testing/Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the Work.

C. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/inspections.
      d. To provide storage and curing of test samples.
   4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
   5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
   6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

2.05 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

END OF SECTION

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities.

B. Temporary sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. Security requirements.

E. Waste removal facilities and services.

F. Project identification sign.

G. Field offices.

1.02 RELATED REQUIREMENTS

A. Section 015100 - Temporary Utilities.

B. Section 015213 - Field Offices and Sheds.

C. Section 015813 - Temporary Project Signage.

1.03 TEMPORARY UTILITIES - SEE SECTION 015100

A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

1.04 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.05 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.06 FENCING

A. Construction: Commercial grade chain link fence.

B. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.07 SECURITY - SEE SECTION 013553

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.08 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.09 PROJECT IDENTIFICATION

A. Provide 1 48" x 60" painted plywood project identification sign.

B. Erect on site at location indicated.

C. No other signs are allowed without Owner permission except those required by law.

1.10 FIELD OFFICES - SEE SECTION 015213

A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.

B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

C. Locate offices a minimum distance of 30 feet from existing and new structures.

1.11 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.

B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.

C. Clean and repair damage caused by installation or use of temporary work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Pre-installation meetings.

C. Cutting and patching.

D. Surveying for laying out the work.

E. Cleaning and protection.

F. Demonstration and instruction of Owner personnel.

G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

H. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

A. Section 078400 - Firestopping.

1.03 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences. Include design drawings and calculations for bracing and shoring.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

D. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.

1.05 QUALIFICATIONS

A. For demolition work, employ a firm specializing in the type of work required.

B. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

C. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical

control points necessary for laying out construction work on project of similar size, scope and/or complexity.

D. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.06 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. Minimize amount of bare soil exposed at one time.
   2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
   3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
   4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

G. 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.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of 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.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Architect four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of examination, preparation and installation procedures.
   2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

F. Utilize recognized engineering survey practices.

G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and _____.

2. Grid or axis for structures.
3. Building foundation, column locations, ground floor elevations, and _____.

H. Periodically verify layouts by same means.

I. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
1. Verify that construction and utility arrangements are as indicated.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Remove existing work as indicated and as required to accomplish new work.
1. Remove items indicated on drawings.
2. Relocate items indicated on drawings.
3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and other related work): Remove, relocate, and extend existing systems to accommodate new construction.
1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
    a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
    b. Provide temporary connections as required to maintain existing systems in service.
4. Verify that abandoned services serve only abandoned facilities.
5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

D. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.

E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.

F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

G. Refinish existing surfaces as indicated:
   1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
   2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

H. Clean existing systems and equipment.

I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

J. Do not begin new construction in alterations areas before demolition is complete.

K. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-complying work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

3.11 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean filters of operating equipment.

F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and _____.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.14 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections including at a minimum the lighting and multi media system, fountain system, an landscape.

B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.

C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 017419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.

E. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.

F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
   1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
   2. Submit Report on a form acceptable to Owner.
   3. Landfill Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
      c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   4. Incinerator Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards, of trash/waste material from the project delivered to incinerators.
      c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   5. Recycled and Salvaged Materials: Include the following information for each:
      a. Identification of material, including those retrieved by installer for use on other projects.
      b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
      c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
      e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
   6. Material Reused on Project: Include the following information for each:
      a. Identification of material and how it was used in the project.
      b. Amount, in tons or cubic yards.
      c. Include weight tickets as evidence of quantity.
   7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PROCEDURES

A. See Section 013000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. See Section 015000 for additional requirements related to trash/waste collection and removal facilities and services.

C. See Section 016000 for waste prevention requirements related to delivery, storage, and handling.

D. See Section 017000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Prebid meeting.
   2. Preconstruction meeting.
   3. Regular job-site meetings.

E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
   1. Provide containers as required.
   2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
   3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 017800

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project record documents.

B. Operation and maintenance data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Individual Product Sections: Specific requirements for operation and maintenance data.

C. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   3. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 3 EXECUTION

2.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Addenda.
   3. Change Orders and other modifications to the Contract.
   4. Reviewed shop drawings, product data, and samples.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on original Contract drawings.

2.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

2.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

E. Provide servicing and lubrication schedule, and list of lubricants required.

F. Include manufacturer's printed operation and maintenance instructions.

G. Include sequence of operation by controls manufacturer.

H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

I. Additional Requirements: As specified in individual product specification sections.

2.04 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

SECTION 017900

DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products and systems to be commissioned and where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance is required for:
   1. All software-operated systems.
   2. Electrical systems and equipment.
   3. Landscape irrigation.

1.02 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures; except:
   1. Make all submittals specified in this section, and elsewhere where indicated for commissioning purposes, directly to the Commissioning Authority.
   2. Submit one copy to the Commissioning Authority, not to be returned.
   3. Make commissioning submittals on time schedule specified by Commissioning Authority.
   4. Submittals indicated as "Draft" are intended for the use of the Commissioning Authority in preparation of overall Training Plan; submit in editable electronic format, Microsoft Word 2003 preferred.

B. Draft Training Plans: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit to Commissioning Authority for review and inclusion in overall training plan.
   2. Submit not less than four weeks prior to start of training.
   3. Revise and resubmit until acceptable.
   4. Provide an overall schedule showing all training sessions.
   5. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such a slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
   1. Include applicable portion of O&M manuals.
   2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
   3. Provide one extra copy of each training manual to be included with operation and maintenance data.

1.03 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
   1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
   2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.

C. Demonstration may be combined with Owner personnel training if applicable.

D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.
   2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Commissioning Authority will prepare the Training Plan based on draft plans submitted.

B. Conduct training on-site unless otherwise indicated.

C. Owner will provide classroom and seating at no cost to Contractor.

D. Do not start training until Functional Testing is complete, unless otherwise specified or approved by the Commissioning Authority.

E. Provide training in minimum two hour segments.

F. The Commissioning Authority is responsible for determining that the training was satisfactorily completed and will provide approval forms.

G. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

H. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. The location of the O&M manuals and procedures for use and preservation; backup copies.
   2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   3. Typical uses of the O&M manuals.

I. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
   3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
   4. Provide hands-on training on all operational modes possible and preventive maintenance.
   5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
   6. Discuss common troubleshooting problems and solutions.
   7. Discuss any peculiarities of equipment installation or operation.

8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
9. Review recommended tools and spare parts inventory suggestions of manufacturers.
10. Review spare parts and tools required to be furnished by Contractor.
11. Review spare parts suppliers and sources and procurement procedures.

J. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION

SECTION 9 99999.03

AIA FORMAT TEMPLATE

PART 2 PRODUCTS

1.01 ARTICLE

END OF SECTION

SECTION 030110

CONCRETE TESTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 DESCRIPTION

A. Concrete testing includes verifying Contractor's proposed mix designs, inspection of concrete mixing, sampling and testing concrete at frequencies specified, and conducting core tests and other additional testing when required.

1.03 TESTING AGENCY

A. Concrete testing shall be performed by an Independent Testing Agency selected and directed by Engineer of Record and paid by the Owner.

B. Duties: Testing Agency will perform the following functions:
   1. Verify mix designs for concrete classes specified.
   2. Review concrete materials for compliance with specifications.
   3. Sample concrete at project site and prepare compressive strength test specimens, test for slump, air content and unit weight.
   4. Maintain test data sheet for each set of concrete specimens. Perform specified laboratory tests.
   5. Notify Engineer of Record immediately of any test specimens that do not meet design compressive strength at 28 days or two-thirds of design strength at seven days.
   6. Distribute copies of test data sheets to Architect, engineer of Record, Contractor, Owner, and Resident Engineer Inspector within 24 hours.
   7. Those items denoted in quality assurance plan in the drawings.

C. Contractor's duties relative to testing:
   1. Deliver materials to Testing Agency's laboratory for use in verifying design mixes.
   2. Advise Testing Agency sufficiently in advance of operations to allow for completion of quality tests and for assignment of personnel.
   3. Store cylinders at project site in storage box for 24 hours after molding. Provide labor to assist in obtaining and handling samples.
   4. Deliver cylinders to Testing Agency's laboratory.
   5. This testing does not relieve Contractor of responsibility of providing concrete in compliance with specifications.

D. Contractor shall designate one individual in his organization to be responsible for conducting Contractor's duties relative to testing. Individual will be instructed in his duties by Testing Agency. Individual shall not be changed without notice to Engineer of Record.

1.04 ACCEPTANCE OF CONCRETE

A. Compressive strength of concrete will be considered satisfactory if averages of all sets of three compressive strength test results equal or exceed the required design compressive strength and no individual strength test result falls below design compressive strength by more than 500 psi.

1.05 QUALITY CRITERIA

A. American Concrete Institute (ACI), standards as referenced herein.

B. American Society for Testing and Materials (ASTM), standards as referenced herein.

PART 2 - PRODUCTS

2.01 EQUIPMENT

A. Testing Agency will maintain supplies, apparatus, tools and devices at project site to obtain specimens and perform on-site test as indicated, including:

1. Molds for compressive strength test specimens.
2. Slump cones with rod for slump test.
3. Scale and unit weight measure.
4. Thermometers.
5. Concrete thermometer.
6. Air meters.

B. Contractor shall provide stable, lockable, insulated storage box, thermostatically controlled to maintain temperature between 60 and 80 degrees F. for storage of cylinders for first 24 hours after molding. Box shall have minimum capacity of 40 cu. ft. Locate box in a permanent lockable area of approximately 100 sq. ft. Limit access to Testing Agency personnel and Contractor's designated agent.

PART 3 - EXECUTION

3.01 FREQUENCY AND QUALITY OF SAMPLES

A. Specimens will be taken for acceptance testing for each concrete mix design not less than once a day or less than once for each 100 cubic yards of concrete or for each 5000 sq. ft. of surface area. Each specimen will consist of four molded cylinders.

B. Specimens will be taken for each concrete mix design on each day in which concrete of the mix design is placed.

C. When the frequency of testing will provide less than five acceptance tests for a given mix design, tests will be made from at least five batches selected at random or from each batch.

D. Field specimens for acceptance testing and initial 24-hour-period curing will be performed in accordance with ASTM C172-08.

E. Slump tests will be conducted each time a set of specimens is prepared for compressive strength testing. Testing will be accordance ASTM C231/ASTMC 143-90A for normal weight concrete, one of test for each load at punt of discharge.

F. Test for air content will be conducted each time a set of specimens is prepared for compressive strength testing. Testing will be in accordance with ASTM C173

G. Specimens will be laboratory cured in accordance with ASTM C31/31M-98.

3.02 LABORATORY TESTING

A. Laboratory compressive strength tests will be performed on cured specimens in accordance with ASTM C39. One set for each 50 cubic yards or fraction thereof of each class of concrete; one specimen tested at 7 days, two specimens tested at 28 days, and one retained for later testing if required.

B. Testing of one cylinder per specimen will be performed at seven days for information only.

C. Acceptance testing will be performed using two cylinders per specimen at 28 days. Each acceptance test result will be the average of the two cylinders.

D. If one test cylinder for a specimen indicates improper sampling, molding, curing or testing, the questionable cylinder will be discarded and remaining cylinder tested to obtain acceptance test result.

E. Extra test cylinders not used in acceptance testing will be discarded.

F. Strength tests may be waived by Engineer of Record if field experience indicates evidence of satisfactory strength when the total quantity of a given class of concrete is less than 50 cubic yards.

3.03 ADDITIONAL TESTING

A. Additional testing, including core tests, load tests, non-destructive or other testing as designated by Architect will be required whenever concrete fails to meet Acceptance of Concrete criteria. Testing will be conducted in accordance with ACI 301. Cost of additional testing for non-conforming work shall be borne by Contractor.

END OF SECTION

SECTION 030516

UNDERSLAB VAPOR BARRIER

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sheet vapor barrier under all conditioned and unconditioned concrete slabs on grade.

1.02 RELATED DOCUMENTS, REQUIREMENTS AND INCLUDED SECTIONS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to the Section.

B. Section 03 2000 - Concrete Reinforcing.

C. Section 03-3000 - Cast-in-Place Concrete: Preparation of subgade, granular fill placement of concrete.

D. Section 31 3116 - Termite Control: Below-grade soil treatment prior to installation of the work in this section.

1.03 REFERENCE STANDARDS

A. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

B. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products including instructions for sealing joints.

C. Test Data: Submit report of tests showing compliance with specified requirements.

D. Samples: Submit samples of underslab vapor barrier to be used.

E. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction.

1.05 DELIVERY, STORAE AND HANDLING:

A. Deliver materials to project site in Manufacturer's original packaging or containers.

B. Store to prevent damage, deterioration or contamination.

1.06 QUALITY ASSURANCE

A. Coordinate the requirements of this Section with the actual products proposed in Section 31 3116 - Termite Control to ensure compatibility with soil treatment products.

PART 2 PRODUCTS

2.01 MATERIALS

A. Underslab Vapor Barrier:
   1. Water Vapor Permeance: Not more than 0.010 perms (0.6 ng/(s m2 Pa)), maximum.
   2. Complying with ASTM E1745 Class A.
   3. Thickness: 15 mils (0.4 mm). [10 mils MAY be accepted IF drainage subgrade is used below vapor barrier.]
   4. Specific Notes: Specifier to revise based upon performance requirements:
      a. Vapor barrier shall have the following characteristics:
         1) Minimum Permeance: 0.01 perms - Factor of 10 GFF
         2) Minimum Tensile Strength: 30 lbf/in.
         3) Minimum Puncture Resistance: 1700 grams
         4) Minimum Thickness: 15 mils

5) ASTM E 1745-09 Class: A

5. Manufactured with only virgin, non-recycled resins.
6. Resistant to degradation by soil treatment products.
7. Basis of Design:
   a. Stego Industries LLC; Stego Wrap Vapor Barrier (15-mil): www.stegoindustries.com
   b. W.R. Meadows; Perminator HP Vapor Barrier (15-mil): www.wrmeadows.com
   c. Reef Industries; Griffolyn 15 Mil Green Vapor Barrier; www.reefindustries.com
8. Substitutions: See Section 01 6000 - Product Requirements.

B. Acceptable Manufacturers: Subject to compliance with requirements, acceptable manufacturers shall include but are not limited to the following:
1. Barrier-Bac, Inc.
2. Fortifiber Building Systems Group.
3. Raven Industries, Inc.
4. Reef Industries, Inc.
5. Stego Industries, Inc.
6. W.R. Meadows.
7. Complying with the water vapor permeance requirements of the listed ASTM requirements for the installed membrane.
8. Substitutions: See Section 01 6000 - Product Requirements.

C. Accessory Products:
1. Comply with the water vapor permeance requirements of the listed ASTM requirements for the installed membrane.
2. Vapor barrier Manufacturer's recommended tape, adhesive, mastic, etc., for sealing seams and penetrations in vapor barrier (and complying with the water vapor permeance requirements of the listed ASTM requirements for the installed membrane.)
   a. Seam tape - Adhesive or pressure-sensitive tape must have the same qualities as the vapor barrier and supplied by the same manufacturer. Minimum width: 4 inches.

D. Pipe Boots
1. Construct pipe boots from vapor barrier material, pressure sensitive tape and/or mastic per manufacturer's requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surface over which vapor barrier is to be installed is complete and ready before proceeding with installation of vapor barrier.

3.02 INSTALLATION

A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E1643.

B. If capillary fill is required by the documents, vapor barrier shall be installed above the capillary fill clean and completely free of debris and protrusions, immediately under the concrete.

C. Unroll vapor retarder with the longest dimension parallel with the direction of the pour. Install vapor retarders in largest practical widths.

D. Where expansion or control joints are indicated in slab, lay vapor barrier continuous under joint filler.

E. Lay vapor barrier over interior building area to receive concrete slab; lap edges 12" and seal accordingly. Apply membrane in minimum of 8'-0" widths. Lay membrane with seams perpendicular to and lapped in direction of pour. Turn edges of membrane up to within 1/2" of top of slab at intersection with vertical surfaces.

F. Lap vapor retarder over footings and seal to foundation walls where applicable. Install where expansion or control joints are indicated in slab, lay vapor barrier continuous under joint filler.

G. Lap joints minimum 12" (300mm), but not less than the minimum overlap required by the manufacturer.

H. No penetration of the vapor retarder is allowed except for reinforcing steel and permanent utilities

I. At turned-down slabs, extend vapor retarder under and bond bottom of turn-down, to be turned up at perimeter vertical face before backfilling. Trim flush with grade. Overlap joints and seal per Manufacturer's instructions.

J. Seal joints, seams and penetrations (including pipes and conduit) water-tight with manufacturer's recommended products and follow manufacturer's written instructions. No penetration of the vapor retarder is allowed except for reinforcing steel and permanent utilities.

K. Seal openings in vapor barrier around pipes and other protrusions with mastic or tape. Fold at corners to form envelope. No penetration of vapor barrier is allowed except for reinforcing steel and permanent utilities.

L. Repair damaged vapor retarder before covering with other materials.

M. Repair damaged areas by cutting patches of vapor retarder overlapping damaged area in the same manner required by the manufacturer for typical seams.

N. Protect vapor barrier installation from damage until concrete slab is in place.

O. In the final installation no view of ground after the vapor retarder is installed.

END OF SECTION

SECTION 031000

CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 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.

1.03 RELATED REQUIREMENTS

A. Section 03 20 00 - Concrete Reinforcing.

B. Section 03 30 00 - Cast-in-Place Concrete.

C. Section 03 3500 - Concrete Finishes.

D. Section 03 25 00 - Post-Tensioned Concrete.

E. Section 04 20 00 - Unit Masonry: Reinforcement for masonry.

F. Section 04 21 01 - Masonry Veneer: Spacing for veneer anchor reglets recessed in concrete.

G. Section 05 12 00 - Structural Steel Framing: Placement of embedded steel anchors and plates in cast-in-place concrete.

H. Section 05 31 00 - Steel Decking: Placement of steel anchors in composite decking.

1.04 PRICE AND PAYMENT PROCEDURES

A. Measurement and payment of forming work will be by the unit price method.

B. Formwork (Vertical Structures): Measure by the square foot (meter). Includes form materials, placement, placing accessories, stripping.

C. Formwork (Horizontal Structures): Measure by the square foot (meter). Includes form materials, placement, placing accessories, stripping.

1.05 REFERENCE STANDARDS

A. American Concrete Institute (ACI) Standards
   1. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials.
   2. ACI 301 - Specifications for Structural Concrete.
   3. ACI 318 - Building Code Requirements for Structural Concrete.
   4. ACI 381 - Building Code Requirements for Structural Concrete and Commentary.
   5. ACI 347R - Guide to Formwork for Concrete.
   6. ACI SP-15 (10), Field Reference Manual.
      a. American Plywood Association (APA) Grading Rules.
         1) American Society for Mechanical Engineers (ASME) Standards
            (a) ASME A17.1 - Safety Code for Elevators and Escalators.
         2) American Society for Testing and Materials (ASTM) Standards
            (a) ASTM A653A65 3M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
            (b) ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
            (c) ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wires, Profiles and Tubes (Metric).

(d) ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
(e) ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
(f) ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
(g) PS 1 - Structural Plywood.
3) Southern Pine Inspection Bureau (SPIB) Grading Rules.
4) Western Wood Products Association (WWPA) Grading Rules

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit copies of manufacturer's product specifications and installation instructions for manufactured products, including form sealer and release agent.

C. Shop Drawings: Indicate pertinent dimensions, materials, bracing, and arrangement of joints and ties.

D. Permanent Structure Layout Drawings:
1. Include Engineer of Record's review for verification of major openings in slabs, locations of stairs, beams, and edge of slab.
2. Include Engineer of Record's review for form-facing joints, rustications, construction and contraction joints, form joint-sealant details, form tie location and patterns, inserts and embedments, cutouts, clean-out panels, and other items that visually affect cast-in-place architectural concrete.
3. Review does not include temporary formwork.
a. Permanent Insulated Foam Panel Formwork Shop Drawings: Include calculations or selections from manufacturer's prescriptive design tables that indicate compliance with applicable building code and manufacturer's requirements.
1) Include test reports for performance criteria specified.
(a) Include the design engineer's stamp or seal on each sheet of shop drawings.
2) Designer's Qualification Statement.
3) Design Data: As required by authorities having jurisdiction.

1.07 QUALITY ASSURANCE

A. Perform work of this section in accordance with Highways standards of the State of Georgia.

B. Designer Qualifications: Design formwork under direct supervision of a Professional Structural Engineer experienced in design of concrete formwork and licensed in the State in which the Project is located.

C. Maintain one copy of each installation standard on site throughout the duration of concrete work.

D. Temporary Formwork Structural Drawings: Design and engineering of formwork are Contractor's sole responsibility, and design shall be prepared by or under the direct supervision of a Professional Structural Engineer licensed in the State in which the Project is located.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver prefabricated forms and installation instructions in manufacturer's packaging.

B. Store prefabricated forms off ground in ventilated and protected manner to prevent deterioration from moisture.

C. Protect plastic foam products from damage and exposure to sunlight.

PART 2 PRODUCTS

2.01 FORMWORK - GENERAL

A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.

B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions, and approved permanent structure layout drawings.

C. Chamfer outside corners of beams, joists, columns, and walls.

D. Comply with applicable state and local codes, and relevant portions of ACI 347R, ACI 301, and ACI 318 with respect to design, fabrication, erection, and removal of formwork.

E. Comply with Highways standards of the State of Georgia.

F. Use the following form types:
   1. Basement Walls Not Exposed To View: Site fabricated plywood.
   2. Basement Walls Exposed To View: Site fabricated rough sawn lumber.
   3. Elevated Floor Slabs: Prefabricated glass fiber pan forms, treated for exposed to view finish.
   4. Elevated Floor/Roof Slabs: Permanent prefabricated foam panel formwork; formwork to remain.
   5. Beam/Column Formwork: Prefabricated formwork sheets.
      a. Contractor shall assume sole responsibility for design and construction of concrete formwork capable of supporting construction loads and maintaining plastic concrete to planes, dimensions, and surfaces shown, within specified tolerances. Care shall be taken in the design to account for uplift, unbalanced and vibratory loads, and their effect upon the vertical and lateral stability of formwork. Design shall maintain joints tight and true.
         1) Build trap doors into back of vertical forms to facilitate cleaning, inspection and deposition of concrete. Build out for accessories, anchors and openings. Secure items to be built into concrete in forms, including inserts for other trades.
         2) Form Ties:
            (a) 1. For architectural finishes: Break-back type with 5/8" removable vinyl sleeve.
            (b) 2. For all other conditions: Ties with 1.5" break back.

2.02 WATER STOPS: SPECIFIED IN SECTION 03 153. ALL WATERSTOPS TO BE PER REQUIREMENT OF THE ARCHITECTURAL AND WATERPROOFING CONSULTANTS'S DESIGN REQUIREMENTS.

2.03 FORM SEALANT:

A. Acceptable products:
   1. General Electric/Silicone Products Dept., SCS-1200.
   2. Dow Chemical Co., #790.
   3. Type: One-part silicone.
   4. Color: Clear
   5. Primer: Sealant manufacturer's recommended product.
      a. Form Release Agent: Type required for use without staining or causing surface imperfections in architectural finishes. Use same brand form release agent for all forms.
      b. Prior to placement of reinforcement, apply form release agent to forms in accordance with manufacturer's printed instructions. Rate of application shall be constant to prevent discoloration of concrete. Remove excess material immediately.
      c. Construct bulkheads with keys at separation of pours, except as otherwise noted on drawings. Locations of bulkheads shall be as indicated on shop drawings.
      d. Construct forms to be removed without hammering or prying against concrete.

2.04 WOOD FORM MATERIALS

A. Form Materials: At the discretion of the Contractor.

B. Softwood Plywood: PS 1, C Grade, Group 2.

C. Softwood Plywood: PS 1, B-B High Density Concrete Form Overlay, Class I.

D. Plywood: Douglas Fir species; solid one side grade; sound undamaged sheets with clean, true edges.

E. Plywood for Unexposed Concrete: C-C EXT-APA, BB Form Ply.

F. Lumber for work unexposed in finished work: Southern Yellow Pine species; No. 2 grade; with grade stamp clearly visible or equal.

G. Studs, Wales, Supports and Centering: Types required and indicated on formwork shop drawings.

2.05 EARTH FORMS

A. Forms for foundations may be cut into earth, provided that earth is dry, stable, level and sound.

B. Hand trim sides and bottom of earth forms. Remove loose soil prior to placing concrete.

2.06 REMOVABLE PREFABRICATED FORMS

A. Manufacturers:
   1. Molded Fiber Glass Construction Products Co
   2. S-Form; Aluminum Formwork Systems
   3. SureVoid Products, Inc
   4. Helser Industries: Precast Forms.
   5. Substitutions: See Section 01 60 00 - Product Requirements.
      a. Metal or Plastic Forms: Smooth, un-dented, clean steel or new plastic forms may be used, with Engineer of Record's approval, to achieve rubbed finish.
         1) Preformed Steel Forms: Minimum 16 gauge, 0.0598 inch (1.52 mm) thick, matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
         2) Preformed Aluminum Forms: ASTM B221 (ASTM B221M), 6061-T6 alloy, matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
            (a) Preformed Plastic Forms: Thermoplastic polystyrene form liner, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
            (b) Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished concrete surfaces.
            (c) Pan Type: Glass fiber, of size and profile indicated.
            (d) Tubular Column Type: Round, spirally wound laminated fiber material, surface treated with release agent, non-reusable, of sizes indicated.
         3) Void Forms: Moisture resistant treated paper faces, biodegradable, structurally sufficient to support weight of wet concrete mix until initial set; 2 inches (50 mm) thick.

2.07 PERMANENT SITE-FABRICATED MESH STEEL FORMING SYSTEM

A. Manufacturers:
   1. Alabama Metal Industries Corporation; Stay-Form
   2. The Reinforced Earth Company (RECo); TerraTrel.
   3. Max Frank Groupl Precafil.
   4. Substitutions: See Section 01 60 00 - Product Requirements.
      a. Provide stay in place expanded mesh steel forming sheets for pile caps, grade beams, blindside walls, tunnels, duct banks, bridges, bulkheads, keyways, construction joints, and shotcrete backstop.

1) Expanded Mesh Steel Sheets:
   (a) Material: ASTM A653/A653M hot-dipped galvanized sheet steel.
   (b) Sheet Thickness: 0.0217 inch (0.5512 mm).
   (c) Configuration: Alternating solid 3/4 inch (19 mm) deep V-ribs and expanded mesh. Ribs spaced 3-7/8 inch (98 mm) on center.
   (d) Sheet Size: 27 inches by 96 inches (686 mm by 2438 mm).
   (e) Mesh Opening Size: 1/4 inch by 3/4 inch (6.35 mm by 19 mm).

2.08 PERMANENT PREFABRICATED FOAM PANEL FORMWORK

A. Manufacturers:
   1. LiteForm Technologies, LLC; LiteDeck WRS
   2. Nuform Building Technologies Inc; Conform.
   3. Portland Cement Association; ICF.
   4. Substitutions: See Section 01 60 00 - Product Requirements.
      a. Floor/Roof Deck Forms: Pre-engineered expanded polystyrene foam plastic deck and beam/joist forms with factory installed metal channel furring strips flush with face of panel and field installed form stiffener slots.
         1) Structural Performance: In accordance with applicable code.
            (a) Fire Rating Impact: Provide product tested to show no detrimental effect on fire rating of concrete deck/beam/joist construction due to retention of foam plastic formwork; compare to calculated fire resistance of concrete constructed without permanent formwork as described in applicable code.
            (b) Form Cross Section: As indicated on drawings; flat-bottomed solid foam blocks with voids only for stiffeners and beam/joist cross-section; interlocking long edges.
            (c) Form Width: 24 inches (600 mm).
            (d) Beam/Joist Depth: 4 inches (102 mm), exclusive of deck depth; if necessary, provide contour cut filler pieces to achieve required depth.
            (e) Beam/Joist Depth: 6 inches (152.4 mm), exclusive of deck depth; if necessary, provide contour cut filler pieces to achieve required depth.
            (f) Beam/Joist Spacing: 24 inches (610 mm) on center.

B. Channel Width at Face of Panel: 1-1/2 inches (38 mm), minimum.

C. Channel Spacing: 12 inches (304.8 mm) on center.

D. Thermal Performance: Average R-value (RSI-value) of 25 (4.4), when tested in accordance with ASTM C177, based on assembled formwork.

E. Sound Transmission: STC of 57, minimum; based on assembly consisting of 3 inch (76.2 mm) concrete cover and 14 inch (355.6 mm) concrete beam/joist depth.

F. Sound Impact Insulation: IIC of 44, minimum; based on assembly consisting of 3 inch (76.2 mm) concrete cover and 14 inch (355.6 mm) concrete beam/joist depth with no floor finish.

2.09 EXPANDED POLYSTYRENE (EPS) INSULATION BOARD: ASTM C578, TYPE VIII.

A. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.

B. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
   1. Form Stiffeners: Steel C-channels, 18 gauge, 0.0478 inch (1.21 mm), complying with ASTM A653/A653M, galvanized to G90/Z275.
   2. Form Stiffeners: 2 by 6 dimension lumber.
   3. Form Stiffeners: One-half of a wood I-joist, 11-7/8 inch (301.62 mm) high.

2.10 FORMWORK ACCESSORIES

A. Form Ties: Removable type, galvanized metal, fixed length, cone type, with waterproofing washer, free of defects that could leave holes larger than 1 inch (25 mm) in concrete surface.

B. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.

1. Composition: Colorless, reactive, water-based or solvent-based compound.
2. Do not use materials containing diesel oil or petroleum-based compounds.
3. VOC Content: In compliance with applicable local, State, and federal regulations.
4. Products:
    a. SpecChem, LLC; Bio Strip WB (water-based).
    b. W. R. Meadows, Inc; Duogard.
    c. BASF; MasterFinish RL 220.
    d. Substitutions: See Section 01 60 00 - Product Requirements.
        1) Dowel Sleeves: Plastic sleeve and nailable plastic base for smooth, round, steel load-transfer dowels.
            (a) Products:
                (1) BoMetals, Inc; QuicDowel System.
                (2) Sika Corporation; Speed Dowel.
                (3) Sika Corporation; Speed Plate.
                (4) Substitutions: See Section 01 60 00 - Product Requirements.
        2) Filler Strips for Chamfered Corners: Rigid plastic type; ¾" by ¾" inch (19 by 19 mm) size; maximum possible lengths.
        3) Flashing Reglets: Galvanized steel, at least 22 gage, 0.0299 inch (0.76 mm) thick, longest possible lengths, with alignment splines for joints. non-filled Provide Springlok Flashing System manufactured by Fry Reglet.
        4) Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.
            (a) Embedded Anchor Shapes, Plates, Angles and Bars: As specified in Section 05 12 00.

PART 3 EXECUTION

EXAMINATION

4.01 VERIFY LINES, LEVELS AND CENTERS BEFORE PROCEEDING WITH FORMWORK. ENSURE THAT DIMENSIONS AGREE WITH DRAWINGS.

A. 3.02 ERECTION - FORMWORK

1. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
    a. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
        1) Install stay in place mesh steel formwork in accordance with manufacturer's recommendations.
            (a) Install permanent insulated foam panel formwork per manufacturer's recommendations.
                (1) Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
                (2) Align joints and make watertight. Keep form joints to a minimum.
        2) Obtain approval before framing openings in structural members that are not indicated on drawings.
        3) Install void forms in accordance with manufacturer's recommendations. Protect forms from moisture or crushing.
        4) Coordinate this section with other sections of work that require attachment of components to formwork.
        5) If formwork is placed after reinforcement, resulting in insufficient concrete cover over reinforcement, request instructions from Architect before proceeding.

4.02 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 or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

4.03 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for items to be embedded in passing through concrete work.

B. Locate and set in place items that will be cast directly into concrete.

C. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.

D. Position recessed anchor slots for brick veneer masonry anchors to spacing and intervals specified in Section 04 20 01.

4.04 INSTALL ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, SO THEY ARE STRAIGHT, LEVEL, AND PLUMB. ENSURE ITEMS ARE NOT DISTURBED DURING CONCRETE PLACEMENT.

4.05 INSTALL WATERSTOPS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, SO THEY ARE CONTINUOUS WITHOUT DISPLACING REINFORCEMENT. HEAT SEAL JOINTS SO THEY ARE WATERTIGHT.

4.06 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.

4.07 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.

4.08 FORM CLEANING

4.09 CLEAN FORMS AS ERECTION PROCEEDS, TO REMOVE FOREIGN MATTER WITHIN FORMS.

4.10 CLEAN AND PROTECT PERMANENT INSULATED CONCRETE FOAM PANEL FORMWORK PER MANUFACTURER'S RECOMMENDATIONS.

4.11 CLEAN FORMED CAVITIES OF DEBRIS PRIOR TO PLACING CONCRETE.

A. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

B. 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.

4.12 EXAMINE FORMS PRIOR TO EACH REUSE AND REPLACE DEFECTIVE UNITS LACKING STRENGTH, TIGHTNESS OR VISUAL APPEARANCES.

4.13 FORMWORK TOLERANCES

4.14 CONSTRUCT FORMWORK TO MAINTAIN TOLERANCES REQUIRED BY ACI 117, UNLESS OTHERWISE INDICATED.

4.15 CONSTRUCT PERMANENT INSULATED FOAM PANEL FORMWORK TO MAINTAIN TOLERANCES REQUIRED BY ACI 301.

4.16 CONSTRUCT AND ALIGN FORMWORK FOR ELEVATOR HOISTWAY IN ACCORDANCE WITH ASME A17.1.

A. Camber slabs and beams 1/4 inch per 10 feet (2 mm/m).

B. Camber slabs and beams in accordance with ACI 301.

C. Temporary Formwork Structural Drawings: Design and engineering of formwork are Contractor's sole responsibility, and design shall be prepared by or under the direct supervision of a professional engineer licensed in the State of Georgia.

D. Allowable Tolerances: Construct formwork within tolerance requirements of ACE 347. Maximum deflection of form facing material between supports shall be limited to 0.0025 x span.

4.17 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.

B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.

C. Do not reuse wood formwork more than 4 times for concrete surfaces to be exposed to view. Do not patch formwork.

4.18 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

C. Store removed forms to prevent damage to form materials or to fresh concrete. Discard damaged forms.

END OF SECTION

SECTION 031500

SLAB ON GROUND ACCESSORIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. This section includes slab on ground dowel system.

1.03 RELATED REQUIREMENTS AND RELATED SECTIONS

A. Section 03 3000 - Cast-in-Place Concrete

1.04 REFERENCE STANDARDS

A. American Concrete Institute (ACI) Standards
   1. ACI 360 - Design of Slabs-on-Ground; American Concrete Institute International; 2006

1.05 SUBMITTALS

A. Product Data: Provide product data on all products including manufacturers installation requirements.

B. Reports: Independent pull-out testing of the debonding agent must demonstrate a required pull-out force of less than 1,000 lbs per load plate.

PART 2 - PRODUCTS

2.01 GENERAL:

A. Acceptable manufacturers:
   1. PNA Construction Technologies
   2. No Substitutions.

2.02 MATERIALS:

A. Smooth plate bars, manufactured from steel meeting ASTM A 36.

B. Load plates must have smooth and true edges. Acceptable methods of manufacture are saw or plasma cut and deburred. If sheared, manufacture must demonstrate that all edges will be deburred, and smooth and true without any deformity that may induce restraint of the slab.

2.03 CONSTRUCTION JOINT DOWELS:

A. All formed construction joints at the slab-on-grade shall be doweled.

B. Acceptable Products:
   1. PNA Construction Technologies (800-542-0214): Diamond Dowel Plates.
      a. Diamond Dowel Plate: 1/4 x 4-1/2 x 4-1/2 inch steel plate.
      b. Spacing: 18 inch on center.
      c. Accessory: High density plastic pocket former.

2.04 SAWN CONTROL JOINT DOWEL BASKETS:

A. Only if shown on Structural Drawings.

B. Acceptable Products:
   1. PNA Construction Technologies (800-542-0214):
      a. PD3 Tapered Plate Dowels: 3/8 x 2 x 12 inch steel plate.
      b. Spacing: 18 inch on center.
   2. Round dowel baskets.
      a. Size: 3/4 x 16 inch round dowels.
      b. Spacing: 12 inch on center.

C. Basket: Fully welded wire basket assembly, fabricated from 1/4 inch diameter cold drawn wire. Eight gauge wires shall be welded across the side frames at approximately 3 feet on center to

D. keep the assembly stable during shipping and installation.. Dimensions as required to locate dowel at mid-point of slab.

E. The load plates shall be delivered to the jobsite with a thin and consistently applied debonding agent of a maximum thickness of 0.002 inch. Greasing plates in the field is not acceptable.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Slab on Ground Dowels:
   1. Place all joint reinforcement products in accordance with the manufacturer's installation details, utilizing all alignment tools available.
   2. Install dowels perpendicular to joint and parallel to finished concrete surface.
   3. Dowel alignment shall be within ACI 117 tolerance allowance.
   4. Do not grease plate dowels.

3.02 CONSTRUCTION JOINTS

A. Mark center point for spacing of each load plate on top of wood form along entire length. Set forms along construction joints. Place pocket former up to within 6 inches of joint intersection and a maximum of 12 inches to ensure positive load transfer at all joint intersections.

B. Install plastic pocket former sleeve insert to slab edge form at mid slab depth using the installation template included in each box of Diamond Dowel® pocket formers or the Diamond Dowel® bulkhead that can be purchased independently from PNA. After the form is removed, insert steel plate prior to adjacent slab pour.

C. Insert load plate into slot created by pocket former. Center corner of plate in middle of label and push straight through label into pocket former. Do not hammer or use excessive force to insert load plate. Insert load plate within three days of concrete placement.

3.03 SAWN CONTROL JOINTS:

A. Locate control lines on sub-base prior to slab pour for accurate placement of plate basket assembly, centered on joint. Basket shall be fabricated to place load plate at mid slab depth. Do not cut temporary cross wires.

B. Baskets shall be fully welded assemblies fabricated to best suit the joint layout. Assemblies that require more than 5 percent of the assemblies to be cut on-site will not be allowed. No basket with less than 3 plates should be used.

C. The number of load plates in the welded assembly at the specified spacing must place the end load plates as close as possible to 6 inches from the joint intersection and in no instance more than 18 inches from the joint intersection.

D. Stake baskets securely in place to prevent shifting during concrete placement. Basket assemblies placed on vapor retarders must be staked to ensure positive alignment during construction. The stakes shall be installed through mastic to maintain the integrity of the vapor retarder.

3.04 FIELD QUALITY CONTROL

A. An independent testing agency, as specified in Section 01400, will inspect installed accessories for conformance to contract documents before concrete placement.

END OF SECTION

SECTION 033000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 DESCRIPTION

A. Definitions:
   1. Architectural Concrete: Concrete exposed in finished work on the exterior of the building or in interior public spaces that receives no covering finish. Architectural concrete work is generally specified to receive a smooth, rubbed finish or a special architectural finish and is of a type where taped formwork joints, grinding marks and similar surface defects are not acceptable.
   2. Special Architectural Finish: Finish for exposed interior and exterior concrete work, as indicated on the drawings and defined by ACI 301 Paragraph 6.3.7.

1.03 SECTION INCLUDES

A. Concrete formwork.

B. Concrete building frame members.

C. Concrete for composite floor construction.

D. Elevated concrete slabs.

E. Floors and slabs on grade.

F. Concrete shear walls, elevator shaft walls, and foundation walls.

G. Concrete reinforcement.

H. Joint devices associated with concrete work.

I. Miscellaneous concrete elements, including equipment pads, equipment pits, light pole bases, thrust blocks, and manholes.

J. Concrete curing.

K. Crack repair of concrete floor slabs.

1.04 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Pre-Slab Meeting.

B. Section 01 4000 - Quality Requirements: Testing and Inspection

C. Section 03 10 00 - Concrete Forming and Accessories: Forms and accessories for formwork.

D. Section 03 1500 - Slab-On-Ground Accessories.

E. Section 03 20 00 - Concrete Reinforcing.

F. Section 03 35 11 - Concrete Floor Finishes: Densifiers, hardeners, applied coatings, and polishing.

G. Section 07 92 00 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

H. Section 31 31 16 - Termite Control: Field-applied termiticide and mildewcide for concrete surfaces.

1.05 PRICE AND PAYMENT PROCEDURES

A. Concrete - Slab-on-Fill or Slab-on-Grade: Includes formwork as specified in Section 03 10 00, reinforcement as specified in Section 03 20 00, concrete, placement accessories, consolidating and leveling, troweling, and curing. Measurement by:
   1. Square foot (meter).
   2. Cubic yard (meter).

a. Concrete - Vertical in Forms: Includes formwork as specified in Section 03 10 00, reinforcement as specified in Section 03 20 00, concrete, placement accessories, consolidating, and curing. Measurement by:
1) Square foot (meter).
(a) Cubic yard (meter).
(b) Concrete - Miscellaneous Locations: Includes formwork as specified in Section 03 10 00, reinforcement as specified in Section 03 20 00, concrete, placement accessories, consolidating, and curing. Measurement by:
(1) Square foot (meter).
(2) Cubic yard (meter).
(c) Concrete - Grouting: Includes preparation of substrate, grout, placement, consolidating, troweling, and curing. Measurement by the cubic yard (meter).
(d) Construction Joint Devices: Includes component, accessories, and installation. Measurement by the linear foot (meter).

1.06 REFERENCE STANDARDS

A. American Concrete Institute (ACI) Standards
1. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials.
2. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.
3. ACI 211.2 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete.
4. ACI 301 - Specifications for Structural Concrete.
5. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.
6. ACI 304.R - Guide for Measuring, Mixing, Transporting, and Placing Concrete.
7. ACI 305R - Guide to Hot Weather Concreting.
8. ACI 306R - Guide to Cold Weather Concreting.
9. ACI 308R - Guide to External Curing of Concrete.
10. ACI 318 - Building Code Requirements for Structural Concrete and Commentary.
11. ACI 347R - Guide to Formwork for Concrete.
a. American Society for Testing and Materials (ASTM) Standards
1) ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
(a) ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for
(1) Concrete Reinforcement.
(2) ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars.
(3) ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement.
(4) ASTM A1064/A1064M - Standard Specification for Carbon Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
(5) ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete.
(6) ASTM C33/C33M - Standard Specification for Concrete Aggregates.
(7) ASTM C348 - Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars.
(8) ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
(9) ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete.
(10) ASTM C476 - Standard Specification for Grout Masonry.
(11) ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

(12) ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50mm) Cube Specimens).
(13) ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete.
(14) ASTM C150/C150M - Standard Specification for Portland Cement.
(15) ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
(16) ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
(17) ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete.
(18) ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
(19) ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete.
(20) ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
(21) ASTM C579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
(22) ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
(23) ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing.
(24) ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of cylindrical Specimens of Cementitious Mixtures.
(25) ASTM C845/C845M - Standard Specification for Expansive Hydraulic Cement.
(26) ASTM C881/C881M - Standard Specification for Epoxy-Rein-Base Bonding systems for Concrete.
(27) ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete.
(28) ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete.
(29) ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
(30) ASTM C1116/C1116M - Standard Specification for Fiber-Reinforced Concrete.
(31) ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
(32) 33. ASTM C1311 - Standard Specification for Solvent Release Sealants.
(33) ASTM C1315 - Standard Specification for Liquid Membrane Forming Compounds Having Special Properties for Curing and Sealing Concrete.
(34) ASTM C1582/C1582M - Standard Specification for Admixtures to Inhibit Chloride-Induced Corrosion of Reinforcing Steel in Concrete.
(35) ASTM D471 - Standard Test Method for Rubber Property - Effect of Liquids.
(36) ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics.
(37) ASTM D8139 - Standard Specification for Semi-Rigid, Closed-Cell Polypropylene Foam, Performed Expansion Joint Filler for Concrete Paving and Structural Construction.

(38) ASTM D994/D994M - Standard Specification for Performed Expansion Joint Filler for Concrete (Bituminous Type).
(39) ASTM D1751 - Standard Specification for Performed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
(40) ASTM D1752 - Standard Specification for Performed SpongeRubber Cork and Recycled PV Expansion Joint Fillers for Concrete Paving and Structural Construction.
(41) ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting.
(42) ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcing Bars.
(43) ASTM E11 - Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves.
(44) ASTM E154/E154M - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.
(45) ASTM E1155 - Standard Test Methods for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers.
(46) ASTM E1155M - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers (Metric).
(47) ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
(48) ASTM E1745 - Standard Specification for Plastic Water vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
(49) ASTM E1993/E1993M - Standard Specification for Bituminous Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
(50) ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.

(b) Corps of Engineers (COE) Standards
(1) COE CRD-C 48 - Method of Test for Water Permeability of Concrete.
(2) COE CRD-C 513 - COE Specifications for Rubber Waterstops.
(3) COE CRD-C 572 - Corps of Engineers Specifications for Polyvinylchloride Waterstop.

(c) International Code Council (ICC) Standards
(1) ICC-ES AC380 - Acceptance Criteria for Termite Physical Barrier Systems.

(d) International Concrete Repair Institute (ICRI) Standards
(1) ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair;.

(e) National Sanitation Foundation (NSF) Standards
(1) NSF 61 - Drinking Water System Components - Health Effects.
(2) NSF 372 - Drinking Water System Components - Lead Content.

1.07 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions and forming accessories, admixtures, joint materials, hardeners, and others as requesed by Architect or Engineer of Record.
1. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives.
2. For chemical-resistant waterstops, provide data on ASTM D471 test results.

a. Mix Design: Submit proposed concrete mix design for each type and class of concrete.
    1) Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
        (a) Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
            (1) Indicate proposed mix design complies with fiber reinforcing manufacturer's written recommendations.
            (2) Designation, type, quality, and source (natural or manufactured) of coarse and fine aggregate materials.
            (3) Sieve Analysis Reports: Provide separate sieve analysis of percentages passing for coarse and fine aggregate. Show values for each sieve size shown on the mix design form. Do not leave any line blank. Sieve analysis sampling and testing for each aggregate source shall be conducted within 60 days of concrete submittal date.
            (4) Aggregate Supplier Statement:
            (5) Stating if aggregate is possibly alkali-reactive, based on tests or past service.
            (6) Stating if aggregate can possibly cause pop-outs, "D" cracking, or other disruptions due to moisture gain, freezing, or other mechanisms, based on tests or past services.
            (7) Proportions shall be determined by means of laboratory tests of concrete made with the cement and aggregate proposed for use.
            (8) Provide report in detail from an approved testing laboratory showing 7-day and 28-day strengths obtained using materials proposed.
            (9) Required average strength above specified strength:
            (10) Determinations of required average strength above specified strength (f'c) shall be in accordance with ACI 318 and ACI 301.
            (11) Establish the required average strength of the design mix using materials proposed to be employed. Standard deviations shall be determined by thirty tests. Average strength used for selecting proportions shall exceed specified strength (f'c) y at least:
            (12) 400 psi (2.8 MPa) Standard deviation is less than 300 psi (2.1 MPa).
            (13) 300 to 400 psi (2.1 to 2.8 MPa) Standard deviation is 300 to 400 psi (2.1 to 2.8 MPa).
            (14) 550 psi (3.8 MPa)
            (15) 700 psi (4.8 MPa) Standard deviation is 400 to 500 psi (2.8 to 3.4 MPa).
            (16) 900 psi (6.2 MPa) Standard deviation is above 500 psi (3.4 MPa) or unknown.
            (17) Contractor must submit verification of 20-25% Portland cement substitution, using coal fly ash, ground granulated blast furnace slag (GGBFS from iron refining), in pounds per cubic yard of concrete percentage used must also be stated.
            (18) A copy of the submittal must be provided for Owner to review for tracking purposes only and concurrent with A/E submittal.
        (b) Placing Drawings: Provide placing plan depicting layout and sequencing of slab pours for Owner approval. Include horizontal and vertical construction joint locations, control joint spacing, temporary block-outs and openings for equipment access.
        (c) Pre-qualify ready-mixed concrete suppliers according to the requirements of ASTM C94.
        (d) LEED Reports: Submit letter indicating source of raw materials and location.

(e) Samples for Pigment Color Selection: Submit manufacturer's complete sample chip set, including pigment number and required dosage rate for each color.
(f) H. Verification Samples: Submit sample chips of specified colors indicating pigment numbers and required dosage rates, for subsequent comparison to installed concrete
(g) Samples: Submit samples of underslab vapor retarder to be used.
(h) Samples: Submit two, 12 inch (305 mm) long samples of waterstops and construction joint devices.
(i) Submit written report to Engineer of Record for each proposed concrete mix at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed and are acceptable to Engineer of Record.
(j) Test Reports: Submit termite-resistant sheet manufacturer's summary of independent laboratory and field testing for effectiveness in subterranean termite exclusion.
(k) Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
(l) Sustainable Design Submittals: If any wood or wood-based form materials, including supports, are permanently installed in the project, submit documentation required for sustainably harvested wood as specified in Section 01 60 00 - Product Requirements.
(m) Sustainable Design Submittal: If any fly ash, ground granulated blast furnace slag, silica fume, rice hull ash, or other waste material is used in mix designs to replace Portland cement, submit the total volume of concrete cast in place, mix design(s) used showing the quantity of portland cement replaced, reports showing successful cylinder testing, and temperature on day of pour if cold weather mix is used.
(n) Sustainable Design Submittal: Submit environmental assessment report for concrete mix. Compare concrete mix submitted with a conventional or reference concrete mixture that meets the specified performance requirements. Include:
    (1) Energy consumption.
    (2) Emissions.
    (3) Potential toxicity.
    (4) Potential risk.
    (5) Raw material consumption.
    (6) Land use.
    (7) Third-party validation of comparison methodology.
(o) Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.
(p) Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.08 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.
    1. Maintain one copy of each document on site.
        a. Follow recommendations of ACI 305R when concreting during hot weather.
            1) Provide report in detail from an approved testing laboratory showing 7-day and 28-day strengths obtained using materials proposed.
                (a) Follow recommendations of ACI 306R when concreting during cold weather.
                (b) For slabs required to include moisture vapor reducing admixture (MVRA), do not proceed with placement unless manufacturer's representative is present for every day of placement.
                (c) Acquire cement from same source and aggregate from same source for entire project.

(d) It shall be the responsibility of the Contractor to produce concrete slabs of the strength, durability, workability and specified finish.
(e) Allowable Tolerances:
(1) Formwork: Conform to most stringent requirements of ACI 117 and ACI 301, except as specified herein.

2. Slab on ground shall conform to ACI 117, unless noted otherwise.
3. Slab on Ground Base Fine Grade: +0 inch, -3/4 inch, with transition no greater than 3/4 inch vertically to 8 inches horizontally for level slab.

B. Minimum slab on ground thickness tolerance: -3/4 inch

C. Ensure at least 85% of the slab on ground area will have a thickness that exceeds the thickness shown on the drawings minus 1/2 inch. Thickness samples are to be randomly located from each slab placement and not exceed 20,000 square feet of slab surface area.

D. Floor Finished Surface Flatness and Levelness:
1. All slabs shall conform to the following tolerances as measured in accordance with ASTM E 1155.
2. Overall and local values for flatness and levelness are specified in “03 35 11 BSD-Concrete Floor Finishes.”
a. Bound individual floor sections for testing purposes by the following that provide the smallest sections: construction joints, column.
1) Start testing sections as soon as possible as they become available after slab finishing operations, so as not to impede the slab curing process.
(a) Additional Requirements:
(1) Conform to F-numbers specified.
(2) Limit to 1/4-inch maximum elevation change that may occur within 2 feet of vertical elements (such as columns or walls) that pass through slab surface.
(3) If test data indicates areas within 10% of Minimum Local Value, additional testing shall be performed to identify possible out of tolerance areas.
(4) Remedies for Out-of-Tolerance Work:
(5) Remove and replace slabs-on-ground measuring below the specified minimum local F-numbers, unless approved by Owner. If allowed to stay in place, remedy out-of-tolerance work as required by Owner.
(6) If entire project floor, when completed, fails to meet or exceed the specified overall F-numbers, then remedy entire floor as required by Owner.
(7) Elevation Envelope: Provide top of entire slab-on-ground within + or - 3/4 of an inch of finished floor elevation shown on Drawings.
(8) Cost Responsibility: Costs for corrective work and extra testing required by defective work born by Contractor.
(9) Anchor Bolt and Other Embedment Placements:
(10) 1/8 inch center to center of any 2 anchor bolts or other embedments within group.
(11) 1/4 inch center to center of adjacent groups.
(12) 1/4 inch within specified elevation.
(13) Slab on Ground Dowels:
(14) 0.075 inch maximum in dowel straightness.
(15) Plus or minus 1/8 inch in dowel alignment in vertical and horizontal planes.

1.09 ENVIRONMENTAL CONDITIONS

A. Concreting in Hot, Dry and/or Windy Weather:

1. Employ methods to avoid cracking when the concrete rate of evaporation exceeds 0.2 pounds per square foot per hour or when any combination of concrete materials and weather conditions are favorable for the formation of plastic shrinkage cracks.
2. Maintain an accurate thermometer at the job site to check temperature of concrete.
3. Unless otherwise allowed, reject concrete if its temperature before placement is over 90°F.
4. Unless otherwise allowed, during hot weather mixing and delivery (discharge) time to be shorter than specified in ASTM C 94 as follows:
    a. When air temperature is between 85°F and 90°F, reduce allowable mixing and delivery time from 90 minutes to 75 minutes.
    b. When air temperature is over 90°F, reduce allowable mixing and delivery time to 60 minutes.
        1) Do not place concrete when forms, subgrade, base, or reinforcing bars are more than 120°F or more than 10°F hotter than ambient air temperature.
            (a) Cool with water or water-soaked burlap as necessary, but allow no standing water on surface on which concrete is placed.
            (b) Concreting in Cold Weather:
                (1) Conform to ACI 306.1 when temperature and other environmental conditions are as noted therein and following additional requirements:
                (2) Frost susceptible soil shall be replaced with non-frost susceptible soil below the slabs to the depth determined by the Geotechnical Engineer.
                (3) Frozen base and subgrade soils shall be thawed immediately before placing concrete.
                (4) Do not place slabs on subgrade, or base that are more than 20°F cooler than concrete. Warm subgrade, or base to decrease temperature differential to 20°F or less.
            (c) Precipitation Protection: Protect surfaces of expose concrete from precipitation until adequate strength is gained to prevent damage.

1.10 PROJECT CONDITIONS

A. No satisfactory chemical or cleaning procedure is available to remove petroleum stains from the concrete surface. Prevention is therefore essential.
    1. No motorized vehicles will be allowed on slabs without proper protection for wheels and oil or hydraulic reservoirs to eliminate oil drips and avoid staining of the concrete.
    2. No trade will park vehicles on the inside slab. If necessary to complete their scope of work, drop cloths will be placed under vehicles at all times.
    3. No pipe cutting machine will be used on the inside floor slab.
    4. Steel will not be placed on interior slabs to avoid rust staining.

1.11 MOCK-UP

A. Construct and erect mock-up panel for architectural concrete surfaces indicated to receive special treatment or finish as result of formwork.
    1. Panel Size: Sufficient to illustrate full range of treatment.
    2. Panel Size: 6 by 6 feet (2 by 2 meters).
    3. Panel Size: As indicated on drawings.
    4. Number of Panels: Two.
    5. Locate as indicated on drawings.
        a. If requested by Architect, cast concrete against mock-up panel. Obtain acceptance of resulting surface finish prior to erecting formwork.
            1) Accepted mock-up panel is considered basis of quality for the finished work. Keep mock-up exposed to view for duration of concrete work.
                (a) Mock-up may remain as part of the Work.

1.12 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Slabs with Moisture Vapor Reducing Admixture (MVRA): Provide warranty to cover cost of flooring failures due to moisture migration from slabs for life of the concrete.

1. Include cost of repair or removal of failed flooring, placement of topical moisture remediation system, and replacement of flooring with comparable flooring system.
2. Provide warranty by manufacturer of MVRA matching terms of flooring adhesive or primer manufacturer's material defect warranty.
    a. Moisture Emission-Reducing Curing and Sealing Compound, Membrane-Forming: Provide warranty to cover cost of flooring delamination failures for 10 years.
        1) Include cost of repair or removal of failed flooring, remediation with a moisture vapor impermeable surface coating, and replacement of flooring with comparable flooring system.
            (a) Moisture Emission-Reducing Curing and Sealing Compound, Penetrating: Provide non-
                (1) prorated warranty to cover cost of flooring delamination failures for 20 years.
                (2) Include cost of repair or removal of failed flooring, remediation with a moisture vapor impermeable surface coating, and replacement of flooring with comparable flooring system.
            (b) Termite-Resistant Vapor Barrier Sheet: Provide five year manufacturer's limited warranty.

PART 2 PRODUCTS

2.01 FORMWORK

A. Comply with requirements of Section 03 10 00.

B. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.
    1. Include 7.5 pcy in locations noted on Drawings.
        a. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
            1) Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
                (a) Form Facing for Exposed Finish Concrete: Steel.
                    (1) Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms.
                    (2) Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
                    (3) Form Ties: Cone snap type that will leave no metal within 1-1/2 inches (38 mm) of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Comply with requirements of Section 03 20 00.

B. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
    1. Type: Deformed billet-steel bars.
    2. Finish: Unfinished, unless otherwise indicated.
    3. Finish: Galvanized in accordance with ASTM A767/A767M, Class I, unless otherwise indicated.
    4. Finish: Epoxy coated in accordance with ASTM A775/A775M, unless otherwise indicated.
        a. Steel Welded Wire Reinforcement (WWR): Galvanized, plain type, ASTM A1064/A1064M.
            1) Form: Coiled Rolls.
                (a) WWR Style: 4 x 8-W6 x W10 (102 x 203-MW39 x MW65).
                (b) Reinforcement Accessories:
                    (1) Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch (1.29 mm).
                    (2) Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

(3) Provide stainless steel, galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches (38 mm) of weathering surfaces.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I or Type III Normal Portland, natural color, domestic manufacturer.
   1. Acquire cement for entire project from same source.
      a. Blended, Expansive Hydraulic Cement: ASTM C845/C845M, Type K.
         1) Manufacturers:
            (a) CTS Cement Manufacturing Corporation; Type K Cement.
               (1) Euclid Chemical Company; EUCON MSA.
               (2) Substitutions: See Section 01 60 00 - Product Requirements.
            (b) Normal Weight Aggregate - Fine and Coarse Aggregates: ASTM C33/C33M except as modified herein.
            (c) For exposed exterior surfaces, do not use fine or coarse aggregates that contain
            (d) substances that cause spalling.
               (1) Do not use manufactured sand for slabs unless blended with natural sand or otherwise allowed.
               (2) For slab-on-grade design mix, conform to the following:
               (3) Gradation requirement of ASTM C33 shall be waived in order to meet ranges specified. The conformance with the combined aggregate gradation requirements is of higher priority than meeting ASTM C33 aggregate gradation tolerances alone.
               (4) Nominal maximum size coarse aggregate required in mi design shall be 1-1/2 inch (#467 stone).
               (5) Adjust proportions of combined coarse, intermediate, and fine aggregate to provide the following particle size distribution characteristics, unless otherwise approved:
               (6) Coarseness Factor of 60 to 75%.
               (7) The Coarseness factor (CF) is the percent of combined aggregate retained on the #8 sieve that is also retained on the 3/" sieve.
               (8) he Coarseness Factor is calculated as follows: CF = Aggregate retained on 3/8" sieve / Aggregate retained on #8 sieve.
               (9) Adjusted Workability Factor:
               (10) The workability Factor (WF) is the percent of combined aggregate that passes the #8 sieve.
               (11) he Adjusted Workability Factor (Adj-WF) is calculated as follows: Adj-WF = WF + [(Cementitious Material - 564 lbs) / 37.6].
               (12) The range of accepted Adj-WF for a given CF is as follows: Adj-WF = [(11.25-.15CF) + 35] + or - 2.5.
               (13) Of total combined coarse and fine aggregates per mix design, do not allow material retained on any one sieve to be less than 6% nor more than 24% of total by weight, except for largest sieve and No. 100 sieves.
               (14) Maintain percent of total combined aggregates retained on largest sieve at 1% to 4%.
               (15) Maintain percent of total combined aggregates retained on No. 100 sieve at 1.5% to 5%.
               (16) For actual field samples ensure total combined aggregates conform to limits specified herein.
               (17) Accepted deviations from the above combined gradation are as follows:
               (18) Never shall three (3) adjacent sieve sizes fall below 6% retained.

(19) Never shall two (2) adjacent sieve sizes fall below 5% retained.
(20) Acquire aggregates for entire project from same source.

(e) Lightweight Aggregate: ASTM C330/C330M.

(f) Aggregate used for slab-on-grade mix shall have proven shrinkage characteristics of less than 0.04% in accordance with ASTM C 157 as modified therein.
   (1) Document slump, air, and temperature of the mixture at the time of mixing - attempt to simulate field conditions.
   (2) The test mix should include any/all admixtures anticipated at the dosage anticipated. If multiple dosages are possible, test mixes including each potential dosage or test mixtures including the high and low range of the potential dosage. Three beams are required for each mixture.
   (3) The test beams should be 4" X 4" X 11.25" as 1.5" aggregate is included in the mix - Section 7.2 of ASTM C-157. Record consolidation procedure.
   (4) In lieu of the specified 28-day soak in lime-saturated water bath, moist-cure beams in moist room maintained at 100% RH for a period of 7 days. Other than this modification, follow the procedure in Section 10.2 to record the initial comparator reading.
   (5) After curing, store beams dry (50% RH and 73°F as specified in Section 11.1.2 of ASTM C-157) and record length measurements using the same comparator used for the initial reading at 3, 7, 14, 21 and 28 days. Document each sample length measurement as well as its initial measurement.
   (6) Continue storage of samples and record additional verification length measurements at 8, 16, 32 and 64 weeks in accordance with Section 11.1.2 of ASTM C-157.
   (7) At each test age, report results in accordance with Section 13 ASTM C-157. Report should include mixture proportions, data for each sample, and ambient conditions of storage room during drying period.

(g) Do not use manufactured sand for slabs unless blended with natural sand or otherwise allowed.

(h) Slag: ASTM C989 Minimum 20%
   (1) Slag: Maximum 30%. This range is acceptable even if final mix exceeds 100 lbs per cubic yard of concrete.

(i) Fly Ash:
   (1) ASTM C618, C or F may be used in concrete mixes with the exception of foundations. For foundation mixes, ASTM C618 F Fly ash is to be used.
   (2) Fly ash will not be allowed in architectural concrete.
   (3) Quantity of fly ash allowable shall not exceed 100 lbs per cu yd of concrete, incorporated to replace an equivalent quantity of cement.
   (4) Maximum 20%. This range is acceptable even if final mix exceeds 100 lbs per cubic yard of concrete.

(j) Waterproofing Additive: Crystalline waterproofing intended for mixing into concrete to close concrete pores by growth of crystals, with no decrease in concrete strength or chemical resistance.
   (1) Permeability of Cured Concrete: No measurable leakage when tested in accordance with COE CRD-C 48 at 350 feet of head; provide test reports.
   (2) Potable Water Contact Approval: NSF certification for use on structures holding potable water, based on testing in accordance with NSF 61.
   (3) Manufacturer:

(4) Xypex Chemical Corporation. Product and dosage rate as recommended by the manufacturer for this mix design.

(k) Calcined Pozzolan: ASTM C618, Class N.

(l) Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.

2.04 ADMIXTURES

A. Chemical Admixture:

1. Manufacturers:
   a. Euclid Chemical Company
   b. Sika Chemical Corporation
   c. Substitutions: See Section 01 60 00 - Product Requirements.
      1) Air Entrainment Admixture: ASTM C260/C260M.
         (a) Manufacturers:
            (1) Euclid Chemical Company
            (2) Sika Chemical Corporation
            (3) Substitutions: See Section 01 60 00 - Product Requirements.
            (4) Use air-entering admixture in all concrete, providing, not less than 4 percent nor more than 6 percent entrained air for concrete exposed to freezing and thawing, and from 2 percent to 4 percent for other concrete.
         (b) High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
            (1) Manufacturers:
            (2) Euclid Chemical Company
            (3) Sika Chemical Corporation
            (4) Substitutions: See Section 01 60 00 - Product Requirements.
            (5) High Range Water Reducing Admixture: ASTM C494/C494M Type F.
            (6) Manufacturers:
            (7) a. Euclid Chemical Company
            (8) b. Sika Chemical Corporation
            (9) c. Substitutions: See Section 01 60 00 - Product Requirements.
         (c) Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.
            (1) Manufacturers:
            (2) Euclid Chemical Company
            (3) Sika Chemical Corporation
            (4) Substitutions: See Section 01 60 00 - Product Requirements.
         (d) Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
            (1) Provide pigmented type, with ASTM C979/C979M inorganic pigments.
            (2) Manufacturers:
            (3) Euclid Chemical Company
            (4) Sika Chemical Corporation
            (5) Substitutions: See Section 01 60 00 - Product Requirements
         (e) Accelerating Admixture: ASTM C494/C494M Type C.
            (1) Manufacturers:
            (2) W. R. Meadows, Inc
            (3) Euclid Chemical Company
            (4) Sika Chemical Corporation
            (5) Substitutions: See Section 01 60 00 - Product Requirements.
         (f) Retarding Admixture: ASTM C494/C494M Type B.
            (1) Manufacturers:
            (2) Euclid Chemical Company
            (3) Sika Chemical Corporation
            (4) Substitutions: See Section 01 60 00 - Product Requirements.
         (g) Water Reducing Admixture: ASTM C494/C494M Type A.
            (1) Manufacturers:

(2) Euclid Chemical Company
(3) Sika Chemical Corporation
(4) Substitutions: See Section 01 60 00 - Product Requirements.

(h) Shrinkage Reducing Admixture:
(1) ASTM C494/C494M, Type S.
(2) Manufacturers:
(3) Euclid Chemical Company
(4) Sika Chemical Corporation
(5) Substitutions: See Section 01 60 00 - Product Requirements.

(i) Shrinkage Compensating Admixture: For on site production of concrete with ASTM C845/C845M, Type K cement.
(1) Manufacturers:
(2) Euclid Chemical Company
(3) Sika Chemical Corporation
(4) Substitutions: See Section 01 60 00 - Product Requirements.

(j) Shrinkage Compensating Admixture with Fiber Reinforcement: For on site production of concrete with ASTM C845/C845M, Type K cement with integral fiber reinforcement.
(1) Manufacturers:
(2) Euclid Chemical Company
(3) Sika Chemical Corporation
(4) Substitutions: See Section 01 60 00 - Product Requirements.

(k) Corrosion Inhibiting Admixture:
(1) 1. ASTM C494/C494M, Type C.
(2) 2. ASTM C1582/C1582M.
(3) 3. Manufacturers:
(4) Euclid Chemical Company
(5) GCP Applied Technologies
(6) Hycrete, Inc
(7) Substitutions: See Section 01 60 00 - Product Requirements.
(8) The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as one using electrical potential measures.

(l) Microbiologically-Induced Corrosion Inhibiting Admixture: Resists growth of bacteria and fungi on or inside concrete.
(1) Manufacturers:
(2) ConShield Technologies, Inc
(3) Sika Chemical Corporation
(4) Substitutions: See Section 01 60 00 - Product Requirements.

(m) Moisture Vapor Reducing Admixture (MVRA): Liquid, inorganic admixture free of volatile organic compounds (VOCs) and formulated to close capillary systems formed during curing to reduce moisture vapor emission and transmission with no adverse effect on concrete properties or finish flooring.
(1) Provide admixture in slabs to receive adhesively applied flooring.
(2) Manufacturers:
(3) Barrier One, Inc.
(4) Euclid Chemical Company
(5) Hycrete, Inc
(6) ISE Logik Industries, Inc
(7) Substitutions: See Section 01 60 00 - Product Requirements.

(n) Waterproofing Admixture: Admixture formulated to reduce permeability to liquid water, with no adverse effect on concrete properties.
(1) Admixture Composition:

(2) Crystalline, functioning by growth of crystals in capillary pores.
(3) Hydrophobic polymer waterproofing and corrosion inhibitor, functioning by closing concrete pores and chemical bonding.
(4) Permeability of Cured Concrete: No measurable leakage when tested in accordance with COE CRD-C 48 at 200 psi (1.38 MPa); provide test reports.
(5) Potable Water Contact Approval: National Science Foundation (NSF) certification for use on structures holding potable water, based on testing in accordance with NSF 61 and NSF 372
(6) Manufacturers:
(7) Euclid Chemical Company
(8) W. R. Meadows, Inc
(9) Sika Chemical Corporation
(10) Substitutions: See Section 01 60 00 - Product Requirements.

(o) Waterproofing Admixture System: Admixture formulated to reduce permeability to liquid water, with no adverse effect on concrete properties; includes manufacturer-provided field services and performance warranty.
(1) Potable Water Contact Approval: National Science Foundation (NSF) certification for use on structures holding potable water, based on testing in accordance with NSF 61 and NSF 372
(2) Manufacturers:
(3) Hycrete, Inc
(4) Euclid Chemical Company
(5) Sika Chemical Corporation
(6) Substitutions: See Section 01 60 00 - Product Requirements.

2) Integral Hardening Admixture: Dry powder added to concrete during batching.
(a) Manufacturers:
(1) Kryton International, Inc
(2) Euclid Chemical Company
(3) Sika Chemical Corporation
(4) Substitutions: See Section 01 60 00 - Product Requirements.
(5) Non-Corrosive, Non-Chloride Accelerator: The admixture shall conform to ASTM C494, Type C or E, and not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term, non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as one using electrical potential measures.
(6) Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
(b) Prohibited Admixture: Calcium chloride, thiocyanates or admixtures containing more than 0.05% chloride ions are not permitted.
(c) Certification: Written conformance to the above-mentioned requirements and the chloride ion content of the admixture will be required from the admixture manufacturer prior to mix design review by the Engineer.

2.05 ACCESSORY MATERIALS

A. Underslab Vapor Retarder:
1. Installation: Comply with ASTM E1643.
2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
3. Manufacturers:
a. Fortifiber Building Systems Group
b. Inteplast Group
c. ISI Building Products

d. Stego Industries, LLC
e. W. R. Meadows, Inc
f. Substitutions: See Section 01 60 00 - Product Requirements.
    1) Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
        (a) Grout: Comply with ASTM C1107/C1107M.
            (1) Height Change, Plastic State; when tested in accordance with ASTM C827/C827M:
            (2) Maximum: Plus 4 percent.
            (3) Minimum: Plus 1 percent.
            (4) Minimum Compressive Strength at 48 Hours, ASTM C109/C109M: 2,000 pounds per square inch (13.7 MPa).
            (5) Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch (48 MPa).
            (6) Products containing aluminum powder are not permitted.
            (7) Flowable Products:
            (8) Dayton Superior Corporation
            (9) Euclid Chemical Company
            (10) The QUIKRETE Companies
            (11) SpecChem, LLC
            (12) W. R. Meadows, Inc
            (13) Substitutions: See Section 01 60 00 - Product Requirements.
            (14) Low-Slump, Dry Pack Products:
            (15) Euclid Chemical Company
            (16) Dayton Superior Corporation
            (17) The QUIKRETE Companies
            (18) SpecChem, LLC
            (19) W. R. Meadows, Inc
            (20) Substitutions: See Section 01 60 00 - Product Requirements.
    2) Non-Shrink Epoxy Grout: Moisture-insensitive, two-part; consisting of epoxy resin, non-metallic aggregate, and activator.
        (a) Composition: High solids content material exhibiting positive expansion when tested in accordance with ASTM C827/C827M.
            (1) Maximum Height Change: Plus 4 percent.
            (2) Minimum Height Change: Plus 1 percent.
            (3) Minimum Compressive Strength at 7 days, ASTM C579: 12,000 pounds per square inch (82.7 MPa).
            (4) Manufacturers:
            (5) Euclid Chemical Company
            (6) Dayton Superior Corporation
            (7) Five Star Products, Inc
            (8) SpecChem, LLC
            (9) W. R. Meadows, Inc
            (10) Substitutions: See Section 01 60 00 - Product Requirements.
        (b) Heavy Duty, Abrasion-Resistant Concrete Floor Topping:
            (1) Manufacturers:
            (2) Euclid Chemical Company
            (3) L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc
            (4) Substitutions: See Section 01 60 00 - Product Requirements.
        (c) Architectural Concrete Floor Topping and Resurfacer:
            (1) Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 6,500 pounds per square inch (45 MPa).

(2) Compressive Strength: Minimum 5000 pounds per square inch (34.5 MPa), tested per ASTM C472.
(3) Manufacturers:
(4) CTS Cement Manufacturing Corporation
(5) SpecChem, LLC
(6) Substitutions: See Section 01 60 00 - Product Requirements.

(d) Non-Shrink Epoxy Chocking Compound:
(1) Manufacturers:
(2) Dayton Superior Corporation
(3) Kaufman Products Inc
(4) Substitutions: See Section 01 60 00 - Product Requirements.

2.06 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
1. Manufacturers:
a. Euclid Chemical Company
1) Kaufman Products Inc
2) SpecChem, LLC
3) W. R. Meadows, Inc
4) Substitutions: See Section 01 60 00 - Product Requirements.
5) B. Epoxy Bonding System:

B. Complying with ASTM C881/C881M and of Type required for specific application.

C. Manufacturers:
1. Adhesives Technology Corporation
2. Euclid Chemical Company
3. Dayton Superior Corporation
4. Kaufman Products Inc
5. W. R. Meadows, Inc
6. Substitutions: See Section 01 60 00 - Product Requirements.

2.07 ACETATE BONDING AGENT: NON-REDISPERSABLE POLYVINYL ACETATE.

A. Manufacturers:
1. Larsen Products Corp
a. Substitutions: See Section 01 60 00 - Product Requirements.
1) Silane Hybrid Anchoring System:
(a) Complying with ASTM C881/C881M and of Type required for specific application.
(1) Manufacturers:
(2) Adhesives Technology Corporation
(3) Substitutions: See Section 01 60 00 - Product Requirements.

(b) Waterproofing Admixture Slurry: Slurry coat of Portland cement, sand, and crystalline waterproofing additive, mixed with water in proportions recommended by manufacturer to achieve waterproofing at cold joints in concrete.
(1) Manufacturers:
(2) Aquafin, Inc
(3) W. R. Meadows, Inc
(4) Xypex Chemical Corporation
(5) Substitutions: See Section 01 60 00 - Product Requirements.

(c) Waterstops: Rubber, complying with COE CRD-C 513.
(1) Configuration: As indicated on drawings.
(2) Size: As indicated on drawings.
(3) Manufacturers:

(4) BoMetals, Inc
(5) Substitutions: See Section 01 60 00 - Product Requirements.

(d) Waterstops: PVC, complying with COE CRD-C 572.
(1) Configuration: As indicated on drawings.
(2) Size: As indicated on drawings.
(3) Manufacturers:
(4) BoMetals, Inc
(5) Substitutions: See Section 01 60 00 - Product Requirements.

(e) Waterstops: Bentonite and butyl rubber, complying with NSF 61 and NSF 372.
(1) Configuration: As indicated on drawings.
(2) Size: As indicated on drawings.
(3) Manufacturers:
(4) CETCO, a division of Minerals Technologies Inc; WATERSTOP RX.
(5) Substitutions: See Section 01 60 00 - Product Requirements.

(f) Waterstops, Chemical-Resistant: Extruded, thermoplastic, virgin rubber; no recycled or reclaimed material or pigments allowed.
(1) Chemical Resistance: Tested in accordance with ASTM D471.
(2) Configuration: As indicated on drawings.
(3) Size: As indicated on drawings.
(4) Manufacturers:
(5) a. BoMetals, Inc
(6) b. Substitutions: See Section 01 60 00 - Product Requirements.

2) J. Waterstops: Synthetic rubber; swells to 1000 percent of original size in clean water.
(a) Configuration: As indicated on drawings.
(b) Size: As indicated on drawings.
(c) Manufacturers:
(1) Kryton International, Inc
(2) Substitutions: See Section 01 60 00 - Product Requirements.
(3) Reglets: Formed steel sheet, galvanized, with temporary filler to prevent concrete intrusion during placement.
(4) Size: As indicated on drawings.
(5) Size: 1/2 inch (13 mm) throat, 1/2 inch (13 mm) deep.

(d) Slab Isolation Joint Filler: 1/2 inch (13 mm) thick, height equal to slab thickness, with removable top section that will form 1/2 inch (13 mm) deep sealant pocket after removal.
(1) Material: ASTM D1751, cellulose fiber.
(2) Material: ASTM D1752, sponge rubber (Type I).
(3) Material: ASTM D8139, semi-rigid, closed-cell polypropylene foam.
(4) Material: Closed-cell, non-absorbent, compressible polymer foam in sheet form.
(5) Manufacturers:
(6) Nomaco, Inc
(7) W. R. Meadows, Inc
(8) Substitutions: See Section 01 60 00 - Product Requirements.

(e) Slab Contraction Joint Device: Preformed linear strip intended for pressing into wet concrete to provide straight route for shrinkage cracking.
(1) Manufacturers:
(2) W. R. Meadows, Inc
(3) Substitutions: See Section 01 60 00 - Product Requirements.

(f) Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with rectangular or round knockout holes for conduit or

rebar to pass through joint form at 6 inches (150 mm) on center; ribbed steel stakes for setting.
(1) Provide removable plastic cap strip that forms wedge-shaped joint for sealant installation.
(2) Height: To suit slab thickness.
(3) Manufacturers:
(4) BoMetals, Inc
(5) Substitutions: See Section 01 60 00 - Product Requirements.

(g) Dowel Sleeves: Plastic sleeve for smooth, round, steel load-transfer dowels.
(1) Manufacturers:
(2) BoMetals, Inc
(3) Substitutions: See Section 01 60 00 - Product Requirements.

(h) Plate Dowel System: Steel plate dowel and plastic dowel sleeve; with integral fasteners for attachment to formwork.
(1) 1. Manufacturers:
(2) BoMetals, Inc
(3) Substitutions: See Section 01 60 00 - Product Requirements.
(4) Q. Bonding Admixture:
(5) 1. Type: latex, non-rewettable type
(6) 2. Manufacturers:
(7) Dayton superior
(8) Euclid Chemical Company

2.08 BONDING COMPOUND

A. Type: polyvinyl acetate, re-wettable. For interior use only in areas not subject to moisture.

B. Manufacturers:
1. Dayton Superior
2. Euclid Chemical Company

2.09 EPOXY ADHESIVE

A. Type: two (2) component, 100% solids, and 100% reactive compound suitable for use on dry or damp surfaces.

B. Manufacturers:
1. Dayton Superior
2. Euclid Chemical Company
3. Sika Chemical Corp
a. Polymer Repair Mortar:
1) Type: Polymer and microsilicia modified cementitious-based compounds.
(a) Manufacturers (horizontal):
(1) Dayton Superior
(2) Euclid Chemical Company
(3) Sika Chemical Corporation
(4) Manufacturers (vertical):
(5) Dayton Superior
(6) Euclid Chemical Company
(7) Sika Chemical Corporation

2.10 CRACK REPAIR MATERIAL

A. Cracks greater than 1/8 inch and less than 3/4 inch: Semi-rigid epoxy joint filler.
1. Manufacturers:
a. Metzger McGuire
b. Roadware, Inc
1) Cracks less than 1/8 inch: Structural polymer adhesive.
(a) Manufacturers:

(1) Metzger McGuire
(2) Roadware, Inc
(3) Select product color from manufacturers full range to closely match concrete color.

2.11 SPALL REPAIR MATERIAL

A. Spalls greater than 4 inches (in any one direction): Epoxy mortar.
1. Manufacturers:
a. Metzger McGuire
b. SpecChem
1) Physical properties before mixing with aggregate:
(a) Shore D Hardness: 86 (+ or - 5)
(1) Compressive Strength: 10,500 PSI
(2) Tensile Strength: 1,400 PSI
(b) Spalls Less than 4inches (in both directions): Structural polymer adhesive.
(1) Manufacturers:
(2) Metzger McGuire
(3) Physical Properties
(4) Shore D Hardness: 86 (+/-5)
(5) Compressive Strength: 4,000 PSI
(6) Tensile Strength: 5,000 PSI
(7) Color: Select color from manufacturers full range to closely match concrete color.
(8) Sand Aggregate for Crack, Spall and Joint Repair: Use fine, oven-dried, washed silica sand ranging from 20 to 40. Color of sand when added to repair material shall closely match concrete floor color.

2.12 EVAPORATION RETARDER

A. Evaporation Retarder - Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement.
1. Manufacturers:
a. Dayton Superior
1) Euclid
(a) L & M
(1) Nox-Crete
(2) Sonneborn
(3) SpecChem

2.13 CURING MATERIALS

A. Evaporation Reducer: Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement.
1. Manufacturers:
a. Dayton Superior Corporation
b. Euclid Chemical Company
c. Kaufman Products Inc
d. Nox-Crete Inc
e. SpecChem, LLC
f. W. R. Meadows, Inc
g. Substitutions: See Section 01 60 00 - Product Requirements.
1) Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309. Clear or translucent, Class B. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft/gal. VOC compliant.)
(a) Product dissipates within 4 to 6 weeks.

(1) Provide product containing fugitive red dye.
(2) Product shall be compatible with tilt-up bond breaker, floor hardeners, sealers, and floor coverings.
(3) Product shall be easily removable from slab surface if film forming, and if used under building cover and not exposed to UV light.
(4) Manufacturers:
(5) Dayton Superior Corporation
(6) Euclid Chemical Company
(7) Kaufman Products Inc
(8) Nox-Crete Inc
(9) SpecChem, LLC
(10) W. R. Meadows, Inc
(11) Substitutions: See Section 01 60 00 - Product Requirements.

(b) Curing Agent, Water-Cure Equivalent Type: Clear, water-based, non-film-forming, liquid-water cure replacement agent.
(1) 1. Comply with ASTM C309 standards for water retention.
(2) 2. Compressive Strength of Treated Concrete: Equal to or greater than strength after
(3) 28-day water cure when tested according to ASTM C39/C39M.
(4) 3. VOC Content: Zero.
(5) 4. Manufacturers:
(6) Sinak Corporation
(7) Substitutions: See Section 01 60 00 - Product Requirements.

2.14 CURING AND ANTI-SPALLING COMPOUND: BOILED LINSEED OIL COMPOUND.

A. Application: Use on roadway, bridge deck, parking deck, and ramps.

B. Manufacturers:
1. Dayton Superior Corporation
2. Euclid Chemical Company
3. W. R. Meadows, Inc
4. Substitutions: See Section 01 60 00 - Product Requirements.
5. Wax Curing Compound: Water-based liquid, white pigmented, membrane-forming.
a. Manufacturers:
1) Dayton Superior Corporation
2) Euclid Chemical Company
3) Kaufman Products Inc
4) Nox-Crete Inc
5) Substitutions: See Section 01 60 00 - Product Requirements.
(a) Resin Curing Compound: Solvent-based liquid, white pigmented, membrane-forming.
(1) For use on exterior slabs. When slab will be painted, sealed, topped, or receive other applied finish, completely remove curing compound after curing is complete and before finish coatings are applied.
(2) Comply with ASTM C309, Type 2, Classes A and B.
(3) VOC Content: Less than 350 g/L.
(4) Solids Content: 20 percent, minimum.
(5) Manufacturers:
(6) Dayton Superior Corporation
(7) Euclid Chemical Company
(8) Kaufman Products Inc
(9) Substitutions: See Section 01 60 00 - Product Requirements.
(b) Low-Solids, Non-Membrane-Forming, Silicate Curing Compound: Water-based, reactive silicate, non-membrane-forming liquid with red fugitive dye.

(1) Manufacturers:
(2) Nox-Crete Inc; Bro-Cure.
(3) Substitutions: See Section 01 60 00 - Product Requirements.

(c) Curing and Sealing Compound, Moisture Emission-Reducing, Membrane-Forming: Liquid, membrane-forming, clear sealer, for application to newly-placed concrete; capable of providing adequate bond for flooring adhesives, initially and over the long term; with sufficient moisture vapor impermeability to prevent deterioration of flooring adhesives due to moisture emission.
(1) Use this product to cure and seal all slabs to receive adhesively applied flooring or roofing.
(2) Comply with ASTM C309 and ASTM C1315 Type I Class A.
(3) VOC Content: Less than 100 g/L.
(4) Solids Content: 25 percent, minimum.
(5) Manufacturers:
(6) Floor Seal Technology, Inc
(7) Nox-Crete Inc
(8) Substitutions: See Section 01 60 00 - Product Requirements.

6) Curing and Sealing Compound, Moisture Emission-Reducing, Penetrating: Liquid for application to newly-placed concrete; capable of providing adequate bond for flooring adhesives, initially and over the long term; with sufficient moisture vapor impermeability to prevent deterioration of flooring adhesives due to moisture emission, moisture vapor emission, and alkalinity.
(a) 1. Use this product to cure and seal all slabs to receive adhesively applied flooring or roofing.
(b) 2. Compressive Strength of Treated Concrete: Equal to or greater than strength after 28-day water
(c) cure when tested according to ASTM C39/C39M.
(1) Comply with ASTM C309 and ASTM C1315 Type I Class A.
(2) VOC Content: Zero.
(3) UL GREENGUARD Gold certified.
(4) Manufacturers:
(5) Sinak Corporation
(6) Substitutions: See Section 01 60 00 - Product Requirements.
(7) Curing Compound, Non-dissipating: Liquid, membrane-forming, clear, non-yellowing acrylic; complying with ASTM C309.
(8) Vehicle: Water-based.
(9) Gloss: Low.
(10) Solids by Mass: 15 percent, minimum.
(11) VOC Content: OTC compliant.
(12) Manufacturers:
(13) BRICKFORM
(14) Dayton Superior Corporation
(15) Kaufman Products Inc
(16) L&M Construction Chemicals, Inc.
(17) Nox-Crete Inc
(18) The QUIKRETE Companies
(19) SpecChem, LLC
(20) Surface Koatings
(21) United Gilsonite Laboratories
(22) W. R. Meadows, Inc
(23) Substitutions: See Section 01 60 00 - Product Requirements.

(d) Curing and Sealing Compound, Low Gloss: Liquid, membrane-forming, clear, non-yellowing acrylic; complying with ASTM C1315 Type 1 Class A.
(1) Vehicle: Water-based.

(2) Solids by Mass: 25 percent, minimum.
(3) VOC Content: OTC compliant.
(4) Manufacturers:
(5) Clemons Concrete Coatings
(6) Concrete Sealers USA
(7) Dayton Superior Corporation
(8) Euclid Chemical Company
(9) Kaufman Products Inc
(10) Surface Koatings, Inc
(11) W. R. Meadows, Inc
(12) Substitutions: See Section 01 60 00 - Product Requirements.

(e) Curing and Sealing Compound, High Gloss: Liquid, membrane-forming, clear, non-yellowing acrylic; complying with ASTM C1315 Type 1 Class A.
(1) Vehicle: Solvent-based.
(2) Solids by Mass: 25 percent, minimum.
(3) VOC Content: Ozone Transport Commission (OTC) compliant.
(4) Manufacturers:
(5) a. BRICKFORM
(6) b. Kaufman Products Inc
(7) c. Nox-Crete Inc
(8) d. SpecChem, LLC
(9) e. W. R. Meadows, Inc
(10) f. Substitutions: See Section 01 60 00 - Product Requirements.

2.15 MOISTURE-RETAINING SHEET: ASTM C171.

A. Curing paper, regular.

B. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch (0.102 mm).

C. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard (1.71 kg/sq m).

D. Manufacturers:
1. Transhield, Inc
2. Substitutions: See Section 01 60 00 - Product Requirements.

2.16 POLYETHYLENE FILM: ASTM D2103, 4 MIL, 0.004 INCH (0.102 MM) THICK, CLEAR.

2.17 WATER: POTABLE, NOT DETRIMENTAL TO CONCRETE.

2.18 MIX DESIGNS

2.19 ESTABLISH MIX DESIGNS FOR NORMAL WEIGHT CONCRETE BY USING ONE OF THE FOLLOWING METHODS:

A. Field experience method.

B. Laboratory verification method.

C. Water/cement ratio method.
1. The following classes of concrete are required:

CLASSES	MINIMUM DESIGN COMPRESSIVE STRENGTH AT 28 DAYS	WEIGHT	SLUMP	MAX. W/C
A	3,000 PSI	120-140 PCF	4" +/- 1"	0.50
B	3,500 PSI	140-150 PCF	4" +/- 1"	0.50
C	4,000 PSI	140-150 PCF	4" +/- 1"	0.45

D	5,000 PSI	140-150 PCF	4" +/- 1"	0.40
E	6,000 PSI	140-150 PCF	4" +/- 1"	0.40

A. Design mixes to provide normal weight concrete with the following properties:
   1. Footings:
      a. 28-Day Strength: 4,000 psi minimum.
      b. Slump Range: 4 inch +/- 1 inch.
      c. Admixtures: None required
         1) Interior Slab-on-Grade:
            (a) 28-Day Strength: 4,000 psi minimum.
               (1) Top Size Aggregate Included: 1 1/2 inches.
               (2) Max. W/C Ratio: 0.45.
               (3) Slump Range: 4.5 inches +/- 1 inch. Concrete with a slump as measured per ASTM C143 exceeding 5.5 inches at the point of deposit on the sub-base shall be rejected.
               (4) Admixtures:
               (5) Water-reducing, 6 oz./100 lbs. cement max.
               (6) Accelerating permissible when ambient air temperature less than 40° F, quantity as approved by Engineer.
               (7) Time of Setting: Initial setting time shall not exceed 400 minutes as determined by ASTM C403 for a laboratory sample representing the submitted mix design, admixture dosages, and concrete temperature of 60° F +/- 5° F. Only one specimen or time of setting test is required per sample. If more than one test is performed per sample, report average times of initial setting. Test shall be performed by an independent testing agency selected by, and as a responsibility of, the Concrete Supplier.
               (8) 3. Cooling Tower Basins:
               (9) 28-Day Strength: 5,000 psi minimum.
               (10) Max. Required Aggregate Size: 1 inch.
               (11) Max. W/C Ratio: 0.40.
               (12) Slump Range: 4 inch +/- 1 inch.
               (13) Admixtures:
               (14) Water-reducing, 6 oz/100 lbs. cement max.
               (15) Accelerating permissible when ambient air temperature less than 40° F, quantity as approved by Engineer.
               (16) Air entraining, 6% maximum for exterior concrete.
               (17) Xpex C-series product and dosage as recommended by the manufacturer for the mix design.
               (18) 7% Microsilica
               (19) Elevated slabs:
               (20) 28-Day Strength: 4,000 psi minimum
               (21) Max. Required Aggregate Size: 1 inch (pump mix)
               (22) Max. W/C Ratio: 0.40
               (23) Slump Range 4 inch +/- 1 inch
               (24) Admixtures:
               (25) Water reducing High Range, 4 oz/100lbs. cement max.
               (26) Accelerating permissible when ambient temperature less than 40° F. Quantity as approved by Engineer.
               (27) Non-structural and Miscellaneous Constructions (sidewalks):
               (28) 28-Day Strength: 3,000 psi.
               (29) Slump Range: 4 inch +/- 1 inch.

(30) Admixtures:
(31) Air entraining, 6 % maximum, for exterior concrete.
(32) Shear Walls (Exhaust Shafts)
(33) 28 Day Strength: 8,000 psi.
(34) Max. Required Aggregate Size: 1 inch
(35) Max W/C Ratio: 0.40
(36) Slump Range: 4 inch +/- inch
(37) Admixtures:
(38) Air entraining, 6% maximum
(39) Water Reducing High Range, 6 oz./100lbs. cement max.

(b) Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as acceptable by Engineer. Laboratory test data for revised mix design and strength results must be submitted to, and accepted by, Engineer before using in Work.

(c) Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
(1) Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.

(d) Proportioning Structural Lightweight Concrete: Comply with ACI 211.2 recommendations.
(1) Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.

(e) Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
(1) For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

(f) Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

(g) Fiber Reinforcement: Add to mix at rate of 1.5 pounds per cubic yard (0.89 kg per cu m), or as recommended by manufacturer for specific project conditions.

(h) Normal Weight Concrete:
(1) Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days:
(2) 3,000 pounds per square inch (20.7 MPa).

d. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
e. Calcined Pozzolan Content: Maximum 10 percent of cementitious materials by weight.
f. Silica Fume Content: Maximum 5 percent of cementitious materials by weight.
g. Cement Content: Minimum 635 pounds per cubic yard (377 kg per cu m).
h. Water-Cement Ratio: Maximum 40 percent by weight.
i. Total Air Content: 4 percent, determined in accordance with ASTM C173/C173M.
j. Maximum Slump: 3 inches (75 mm).
k. Maximum Aggregate Size: 5/8 inch (16 mm).
l. K. Structural Lightweight Concrete
m. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 pounds per square inch (20.7 MPa).
n. Water-Cement Ratio: Maximum 40 percent by weight.
o. Total Air Content: 3 percent, determined in accordance with ASTM C173/C173M.
p. Maximum Slump: 3 inches (75 mm).

q. Maximum Aggregate Size: 5/8 inch (16 mm).

2.20 MIXING

A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
   1. Colored Concrete: Add pigments in strict accordance with manufacturer's instructions to achieve consistent color from batch to batch.
   2. Fiber Reinforcement: Batch and mix as recommended by manufacturer for specific project conditions.
      a. Transit Mixers: Comply with ASTM C94/C94M.
         1) Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 INSPECTION

A. Preconstruction Meeting: Prior to beginning concrete placement, Contractor shall schedule meeting with Owner, Architect, Engineer, Testing Agency, concrete supplier, concrete placing and finishing foreman and other affected sub contractors. Discuss pacing procedures, acceptable tolerances and finishes, testing, curing and protection. Contractor shall be responsible for keeping minutes of meeting and distributing to attending parties.

B. Pre-slab Meeting: A minimum of 14 days prior to beginning concrete placement, Contractor shall schedule meeting, as described in Section 01 3000 - Administrative Requirements, with Architect, Testing Agency, Concrete supplier, admixture manufacturer, concrete placing and finishing foreman and other affected subcontractors. Discuss mix designs, placing procedures, acceptability of formwork and reinforcement, acceptable tolerances and finishes, testing, curing and protection. Contractor shall be responsible for keeping minutes of meeting and distributing to attending parties.

3.02 BATCHING AND MIXING

A. Batch, mix and transport in accord with ASTM C94, except where more stringent requirements are specified.
   1. Delivery Tickets: Concrete producer shall furnish with each load of concrete, a numbered delivery ticket showing Contractor, name and location of project, date and time batched, truck number, number of cubic yards in load, specified strength, slump and mix design number.
      a. Slab-on-Grade Mix: All delivery tickets shall be clearly marked to also show in gallons per
         1) cubic yard:
            (a) The "maximum permitted water content."
               (1) The "actual batch water content" (including the water estimated to have been introduced by the aggregate).
               (2) The "maximum permitted additional water for slump adjustment" (ie. the difference between the "maximum" and "actual" water contents).
               (3) Clean truck mixer drums prior to each batching of concrete. Load truck mixers at capacity that will ensure uniform batch at slump specified. Reject non-uniform mixing.
               (4) Start mixing time after all ingredients are in mixer. Minimum mixing shall be 70 revolutions at mixing speed, if charged to maxim capacity; 50 revolutions at mixing speed, if charged to less than maxim capacity.
               (5) When concrete is delivered in a ruck mixer or agitator, no additional water shall be added after the initial introduction of mixing water for the bath, except when on arrival at project site. the slump of the concrete is less than than specified or as allowed herein for hot weather concreting. Such additional water (not to exceed the required water/cement ratio) may be added to bring slump within required

limits, and shall be injected into the mixer. The drum or blades shall be turned an additional 30 revolutions or more at mixing speed until the concrete is within the proper slump limit.

(b) Discharge of the concrete shall be completed within 1.5 hours or before the drum has revolved 300 revolutions, whichever comes first, after the introduction of the mixing water to the cement and aggregates or the introduction of the cement to the aggregates.

(c) Concrete shall be delivered at such a rate as will assure prompt discharge upon truck arrival. Place no concrete that has been discharged from mixer truck for longer than 30 minutes.

(d) Reject truck mixers with unacceptable bathes of concrete. Dispose of concrete legally and clean mixer prior to refill. Rejected mixers shall be tested by Testing agency on new delivery for slump and mix tests.

(e) Cause for rejection of concrete:
   (1) Concrete exceeds allowable slump.
   (2) Excessive air (over 3%) in concrete for floor slabs, and in other instances where air exceeds project specifications.
   (3) Concrete temperature at placement exceeds 90°F.
   (4) Concrete discharge exceeds 90 minute time limit and in other instances where concrete does not meet project specifications.

3.03 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.04 PREPARATION

A. Formwork:
   1. Comply with requirements of ACI 301.
   2. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
   3. Construct so that concrete members and structures are of correct size, shape, alignment, elevation and position.
   4. Provide openings in formwork to accommodate work of other trades. Accurately place and securely support items built into forms.
   5. Verify that forms are clean and free of rust before applying release agent.
   6. Apply form release agents or wet forms, as required.
   7. Retighten forms during concrete placement if required to eliminate mortar leaks.
      a. Verify that forms are clean and free of rust before applying release agent.
         1) Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
            (a) Install premolded expansion-contraction joint filler in accordance with manufacturer's instructions.

B. Position joint filler against forms, at interrupting objects or columns, and against abutting structures before concrete placement.

C. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface. Place expansion joint cap to flush with finished slab surface.

D. Prior to installation of joint sealant, slide expansion joint cap off the expansion joint.

E. Conform to Section 07 9005 for joint sealer requirements.

3.05 PREPARE EXISTING CONCRETE SURFACES TO BE REPAIRED ACCORDING TO ICRI 310.2R.

3.06 WHERE NEW CONCRETE IS TO BE BONDED TO PREVIOUSLY PLACED CONCRETE, PREPARE EXISTING SURFACE BY CLEANING AND APPLYING BONDING AGENT IN ACCORDING TO BONDING AGENT MANUFACTURER'S INSTRUCTIONS.

A. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.

B. Use latex bonding agent only for non-load-bearing applications.

3.07 WHERE NEW CONCRETE WITH INTEGRAL WATERPROOFING IS TO BE BONDED TO PREVIOUSLY PLACED CONCRETE, PREPARE SURFACES TO BE TREATED IN ACCORDANCE WITH WATERPROOFING MANUFACTURER'S INSTRUCTIONS. SATURATE COLD JOINT SURFACE WITH CLEAN WATER, AND REMOVE EXCESS WATER BEFORE APPLICATION OF COAT OF WATERPROOFING ADMIXTURE SLURRY. APPLY SLURRY COAT UNIFORMLY WITH SEMI-STIFF BRISTLE BRUSH AT RATE RECOMMENDED BY WATERPROOFING MANUFACTURER.

A. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

B. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches (150 mm). Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.
   1. Granular Fill Over Vapor Retarder: Cover vapor retarder with compactible granular fill as indicated on drawings. Do not use sand.
   2. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as indicated on drawings. Do not use sand.
   3. Install composite vapor retarder sheet with non-woven geotextile surface facing concrete.

3.08 CONSOLIDATION

A. Use vibrators with hand-rodding and tamping for concrete consolidation so that concrete is worked around reinforcement and other embedded items and into forms. Place vibrators in concrete rapidly to penetrate into previous lift blending two layers and minimizing or eliminating entrapped air between concrete and form.

B. Use vibrators along slab-on-grade edge forms to properly consolidate concrete around construction joint reinforcement dowels. Vibrator head shall not be allowed to come within 3" of form face.

C. Use vibrators with steady, continuous motion in concrete mass and for long enough duration at each position in a pattern to permit maximum escape of air from concrete.

D. Vibrators shall be 2-1/2" to 2-5/8" in diameter with minimum frequency of 10,000 impulses per minute. Furnish number of vibrators as required to vibrate all concrete immediately upon placing. Maintain spare vibrators at project site in case of breakdown. Use and type of vibrators shall conform to ACI 309 "Recommended Practice for Consolidation of Concrete."

3.09 COLD WEATHER CONCRETING

A. Take cold weather precautions when temperature on job site is below 40°F, in accord with ACI 306R. Accelerators, if used, shall be added at the concrete producer's plant in accord with approved mix design.
   1. Heat water, aggregates or both to maintain the temperature of the concrete at the time of delivery at not less than 55°F. Provide tarps, heaters, insulated forms or other means to maintain the temperature of deposited concrete at not less than 40°F for seven days after placement.

3.10 HOT WEATHER CONCRETING

A. Concreting in Hot, Dry and/or Windy Weather:
   1. Conform to ACI 305R when any combination of high air or concrete temperature, low relative humidity, and wind velocity tend to impair quality of concrete.
   2. Employ special precautions when evaporation rate as obtained from ACI 305R is expected to reach 0.2 pound per square foot per hour or more.
   3. Unless otherwise allowed reject concrete if its temperature before placement is over 90°F.
   4. Unless otherwise allowed during hot weather mixing and delivery (discharge) time shall be shorter than specified in ASTM C94 as follows:

a. When air temperature is between 85°F and 90°F, reduce allowable mixing and delivery time from 90 minutes to 75 minutes.
b. When air temperature is greater than 90°F, reduce allowable mixing and delivery time to 60 minutes.
    1) Do not place concrete when forms, subgrade, base or reinforcing bars are more than 120°F or more than 10°F hotter than ambient air temperature.
        (a) Cool with water or water-soaked burlap as necessary, but allow no standing water on surface on which concrete is placed.
        (b) Retarders, if used, shall be added at concrete producer's plant in accord with approved mix designs. Where necessary, cool aggregates or use chilled water or both to maintain concrete temperature as delivered to the job site below 90°F.
        (c) In hot weather, up to 10% of design mix water (not to exceed the required water/cement ratio) may be added to truck mixers at job site to replace water lost by evaporation. Mix for minimum of 3 additional revolutions after water is added. Make slump test and cylinders for compression test specimens from each truck to which water has been added. The additional cylinders shall not be counted in determining "frequency of testing" as defined in Concrete Testing section. Cost for additional testing shall be born by Contractor.

3.11 SLAB FINISHES

A. Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.

B. Using Laser Screed, consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items and into corners. Do not over-vibrate surface.

C. Membrane Curing Compound
    1. The compound shall be applied uniformly over the entire surface in accordance with manufacturer's instruction.
    2. Moisture loss from absorption of forms shall be minimized by keeping forms wet until they can be safely removed.
    3. During 7 day curing period, the surfaces shall be protected from damage by equipment, temperature change, stored materials, curing procedures, rain and running water.
        a. Bring slab surfaces to correct level with straightedge and strike-off. Use highway straightedge, bull float or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
            1) Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Float surfaces on concrete in manner that will compact concrete and produce surface free of depressions or ridges. Test for grade or level and correct as necessary by removing excess or adding and compacting additional concrete. Surfaces to receive float finish include slabs to receive setting beds.
                (a) Check and level surface plane to tolerance of 1/4" maximum deviation in 10 feet. Cut down high spots and fill low spots.
            2) Trowel finish: Apply a 3 trowel finish to designated monolithic slab surfaces that are exposed-to-view or are to be covered with resilient flooring, paint or other thin film coating. After floating begin first trowel finish operation using power-driven trowel. Begin final troweling when surface produces ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand and power troweling operation, free of trowel marks, uniform in texture and appearance. Do not overwork the final troweling operation. Do NOT burnish the slab surface. Finish tolerance shall be exceed 1/4 inch in 10 ft when tested with a 10 ft straight edge.

(a) Non-slip broom finish: Apply non-slip broom finish to all exterior concrete platforms, steps, pavement and ramps. Immediately after trowel finishing, roughen concrete surface by brooming in direction perpendicular to main traffic routes. Coordinate required final finish with Architect before application.

(b) Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply trowel finish as specified, then immediately follow with slightly scarifying surface by fine brooming.

3.12 GRINDING OF CONSTRUCTION JOINTS

A. All construction joints shall be ground and polished to an even, smooth, slick finish using gasoline powered diamond-disk and/or stone grinders. The final polishing pass shall be performed using not less than 100 grit stone.

3.13 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Fabricate and handle epoxy-coated reinforcing in accordance with ASTM D3963/D3963M.

B. Reinforcement: Position, support and secure reinforcement against displacement. Locate and support with metal chairs, runners, bolsters, spacers and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

C. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

D. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

E. Installation of Embedded Items: Set and build into work anchorage devices and other embeded items required for other work that is attached to, or supported by cast-in-place concrete. Use setting diagrams, templates and instructions provided by others for locating and setting.

F. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.14 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Place concrete for floor slabs in accordance with ACI 302.1R.

C. Notify EOA not less than 24 hours prior to commencement of placement operations. Do not begin placement until work of other trades affecting concrete is completed.

D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

E. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

1. All sawn contraction joints shall be made using the "Soff-Cut" method. Minimum depth of joint with new blade shall be 1-1/2" thick.
2. Saw joints immediately following the final finishing operation in accordance with recommendations of Soff-Cut International, and as soon as concrete has hardened sufficiently to prevent raveling or dislodging of aggregates. For "Soff-Cut" saw, this will typically be from 1 hour in hot weather to 4 hours in cold weather after completing finishing of slab in that joint location.
3. Install Velcro or other non-scratch material to base of skid plate to reduce surface scratching.
4. Replace saw blades at first sign of raveling at the joint. Guide plate shall be replaced each time a saw blade is replaced.
5. Use "joint saver" inserts, provided by the saw manufacturer, at all intersecting joints and at location where front wheel crosses perpendicular to the previously cut joint.
6. Use offset grinder with abrasive wheel or small diameter diamond blade to extend saw cut into column or perimeter isolation joint material.

a. Slab on grade shall be placed on compacted subbase. Fine grade subbase using a laser controlled grading box and then roller compact to within a +/- 3/8" of final grade. A final examination of the subbase shall be performed by the Geotechnical Engineer immediately prior to placing floor slabs. If the exposed subgrade becomes wet or frozen, the surface shall be recompacted at the direction of the Geotechnical Engineer. The minimum compaction required unless noted otherwise is 98% of ASTM Specification D-698 (Standard Proctor Density). Proof of each slab placement area on the day prior to slab installation using a loaded 40 GWT tandem axle truck. Slabs shall not be placed over any base that visibly "pumps" or ruts more than 1/2 inch under such proof rolling. If pumping is encountered, Contractor shall make repairs as recommended by the Geotechnical Engineer at no additional cost to the Owner or extension of Contract Time.
    1) All footing excavations should be examined by the Geotechnical Engineer to verify that the design bearing pressure is available. All footings should be clean, level and free of ponding water. Since the soils tend to soften upon exposure, concrete should be placed as soon as is practical after the footing is excavated. Any open footing shall be protected from weather conditions until reinforcing steel and concrete can be placed.
        (a) Before placing concrete, inspect and approve formwork reinforcement, sleeves and embedded items.
        (b) Maintain reinforcing in proper position on dobies during concrete placement. Use sufficient dobies to withstand construction loads. Hold reinforcing in place not less than one support per 15 sf of slab area.
        (c) Handle concrete from mixer to place of final deposit as rapidly as practical by methods that shall prevent segregation or loss of ingredients. Distribute concrete by means of equal to a steep sided bottom drop concrete bucket. Allow no concrete to free-fall over 4'-0." Utilize buckets with a capacity of not less than 1/2 cu. yd. Clean transporting and handling equipment at frequent intervals and flush with water before and after each day's run. Discharge no water into concrete forms.
        (d) Place no concrete in forms after initial set has taken. Re-tempering of concrete that has partially set is prohibited. Place no concrete while temperature or other environmental conditions or limitations of facilities prevent proper finishing and curing.
        (e) Deposit concrete as near final position as possible to avoid rehandling. Place concrete in forms with uniform horizontal layers 1'-6" to 2'-0" in depth; avoid vertical joints or inclined planes. Do not permit piling up of concrete in forms in a manner to permit escape of mortar or flow of the concrete. Deposit concrete continuously with thorough consolidation by vibrating to insure a dense, homogeneous mass without voids or pockets.
        (f) Transport and place pumped concrete in accord with ACI 304 requirements. Brace formwork to handle effects of pump hammer. Employ aggregates of controlled water contents for pumped concrete. Use no aluminum pipes for transporting concrete. Equipment used to transport concrete shall be compatible with concrete reinforcement and desired finishes.
        (g) Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.
        (h) Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.
            (1) Locate construction joints as indicated on the drawings or as approved.
            (2) Provide 1/8" edger to edge of second slab placement so that joint can be easily located and recut for joint filling operation. Do not edge first placement.

3.15 SLAB JOINTING

A. Locate joints as indicated on drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
   1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.
   2. Place isolation and control joints in slabs-on-ground to stabilize differential settlement and random cracking.
      a. Load Transfer Construction and Contraction Joints: Install load transfer devices as indicated; saw cut joint at surface as indicated for contraction joints.
         1) Saw-Cut Contraction Joints:
            (a) All sawn contraction joints shall be made using the "Soff-Cut" method. Minimum depth of joint with new blade shall be 1-1/2" thick.
               (1) Saw joints immediately following the final finishing operation in accordance with recommendations of Soff-Cut International, and as soon as concrete has hardened sufficiently to prevent raveling or dislodging of aggregates. For "Soff-Cut" saw, this will typically be from 1 hour in hot weather to 4 hours in cold weather after completing finishing of slab in that joint location.
               (2) Install Velcro or other non-scratch material to base of skid plate to reduce surface scratching.
               (3) Replace saw blades at first sign of raveling at the joint. Guide plate shall be replaced each time a saw blade is replaced.
               (4) Use "joint saver" inserts, provided by the saw manufacturer, at all intersecting joints and at location where front wheel crosses perpendicular to the previously cut joint.
               (5) Use offset grinder with abrasive wheel or small diameter diamond blade to extend saw cut into column or perimeter isolation joint material.
            (b) Contraction Joint Devices: Use preformed joint device, with top set flush with top of slab.
            (c) Saw-Cut Control Joint Dust Collection
               (1) Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch (5 mm) thick blade and cut at least 1 inch (25 mm) deep but not less than one quarter (1/4) the depth of the slab.
               (2) Connect a dust collection system directly to each Soff-Cut saw being used.
               (3) Remove all saw debris, either loose or compacted, from slab surface and joints prior to curing cover installation.
            (d) Construction Joints: Where not otherwise indicated, use metal combination screed and key form, with removable top section for joint sealant.
               (1) Locate construction joints as indicated on the drawings or as approved so as not to impair strength and appearance of structure.
               (2) Provide 1/8" edge to edge of second slab placement so that joint can be easily located and recut for joint filling operation. Do not edge first placement.
            (e) Contractor Duties Regarding Testing Agency:
               (1) Provide a space suitable for Testing Agency to store 1-6 day old cylinders that will not require continual movement during construction.
               (2) If weather dictates, provide for testing Agency an on-site curing space in accordance with ACI standards for storage of cylinders during cold weather concreting.

3.16 SEPARATE FLOOR TOPPINGS

A. Prior to placing floor topping, roughen substrate concrete surface and remove deleterious material. Broom and vacuum clean.

B. Place required dividers, edge strips, reinforcing, and other items to be cast in.

C. Apply bonding agent to substrate in accordance with manufacturer's instructions. D. Apply sand and cement slurry coat on base course, immediately prior to placing toppings.

D. Place concrete floor toppings to required lines and levels.
   1. Place topping in checkerboard panels not to exceed 20 feet (6 m) in either direction.
      a. Screed toppings level, maintaining surface flatness of maximum 1:1000.

3.17 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. An independent testing agency, as specified in Section 01 40 00, will inspect finished slabs for compliance with specified tolerances.

B. Maximum Variation of Surface Flatness:
   1. Exposed Concrete Floors: 1/4 inch (6 mm) in 10 feet (3 m).
   2. Under Seamless Resilient Flooring: 1/4 inch (6 mm) in 10 feet (3 m).
   3. Under Carpeting: 1/4 inch (6 mm) in 10 feet (3 m).
      a. Correct the slab surface if tolerances are less than specified.
         1) Overall and local values for flatness and levelness are specified in “03 35 11 BSD-Concrete Floor Finishes.”
            (a) Measure F(F) Floor Flatness and F(L) Floor Levelness in accordance with ASTM E1155 (ASTM E1155M), within 48 hours after slab installation; report both composite overall values and local values for each measured section.
            (b) Correct the slab surface if composite overall value is less than specified and if local value is less than two-thirds of specified value or less than F(F) 13/F(L) 10.
            (c) Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.18 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch (6 mm) or more in height.

C. Exposed Form Finish: Rub down or chip off smooth finsh or other raised areas 1/4 inch (6 mm) or more in height and provide a smooth finish exposed concrete surfaces and surfaces that are to be covered with a coating or covering material applied directly to concrete. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
   2. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.
   3. Cork Floated Finish: Immediately after form removal, apply grout with trowel or firm rubber float; compress grout with low-speed grinder, and apply final texture with cork float.
   4. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterprofing, membrane or elastic roofing, or sand-bed terrazzo, and as otherwise indicated.
      a. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
         1) Surfaces to Receive Thick Floor Coverings: "Wood float" as described in ACI 302.1R; thick floor coverings include quarry tile, ceramic tile, and Portland cement terrazzo with full bed setting system.

(a) Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
    (1) Decorative Exposed Surfaces: Trowel as described in ACI 302.1R; take measures necessary to avoid black-burnish marks; decorative exposed surfaces include surfaces to be stained or dyed, pigmented concrete, surfaces to receive liquid hardeners, surfaces to receive dry-shake hardeners, surfaces to be polished, and all other exposed slab surfaces.
    (2) Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.
    (3) Chemical Hardener: See Section 03 35 11.
(b) In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.
(c) Concrete Polishing: See Section 03 35 11.

3.19 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
    1. Normal concrete: Not less than seven days.
    2. High early strength concrete: Not less than four days.
        a. Membrane Curing Compound
            1) The compound shall be applied uniformly over the entire surface in accordance with manufacturer's instruction.
                (a) Moisture loss from absorption of forms shall be minimized by keeping forms wet until they can be safely removed.
                    (1) During 7 day curing period, the surfaces shall be protected from damage by equipment, temperature change, stored materials, curing procedures, rain and running water.
                (b) Formed Surfaces: Cure by moist curing with forms in place for full curing period.
                (c) Surfaces Not in Contact with Forms:
                    (1) Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
                    (2) Initial Curing: Start as soon as free water has disappeared and before surface is dry. Where possible, keep continuously moist for not less than 72 hours. Continue curing by use of moisture-retaining cover or membrane-forming curing compound. Cure formed sufaces by moist curing until forms are removed. Provide protecion as required to prevent damage to exposed concrete surfaces. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
                    (3) Ponding: Maintain 100 percent coverage of water over floor slab areas, continuously for 4 days.
                    (4) Spraying: Spray water over floor slab areas and maintain wet.
                    (5) Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
                    (6) Final Curing: Begin after initial curing but before surface is dry.

(7) Moisture-Retaining Sheet: Lap strips not less than 3 inches (75 mm) and seal with waterproof tape or adhesive; secure at edges.
(8) Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.
(9) F. Where other concrete structures are to be poured on top of or adjacent to finished surfaces,
(10) take all necessary precautions to prevent damage from erection of formwork or staining from
(11) concrete laitance.

(d) Alert other trades to the need for special protection against rolling or sliding heavy loads across the surface, oil drippings from pipe threaders, spillage of paint plaster and mortar. Insure that the covering is not damaged or removed during the progress of the work.

(e) Review proposed tilt panel construction and erection procedures to ensure that scratching, marring, gouging, and cracking of the floor slabs will be avoided.

3.20 DEFECTIVE FLOOR SLAB

A. Defective Slab: If it is determined that any type of crack or defect in the slab-on-ground has occurred due to the result of Contractor's failure to comply with these specifications and construction documents, Contractor shall repair and/or replace cracked and defective slabs to the satisfaction of the Owner, and as directed by the Architect.

3.21 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
1. Test of concrete will be deemed satisfactory if considered satisfactory according to methods and standards of ACI 318-11, Subparagraph 5.6.3 for 28-day tests.
a. Repair or replacement of defective concrete will be determined by the Architect/Engineer and at no expense to the Owner. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
1) Load tests, if permitted by the Architect/Engineer, shall be conducted in accordance with the loading criteria as required by the design of the structure, as determined by the Architect/Engineer.
(a) Contractor Duties Regarding Testing Agency:
(1) Provide a space suitable for Testing Agency to store 1-6 day old cylinders that will not require continual movement during construction.
(2) If weather dictates, provide for Testing Agency an on-site curing space in accordance with ACI standards for storage of cylinders during cold weather concreting.
(b) Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.
(c) Failure to measure up to any of the specified conditions constitutes faulty concrete. Unless otherwise directed by the Architect/Engineer, faulty concrete shall be removed and replaced with concrete as specified, at no expense to the Owner.

3.22 CRACK AND SPALL REPAIR OF FLOOR SLABS

A. Coordination: Repairs made after the Owner moves in shall be made at times that do not interfere with regular business activities.

B. Repair those cracks that meet any of the following conditions:
1. The crack is within the "shipping/receiving" bays.
2. The crack is wider than 1/32" (i.e. "credit card width").
3. The crack edges have begun to spall.

4. Adjacent slab elements (on either side of the crack) exhibit vertical movement when crossed by a loaded forklift.
    a. Method of Crack Repair: Follow these steps (or use other method acceptable to the Architect):
        1) Multiple cracks clustered in a spider web appearance, or cracks within the "shipping/receiving" bays:
            (a) Remove concrete slab forming a rectangular area normal to column grid. Extend rectangular area to the nearest control or construction joint.
                (1) Place and finish new concrete with same specifications as original slab. All edges shall be doweled into existing slab using 3/4X12" long square steel dowels at 18 inches on-center. Dowels shall be placed centered in slab. Drill oversized 1-1/4" holes approximately 5-14" deep in to the existing slab to receive square dowels, set in epoxy grout. Install PNA square dowel clips over dowel length to be placed in new slab.
    b. Isolated random cracks less than 1/8" wide, without "islands" or chipping, and not subject to movement.
        1) Clean crack out using right angle grinder with soft wire wheel or wire brush, then blow out with air.
        2) Following manufacturer's mixing and installation instructions fill the crack with structural polymer adhesive material slightly overfilling. Monitor op and refill if necessary to assure fill remains crowned above floor surface.
        3) After cure, use medium grit grinding pad to remove excess material flush with floor surface.
    c. Isolated random cracks greater than 1/8" and less than 3/4," and not subject to movement:
        1) Utilizing crack chasing saws and dust-free cleanout, cut along the crack to a depth of approximately 3/4" creating a straight, clean vertical edge. Ensure that all concrete "islands," and any loose or weak concrete from the crack edge is removed. Blow out with air to clear all loose elements or debris.
            (a) Following manufacturer's mixing and installation instructions fill the joint with semi-rigid epoxy joint filler. Monitor top and refill if necessary to assure fill remains crowned above floor surface.
            (b) After cure, trim the overfill using a stiff sharp razor so top of filler material is flush with concrete floor on both sides.
            (c) Method of Spall Repair: Follow these steps (or use other method acceptable to the Architect):
                (1) Bolt holes, small gouges, chips, and spall areas less than 4 inches:
                (2) For anchor bolt holes, cut bolt off and drive anchor minimum 1/2" below floor surface.
                (3) Roughen surface of concrete with grinder. Sweep and vacuum roughened surface to remove debris.
                (4) Clean surfaces free of oil, grease, coatings, sealers, paint, rust, etc. Verify surfaces are dry, and structurally sound.
                (5) Following manufacturer's mixing and installation instructions, fill area with structural polymer adhesive, slightly overfilling, and trowel smooth.
                (6) After material has cured, grind off overfill to ensure flush, smooth floor surfaces.
                (7) Spalled areas 4 inches and greater:
                (8) Prevent feather edging by making vertical cuts at the spall outer edges, minimum 3/4" deep.
                (9) Remove delaminated material and deteriorated concrete surface material a minimum depth of 1/2". Sweep and vacuum roughened surface to remove debris.

(10) Clean surfaces free of oil, grease, coatings, sealers, paint, rust, etc. Verify surfaces are dry, and structurally sound.
(11) Following manufacturer's mixing and installation instructions fill area with epoxy mortar repair material, slightly overfilling, and trowel smooth.
(12) After material has cured, grind off overfill to ensure flush, smooth floor surfaces.

3.23 FIELD QUALITY CONTROL

A. An independent testing agency, selected by the Contractor acceptable to the Architects and paid by the Owner, will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Testing Agency Duties:

E. Review proposed mix designs for concrete classes specified.
1. Review concrete materials for compliance with specifications. Obtain samples as required.
2. Concrete Plant Certification: Certify plants proposed for furnishing concrete as being approved at highest level by NRMCA or by Department of Transportation in state where project is located.
3. Sample concrete at project site and prepare compressive strength test specimens, tests for slump, air content and unit weight.
4. Maintain field test data sheet for each set of concrete specimens. The completed data sheets shall include laboratory number, date, plant, truck number, time batched, time sampled, air temperature, concrete temperature, inspector, mix design number, required compressive strength, unit weight, air content, slump, location of placement, seven day and 28 day strengths.
5. Transport test specimens to Testing Agency's laboratory.
6. Perform specified laboratory tests.
7. Notify Architect immediately of any test specimens that do not meet design compressive strength at 28 days or 2/3 of design strength at seven days.
8. Perform floor tolerance measurements.
    a. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards (76 cu m) or less of each class of concrete placed.
        1) Specimens may be 4X8" cylinders for 6X12" cylinders.
            (a) When the frequency of testing will provide less than five acceptance tests for a given mix design, tests shall be made from at least five batches selected at random or from each batch.
                (1) Perform acceptance testing using cylinders at 28 days.
                (2) Compressive strength of concrete will be considered satisfactory if averages of all sets of three consecutive strength test results equal or exceed the required 28 day design compressive strength and no individual strength test result falls below design compressive strength by more than 500 psi.
            (b) For trowel finished slabs, perform air test for every 100 cu yd or less of concrete placed. Reject concrete if air content is over 3%.
            (c) During first day of concrete placement and later as directed by Owner's Representative, take concrete sample at point of final placement to verify mix design submittals. Washout sample to remove material finer than No. 200 sieve and perform combined sieve analysis, using sieve sizes specified, furnishing percent retained on each sieve. Ensure concrete sample size is large enough to be representative but is not less than 70 pounds. Conform

to ASTM C136. As compared to approved concrete mix design, of total combined coarse and fine aggregates, ensure within tolerance for material retained on any 1 sieve of 3% and +4%, except No. 100 sieve. Ensure within tolerance for material retained on No. 100 sieve is +2% or 2%.

(d) Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

(e) Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

(f) Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

(g) Slab Testing: Cooperate with manufacturer of specified moisture vapor reducing admixture (MVRA) to allow access for sampling and testing concrete for compliance with warranty requirements.

(h) Permeability Test: Test concrete with waterproofing admixture according to COE CRD-C 48.

(i) The laboratory shall sample, mold, transport, store, cure, prepare for breaking and test concrete cylinders in accordance with ASTM C39. The laboratory shall, during the time their representative s on the site for the purpose of molding cylinders, determine the air content of concrete in accordance with ASTM C231 and/or ASTM C173, as determined by testing laboratory, observe job conditions in the handling and placing of concrete and report to the Architect/Engineer as to compliance with these specifications. The laboratory shall submit to the Architect/Engineer six copies of test reports stating the date and time batched, date and sampled, temperature of concrete and air; slump, location of concrete represented by sample, date of test and age of specimen, air content, unit weight and compressive strength for each concrete test.

(j) The Contractor shall provide wheelbarrow, shovels, mixing boards and workspace for the laboratory representative for molding test cylinders. He shall provide stable, insulated storage boxes, equipped with thermostatically controlled heat for storage of cylinders for the first 24 hours molding to maintain temperature between 60 and 80°F, and to prevent loss of moisture, in accordance with ASTM C31/C31M-08b. He shall keep a slump cone available at all times.

(k) Contractor's duties relative to testing: The Contractor shall furnish all necessary labor to assist the testing agency in obtaining and handling samples at the project, provide and maintain for the sole use of the testing agency adequate facilities for safe storage and proper curing of concrete test specimens for the first 24 hours as required by ASTM C31/C31M-08b, Method of Making and Curing Concrete Compression and Flexural Specimens in the Field.

3.24 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

3.25 SCHEDULE - CONCRETE TYPES AND FINISHES

A. SEE STRUCTURAL PLANS

END OF SECTION

SECTION 033511

CONCRETE FLOOR FINISHES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Surface treatments for concrete floors and slabs.

B. Liquid densifiers and hardeners.

C. Dry shake hardeners.

D. Concrete stains and dyes.

E. Clear coatings.

F. Color coatings.

G. Clear penetrating sealers.

H. Polished concrete.

I. Cast-in-Place Concrete

J. Concrete Reinforcement.

K. Concrete Testing.

L. Finishing slabs on grade and elevated slabs.

M. Curing concrete surfaces.

N. Grinding construction joints.

O. Crack repair of concrete floor slabs.

1.03 REFERENCE STANDARDS

A. American Concrete Institute (ACI) Standards
   1. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; 2010.
   2. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International; 2004 (errata 2007).
   3. ACI 308 - Standard Practice for Curing Concrete; American Concrete Institute International; 2001.

B. American Society for Testing Materials (ASTM) Standards
   1. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 1998.
   2. ASTM C 171 - Standard Specification for Sheet Materials for Curing Concrete; 2003.
   3. ASTM E1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; 1996 (Reapproved 2008).

1.04 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Pre-Slab Meeting.

B. Section 01 6116.01 - Accessory Material VOC Content Certification Form.

C. Section 03 30 00 - Cast-in-Place Concrete: Finishing of concrete surface to tolerance; floating, troweling, and similar operations; curing.

D. Section 03 30 00 - Cast-in-Place Concrete: Curing compounds that also function as sealers.

E. Section 03 35 23 - Exposed Aggregate Concrete Finishing.

F. Section 07 9005 - Joint Sealers.

G. Section 07 9216 - Interior Floor Joint Filler.

H. Section 09 65 66 - Resilient Athletic Flooring: Fluid-applied athletic flooring.

I. Section 09 66 23 - Resinous Matrix Terrazzo Flooring.

J. Section 09 67 00 - Fluid-Applied Flooring.

K. Section 09 96 00 - High-Performance Coatings.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with concrete floor placement and concrete floor curing.

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.

C. Maintenance Data: Provide data on maintenance and renewal of applied finishes.

1.07 QUALITY ASSURANCE

A. Interior Slab-on-Grade Installer: Construction of interior slab-on-grade shall be performed by Installer capable of achieving high quality control in finished product as measured in terms of surface flatness and levelness, uniformity in texture, smoothness, and appearance of hard steel troweled surfaces, precision in construction of joints, and minimization of slab shrinkage, cracking, and edge curling. Engage Installer, fully experienced in ways, means, methods and materials of slab-on-grade concrete construction, capable of producing high quality finished product for this project, and as acceptable to Owner.

B. Perform work in accordance with ACI 301 and ACI 302.1.R.

1.08 MOCK-UP

A. For coatings, construct mock-up area under conditions similar to those that will exist during application, with coatings applied.

B. Mock-Up Size: 10 feet (3 m) square.

C. Locate where directed.

D. Mock-up may remain as part of the work.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's sealed packaging, including application instructions.

1.10 FIELD CONDITIONS

A. Maintain light level equivalent to a minimum 200 W light source at 8 feet (2.5 m) above the floor surface over each 20 foot (6 m) square area of floor being finished.

B. Do not finish floors until interior heating system is operational.

C. Maintain ambient temperature of 50 degrees F (10 degrees C) minimum (for seven days after placing. Protect work against frost, rapid drying and heavy rain.)

1.11 PROJECT CONDITIONS

A. No satisfactory chemical or cleaning procedure is available to remove petroleum stains from the concrete surface. Prevention is therefore essential.

1. No motorized vehicles will be allowed on slabs without proper protection for wheels and oil or hydraulic reservoirs to eliminate oil drips and avoid staining of the concrete.
2. No trade will park vehicles on the inside slab. If necessary to complete their scope of work, drop cloths will be placed under vehicles at all times.
3. No pipe cutting machine will be used on the inside floor slab.
4. Steel will not be placed on interior slabs to avoid rust staining.

PART 2 PRODUCTS

2.01 SURFACE TREATMENTS

A. Troweling Aid, Densifier and Curing Agent: Liquid reactive colloidal silica-based topical treatment, spray-applied to wet concrete and floated or troweled into the surface.
   1. Product:
      a. Solomon Colors; Solomon Colors Lythic Day1.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 DENSIFIERS AND HARDENERS

A. Liquid Densifier and Hardener: Penetrating chemical compound that reacts with concrete, filling the pores and dustproofing; for application to concrete after set.
   1. Composition: Lithium silicate.
   2. Products:
      a. Ameripolish, Inc; 3D HS Hybrid Silicate Densifier.
      b. ARDEX Engineered Cements; ARDEX PC-Finish.
      c. ARDEX Engineered Cements; ARDEX PC-50.
      d. Clemons Concrete Coatings; Super Hard L.
      e. Concrete Sealers USA.
      f. Dayton Superior Corporation.
      g. Euclid Chemical Company; EUCOSIL.
      h. Euclid Chemical Company; EUCO DIAMOND HARD.
      i. Euclid Chemical Company; ULTRASIL LI+.
      j. Kaufman Products Inc; Silicure.
      k. Kaufman Products Inc; SureHard.
      l. Kaufman Products Inc; SureHard LS.
      m. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc.
      n. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc.
      o. Master Builders Solutions by BASF.
      p. Nox-Crete Inc; Duro-Nox.
      q. Nox-Crete Inc; Duro-Nox LS.
      r. Nox-Crete Inc; Duro-Nox LSC.
      s. PROSOCO, Inc; Consolideck LS/CS.
      t. PROSOCO, Inc; Consolideck LS.
      u. PROSOCO, Inc; ColorHard used with Consolideck LS or LS/CS.
      v. Solomon Colors; Lythic Densifier.
      w. Solomon Colors; Lythic Densifier XL
      x. SpecChem, LLC; Cure Hard.
      y. SpecChem, LLC; LithSeal SC.
      z. SpecChem, LLC; SpecHard.
      aa. Surface Koatings, Inc; Aqualon S-400.
      ab. Surface Koatings, Inc; Aqualon SP-450.
      ac. Surface Koatings, Inc; Aqualon L-100.
      ad. W. R. Meadows, Inc; Med-Cure.
      ae. W. R. Meadows, Inc; Liqui-Hard.
      af. W. R. Meadows, Inc; Liqui-Hard Ultra.
      ag. Sonneborn Div. of Contech, Inc.
      ah. W.R. Meadows Co., Durehard.
      ai. Substitutions: See Section 01 60 00 - Product Requirements.

B. Dry Shake Hardener: Premixed dry powder for spreading on and working into concrete surface prior to set.
   1. Composition: Non-metallic aggregate.
   2. Composition: Non-oxidizing metallic aggregate.
   3. Composition: Metallic, aluminum oxide (emery) aggregate.

4. Composition: Metallic, iron aggregate.
5. Color(s): As selected by Architect from manufacturer's standard range.
6. Color(s): As indicated on drawings.
7. Products:
    a. BRICKFORM; BRICKFORM Color Hardener.
    b. Dayton Superior Corporation.
    c. Euclid Chemical Company; EUCO-PLATE HD.
    d. Euclid Chemical Company; DIAMOND PLATE.
    e. Euclid Chemical Company; SURFLEX.
    f. Euclid Chemical Company; SURFLEX TR.
    g. Kaufman Products Inc; Tycron.
    h. Kaufman Products Inc; Tycron EM.
    i. Kaufman Products Inc; Tycron Met.
    j. Kaufman Products Inc; Tycron Met 200.
    k. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc.
    l. L.M. Scofield Company; Emerchrome SC Color Hardener.
    m. L.M. Scofield Company; LITHOCHROME® Color Hardener.
    n. Master Builders Solutions by BASF.
    o. SpecChem, LLC; Quartz Floor Hardener.
    p. Substitutions: See Section 01 60 00 - Product Requirements.

2.03 COATINGS

A. Concrete Floor Topping with Aggregate: Pre-mixed blend of Portland cement, hardeners and emery/corundum.
    1. Product:
        a. Dayton Superior Corporation.
        b. Euclid Chemical Company; SURFLEX E.
        c. Euclid Chemical Company; EUCOFLOOR E.
        d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Concrete Stain or Dye: Translucent, penetrating compound for interior or exterior use; must be finished with a topical sealer.
    1. Composition: Water-based, non-reactive.
    2. Number of Coats: Minimum of two.
    3. VOC: 100 g/L or less.
    4. Application:
        a. Primary Color: Spray applied.
        b. Secondary Color: Spray applied.
    5. Products:
        a. Ameripolish, Inc; Surelock Concrete Dye.
        b. BRICKFORM; BRICKFORM Blush-Tone Acid Stain.
        c. BRICKFORM; BRICKFORM E-Stain.
        d. BRICKFORM; BRICKFORM ARTesian Stain.
        e. Clemons Concrete Coatings; Acid Stain.
        f. Clemons Concrete Coatings; Super Color.
        g. Clemons Concrete Coatings; Super Dye.
        h. Euclid Chemical Company; STAIN-CRETE.
        i. Euclid Chemical Company; STONE ESSENCE.
        j. Euclid Chemical Company; VIBRA-STAIN.
        k. L.M. Scofield Company; LITHOCHROME Chemstain Classic Concrete Stain.
        l. PROSOCO, Inc; GemTone Stain.
        m. Surface Koatings, Inc; Heritage Reactive Concrete Stain.
        n. SureCrete Design Products; Eco Stain.
        o. Substitutions: See Section 01 60 00 - Product Requirements.

C. High Gloss Clear Coating: Transparent, non-yellowing, water- or solvent-based coating.

1. Composition: Acrylic polymer-based.
2. Nonvolatile Content: 15 percent, minimum, when measured by volume.
3. Products:
    a. BRICKFORM; BRICKFORM Gem-Seal 100 VOC.
    b. Clemons Concrete Coatings; Super Guard.
    c. Concrete Sealers USA.
    d. Dayton Superior Corporation.
    e. Euclid Chemical Company: ULTRAGUARD.
    f. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc.
    g. Nox-Crete Inc; Sparkl-Seal.
    h. Nox-Crete Inc; Richseal Series.
    i. PROSOCO, Inc; LSGuard.
    j. The QUIKRETE Companies; QUIKRETE® Concrete & Masonry High Gloss Sealer.
    k. SpecChem, LLC; Aqua Shine.
    l. SpecChem, LLC; Crystal Shine.
    m. SpecChem, LLC; Deco Shine.
    n. W. R. Meadows, Inc; Deck-O-Grip W/B (slip-resistant).
    o. W. R. Meadows, Inc; Decra-Seal W/B.
    p. Substitutions: See Section 01 60 00 - Product Requirements.

D. Low Gloss Clear Coating: Transparent, nonyellowing, water- or solvent-based coating.
1. Composition: Acrylic polymer-based.
2. Nonvolatile Content: 15 percent, minimum, when measured by volume.
3. Products:
    a. Clemons Concrete Coatings; Supreme Shield 600.
    b. Clemons Concrete Coatings; Supreme Shield 350.
    c. Clemons Concrete Coatings; Supreme Shield 100.
    d. Concrete Sealers USA; TS202.
    e. Concrete Sealers USA; TS210.
    f. Substitutions: See Section 01 60 00 - Product Requirements.

E. Color Coating: Pigmented coating recommended by manufacturer for finishing concrete floors and slabs.
1. Type: Polyaspartic; two-component, fast-curing.
2. Type: High solids acrylic; one-component; fast-curing
3. Type: High solids epoxy; two-component.
4. Type: High solids aliphatic polyurethane; one- or two-component.
5. Gloss: Matte.
6. Color(s): As selected by Architect from manufacturer's standard range.
7. Color(s): As indicated on drawings.
8. Products:
    a. Allied Construction Technologies, Inc; AC Tech 2170.
    b. Allied Construction Technologies, Inc; AC Tech 2170FC.
    c. ARDEX Engineered Cements.
    d. Clemons Concrete Coatings; Super Sealer Stains.
    e. Dayton Superior Corporation.
    f. Euclid Chemical Company; CONCRETE STAIN SEALER.
    g. Euclid Chemical Company; EUCOTHANE.
    h. Euclid Chemical Company; DURALTEX.
    i. HP Spartacote, Inc.
    j. Kaufman Products Inc; SurePoxy HiBild.
    k. Kaufman Products Inc; SurePoxy Protective Coating WD: www.kaufmanproducts.net/#sle.
    l. Kaufman Products Inc; K PRO CRS.
    m. Master Builders Solutions by BASF

n. Nox-Crete Inc; Acryl-Pen.
o. Sika Corporation; Sikafloor 510N LPL.
p. SpecChem, LLC; Surface Shine Gray.
q. SureCrete Design Products; Colortec 400.
r. SureCrete Design Products; Colortec 400WB.
s. SureCrete Design Products; Colortec 500.
t. Substitutions: See Section 01 60 00 - Product Requirements.

F. Clear Coating: Clear coating recommended by manufacturer for finishing concrete floors and slabs.
1. Type: High solids epoxy; two-component.
2. Type: High solids polyurethane; two-component.
3. Gloss: High gloss.
4. Color(s): As selected by Architect from manufacturer's standard range.
5. Color(s): As indicated on drawings.
6. Products:
a. SureCrete Design Products; DK 500.
b. SureCrete Design Products; DK 400.
c. SureCrete Design Products; DK 400WB.
d. Substitutions: See Section 01 60 00 - Product Requirements.

G. Clear, Penetrating, Moisture Vapor-Resistant Coating: Vapor-resistant and pH-reducing coating recommended by manufacturer for new and existing concrete floors and slabs.
1. Type: High solids epoxy; two-component.
2. Products:
a. Polycoat Products; Polycoat PC FMB.
b. Substitutions: See Section 01 60 00 - Product Requirements.

H. Penetrating Sealer: Transparent, nonyellowing, water- or solvent-based coating.
1. Composition: Siloxane.
2. Products:
a. Ameripolish, Inc; 3D SP Concrete Sealer.
b. Ameripolish, Inc; SR2 Concrete Sealer.
c. Clemons Concrete Coatings; Silane 40.
d. Clemons Concrete Coatings; Super Seal M.
e. Concrete Sealers USA.
f. Nox-Crete Inc; Duo-Shield.
g. SureCrete Design Products; Siloxane Dye.
h. Surface Koatings, Inc; Deco Guard.
i. Surface Koatings, Inc; Deco Guard Plus.
j. Surface Koatings, Inc; SurfBlock SB-12.
k. TK Products Construction Coatings; Salt Protector Plus.
l. Substitutions: See Section 01 60 00 - Product Requirements.

I. Curing and Sealing Compound
1. Acceptable Products:
a. Euclid Chemical C., Rez-Seal.
b. Gifford-Hill & Co., Sealco.
c. Sonneborn Div. of Contech, Inc. Kure-N-Seal 0800.
2. Type: Clear acrylic based, non-yellowing, meeting ASTM C309, Type I.

J. Plastic Aggregate: Finely ground polymer for addition to coatings for slip resistance.
1. Products:
a. Dayton Superior Corporation..
b. Euclid Chemical Company; EUCO GRIP.
c. SpecChem, LLC; Surface Grip.
d. Substitutions: See Section 01 60 00 - Product Requirements.

K. Natural Aggregate: Finely ground stone for addition to coatings for slip resistance.
   1. Products:
      a. Dayton Superior Corporation.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

L. Wet-Curing Materials
   1. Sand: Clean, natural sand meeting ASMT C144.
   2. Moisture-Retaining Cover: Waterproof paper, polyethylene film or burlap-polyethylene sheet meeting ASTM C171.
   3. Water: Clean, potable free of alkali, acid, oil or organic matter.

M. Abrasive Aggregate
   1. Aluminum oxide or emery graded from particles retained on a #50 mesh screen to particles passed by 1/8" screen.

N. Concrete Bonding Agent
   1. Acceptable Products:
      a. Burke Concrete Accessories, Inc., Bondcrete-S.
      b. Euclid Chemical Co., Flexcon.
      c. Larsen Products Corp., Weld-Crete.
      d. Sika Chemical Corp., Sika Latex.
      e. Sonneborn Div. of Concrete, Inc., Sonocrete.
      f. The Upco. Co., 705 Bonding Adhesive.
   2. Characteristics: Acrylic latex emulsion, non-reversible.

2.04 POLISHED CONCRETE SYSTEM

A. Polished Concrete System: Materials, equipment, and procedures designed and furnished by a single manufacturer to produce dense polished concrete of the specified sheen.
   1. Acceptable Systems:
      a. Ameripolish, Inc; Ameripolish Polished Concrete System.
      b. ARDEX Engineered Cements.
      c. Euclid Chemical Company; DOUBLE DIAMOND POLISHED CONCRETE FLOOR SYSTEMS.
      d. L&M Construction Chemicals, Inc., a subsidiary of Laticrete International, Inc; FGS Permashine Concrete Polishing System.
      e. Multiquip, Inc; SlabArmor System.
      f. Multiquip, Inc; SlabArmor Plus System.
      g. Nox-Crete Inc; Durocolor System.
      h. PROSOCO, Inc; Consolideck Polished Concrete System.
      i. W. R. Meadows, Inc; Induroshine and Bellatrix Concrete Enhancer.
      j. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 MEMBRANE CURING COMPOUND

A. Membrane Curing Compound: ASTM C 309 Type 1 - Clear or translucent, Class B. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft/gal. VOC compliant.
   1. Dissipating resin type.
   2. Product shall be compatible with tilt-up bond breaker, floor hardeners, sealers, and floor coverings.
   3. Product shall be easily removable from slab surface if film forming, and if used under building cover and not exposed to UV light.
   4. Product equal to Euclid: Furze DR VOX

2.06 PENETRATING CONCRETE HARDENER - FOR ALL INTERNAL SLABS EXCEPT AREAS RECEIVING ELECTROSTATIC CONTROL EPOXY COATING

A. Penetrating, chemically reactive, concrete hardener containing a minimum 15% lithium silicate solids, (no potassium or sodium silicate blends allowed) equal to:
   1. Convergent Concrete Technology: Pentra-Sil NL

2. Seal Source: SS Harden X
3. Prosoco: Consolideck LS
4. SpecChem: LithSeal SC

2.07 EVAPORATION RETARDANT

A. Acceptable Products:
1. Dayton Superior: Sure Film.
2. Euclid: Eucobar.
3. L&M: E-Con.
4. Nox-Crete: Monofilm
5. Sonneborn: Confilm
6. SpecChem: Spec Film

2.08 CRACK REPAIR MATERIAL

A. Cracks Greater Than 1/8 inch and less than 3/4 inch: Semi-rigid epoxy joint filler. See section 07 9216 - Interior Floor Joint Filler.

B. Cracks Less Than 1/8 Inch: Structural polymer adhesive.
1. Acceptable Product:
a. Metzger McGuire: Rapid Refloor
b. Roadware, Inc: Roadware 10 Minute Concrete Mender.
2. Select product color from manufacturers full range to closely match concrete color.

2.09 SPALL REPAIR MATERIAL

A. Spalls Greater Than 4 inches (in any one direction): Epoxy mortar.
1. Acceptable Product:
a. Metzger McGuire: Armor Hard
b. SpecChem: SpecPoxy Mortar (3-component epoxy mortar; aggregate included)
2. Physical properties before mixing with aggregate:
a. Shore D Hardness: 75 (+/-5)
b. Compressive Strength: 10,500 PSI
c. Tensile Strength: 1,400 PSI

B. Spalls Less Than 4 inches (in both directions): Structural polymer adhesive.
1. Acceptable Product:
a. Metzer McGuire: Rapid Refloor
2. Physical Properties
3. a. Shore D Harness: 70 (+/-5)2
a. Compressive Strength: 4,000 PSI
b. Tensile Strength: 5,500 PSI
c. Color: Select color from manufacturer's full range to closely math concrete color.

C. Sand Aggregate for Crack, Spall and Joint Repair: Use fine, over-dried, washed silica sand ranging from 20-40. Color of sand when added to repair material shall closely match concrete floor color.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that floor surfaces are acceptable to receive the work of this section.

B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

3.02 GENERAL

A. Apply materials in accordance with manufacturer's instructions.

3.03 SLAB FINISHES

A. Screed floor slabs to even surface by use of straightedge and screeding strips, within tolerances prescribed by ACI 301 and ACI 117 (AA) for specified slab finish.

B. Float surfaces on concrete with wood float in manner that will compact concrete and produce surface free of depressions or ridges. Test for grade o level and correct as necessary by removing excess or adding and compacting additional concrete. Surfaces to receive float finish include slabs to receive setting beds.

C. Trowel Finish: Apply trowel finish to designated monolithic slab surfaces. After floating, begin first trowel finish operation using power-driven trowel. Begin final troweling when surface produces ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand troweling operation, free of trowel marks, uniform in texture and appearance. The following surfaces shall receive a trowel finish:
   1. Slabs to be exposed in the finished work, except where designated to receive a non-slip broom finish.
   2. Slabs designated to receive elastomeric surfacing or seamless flooring.
   3. Slabs to receive resilient flooring, carpet and similar finish materials.

D. Non-Slip Broom Finish: Immediately after trowel finishing, roughen concrete surface by brooming in direction perpendicular to main traffic route. Coordinate required final finish with Architect before application. Apply non-slip broom finish to exterior concrete platforms, steps and ramps.

E. Non-Slip Aggregate Finish: After completion of float finishing, and before beginning trowel finish, distribute 25 pounds of dampened abrasive aggregate per 100 sq. ft. of surface. Tamp aggregate flush with surface using steel trowel, but do not force non-slip aggregate particles below the surface. After broadcasting and tamping, apply trowel finishing as specified. After curing, work surface with steel wire brush, or an abrasive stone, and water to expose non-slip aggregate. Apply non-slip aggregate finish to interior concrete stair treads platforms, and ramps.

F. Nonmetallic hardened finish: Apply hardener as dustcoat, in two shakes. Apply at a minimum rate in accordance with manufacturer's product data. Apply approximately two-thirds of aggregate in first shake, floating into surface. Apply remainder of aggregate after achieving uniform color and when surface water disappears. Trowel finish as specified.

3.04 FLOOR FINISH TOLERANCE

A. Exterior Slabs:
   1. Finish slabs to drain freely.
   2. Cut out and replace depressions that hold water.

3.05 PATCHING OF EXPOSED CONCRETE SURFACES

A. Areas requiring patching shall not exceed two square feet per 1000 square feet of surface area and shall be widely dispersed. Areas having excessive defects as determined by the Architect shall be removed and replaced.

B. Following finishing operation, patch voids, honeycomb from tie holes and defects using a mixture of similar proportions to original concrete, deleting coarse aggregate.

C. In preparing areas to receive patch, remove loose particles and chip out adjacent sound concrete to avoid featheredge patches. Patches shall match approved patches on mock-up.

D. Apply a coating of bonding agent to areas being patched. Take care to prevent staining of exposed surfaces. Apply bonding agent in accordance with manufacturer's product data.

E. Fill in area with selected mix, bringing to same level as original concrete. Brush out area to match surrounding work. Allow to cure.

3.06 COATING APPLICATION

A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.

B. Verify that water vapor emission from concrete and relative humidity in concrete are within limits established by coating manufacturer.

C. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.

D. Apply coatings in accordance with manufacturer's instructions, matching approved mock-ups for color, special effects, sealing and workmanship.

3.07 CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at relatively constant temperature for the period of time necessary for hydration of cement and hardening of concrete.

B. Begin initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Keep continuously moist for not less than 72 hours.

C. Begin final curing procedures immediately following initial curing and before the concrete has dried. Continue final curing for at least 168 cumulative hours (not necessarily consecutive) during which the concrete has been exposed to air temperatures above 50 degrees F. Avoid rapid drying at end of final curing period.

D. Curing Methods: Cure concrete by moist during, by moisture-retaining cover curing, by liquid curing compound, or by combinations thereof, except where manufactured products, in accordance with manufacturer's product data, forbid mixing certain methods.

E. Cure surfaces to receive elastomeric roofing surfacing or coatings using sodium silicate or chlorinated rubber-based curing and sealing compound after finishing.

F. Cure floor surfaces that are not designated to receive further finish with sodium silicate or chlorinated rubber-based curing and sealing compound after finishing.

G. Provide moisture curing by any of the following methods:
   1. Keeping surface of concrete continuously wet by covering with water.
   2. Continuously water-fog spray.
   3. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water, and keeping absorptive cover continuously wet.

H. Provide moisture retaining cover curing as follows: Cover concrete surfaces with specified moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

I. Provide liquid curing-sealing compound as follows: Apply specified membrane-forming, curing-sealing compound to damp concrete surfaces as soon as the concrete has set sufficiently so as not to be marred by the application. Areas subjected to heavy rainfall within three hours after initial application shall be recoated. Maintain continuity of coating and repair damage to coat during entire period.

J. Do not use membrane curing/sealing compounds on surfaces which are to be covered with a coating material applied directly to the concrete or with waterproofing, damp proofing, flooring, paint and coatings and finish materials.

K. Cure formed surfaces of concrete, including undersides of supported slabs and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

L. Curing Unformed Surfaces:
   1. Initially cure unformed surfaces, such as slabs and other flat surfaces by moist curing.
   2. Final cure unformed surfaces, unless otherwise specified, by any of the methods specified above, as applicable.

3.08 PROTECTION

A. Protect freshly placed concrete from damage due to water, falling objects, or persons marring finish surface of concrete. Surfaces damaged due to lack of protective measures shall be removed and replaced with fresh concrete.

B. Protect finished surfaces from damage by work of other trades due to subsequent work.

C. Protect floor surfaces to be left exposed from damage during subsequent construction operations and make necessary repairs to damaged areas, returning to original condition.

3.09 CONCRETE POLISHING

A. Execute using materials, equipment, and procedures specified by manufacturer, using manufacturer approved installer.
   1. Final Polished Sheen: Satin finish; other sheens are included as comparison to illustrate required sheen; final sheen is before addition of any sealer or coating, regardless of whether that is also specified or not.
   2. Satin Finish: Reflecting images from side lighting.
   3. Semi-Gloss Finish: Reflecting overhead and side images from 35 to 45 feet (10 to 14 meters) away.
   4. High Gloss Finish: Finish that looks wet and shows mirror-like reflections of side and overhead images.

B. Protect finished surface as required and as recommended by manufacturer of polishing system.

3.10 RANDOM TRAFFIC FLOORS:

A. Definitions:
   1. Ff defines the maximum floor curvature allowed over 24 inches computed on the basis of successive 12 inch elevation differentials, Ff is commonly referred to as the "Flatness F-Number."
   2. FI defines the relative conformity of the floor surface to a horizontal plane as measured over a 10-foot distance.

B. Criteria:
   1. The entire slab-on-grade shall be designated as a Random Traffic Floor.
   2. Slab-on-grade floor slabs shall conform to the following F-number requirements.
      a. Specified Overall Value: Ff 35/FI 30.
      b. Minimum Local Value: Ff 24/ FI 20.
   3. Elevated slab areas shall conform to the following ACI F-number requirements (note that FI levelness tolerances do not apply to unshored elevated construction):
      a. Specified Overall Value: Ff 25.
      b. Minimum Local Value: Ff 18.
   4. General Conformity to Design Grade:
      a. The slab-on-grade floor shall fall within +/- 3/4 inch of the finished floor elevation.
   5. Floor Tolerance Measurements: Floor flatness and levelness tests shall be conducted in accordance with the provisions set forth in ASTM E1155. Floor tolerance measurements shall be made within 24 hours after completion of the final troweling operations - and in all cases before forms and/or shores have been removed - using a Dipstick, or an F-Meter, or other measuring device specifically approved by the Architect. Results of all floor tolerance tests, including a formal notice of acceptance or rejection of the work, shall be provided to the Contractor within 24 hours after data collection. Weekends and holidays shall be ignored when computing the testing and reporting deadlines specified above.
   6. Each newly installed floor slab shall be subdivided into Minimum Local Floor Sections defined by either the column and half-column lines, or the construction and control joints whichever subdivision yields the smaller area.
   7. Remedy for out-of-tolerance work: All Minimum Local Floor Sections measuring at or above both of the specified minimum local F-numbers shall be accepted for tolerance compliance as constructed. All Minimum Local Floor Sections measuring below either of the specified minimum local F-numbers shall be removed and replaced for slab-on-grade.

3.11 SLAB FINISHES

A. Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.

B. Using Laser Screed, consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items and into corners. Do not over-vibrate surface.

C. Bring slab surfaces to correct level with straightedge and strike-off. Use highway straightedge, bull float or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.

D. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Float surfaces on concrete in manner that will compact concrete and produce surface free of depressions or ridges. Test for grade or level and correct as necessary by removing excess or adding and compacting additional concrete. Surfaces to receive float finish include slabs to receive setting beds.

E. Check and level surface plane to tolerance of 1/4" maximum deviation in 10 feet. Cut down high spots and fill low spots.

F. Trowel finish: Apply a 3 trowel finish to designated monolithic slab surfaces. After floating, begin first trowel finish operation using power driven trowel. Begin final troweling when surface produces ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand and power troweling operation, free of trowel marks, uniform in texture and appearance. Do not overwork the final troweling operation. Do NOT burnish the slab surface.

G. Non-slip broom finish: Immediately after trowel finishing, roughen concrete surface by brooming in direction perpendicular to main traffic routes. Coordinate required final finish with Architect before application. Apply non-slip broom finish to all exterior concrete platforms, steps, pavement and ramps.

3.12 EVAPORATIVE RETARDANT

A. When concrete slab placement are subject to high temperatures, wind and/or low humidity, the Contractor shall use the evaporation retarder to minimize plastic cracking. The compound may be required to be applied one or more times during the finishing operation. The initial application is usually made after the strike-off operation.

3.13 CONSTRUCTION JOINTS

A. Locate construction joints as indicated on the drawings or as approved.

B. Provide 1/8 inch edger to edge of second slab placement so that joint can be easily located and recut for joint filling operation. Do not edge first placement.

3.14 3.14 CONTROL JOINTS

A. Locate control joints as indicated on the drawings.

B. All sawn control joints shall be made using the "Soff-Cut" method. Initial depth of joint with new blade shall be 1-1/4 inch. Minimum depth of joint accounting for blade wear shall be 1 inch. Saw joints immediately following the final finishing operation in accordance with recommendations of Soff-Cut. Replace saw blades at first sign of raveling at the joint. Guide plate shall be replaced each time a saw blade is replaced. Use "joint saver" inserts, provided by the saw manufacturer, at all intersecting joints and at location where front wheel crosses perpendicular to the previously cut joint.

3.15 CURING

A. Cure floor surfaces in accordance with ACI 308.

B. Membrane Curing Compound:
   1. The compound shall be applied uniformly over the entire surface in accordance with manufacturer's instruction.
   2. Moisture loss from absorption of forms shall be minimized by keeping forms wet until they can be safely removed.
   3. During 7 day curing period, the surfaces shall be protected from damage by equipment, temperature change, stored materials, curing procedures, rain and running water.

3.16 PENETRATING CONCRETE HARDENER:

A. The hardener shall be applied after the concrete has cured a minimum of 30 days, and prior to Tenant's material handling vendors entry on the slab.

B. Application: Follow the manufacturer's written instructions for the application of the hardener.
   1. 1.
   2. It is critical that the slab be clean and all surface dirt and curing membrane residue be completely removed prior to application.

C. Per manufacturer's instructions, apply a single coat of hardener. Lightly apply sufficient product to wet the surface without producing puddles.

D. Use a clean, soft bristle push broom or microfiber pad to spread the product evenly and ensure uniform wetting. Avoid spreading once drying begins. Scrubbing is not necessary.

E. If surfaces dry immediately, increase the rate of application. Surface should remain wet for 5-10 minutes. Adjust rate of application to eliminate puddles.

F. NOTE: Allowing excess material to puddle on the floor will extend dry times and create white residues which must be removed immediately.

G. Allow treated surfaces to dry.

3.17 PROTECTION

A. Where other concrete structures are to be poured on top of or adjacent to finished surfaces, take all necessary precautions to prevent damage from erection of formwork or staining rom concrete laitance.

B. Alert other trades to the need for special protection against rolling or sliding heavy loads across the surface, oil drippings from pipe threaders, spillage of paint, plaster and mortar. Insure that the covering is not damaged or removed during the progress of the work.

C. Review proposed tilt panel construction and erection procedures to ensure that scratching marring, gouging and cracking of the floor slabs will be avoided.

3.18 DEFECTIVE FLOOR SLAB:

A. Defective Slab: If it is determined that any type of crack or defect in the slab-on-ground has occurred due to the result of Contractor's failure to comply with these specifications and construction documents, Contractor shall repair and/or replace cracked and defective slabs to the satisfaction of the Owner, and as directed by the Architect.

3.19 3.19 CRACK AND SPALL REPAIR OF FLOOR SLABS:

A. Coordination: Repairs made after the Owner moves in shall be made at times that do not interfere with regular warehouse activities.

B. Repair those cracks that meet any of the following conditions:
   1. The crack is within the "shipping/receiving" bays.
   2. The crack is wider than 1/32 inch (i.e. "credit card width").
   3. The crack edges have begun to spall.
   4. Adjacent slab elements (on either side of the crack) exhibit vertical movement when crossed by a loaded forklift.

C. Method of Crack Repair: Follow these steps (or use other method acceptable to the Engineer):
   1. Multiple cracks clustered in a spider web appearance, or cracks within the "shipping/receiving" bays.
      a. Remove concrete slab forming a rectangular area normal to column grid. Extend rectangular area to the nearest control or construction joint.
      b. Place and finish new concrete with same specifications as original slab. All edges shall be doweled into existing slab using 3/4 x 12 inch long square steel dowels at 18 inches on-on center. Dowels shall be placed centered in slab. Drill oversized 1-1/4" holes approximately 5-1/4" deep in to the existing slab to receive square dowels, set

in epoxy grout. Install PNA square dowel clips over dowel length to be placed in new slab.

2. Isolated random cracks less than 1/8 inch wide, without "islands" or chipping, and not subject to movement:
    a. Clean crack out using right angle grinder with soft wire wheel or wire brush, then blow out with air.
    b. Following manufacturer's mixing and installation instructions fill the crack with structural polymer adhesive material slightly overfilling. Monitor top and refill if necessary to assure fill remains crowned above floor surfaces.
    c. After cure, use medium grit grinding pad to remove excess material flush with floor surface.
3. Isolated random cracks greater than 1/8 inch and less than 3/4 inch, and not subject to movement.
    a. Utilizing crack chasing saws and dust-free cleanout, cut along the crack to a depth of approximately 3/4 inch creating a straight, clean vertical edge. Ensure that all concrete "islands," and any loose or weak concrete from the crack edge is removed. Blow out with air to clear all loose elements or debris.
    b. Following manufacturer's mixing and installation instructions fill the joint with semi-rigid epoxy joint filler specified in Section 07 9216. Monitor top and refill if necessary to assure fill remains crowned above floor surface.
    c. After cure, trim the overfill using a stiff sharp razor so top of filler material is flush with concrete floor on both sides.

D. Method of Spall Repair: Follow these steps (or use other method acceptable to the Architect):
1. Bolt holes, small gouges, chips, and spall areas less than 4 inches:
    a. For anchor bolt holes, cult bolt off and drive anchor minimum 1/2" below floor surface.
    b. Roughen surface of concrete with grinder. Sweep and vacuum roughened surface to remove debris.
    c. lean surfaces free of oil, grease, coatings, sealers, paint, rust, etc. Verify surfaces are dry, and structurally sound.
    d. Following manufacturer's mining and installation instructions fill area with structural polymer adhesive, slightly overfilling, and trowel smooth.
    e. After material has cured, grind off overfill to ensure flush, smooth floor surfaces.
2. Spalled areas 4 inches and greater:
    a. Prevent feather edging by making vertical cuts at the spall outer edges, minimum 3/4 inch deep
    b. Remove delaminated material and deteriorated concrete surface material a minimum depth of 1/2 inch. Sweep and vacuum roughened surface to remove debris.
    c. Clean surfaces free of oil, grease, coatings, sealers, paint, rust, etc. Verify surfaces are dry, and structurally sound.
    d. Following manufacture's mixing and installation instructions fill area with epoxy mortar repair material, slightly overfilling, and trowel smooth.
    e. After material has cured, grind off overfill to ensure flush, smooth floor surfaces.

E. FIELD QUALITY CONTROL
1. An independent testing agency, as specified in Section 01 4000, will inspect finished slabs for flatness and levelness.

END OF SECTION

SECTION 034500

PRECAST ARCHITECTURAL CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Architectural precast concrete wall panels with integral insulation.

B. Architectural precast concrete accessories.

C. Supports, anchors, and attachments.

D. Grouting under panels.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

A. ACI 318 - Building Code Requirements for Structural Concrete; 2019, with Errata (2021).

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

D. ASTM C150/C150M - Standard Specification for Portland Cement; 2021.

E. PCI MNL-117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products; 2013.

F. PCI MNL-120 - PCI Design Handbook; 2017.

G. PCI MNL-122 - Architectural Precast Concrete: Fully Revised Manual Including New Sections, Extensive Updates, and Detailed Specifications to Meet Today's Construction Needs; 2007.

H. PCI MNL-123 - Connections Manual: Design and Typical Details of Connections for Precast and Prestressed Concrete; 1988.

I. PCI MNL-135 - Tolerance Manual for Precast and Prestressed Concrete Construction; 2000.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate layout, unit locations, configuration, unit identification marks, reinforcement, integral insulation, insulated panel system connectors, connection details, support items, location of lifting devices, dimensions, openings, and relationship to adjacent materials. Provide erection drawings.

C. Samples: Submit two 12, by 12 inch in size, illustrating surface finish, color and texture.

D. Designer's Qualification Statement.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications:

1. Plant certified under Architectural Precast Association Plant Certification Program for production of architectural precast concrete.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Handling: Lift and support precast units only from support points.

B. Protect units to prevent staining, chipping, or spalling of concrete.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Architectural Precast Concrete:

1. Any manufacturer holding a PCI Group A Plant Certification for the types of products specified; see www.pci.org/#sle.

2.02 PRECAST UNITS, GENERAL

A. Precast Architectural Concrete Units: Comply with PCI MNL-120, PCI MNL-122, PCI MNL-123, PCI MNL-135, and ACI 318.
   1. Design Loads: Static loads, anticipated dynamic loading, including positive and negative wind loads, thermal movement loads, and erection forces as defined by applicable code.
   2. Calculate structural properties of units in accordance with ACI 318.
   3. Accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.
   4. Provide connections that accommodate building movement and thermal movement and adjust to misalignment of structure without unit distortion or damage.

B. Finish Type A: Ensure exposed-to-view finish surfaces of precast units are uniform in color and appearance, matching color and finish of existing building precast panels.

2.03 REINFORCEMENT

2.04 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.

2.05 REVEAL AND ACCENT STRIPS

A. Material: Non-staining, non-reactive, high-density polyethylene.

B. Profile(s): As indicated on drawings.

2.06 SUPPORT DEVICES

A. Connecting and Support Devices; Anchors and Inserts: ASTM A36/A36M steel; hot-dip galvanized in accordance with ASTM A153/A153M.
   1. Clean surfaces of rust, scale, grease, and foreign matter.

2.07 FABRICATION

A. Fabricate in compliance with PCI MNL-117 and PCI MNL-135.

PART 3 EXECUTION

3.01 PREPARATION

A. Provide for erection procedures and induced loads during erection. Maintain temporary bracing in place until final support is provided.

3.02 ERECTION

A. Erect units without damage to shape or finish. Replace or repair damaged panels.

B. Erect units level and plumb within allowable tolerances.

C. Align and maintain uniform horizontal and vertical joints as erection progresses.

3.03 TOLERANCES

A. Erect members level and plumb within allowable tolerances. Comply with PCI MNL-135, except as specifically amended below.

END OF SECTION

SECTION 040511

MORTAR AND MASONRY GROUT

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Mortar for masonry.

B. Grout for masonry.

1.03 RELATED REQUIREMENTS

A. Section 04 20 00 - Unit Masonry: Installation of mortar and grout.

B. Section 04 21 00 - Masonry Veneer Brick.

C. Section 04 72 00 - Cast Stone Masonry: Installation of mortar.

D. Section 08 11 13 - Hollow Metal Doors and Frames: Products and execution for grouting steel door frames installed in masonry.

1.04 REFERENCE STANDARDS

A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.

B. ASTM C5 - Standard Specification for Quicklime for Structural Purposes; 2018.

C. ASTM C91/C91M - Standard Specification for Masonry Cement; 2018.

D. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2018.

E. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.

F. ASTM C150/C150M - Standard Specification for Portland Cement; 2018.

G. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2018.

H. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019.

I. ASTM C387/C387M - Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar; 2017.

J. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2018.

K. ASTM C476 - Standard Specification for Grout for Masonry; 2018.

L. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2018a.

M. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2016.

N. ASTM C1019 - Standard Test Method for Sampling and Testing Grout; 2018.

O. ASTM C1072 - Standard Test Method for Measurement of Masonry Flexural Bond Strength; 2013, with Editorial Revision (2014).

P. ASTM C1142 - Standard Specification for Extended Life Mortar for Unit Masonry; 1995 (Reapproved 2013).

Q. ASTM C1148 - Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar; 1992a (Reapproved 2014).

R. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms; 2018.

S. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry; 2014a.

T. ASTM E518/E518M - Standard Test Methods for Flexural Bond Strength of Masonry; 2015.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used. Also include required environmental conditions and admixture limitations.

C. Samples: Submit two samples of mortar, illustrating mortar color and color range.

D. Reports: Submit reports on mortar indicating compliance of mortar to property requirements of ASTM C270 and test and evaluation reports per ASTM C780.

E. Reports: Submit reports on grout indicating compliance of component grout materials to requirements of ASTM C476 and test and evaluation reports to requirements of ASTM C1019.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Manufacturer's Installation Instructions: Submit packaged dry mortar manufacturer's installation instructions.

1.06 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
   1. Maintain one copy of each document on project site.

1.07 PRECONSTRUCTION TESTING

A. Testing will be conducted by an independent test agency, in accordance with provisions of Section 01 40 00 - Quality Requirements.

B. Mortar Mixes: Test mortars prebatched by weight in accordance with ASTM C780 recommendations for preconstruction testing.
   1. Test results will be used to establish optimum mortar proportions and establish quality control values for construction testing.

C. Grout Mixes: Test grout batches in accordance with ASTM C1019 procedures.
   1. Test results will be used to establish optimum grout proportions and establish quality control values for construction testing.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.09 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

B. Maintain materials and surrounding air temperature to minimum 40 degrees F (5 degrees C) prior to, during, and 48 hours after completion of masonry work.

C. Maintain materials and surrounding air temperature to maximum 90 degrees F (32 degrees C) prior to, during, and 48 hours after completion of masonry work

PART 2 PRODUCTS

2.01 MORTAR AND GROUT APPLICATIONS

A. At Contractor's option, mortar and grout may be field-mixed from packaged dry materials, made from factory premixed dry materials with addition of water only, or ready-mixed.

B. Use only ready-mixed mortar and grout, produced in on-site plant.

C. Use only factory premixed packaged dry materials for mortar and grout, with addition of water only at project site.
   1. Exception: If a specified mix design is not available in a premixed dry package, provide equivalent mix design using standard non-premixed materials.

D. Field-mix all mortar and grout.

E. Mortar Color: Natural gray at CMU walls unless otherwise indicated. At brick veneer, provide buff color from manufacturer's standard color line.

F. Mortar Mix Designs: ASTM C270, Property Specification.
   1. Historic Exterior Masonry Pointing Mortar: Type O; color to match existing.
   2. Masonry below grade and in contact with earth: Type S.
   3. Exterior Masonry Veneer: Type N.
   4. Exterior Cavity Walls: Type S mortar with Type N pointing mortar.
   5. Engineered Masonry: Type M.
   6. Exterior, Loadbearing Masonry: Type N.
   7. Exterior, Non-loadbearing Masonry: Type N.
   8. Exterior Repointing Mortar: Type N with maximum 2 percent ammonium stearate or calcium stearate per cement weight.
   9. Interior, Loadbearing Masonry: Type N.
   10. Interior, Non-loadbearing Masonry: Type O.
   11. Pointing Mortar for Prefaced or Specially Faced Unit Masonry: One part Portland cement, 1/8 part hydrated lime, and two parts graded (80 mesh) aggregate, proportioned by volume. Add aluminum tristearate, calcium stearate, or ammonium stearate equal to 2 percent of Portland cement by weight.
   12. Glass Unit Masonry: Type N mortar and Type O pointing mortar.

G. Grout Mix Designs:
   1. Bond Beams and Lintels: 3,000 psi (21 MPa) strength at 28 days; 8-10 inches (200-250 mm) slump; provide premixed type in accordance with ASTM C 94/C 94M.
      a. Fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less.
      b. Coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).
      c. Engineered Masonry: 3,000 psi (21 MPa) strength at 28 days; 8-10 inches (200-250 mm) slump; provide premixed type in accordance with ASTM C 94/C 94M.
         1) Fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less.
         2) Coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).

2.02 MATERIALS

A. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C387/C387M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
   1. Type: Type N.
   2. Color: Standard gray.
   3. Water repellent mortar for use with water repellent masonry units.

B. Masonry Cement: ASTM C91/C91M.
   1. Type: Type N; ASTM C91/C91M.
   2. Colored Mortar: Premixed cement as required to match Architect's color sample.
   3. Manufacturers:
      a. Solomon Colors; Solomon Colors Concentrated A, H, and X Series:
      b. Substitutions: See Section 01 60 00 - Product Requirements.

C. Hydrated Lime: ASTM C207, Type S.

D. Quicklime: ASTM C5, non-hydraulic type.

E. Mortar Aggregate: ASTM C144.

F. Grout Aggregate: ASTM C404.

G. Water: Clean and potable.

H. Accelerating Admixture: Nonchloride type for use in cold weather.

I. Moisture-Resistant Admixture: Water repellent compound designed to reduce capillarity.

J. Bonding Agent: Latex type.

K. Integral Water Repellent Admixture: Polymeric liquid admixture added to mortar at the time of manufacture.
   1. Performance of Mortar with Integral Water Repellent:
      a. Water Permeance: When tested per ASTM E514/E514M and for a minimum of 72 hours:
         1) No water visible on back of wall above flashing at the end of 24 hours.
         2) No flow of water from flashing equal to or greater than 0.032 gallons per hour (0.05 L per hour) at the end of 24 hours.
         3) No more than 25 percent of wall area above flashing visibly damp at end of test.
         4) Flexural Bond Strength: ASTM C1072; minimum 10 percent increase.
         5) Compressive Strength: ASTM C1314; maximum 5 percent decrease.
         6) Drying Shrinkage: ASTM C1148; maximum 5 percent increase in shrinkage.
      b. Use only in combination with masonry units produced with integral water repellent admixture..

2.03 MORTAR MIXING

A. Ready Mixed Mortar: ASTM C1142, Type equivalent to that specified according to ASTM C270.

B. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.

C. Maintain sand uniformly damp immediately before the mixing process.

D. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio; mix in accordance with manufacturer's instructions, uniform in coloration.

E. Add admixtures in accordance with manufacturer's instructions; mix uniformly.

F. Do not use anti-freeze compounds to lower the freezing point of mortar.

G. If water is lost by evaporation, re-temper only within two hours of mixing.

2.04 GROUT MIXING

A. Mix grout in accordance with ASTM C94/C94M.

B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.

C. Add admixtures in accordance with manufacturer's instructions; mix uniformly.

D. Do not use anti-freeze compounds to lower the freezing point of grout.

PART 3 EXECUTION

3.01 PREPARATION

A. Apply bonding agent to existing concrete surfaces.

B. Plug clean-out holes for grouted masonry with brick masonry units. Brace masonry to resist wet grout pressure.

3.02 INSTALLATION

A. Install mortar and grout to requirements of section(s) in which masonry is specified.

B. Work grout into masonry cores and cavities to eliminate voids.

C. Do not install grout in lifts greater than 16 inches (400 mm) without consolidating grout by rodding.

D. Do not displace reinforcement while placing grout.

E. Remove excess mortar from grout spaces.

3.03 GROUTING

A. Use either high-lift or low-lift grouting techniques, at Contractor's option, subject to other limitations of Contract Documents.

B. Perform all grouting by means of low-lift technique. Do not employ high-lift grouting.

C. Perform grouting by means of high-lift technique, except in locations that mandate use of low-lift grouting technique.
   1. Do not use high-lift grouting where size of cavities mandates use of fine grout.

D. Low-Lift Grouting:
   1. Limit height of pours to 12 inches (300 mm).
   2. Limit height of masonry to 16 inches (400 mm) above each pour.
   3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
   4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.

E. High-Lift Grouting:
   1. Verify that horizontal and vertical reinforcement is in proper position and adequately secured before beginning pours.
   2. Brick: Limit pours to maximum 12 feet (3.66 m) in height and 25 feet (7.6 m) horizontally.
   3. Hollow Masonry: Limit lifts to maximum 4 feet (1.2 m) and pours to maximum height of 24 feet (7.3 m).
   4. Place grout for spanning elements in single, continuous pour.

3.04 FIELD QUALITY CONTROL

A. An independent testing agency will perform field tests, in accordance with provisions of Section 01 40 00 - Quality Requirements.

B. Test and evaluate mortar in accordance with ASTM C780 procedures.
   1. Test with same frequency as specified for masonry units.

C. Test and evaluate grout in accordance with ASTM C1019 procedures.
   1. Test with same frequency as specified for masonry units.

D. Prism Tests: Test masonry and mortar panels for compressive strength in accordance with ASTM C1314, and for flexural bond strength in accordance with ASTM C1072 or ASTM E518/E518M; perform tests and evaluate results as specified in individual masonry sections.

3.05 SCHEDULES

A. Exterior Cavity Wall: Type S mortar with Type N pointing mortar.

B. Parking Levels 1-3: CMU partitions with Type N mortar.

END OF SECTION

SECTION 042000

UNIT MASONRY

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Concrete block.

B. Concrete building brick.

C. Concrete facing brick.

D. Clay facing brick.

E. Common brick.

F. Hollow brick.

G. Sand-lime face brick.

H. Ceramic glazed face brick.

I. Clay tile.

J. Ceramic glazed structural clay facing tile.

K. Firebox brick.

L. Clay flue lining units.

M. Mortar and grout.

N. Reinforcement and anchorage.

O. Flashings.

P. Lintels.

Q. Accessories.

1.03 RELATED REQUIREMENTS

A. Section 03 10 00 - Concrete Forming and Accessories: Dovetail slots for masonry anchors.

B. Section 03 20 00 - Concrete Reinforcing: Reinforcing steel for grouted masonry.

C. Section 03 30 00 - Cast-in-Place Concrete: Installation of dovetail slots for masonry anchors.

D. Section 04 05 11 - Mortar and Masonry Grout.

E. Section 05 50 00 - Metal Fabrications: Loose steel lintels.

F. Section 06 10 00 - Rough Carpentry: Nailing strips built into masonry.

G. Section 07 11 13 - Bituminous Dampproofing: Dampproofing parged masonry surfaces.

H. Section 07 21 00 - Thermal Insulation: Insulation for cavity spaces.

I. Section 07 25 00 - Weather Barriers: Water-resistive barriers or air barriers applied to the exterior face of the backing sheathing or masonry.

J. Section 07 62 00 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.

K. Section 07 84 00 - Firestopping: Firestopping at penetrations of fire-rated masonry and at top of fire-rated walls.

L. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.04 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

B. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

C. ASTM A480/A480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.

D. ASTM A580/A580M - Standard Specification for Stainless Steel Wire.

E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

F. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.

G. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

H. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

I. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement.

J. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.

K. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

L. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.

M. ASTM C27 - Standard Classification of Fireclay and High-Alumina Refractory Brick.

N. ASTM C34 - Standard Specification for Structural Clay Load-Bearing Wall Tile.

O. ASTM C55 - Standard Specification for Concrete Building Brick.

P. ASTM C56 - Standard Specification for Structural Clay Nonloadbearing Tile.

Q. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale).

R. ASTM C67/C67M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.

S. ASTM C73 - Standard Specification for Calcium Silicate Brick (Sand-Lime Brick).

T. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.

U. ASTM C91/C91M - Standard Specification for Masonry Cement.

V. ASTM C126 - Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.

W. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units.

X. ASTM C140/C140M - Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units.

Y. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.

Z. ASTM C150/C150M - Standard Specification for Portland Cement.

AA. ASTM C199 - Standard Test Method for Pier Test for Refractory Mortars.

AB. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes.

AC. ASTM C212 - Standard Specification for Structural Clay Facing Tile.

AD. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale).

AE. ASTM C270 - Standard Specification for Mortar for Unit Masonry.

AF. ASTM C315 - Standard Specification for Clay Flue Liners and Chimney Pots.

AG. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.

AH. ASTM C476 - Standard Specification for Grout for Masonry.

AI. ASTM C530 - Standard Specification for Structural Clay Nonloadbearing Screen Tile.

AJ. ASTM C652 - Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale).

AK. ASTM C744 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units.

AL. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.

AM. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete.

AN. ASTM C1072 - Standard Test Method for Measurement of Masonry Flexural Bond Strength.

AO. ASTM C1148 - Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar.

AP. ASTM C1261 - Standard Specification for Firebox Brick for Residential Fireplaces.

AQ. ASTM C1283 - Standard Practice for Installing Clay Flue Lining.

AR. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms.

AS. ASTM C1405 - Standard Specification for Glazed Brick (Single Fired, Brick Units).

AT. ASTM C1634 - Standard Specification for Concrete Facing Brick.

AU. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry.

AV. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.

AW. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane.

AX. ASTM E11 - Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves.

AY. ASTM E154/E154M - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover; 2008a, with Editorial Revision

AZ. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry.

BA. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing.

BB. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls.

BC. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls.

BD. BIA Technical Notes No. 46 - Maintenance of Brick Masonry.

BE. ICC-ES AC380 - Acceptance Criteria for Termite Physical Barrier Systems.

BF. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures.

BG. UL (FRD) - Fire Resistance Directory; Current Edition.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.

C. Shop Drawings: Indicate pertinent dimensions, materials, anchorage, size and type of fasteners, and accessories for brickwork support system.
   1. Include calculations or selections from the manufacturer's prescriptive design tables that indicate compliance with the applicable building code and project conditions.
   2. Include the design engineer's stamp or seal on each sheet of shop drawings.

D. Samples: Submit four samples of decorative block units to illustrate color, texture, and extremes of color range.

E. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

F. Manufacturer's Certificate: Certify that water repellent admixture manufacturer has certified masonry unit manufacturer as an approved user of water repellent admixture in the manufacture of concrete block.

G. Test Reports: Concrete masonry manufacturer's test reports for units with integral water repellent admixture.

H. Designer's Qualification Statement.

I. Manufacturer's Qualification Statement.

J. Installer's Qualification Statement.

K. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.
   2. Extra Glazed Units: 50 of each type, size, and color combination.
   3. Extra Pre-Faced Units: 50 of each type, size, and color combination.

1.07 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
   1. Maintain one copy of each document on project site.

B. Fire Rated Assemblies: Comply with applicable code for UL (FRD) Assembly No. ____.

C. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

D. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.

E. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.08 MOCK-UP

A. Construct a masonry wall as a mock-up panel sized 8 feet (2.4 m) long by 6 feet (1.8 m) high; include mortar, accessories, structural backup, and flashings (with lap joint, corner, and end dam) in mock-up.

B. Locate where directed.

C. Mock-up may remain as part of the Work.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

B. Handle and store ceramic glazed masonry units in protective cartons or trays. Do not remove from protective packaging until ready for installation.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 by 8 inches (400 by 200 mm) and nominal depth of 8 inches (200 mm).
   2. Size: Standard units with nominal face dimensions of 16 by 8 inches (400 by 200 mm) and nominal depths as indicated on drawings for specific locations.
   3. Special Shapes: Provide non-standard blocks configured for corners.
      a. Provide bullnose units for outside corners.

4. Load-Bearing Units: ASTM C90, normal weight.
    a. Hollow block, as indicated.
    b. Exposed Faces: Manufacturer's standard color and texture where indicated.
    c. Pattern: Vertical single score.
    d. Pattern: Vertically ribbed and split.
    e. Manufacturers:
        1) The Concrete Products Group; Spec-Brik:
        2) Substitutions: See Section 01 60 00 - Product Requirements.
5. Non-Loadbearing Units: ASTM C129.
    a. Hollow block, as indicated.
    b. Lightweight.
6. Pre-Faced Units: ASTM C90, hollow block, with smooth resinous facing complying with ASTM C744.
7. Units with Integral Water Repellent: Concrete block units as specified in this section with polymeric liquid admixture added to concrete masonry units at the time of manufacture.
    a. Performance of Units with Integral Water Repellent:
        1) Water Permeance: When tested per ASTM E514/E514M and for a minimum of 72 hours.
            (a) No water visible on back of wall above flashing at the end of 24 hours.
            (b) No flow of water from flashing equal to or greater than 0.032 gallons per hour (0.05 L per hour) at the end of 24 hours.
            (c) No more than 25 percent of wall area above flashing visibly damp at end of test.
        2) Flexural Bond Strength: ASTM C1072; minimum 10 percent increase.
        3) Compressive Strength: ASTM C1314; maximum 5 percent decrease.
        4) Drying Shrinkage: ASTM C1148; maximum 5 percent increase in shrinkage.
    b. Use only in combination with mortar that also has integral water repellent admixture.
    c. Use water repellent admixtures for masonry units and mortar by a single manufacturer.
8. Standard Units with Factory-Installed Insulation Inserts: ASTM C90, normal weight.
    a. Size: Standard units with nominal face dimensions of 16 by 8 inches (400 by 200 mm) and nominal depth of 8 inches (200 mm).
    b. Size: Standard units with nominal face dimensions of 16 by 8 inches (400 by 200 mm) and nominal depths as indicated on drawings for specific locations.
    c. Insulation Type: Manufacturer's standard expanded polystyrene (XPS).
    d. Pattern: Vertical single score.
    e. Pattern: Vertically ribbed and split.
    f. Exposed Faces: Color and texture to be selected from manufacturer's standard range.
    g. Exposed Faces: Color and texture to match Architect's sample.
9. Special Units with Factory-Installed Insulation Inserts: ASTM C90, normal weight.
    a. Type: Special shape without end webs; with continuous horizontal insulation inserts.
    b. Insulation Type: Manufacturer's standard expanded polystyrene (XPS).
    c. Size: Nominal face dimensions of 16 inches by 4 inches (400 mm by 100 mm)) and nominal depths as indicated on drawings for specific locations.
    d. Exposed Faces: Color and texture to be selected from manufacturer's standard range.
    e. Exposed Faces: Color and texture to match Architect's sample.
    f. Manufacturers:
        1) The Concrete Products Group; Spec-Brik Hi-R.

B. Concrete Brick:
    1. Size: As indicated on drawings.
    2. Concrete Building Brick: ASTM C55; lightweight, solid, for interior or concealed use.

3. Concrete Facing Brick: ASTM C1634; solid, lightweight; for architectural, paver, and below grade use.
    a. Exposed Faces: Color and texture to be selected from manufacturer's standard range.
    b. Exposed Faces: Color and texture to match Architect's sample.

2.02 BRICK UNITS

A. Manufacturers:
1. Belden Brick; Belcrest.
2. Endicott Clay Products Co; Face Brick - FBS.
3. Meridian Brick LLC; Athens Architectural Series: www.meridianbrick.com/#sle.
4. Substitutions: See section 01 60 00 - Product Requirements.

B. Facing Brick: ASTM C216, Type FBS Smooth, Grade SW.
1. Color and texture to match Architect's sample.
2. Nominal size: As indicated on drawings.
3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.
4. Compressive strength: As indicated on drawings, measured in accordance with ASTM C67/C67M.

C. Building (Common) Brick: ASTM C62, Grade SW; solid units.
1. Nominal size: As indicated on drawings.
2. Compressive strength: As indicated on drawings, measured in accordance with ASTM C67/C67M.

D. Hollow Facing and Building Brick: ASTM C652, Grade SW; Type HBS; Class H40V.
1. Color and texture to match Architect's sample.
2. Nominal size: As indicated on drawings.
3. Compressive strength: As indicated on drawings, measured in accordance with ASTM C67/C67M.

E. Sand-Lime Brick: ASTM C73, Grade SW.
1. Color and texture to match Architect's sample.
2. Nominal size: As indicated on drawings.

F. Glazed Brick (Single Fired, Brick Units): ASTM C1405, Grade S (standard), Type I (single-faced units), Class Exterior, Division Solid.
1. Color and texture to match Architect's sample.
2. Nominal size: As indicated on drawings.
3. 3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn without chipping glaze to produce equivalent effect.

G. Glazed Brick (Double Fired, Brick Units):
1. Glazed Facing Brick: ASTM C216, Type FBS Smooth, Grade SW with ceramic glaze complying with ASTM C126.
2. Glazed Hollow Facing Brick: ASTM C652, Grade SW; Type HBS; Class H40V with ceramic glaze complying with ASTM C126.
3. Color and texture to match Architect's sample.
4. Nominal size: As indicated on drawings.
5. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn without chipping glaze to produce equivalent effect.

H. Ceramic Glazed Face Brick: ASTM C126, Grade S (Select), Type I (single-faced units).
1. Color and texture to match Architect's sample.
2. Nominal size: As indicated on drawings.
3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn without chipping glaze to produce equivalent effect.
4. Compressive strength: As indicated on drawings, measured in accordance with ASTM C67/C67M.

I. Fireclay Refractory Brick: ASTM C27 Class Super-duty; nominal size as indicated on drawings.
   1. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.

J. Firebox Brick for Residential Fireplaces: ASTM C1261; actual size as indicated on drawings.

2.03 MORTAR AND GROUT MATERIALS

A. Mortar and Grout: As specified in Section 04 05 11.

B. Masonry Cement: ASTM C91/C91M, Type N.
   1. Colored Mortar: Premixed cement as required to match Architect's color sample.

C. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
   1. Not more than 0.60 percent alkali.

D. Hydrated Lime: ASTM C207, Type S.

E. Mortar Aggregate: ASTM C144.

F. Grout Aggregate: ASTM C404.

G. Water: Clean and potable.

H. Integral Water Repellent Admixture for Mortar: Polymeric liquid admixture added to mortar at the time of manufacture.
   1. Use only in combination with masonry units manufactured with integral water repellent admixture.
   2. Use only water repellent admixture for mortar from the same manufacturer as water repellent admixture in masonry units.
   3. Meet or exceed performance specified for water repellent admixture used in masonry units.

I. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
   1. Type: Type N.
   2. Color: Standard gray.
   3. Water-repellent mortar for use with water repellent masonry units.

J. Packaged Dry Material for Mortar for Unit Masonry: Premixed masonry cement and mason's sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
   1. Type: Type N.
   2. Color: Standard gray.
   3. Water-repellent mortar for use with water-repellent masonry units.

K. Packaged Dry Material for Mortar for Repointing: Premixed Portland cement, hydrated lime, and graded sand; capable of producing Type O mortar in accordance with ASTM C270 with the addition of water only.
   1. Color: Standard gray.

L. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.
   1. Type: Fine.

M. Refractory Mortar: Provide hydraulic-setting or premixed high-alumina refractory mortar containing calcium aluminate cements, ground fire clay, ganister, etc. and complying with ASTM C199.

2.04 REINFORCEMENT AND ANCHORAGE

A. Manufacturers:
   1. Blok-Lok Limited.

2. Hohmann & Barnard, Inc; X-Seal Anchor.
3. WIRE-BOND.
4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Reinforcing Steel: ASTM A615/A615M Grade 60, as specified in Section 03 20 00; size as indicated on drawings.

C. Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi) (280 MPa), deformed billet bars; galvanized.

D. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.

E. Single Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss or ladder.
2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3.
3. Size: 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not less than 5/8 inch (16 mm) of mortar coverage on each exposure.

F. Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss.
2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3.
3. Size: 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not less than 5/8 inch (16 mm) of mortar coverage on each exposure.

G. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss, with adjustable ties or tabs spaced at 16 in (406 mm) on center.
2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M, Class B.
3. Size: 0.1875 inch (4.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods and adjustable components of 0.1875 inch (4.8 mm)wire, width of components as required to provide not less than 5/8 inch (16 mm) of mortar coverage from each masonry face.
4. Vertical adjustment: Not more than 1 1/4 inches (32 mm).
5. Seismic Feature: Provide lip, hook, or clip on extended leg of wall ties to engage or enclose not less than one continuous horizontal joint reinforcement wire of 0.1483 inch (3.8 mm) diameter.
6. Insulation Clips: Provide clips at tabs or ties designed to secure insulation against outer face of inner wythe of masonry.
7. H. Strap Anchors: Bent steel shapes, 1-1/2 inch (38 mm) width, 0.105 inch (2.7 mm) thick, 24 inch (610 mm) length, with 1-1/2 inch (38 mm) long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M, Class B.

H. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch (16 mm) of mortar coverage from masonry face.
1. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch (25 mm) width x 0.024 in (0.61 mm) thick, with trapezoidal wire ties 0.1875 inch (4.75 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
2. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch (25 mm) width x 0.024 in (0.61 mm) thick, with corrugated strap ties of nominal 1 inch (25 mm) width and 0.075 inch (1.91 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
3. Steel frame: Crimped wire anchors for welding to frame, 0.25 inch (6.3 mm) thick, with trapezoidal wire ties 0.1875 inch (4.75 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B.

I. Residential Wall Ties: Corrugated formed sheet metal, 7/8 inch (22 mm) wide by 0.05 inch (1.22 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B, sized to extend at least

1-1/2 inches (38 mm) into the veneer with at least 5/8 inch (16 mm) of mortar coverage from masonry face.

J. Two-Piece Wall Ties: Formed steel wire, 0.1875 inch (4.8 mm) thick, adjustable, eye and pintle type, hot dip galvanized to ASTM A 153/A 153M, Class B, sized to provide not less than 5/8 inch (16 mm) of mortar coverage from masonry face and to allow vertical adjustment of up to 1-1/4 in (32 mm).

K. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
   1. Anchor plates: Not less than 0.075 inch (1.91 mm) thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
   2. Wire ties: Manufacturer's standard shape, 0.1875 inch (4.75 mm) thick.
   3. Vertical adjustment: Not less than 3-1/2 inches (89 mm).
   4. Seismic Feature: Provide lip, hook, or clip on end of wire ties to engage or enclose not less than one continuous horizontal joint reinforcement wire of 0.1483 inch (3.8 mm) diameter.

L. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.
   1. Manufacturers:
      a. ITW Commercial Construction North America; Teks Select Series.

2.05 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
   1. Masonry below grade and in contact with earth: Type S.
   2. Exterior, loadbearing masonry: Type N.
   3. Exterior, non-loadbearing masonry: Type N.
   4. Interior, loadbearing masonry: Type N.
   5. Interior, non-loadbearing masonry: Type O.

B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.

C. New Mortar for Old Brick: Proportion by volume only; no more than 20 percent of the total volume of Portland cement and lime combined to be Portland cement.
   1. Sand: Match original mortar as closely as possible in color, size, and texture, without use of other additives.
   2. Do not use modern additives unless permitted in writing by Architect.
   3. Repointing Mortar: Use proportions from 1 part lime to 2 parts sand with no Portland cement, up to 2 parts Portland cement to 3 parts lime to 6 parts sand.
   4. White Portland Cement: Use for repointing mortar where Portland cement is permitted.
   5. Use mortar within 30 minutes after final mixing; do not add more water after the initial mix is prepared.

D. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).

E. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.

F. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

A. Direct and coordinate placement of metal anchors supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

B. Maintain materials and surrounding air temperature to minimum 40 degrees F (5 degrees C) prior to, during, and 48 hours after completion of masonry work.

C. Maintain materials and surrounding air temperature to maximum 90 degrees F (32 degrees C) prior to, during, and 48 hours after completion of masonry work.

3.04 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
   1. Bond: Running.
   2. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
   3. Mortar Joints: Concave.

D. Brick Units:
   1. Bond: Running.
   2. Coursing: Three units and three mortar joints to equal 8 inches (200 mm).
   3. Mortar Joints: Concave.

E. Clay Tile Units:
   1. Bond: Running.
   2. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
   3. Mortar Joints: Concave.

3.05 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar and mortar smears as work progresses.

E. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.

F. Interlock intersections and external corners, except for units laid in stack bond.

G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

I. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.

J. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.

K. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

L. Lay clay tile flue linings vertically, embedded in concrete block units.
   1. Install in accordance with ASTM C1283.

2. Extend above chimney cladding 8 inches (203 mm).
3. Trowel mortar smooth over chimney cladding and slope for positive drainage.

M. Place precast chimney cap atop chimney masonry; mortar into place; seal to protruding flue.

3.06 WEEPS/CAVITY VENTS

A. Install weeps in veneer and cavity walls at 24 inches (600 mm) on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

B. Install cavity vents in veneer and cavity walls at 32 inches (800 mm) on center horizontally below shelf angles and lintels and near top of walls.

3.07 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.

C. Install cavity mortar control panels continuously throughout full height of exterior masonry cavities during construction of exterior wythe, complying with manufacturer's installation instructions.
1. Verify that airspace width is no more than 3/8 inch (9 mm) greater than panel thickness.
2. Hold cavity mortar control panel tight to face wythe.
3. Install horizontally between joint reinforcement.
4. Stagger end joints in adjacent rows.
5. Fit to perimeter construction and penetrations without voids.

D. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches (400 mm) on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch (16 mm) mortar cover on each side.

E. Lap joint reinforcement ends minimum 6 inches (150 mm).

F. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches (400 mm) on center.

G. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches (900 mm) horizontally and 24 inches (600 mm) vertically.

H. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches (38 mm) with at least 5/8 inch (16 mm) mortar cover to the outside face of the anchor.

I. 3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

J. Masonry Back-Up: Embed anchors to bond veneer at maximum 16 inches (400 mm) on center vertically and 36 inches (900 mm) on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.

K. Masonry Back-Up: Embed anchors in masonry back-up to bond veneer at maximum 1.77 sq ft (0.16 sq m) of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.

L. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches (400 mm) on center vertically and 24 inches (600 mm) on center

horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.

M. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 1.77 sq ft (0.16 sq m) of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.

N. Seismic Reinforcement: Connect veneer anchors with continuous horizontal wire reinforcement before embedding anchors in mortar.

3.09 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHE UNIT MASONRY

A. Use individual metal ties installed in horizontal joints to bond wythes together. Provide ties spaced as indicated on drawings.

B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.

3.10 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Extend flashings full width at such interruptions and at least 6 inches (152 mm), minimum, into adjacent masonry or turn up flashing ends at least 1 inch (25.4 mm), minimum, to form watertight pan at non-masonry construction.
   2. Remove or cover protrusions or sharp edges that could puncture flashings.
   3. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 8 inches (203 mm) minimum on vertical surface of backing:
   1. Install vertical leg of flashing behind water-resistive barrier sheet over backing.
   2. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer92s directions.
   3. Terminate vertical leg of flashing into bed joint in masonry or reglet in concrete.
   4. Anchor vertical leg of flashing into backing with a termination bar and sealant.
   5. Apply cap bead of sealant on top edge of self-adhered flashing.

C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.

D. Extend metal flashings through exterior face of masonry and terminate in an angled drip with hemmed edge. Install joint sealer below drip edge to prevent moisture migration under flashing.

E. Extend metal flashings to within 1/2 inch (12 mm) of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.

F. Support flexible flashings across gaps and openings.

G. Extend plastic, laminated, EPDM, and _____ flashings to within 1/2 inch (12 mm) of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.

H. Lap end joints of flashings at least 6 inches (152 mm), minimum, and seal watertight with flashing sealant/adhesive.

3.11 3.12 LINTELS

A. Install loose steel lintels over openings.

B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
   1. Openings to 42 inches (1070 mm): Place two, No. 3 (M9) reinforcing bars 1 inch (25 mm) from bottom web.
   2. Openings from 42 inches (1070 mm) to 78 inches (1980 mm): Place two, No. 5 (M16) reinforcing bars 1 inch (25 mm) from bottom web.
   3. Openings over 78 inches (1980 mm): Reinforce openings as detailed.
   4. Do not splice reinforcing bars.
   5. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.

6. Place and consolidate grout fill without displacing reinforcing.
7. Allow masonry lintels to attain specified strength before removing temporary supports.

C. Install thermal brick support system in accordance with manufacturer92s instructions at locations indicated on drawings

3.12 GROUTED COMPONENTS

A. Lap splices minimum 50 bar diameters.

B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.

C. Place and consolidate grout fill without displacing reinforcing.

D. At bearing locations, fill masonry cores with grout for a minimum 12 inches (300 mm) either side of opening.

3.13 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.

C. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

D. Size control joints as indicated on drawings; if not indicated, 3/4 inch (19 mm) wide and deep.

E. Form expansion joint as detailed on drawings.

3.14 BUILT-IN WORK

A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
1. Fill adjacent masonry cores with grout minimum 12 inches (300 mm) from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

3.15 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation from Alignment of Columns: 1/4 inch (6 mm).

C. Maximum Variation From Unit to Adjacent Unit: 1/16 inch (1.6 mm).

D. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft (6 mm/3 m) and 1/2 inch in 20 ft (13 mm/6 m) or more.

E. Maximum Variation from Plumb: 1/4 inch (6 mm) per story non-cumulative; 1/2 inch (13 mm) in two stories or more.

F. Maximum Variation from Level Coursing: 1/8 inch in 3 ft (3 mm/m) and 1/4 inch in 10 ft (6 mm/3 m); 1/2 inch in 30 ft (13 mm/9 m).

G. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch (minus 6.4 mm, plus 9.5 mm).

H. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch (6 mm).

3.16 CUTTING AND FITTING

A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.17 PARGING

A. Dampen masonry walls prior to parging.

B. Scarify each parging coat to ensure full bond to subsequent coat.

C. Parge masonry walls in two uniform coats of mortar to a total thickness of 3/4 inch (19 mm).

D. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot (1 mm/m).

E. Strike top edge of parging at 45 degrees.

3.18 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.

B. Clay Masonry Unit Tests: Test each variety of clay masonry in accordance with ASTM C67/C67M requirements, sampling 5 randomly chosen units for each 50,000 installed.

C. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for compliance with requirements of this specification.

D. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

3.19 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.20 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

SECTION 047200

CAST STONE MASONRY

PART 2 PRODUCTS

1.01 MATERIALS

A. Portland Cement: ASTM C150/C150M.
   1. For Mortar: Type I or II, except Type III may be used in cold weather.

B. Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.

C. Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.

D. Admixtures: ASTM C494/C494M.

E. Water: Potable.

F. Reinforcing Bars: ASTM A615/A615M, Grade 40 (40,000 psi), deformed bars, galvanized.
   1. Galvanized in accordance with ASTM A767/A767M, Class I.

G. Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.

H. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.

I. Mortar: Portland cement-lime, as specified in Section 040511; do not use masonry cement.

J. Cleaner: General-purpose cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

END OF SECTION

SECTION 051200

STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specifications, apply to this Section.

1.02 SECTION INCLUDES

A. Structural steel framing members.

B. Structural steel support members, suspension cables, sag rods, and struts.

C. Base plates, shear stud connectors and expansion joint plates.

D. Grouting under base plates.

1.03 RELATED REQUIREMENTS AND RELATED SECTIONS

A. Section 05 31 00 - Steel Decking: Support framing for small openings in deck.

B. Section 05 50 00 - Metal Fabrications: Steel fabrications affecting structural steel work.

C. Section 07 81 23 – Intumescent Fireproofing

D. Section 31 31 16 - Termite Control: Field-applied termiticide and mildewcide for structural steel.

1.04 PRICE AND PAYMENT PROCEDURES

A. Structural Steel Framing:
   1. Basis of Measurement: By the ton (metric ton).
   2. Basis of Payment: Includes structural members fabricated, placed, and anchored.

1.05 REFERENCE STANDARDS

A. American Institute of Steel Construction (AISC) Standards
   1. AISC (MAN) - Steel Construction Manual
   2. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges

B. American Society for Testing and Materials (ASTM) Standards
   1. ASTM A6 - Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes and Sheet Piling.
   2. ASTM A36/A36M - Standard Specification for Carbon Structural Steel
   3. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold Finished
   4. ASTM A13/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
   5. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
   6. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
   7. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
   8. ASTM A514/A514M - Standard Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding
   9. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts
   10. ASTM A563M - Standard Specification for Carbon and Alloy Steel Nuts [Metric]
   11. ASTM A780 - Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
   12. ASTM A992/A992M - Standard Specification for Structural Steel Shapes
   13. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic - Cement Grout
   14. ASTM F844 - Specification for Washers, Steel Plain (Flat), Unhardened for General Use.
   15. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

C. American Welding Society (AWS) - Standards
   1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination
   2. AWS D1.1D1.1M - Structural Welding Code - Steel

D. Steel Structures Painting Manual (SSPC)

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:
   1. Indicate shop fabrication details, including cuts, copes, connections, holes, bolts, shear studs, base plates, grouting, cambers, welds, and special preparations.

C. Welding Procedure:
   1. Submit witnessed weld procedure qualification test records per AWS B2.1.
   2. Submit description of special welding equipment.
   3. Certification: Submit for welder's qualifications.

D. Mill Test Reports:
   1. Rolled shapes, plate and bars: Indicate chemical and physical properties.
   2. Tubing and filler metals: Submit certificates of conformance.
   3. Shear studs: Indicate compliance with AWS D1.1, Section 4, Part F.
   4. High strength bolts: Indicate compliance with ASTM A325.

E. Quality Control Program: Submit for Architect's approval a quality control program including procedures and techniques for testing and observation specified hereinafter. Submittal shall include the following program:
   1. Organization of quality control program/
   2. Quality verification procedures.
   3. Personnel certification.
   4. Equipment and facilities.
   5. Typical report forms.

1.07 DELIVERY, STORAGE AND HANDLING

A. Store structural steel members at project site above ground on platforms or skids.

B. Store bolts and weld rod in original containers with labels intact.

C. Protect items from corrosion affecting structural strength and use.

1.08 DESIGN CONNECTIONS

A. Not detailed on the drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State where the project is logged.

1.09 QUALITY CRITERIA

A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."

B. Applicable Standards:
   1. American Institute of Steel Construction (AISC):
      a. Specifications for Design, Fabrication and Erection of Structural Steel for Buildings, with supplements.
      b. Code of Standard Practice for Steel Buildings and Bridges
      c. Quality Criteria and Inspection Standards.
   2. American Society for Testing and Materials (ASTM) standards as referenced herein.
   3. American Welding Society (AWS):
      a. AWS D1.1: Structural Welding Code.
      b. AWS B1.0: Guide for the Non-Destructive Inspection of Welds.
      c. AWS B3.0: Welding Procedure and Performance Qualifications
   4. Research Council on Riveted and Bolted Joints: Specifications for Structural Joints using ASTM A325 or A490 Bolts.

5. Steel Structures Painting Council (SSPC): Systems and Specifications.
6. American Society for Non-Destructive Testing (ASNT) standards as referenced herein.

C. Allowable Tolerances:
1. In manufacture: Within limits established by ASTM A6/A6M.
2. In erection: Complying with AISC Code of Standard Practice.

D. Quality Control Program: Maintain shop and field quality control procedures including the following, as a minimum:
1. Manufacture's certified test reports for materials and products.
2. Shop inspection of work-in-progress and of completed pieces for shipment. Indicate the following:
   a. Material meeting ASTM A6/A6M
   b. Color-coding of high strength steel per ASTM A6/A6M
   c. Basic dimensions of fabricated members.
   d. Holes (location and size)
   e. Sizing (cutting, burning)
   f. Set-up and fitting
   g. Cleaning and painting
   h. Overall appearance
   i. Trial assembly (if directed)
3. Weld Inspection: Visual: 100%
4. Material Inspection: Visually inspect all edges of main material in accordance with Table PM-01, Visible Discontinuities on Cut Edges, AISC Quality Criteria and Inspection Standards.
5. Bolt inspection in accordance with Specification for Structural Joints Using ASTM A325 or A490 Bolts, Paragraph 6(b).
6. In accordance with quality assurance program in plans.

E. Qualifications of Welders:
1. Welders employed on the work shall have passed qualification tests within the past 12 months in the position for which qualified, using test procedures covered in the AWS D1.1-00.
2. Contractor shall require any Welder to retake he qualification test when, in the opinion of the Architect, the work of the Welder creates a reasonable doubt as to the proficiency of the Welder. Retests shall be conducted at no additional expense to the Owner. Recertification shall be made to the Architect after the Welder has passed the retest.
3. Each shop and field Welder shall be assigned an identifying symbol and all welds made by him shall be so identified.

1.10 TESTING

A. Testing of Structural Steel shall be performed by an inspection testing agency qualified in accordance with the ASNT Recommended Practice No. SNT-TC-1A, and NDT Level 1. Independent Testing Agency shall be selected by the Contractor, acceptable to the Architect and paid by te Owner. Contractor shall pay for any additional structural testing/inspection required for work or materials not complying with Contract Documents due to negligence or non-conformance. Contractor shall pay for any additional structural testing/inspection required for his convenience. Neither the observation of the Architect/Structural Engineer in the administration of the contract, nor tests/inspections by he Testing/Inspection agency, nor approvals by persons other than the Architect/Structural Engineer shall relieve the Contractor of his obligation to perform the work in accordance with the Contract Documents.

B. Structural Testing/Inspection Agency shall perform the following structural steel quality-related items:
1. Inspection of work performed at Fabricator's shop:
   a. Building Code Approved Fabricator:

1) At completion of fabrication, the Fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.
2) The Owner's Structural Testing/Inspection Agency shall perform the following structural steel quality-related items:
(a) The Special Inspector shall verify that the Fabricator maintains detailed control procedures that provide a basis for inspection control of the workmanship and the Fabricator's ability to conform to approved construction documents and referenced standards.
(b) The Special Inspector shall review the procedures for completeness and adequacy relative to the code requirements for the Fabricator's scope of work.
(c) Verify the Welders are certified with current papers and that they demonstrate proper techniques.

2. Inspection of Work Performed at the Job Site: The Special Inspector shall review the procedures for completeness and adequacy relative to the code requirements for the Fabricator's scope of work. Inspector shall document the accepted and rejected items in a written report transmitted to the Engineer in a timely manner.
a. Anchor Rods (Bolts): Anchor rod (bolt)size, grade, configuration, and embedment shall be verified prior to placement of concrete.
b. Welded Connections:
1) Inspection shall be in accordance with AWS D1.1
2) Monitoring of the welds shall be periodic or continuous as indicated below and shall include:
(a) Visual inspection of all field-welded connections. All fillet welds shall be visually inspected, and when the Special Inspector deems appropriate, tested by magnetic-particle testing.
(b) Visual inspection of steel fit-up prior to weld.
(c) Contractor shall require any welder to retake the qualification test when, in the Testing Agency's opinion, the Welder's work creates reasonable doubt as to his proficiency. Retests shall be conducted at no additional expense to the Owner. Recertification shall be submitted to the Structural Engineer after Welder has passed the retest.
3) Complete penetration groove welds.
c. Bolted Connections:
1) Inspection and testing shall be in accordance with AISC Specifications for Structural Joints using ASTM A325 or A490 Bolts.
2) Connections with Snug-Tight Bolts:
(a) 100 percent of connections with snug-tight bolts shall be inspected visually.
(b) The inspector shall perform periodic monitoring to verify that the connected materials have been drawn together and properly snugged.
d. Material Verification:
1) The inspector shall conduct periodic inspections to verify high-strength bolts, nuts, and washers:
(a) Verify that the identification markings conform to the ASTM standards, specified in the approved construction documents.
(b) Verify the manufacturer's certificate of compliance.
2) The inspector shall conduct periodic inspections to verify structural steel:
(a) Verify hat the identification markings conform to the ASTM standards, specified in the approved construction documents.
(b) Verify the manufacturer's certified mill test reports.
(c) The inspector shall conduct periodic inspections to verify the weld filler materials:

(d) Verify that the identification markings conform to the AWS standard, specified in the approved Construction Documents and approved welding procedure.
(e) Verify the manufacturer's certificate of compliance.

3) The inspector shall conduct periodic inspections to:
(a) Verify electrode, flux and gas shielding certifications for compliance with Contract Documents.
(b) Verify that electrodes are used only in the permitted positions and within the welding parameters specified in the approved welding procedure.
(c) Verify that electrodes and fluxes are properly stored, and that exposure limits for the welding materials are satisfied.

e. At suitable intervals, observe joint preparation, assembly practice, preheat temperatures, interpass temperatures, welding techniques, welder performance and any post-weld controlled cooling or heat treatment to ensure that the applicable requirements of the welding procedure are satisfied.

f. Details: The inspector shall conduct periodic inspections of the steel frame to verify compliance with the details shown on the approved construction documents, such as bracing, stiffening, member locations and proper application of joint details at each connection.

g. See Structural Drawings for list of required special inspections.

C. Contractor's duties relative to testing:
1. Provide Testing Agency to access to project site.
2. Notify Testing Agency of schedule for shop and fieldwork.
3. Provide Testing Agency with complete set of shop and erection drawings, material lists, mill reports and cutting lists.
4. Furnish temporary scaffolding and work platforms for testing work.
5. Coordinate with Testing Agency for field-testing.
6. Pay costs of additional testing performed beyond scope of that required and for retesting if initial tests reveal non-conformance with specified requirements.
7. Contractor shall also maintain its own Quality Assurance Testing program. Contractor shall understand that Owner's Testing Agency is inspecting for quality acceptance and is not acting as the Contractor's Quality Assurance inspector.
8. The Contractor shall be responsible for visual and ultrasonic inspection for his own quality control. He shall make all necessary correction of deficiencies in materials and workmanship prior to welding, and if required, after welding.
9. If the Inspector(s) find deficiencies in the materials and workmanship, regardless of whether the Inspector(s) is a representative of the Owner or an employee of the Contractor, the Contractor shall be responsible for all necessary corrections at his expense.

1.11 DELIVERY, STORAGE AND HANDLING

A. Store structural steel members at project site above ground on platforms or skids.

B. Store bolts and weld rod in original containers with labels intact.

C. Protect items from corrosion affecting structural strength and use.

PART 2 PRODUCTS

2.01 MATERIALS

A. Rolled steel plates and bars: ASTM A36/A36M-08 as indicated on the Plans. Wide flange shapes: ASTM A992/A992M-06a.

B. Cold formed steel tubing: ASTM A500, Grade B. (Fy=46 ksi).

C. Cold-Formed Structural Tubing: ASTM A500/A500M, Grade B.

D. Hot-Formed Structural Tubing: ASTM A501/A501M, seamless or welded

E. Pipe: ASTM A53/A53M, Grade B, Finish black.

F. High strength bolts and nuts: Meeting ASTM A324, Type I.

G. Welding electrodes: Meeting AWS D1.1

H. Anchor Bolts:
   1. ASTM F1554 (GR55 or G105, as indicated in plans) with a heavy hexagonal nut at the bottom of the rod unless noted otherwise.
   2. Provide 2 hexagonal nuts and 2 plain washers for each anchorage conforming to ASTM F844.
   3. Provide 3/8 inch thick plate washers on base plate with oversized hole.

I. Grout: Non-shrink, non-metallic aggregate type, complying with ASTM C1107/C1107M and capable of developing a minimum compressive strength of 5,000 psi at 28 days and 3,000 psi at one day.

J. Shop and Touch-up Primer: SSPC-Paint 15, Type 1, gray oxide, complying with VOC limitations of authorities having jurisdiction.

K. Headed Stud-Type Shear Connectors:
   1. Type: Cold finished carbon steel, meeting ASTM A100. Grade designation 1015 or 1020.
   2. Dimensions: Conform to Figure 4.22.1 of AWS D1.1.
   3. Physical properties of finished studs per ASTM A370:
      a. Minimum tensile strength: 60,000 psi
      b. Minimum yield strength (0.2% off-set method): 50,000 psi
      c. Minimum elongation in 2 inches: 20%
      d. Minimum reduction in area: 50%

L. Shop and Touch-Up Primer: SSPC-Paint 15, Type I, gray oxide, complying with VOC limitations and authorities having jurisdiction.

2.02 FABRICATION

A. General: Comply with AISC Specifications unless more stringent requirements are specified herein.

B. Shop connections shall be welded unless otherwise indicated. Combination of bolts and welds in the same connection will not be permitted unless shown. Shop Fabricator to the greatest extent possible.

C. Members shall not be spliced, connected or extended, except as shown on drawings without Architect's written consent.

D. Beams, girders and trusses shall be located with natural camber up or shall be cambered as indicated on drawings.

E. Drill or punch holes at right angles to metal surface. Do not make or enlarge holes by burning. Remove burrs resulting from drilling operations.

F. Provide holes or slots in members to permit connection of the work of other trades.

G. Cut required beam penetrations and reinforce as indicated. For openings shown on the drawings no change in location will be permitted without Architect's written consent.

H. Connections:
   1. Use seated connections only when they do not interfere with architectural features or work of other trades.
   2. Connections for beams shall be adequate to provide for the reaction due to the maximum uniformly distributed load for that span, based on the allowable unit stresses, except where higher reactions are shown.
   3. All connections shall conform to those shown on structural drawings unless Architect's written consent is obtained. The Contractor shall pay for changes he requests that require design.

I. Bolting
   1. Use high-strength bolts in bearing as shown or noted.
      a. 2. Bolts shall be of length allowing full thread engagement.

b. 3. Enter bolts into holes without damaging the threads.
c. 4. Provide one hardened flat washer under the turned element.
d. 5. Oversize and short-slotted holes are subject to Architect's acceptance. Where oversize or shot-slotted holes are accepted for use, provide standard hardened washers for adequate bearing area. Place washers on exposed face of oversize or shot-slotted hole.
e. 6. Long-slotted holes are subject to Architect's acceptance.
f. 7. Use no manual torque wrenches for final tightening of high strength bolts.
g. 8. Draw unfinished bolt heads and nuts tight with a wrench not less than 1'-3" long.

J. Welding: Prior to beginning welding, bolt or track elements in intimate contact and adjust to dimensions shown, with allowance for weld shrinkage.

K. Surface Preparation: Clean all surfaces after fabrication and immediately prior to shop painting in accordance with SSPC-SP2, Hand Tool Cleaning: SSPC-SP3, Power Tool Cleaning; or SSPC-SP7, Brush-off Blast Cleaning, at manufacturer's option. Blast clean only when relative humidity is below 85% and when surface temperature of steel is a minimum of 5 degrees F. above the dew point. Remove all traces of blast residue and dust. Do not contaminate the surfaces. Require workmen to wear clean gloves when handling blast-cleaned steel.

L. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Shop weld shear connectors, spaced as shown, to beams and girders in composite construction. Use automatic end welding of headed stud shear connectors in accordance with manufacturer's printed instructions.

2.03 FABRICATOR'S QUALIFICATIONS

A. Steel Fabricator shall be certified by the American Institute of Steel construction (AISC) Quality Certification Program for Complex Steel Building (Cbd) or Major Steel Bridges (Cbr) and, if required by the Building Code, approved by the Building Official. Fabricator shall take all necessary precautions to control residual stresses to prevent defects from occurring in the weld or based material.

2.04 FINISH

A. Surface Preparation:
1. Clean all surfaces after fabrication and immediately prior to shop painting in accord with SSPC-SP6.
2. Blast clean only when relative humidity is below 85% and when surface temperature of steel is a minimum of 5 degrees F. above the dew point. Remove all traces of blast residue and dust. Do not contaminate the surfaces. Require workmen to wear clean gloves when handling blast cleaned steel.

B. Shop Painting
1. Apply specified shop coat in accord with manufacturer's product data to provide a minimum dry film thickness of 2.0 mils. Apply shop coat of paint within four hours after cleaning and before rust-bloom occurs. Paint only in relative humidity below 85% and surface temperatures of 5 degrees F. above dew point.
2. Apply lacquer to milled surfaces to dry film thickness of 0.5 mils.

C. Shop Painting Schedule: Paint all structural steel with a shop coat of paint, except:
1. Members encased in concrete.
2. Contact surfaces of welded connections and areas within 2" of field welds except as noted.
3. Contact surfaces of high-strength bolted connections.
4. Surfaces receiving field welded steel studs.

D. Galvanizing
1. Galvanized coating shall conform to ASTM A123. Furnish minimum 1.25 ounces per square feet.
2. Galvanize bolts, nuts, and washers in accordance with ASTM A153 when used to connect steel members that are specified to be galvanized.

3. Expansion anchors or adhesive anchors specified to be galvanized shall be mechanically galvanized in accordance with ASTM B695, Class 65, Type I.

PART 3 EXECUTION

3.01 ERECTION

A. Erect structural steel in compliance with AISC "Code of Standard Practice for Steel Buildings and Bridges."

B. Allow for erection loads and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.

C. Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
   1. Level and plumb individual members of structure within specified AISC tolerances.
   2. Splice members only where indicated and accepted on shop drawings.
   3. Do not enlarge unfair holes in members by burning or by use of drift pins. Ream holes that must be enlarged to admit bolts.
   4. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in structural framing unless acceptable to Architect/Engineer. Finish gas-cut sections equal to a sheared appearance when permitted.

D. Do not field cut or alter structural members without approval of Architect.

E. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for nonshrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.

3.02 ERECTOR'S QUALIFICATIONS

A. Erector shall be experienced in erecting structural systems similar in complexity to this project as evidenced by 10 completed projects.

B. Erector shall have a minimum of 5 years of experience in the erection of structural steel and is an AISC Certified Advanced Steel Erector.

C. Field Welders shall be qualified in accordance with AWS at the project site.

3.03 TOUCH-UP PAINTING

A. After erection, clean and remove rust, dirt and other foreign matter from exposed surfaces of field connections, unpainted areas adjacent to field connections, and damaged areas in shop primer. Touch-up paint with primer to the same standards as required for the shop coat and paint using identical primer.

3.04 TOLERANCES

A. Level and plumb individual members of structure within specified AISC tolerances.

3.05 WELDING

A. Comply with AWS Structural Welding code. Use prequalified weld procedures.

B. Provide end returns where fillet welds terminate at end or sides. Returns shall be continuous for a distance of not less than two times the nominal size of the weld.

C. Complete penetration joints shall be back-gouged to sound metal before the second side is welded or have 1/4-inch root opening with 3/16 x 1-inch backing bar. Access holes are required. Filling access holes is not required.

D. Beam Copes and Weld Access holes: All weld access holes required to facilitate welding operations shall have a length from the toe of the weld preparation not less than 1 1/2 times the thickness of the material in which the hole is made. The height of the access hole shall e adequate for deposition of sound weld metal in te adjacent plates and provide clearance for

weld tabs. In hot-rolled shapes and built-up shapes, all beam copes and weld access holes shall be shaped free of notches or sharp re-entrant corners.

3.06 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in this specification and in the plans.

B. High-Strength Bolts: Provide testing and verification of field-bolted connections in accordance with AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts," testing 100 percent of bolts at each connection.

C. Welded Connections: Visually inspect all field-welded connections.

D. Re-inspection shall be required for all failed tests.

END OF SECTION

SECTION 057000

DECORATIVE METAL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Railing and guardrail assemblies.

B. Wall-mounted handrails.

C. Free-standing railings at steps.

1.02 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

B. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings; 2020.

C. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2021.

D. AWS C3.4M/C3.4 - Specification for Torch Brazing; 2016.

E. AWS C3.5M/C3.5 - Specification for Induction Brazing; 2016 (Amended 2017).

F. AWS C3.9M/C3.9 - Specification for Resistance Brazing; 2020.

G. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020.

H. AWS D1.6/D1.6M - Structural Welding Code - Stainless Steel; 2017.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate railing system elevations and sections, details of profile, dimensions, sizes, connection attachments, anchorage, size and type of fasteners, and accessories. Indicate anchor and joint locations, brazed connections, transitions, and terminations.

C. Test Reports: Submit test reports from an independent testing agency showing compliance with specified design and performance requirements.

D. Manufacturer's qualification statement.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in installing decorative stairs and railing systems and acceptable to manufacturer.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than three years of documented experience.

PART 2 PRODUCTS

2.01 RAILING SYSTEMS

A. Railing Systems - General: Factory- or shop-fabricated in design indicated, to suit specific project conditions, and for proper connection to building structure, and in largest practical sizes for delivery to site.

1. Performance Requirements: Design and fabricate railings and anchorages to resist the following loads without failure, damage, or permanent set; loads do not need to be applied simultaneously.
    a. Lateral Force: 75 lb minimum, at any point, when tested in accordance with ASTM E935.
    b. Distributed Load: 50 lb/ft minimum, applied in any direction at the top of the handrail, when tested in accordance with ASTM E935.
    c. Concentrated Loads on Intermediate Rails: 50 psf, minimum.
    d. Concentrated Load: 200 lbs minimum, applied in any direction at any point along the handrail system, when tested in accordance with ASTM E935.
    e. Handrails: Comply with applicable accessibility requirements of ADA Standards.

2. Assembly: Join lengths, seal open ends, and conceal exposed mounting bolts and nuts using slip-on non-weld mechanical fittings, flanges, escutcheons, and wall brackets.
3. Joints: Tightly fitted and secured, machined smooth with hairline seams.
4. Provide thermal expansion joints
5. Field Connections: Provide sleeves to accommodate site assembly and installation.
6. Welded and Brazed Joints: Make visible joints butt tight, flush, and hairline; use methods that avoid discoloration and damage of finish; grind smooth, polish, and restore to required finish.
    a. Ease exposed edges to a small uniform radius.
    b. Welded Joints:
        1) Carbon Steel: Perform welding in accordance with AWS D1.1/D1.1M.
        2) Stainless Steel: Perform welding in accordance with AWS D1.6/D1.6M.
    c. Brass/Bronze Brazed Joints:
        1) Perform torch brazing in accordance with AWS C3.4M/C3.4.
        2) Perform induction brazing in accordance with AWS C3.5M/C 3.5.
        3) Perform resistance brazing in accordance with AWS C3.9M/C3.9.

B. Metal Railing: Engineered, post-supported railing and guardrail system as shown on the plans.
1. Decorative Flanges for Embedded Posts: Circular, collared cover plate without screw holes.
2. Wall Mounted Components: Components necessary to support railing with 1-1/2 inch clearance from wall, and as follows:
    a. Underslung support brackets: Supports at 60 inches, maximum.
3. Fasteners: Concealed.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate and site conditions are acceptable and ready to receive work.

B. Verify field dimensions of locations and areas to receive work.

C. Notify Architect immediately of conditions that would prevent satisfactory installation.

D. Do not proceed with work until detrimental conditions have been corrected.

E. Furnish components to be installed in other work to installer of that other work, including but not limited to blocking, sleeves, inserts, anchor bolts, embedded plates, and supports for attachment of anchors.

3.02 PREPARATION

A. Review installation drawings before beginning installation. Coordinate diagrams, templates, instructions, and directions for installation of anchorages and fasteners.

B. Clean surfaces to receive units. Remove materials and substances detrimental to the installation.

3.03 INSTALLATION

A. Shop build and finish all compenents to the grreatest extent possible.

B. Install components plumb and level, accurately fitted, free from distortion or defects, and with tight joints, except where necessary for expansion.

C. Anchor securely to structure.

D. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

E. Weld connections that cannot be shop welded due to size limitations.
1. Weld in accordance with AWS D1.1/D1.1M.
2. Match shop welding and bolting.
3. Clean welds, bolted connections, and abraded areas.
4. Touch up shop primer and factory-applied finishes.

5. Repair galvanizing with galvanizing repair paint per ASTM A780/A780M.

F. Isolate dissimilar materials with bituminous coating, bushings, grommets, or washers to prevent electrolytic corrosion.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

3.05 CLEANING

A. Remove protective film from exposed metal surfaces.

B. Metal: Clean exposed metal finishes with potable water and mild detergent, in accordance with manufacturer recommendations; do not use abrasive materials or chemicals, detergents, or other substances that may damage the material or finish.

3.06 PROTECTION

A. Protect installed components and finishes from damage after installation.

B. Repair damage to exposed finishes to be indistinguishable from undamaged areas.

1. If damage to finishes and components cannot be repaired to be indistinguishable from undamaged finishes and components, replace damaged items.

END OF SECTION

SECTION 133100

TENSILE MEMBRAIN STRUCTURES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections apply to the work of this section.

1.02 SUMMARY

A. A. This section includes an exterior architectural tensile membrane roof structure system.

B. The tensile membrane structure contractor (hereafter referred to as “Subcontractor”) shall be responsible for the structural design, detailing, fabrication, supply, and installation of the work specified herein, some or all of which may be contracted by Subcontractor to others meeting the qualification requirements of Section 1.5. The intent of this specification is to establish in the first instance an undivided, single-source responsibility of the Subcontractor for all of the foregoing functions.

C. Subcontractor’s work shall include, but not necessarily be limited to, the structural design, supply, fabrication, shipment, and erection of the following principal items:
   1. The architectural membrane as indicated on the drawings and in these specifications.
   2. Cables and end fittings.
   3. Perimeter, catenary, and sectionalized aluminum clamping system.
   4. Structural steel, including masts, trusses, struts, beams, and / or weldments, as indicated on the drawings.
   5. Fasteners and gasketing.
   6. General: Basis of Design of waterproof fabric shall be UV protected NovaShield ® RU ELITE as manufactured by IINTERTAPE POLYMER GROUP® and made of woven HDPE scrim and coated with White PE.
   7. 1.3 REFERENCES
   8. General: Except as otherwise shown or noted, all work shall comply with the requirements of the following codes and standards:
      a. American Institute of Steel Construction (AISC).
         1) Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings
         2) Code of Standard Practice for Steel Buildings and Bridges
         3) Specification for Structural Steel Buildings – Allowable Stress Design and Plastic Design
         4) Specification for Allowable Stress Design of Single-Angle Members
         5) Seismic Provisions for Structural Steel Buildings
      b. International Accreditation Services (AIS)
      c. American Society of Civil Engineers (ASCE)
         1) ASCE 19: Structural Applications of Steel Cables for Buildings
         2) ASCE 7: Minimum Design Loads for Buildings and Other Structures
      d. America Society of Testing and Materials (ASTM)
         1) ASTM A 586: Standard Specification for Zinc-Coated Steel Structural Strand
         2) ASTM A 603: Standard Specification for Zinc-Coated Steel Structural Wire Rope
         3) ASTM A 780: Zinc Rich Paint Repairs
         4) ASTM A 153: Hot Dip Galvanizing
         5) ASTM D 4851-88: Standard Test Methods for Coated and Laminated Fabrics for Architectural Use
         6) ASTM A 36: Carbon Steel
         7) ASTM A 307: Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength

8) ASTM E 84: Standard Test Method and Surface Burning Characteristics of Building Materials
9) ASTM 108: Standard Test Methods for Fire Tests of Roof Coverings
10) ASTM 136: Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750° C
11) ASTM C 423: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
12) ASTM E 424: Standard Test Method for Solar Energy Transmittance and Reflectance of Sheet Materials
13) ASTM D 1117: Testing Non-Woven Fabrics
14) ASTM B 221-08: Standard Aluminum and Aluminum Alloy Extruded Bars
15) ASTM B 209: Standard Specification for Aluminum Sheet

e. America Welding Society (AWS)
1) AWS D1.1: Structural Welding Code
2) AWS 2.4: Symbols for Welding and Nondestructive Testing

f. Aluminum Association
1) Specifications for Aluminum Structures

g. National Fire Protection Association (NFPA)
1) NFPA 701: Standard Methods of Fire Tests for Flame Propagation of Textiles and Films

h. Steel Structures Painting Council (SSPC)
1) Steel Structures Painting Manual, Volumes 1 and 2

1.03 SYSTEM REQUIREMENTS

A. General: Provide a structural tensile membrane system that complies with requirements specified herein by testing the Subcontractor's corresponding membrane system in accordance with the indicated test methods.

B. Building Code Criteria: The tensile membrane structure shall comply with the International Building Code, 2021 edition.

*****PLEASE NOTE ALL BELOW ITEMS WILL MEET IBC 2021 STANDARDS*****

- Ground Snow Load:
- Snow Load Importance Factor:
- Roof Live Load:
- Basic Wind Speed:
- Wind Load Importance Factor:
- Wind Exposure Category:
- Seismic Use Group:
- Seismic Importance Factor:
- Mapped Spectral Response Acceleration at Short Periods, Ss:
- Mapped Spectral Response Acceleration at 1-Second Period, S1:
- Seismic Site Class:
- Damped Spectral Response Coefficient at Short Periods, Sds:
- Seismic Design Category:

1. Life Safety: All tensile membrane structures shall be detailed so that no life safety issue is created in the event of a loss of a part of the membrane. The tensile membrane structure shall not rely on the membrane for structural stability.
2. Design of fabric canopies are to withstand the most critical effects of load factors and load calculations.

1.04 QUALITY ASSURANCE

A. Subcontractor Qualifications: Fabrication and erection of the tensile membrane structure is limited to firms with proven experience in fabrication and construction of complex tensile

membrane structures. Such firms, through their own experience and/or that of their qualified subcontractors, shall meet the following minimum requirements:

1. The Subcontractor shall have at least fifteen (15) years' experience in the successful fabrication and erection of permanent, custom tensile membrane structures.
2. Demonstrate it has maintained a professional engineering design staff for at least ten (10) years, and will provide final engineering drawings that have been prepared by licensed Professional Engineers in its employ.
3. The Subcontractor shall demonstrate it has a fabrication facility of adequate capacity and a staff experienced in the fabrication of PVC tensile membrane structures that will undertake the fabrication of this project.
4. The Subcontractor shall submit a Corporate Quality Control Manual describing the company's complete quality assurance program.
5. All bidders will need to provide a Payment & Performance Bond. The bidder needs to provide proof of bonding capacity of $6,000,000 and minimum aggregate bonding capacity of $25,000,000 by providing a signed letter from their surety company with their bid.
6. All bidders shall be able to provide proof with their bid of a minimum of $2,000,000 general/public liability insurance, $3,000,000 professional liability (PL) insurance and additional $10,000,000 umbrella/excess liability insurance.
7. All bidders must provide a signed letter with their bid from their legal representative stating that they are not or have not been in litigation with Owners, Contractors or A/E firms for failed structures within the past fifteen (15) years.
8. The Subcontractor must demonstrate their company's steel fabrication capability by submitting a copy of their IAS Approved Fabricator Status. This is to be provided directly by the Subcontractor and Outside third party fabricators will not be accepted.

1.05 SUBMITTALS

A. Submit under provision of Section 013300 – Submittal Procedures.

B. General: Not withstanding any provisions of these specifications that may appear to be to the contrary, any and all submittals by the Subcontractor shall be subject to review, approval, and adoption by the Architect/Engineer as part of the overall project design and engineering, and shall not create a contractual or other professional design relationship between the Subcontractor and either the Architect/Engineer or the Owner.

C. Product Data: Include manufacturer's specifications for materials, fabrication, installation, and recommendations for maintenance. Include test reports showing compliance with project requirements where test method is indicated.
   1. Sample: Submit selection and verification samples.
   2. Design Drawings: Subcontractor shall submit tensile membrane structure drawings defining the completed structure, anchorage, and connection details, interfaces with building construction and general membrane seam arrangements. Design Drawings are to be signed and sealed by a Structural Engineer in the State of California.
   3. Design Calculations: Subcontractor shall submit complete calculations for the tensile membrane structure, as one package with the design drawings, signed and sealed by a Structural Engineer licensed in the State of California. Structural calculations shall include all required loading cases and load combinations used in the design and resulting member forces, reactions, deflections and drift. The magnitude of maximum reactions on the supporting structures from all critical load combinations shall be separately tabulated. Critical load conditions used in the final sizing of the members shall be emphasized. The design analysis shall include the name and office phone number of the designer to answer questions during the design drawing review.
      a. Quality Assurance Submittals
      b. Test Reports: Provide test reports from a qualified testing laboratory that show compliance of the Subcontractor's NovaShield tensile membrane system with specification requirements, as follows:
         1) Physical test data of the actual fabric roll goods to be used in the project confirming conformance with specifications for the membrane.

c. Certificates: Product certificates signed by the Subcontractor certifying materials comply with specified characteristics, criteria, and physical requirements.
d. A single Tensile Contractor shall design, engineer, manufacture, erect the tensile structure and (install the footings)
e. All bidders must have a minimum of 15 years' experience in the design, engineering, manufacturing and installation of tensile structures.
f. All bidders shall be able to provide a minimum of $1,000,000 general/public liability insurance $3,000,000 professional liability (PL) insurance, and an additional $10,000,000 umbrella/excess liability insurance.
g. All bidders shall be licensed and bonded with a minimum single bonding capacity of $6,000,000 and minimum aggregate bonding capacity of $25,000,000.
h. Steel manufacturer shall be accredited by IAS (International Accreditation Services) for Structural Steel Fabrication under UBC 97 & 2000 Section 1701.7 and IBC 2015 Section 1704.2.2.
i. Proof of ISNetworld Member Contractor.
j. See Section – 17000 – Close-out Procedures: Submit the following items:
k. Warranty: Project Warranty documents as described herein.
l. Record Documents: Project record documents for installed materials in accordance with Contract Conditions and Division 1 Submittal Procedures Section.
m. Maintenance Manual: Submit one (1) copy of a maintenance manual for the tensile membrane structure to the owner. The manual shall include a schedule for routine inspection, and inspection checklist, instructions for emergency repair and use of emergency repair materials, and warranty. During the system erection period, the owner shall provide maintenance personnel to be trained in the se of repair materials.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. See Section – 016000 – Product Requirements.

B. Materials shall be packed, loaded, shipped, unloaded, stored and protected in a manner that will avoid abuse, damage, and defacement.

1.07 WARRANTY

A. The Subcontractor shall furnish the Owner with a written warranty, which warrants the membrane, its perimeter attachment system, and the structural support system as supplied by the Subcontractor have been installed in accordance with the project specifications and will be free from defects in materials and workmanship that will impair their normal use of service. The warranty shall start from the date of substantial completion of the tensile membrane structure; which shall be the first date on which the entire tensile membrane structure is subject to design pre-stress conditions, and continue for a period of 10 years thereafter.

B. One (1) year workmanship warranty on installed products
   1. Ten (10) year structural warranty on structural steel and cables
   2. One (1) year warranty on paint system
   3. Manufacturer's standard pass thru warranty on fabric

PART 2 – MATERIALS

2.01 QUALIFIED CONTRACTOR

A. USA Shade
   1. ATTN: Jay Rivera
   2. 2580 Esters Blvd Su 100
   3. DFW Airport, TX 75261
   4. Tel: 1-707-738-8974
   5. jay.rivera@usa-shade.com
   6. Or approved equal. Substitution requests must be submitted by a prime bidder a minimum of ten (20) days prior to bid date. Any approved equals shall be issued by addendum only, prior to the bid date.

7. Approved bidders must meet all qualifications in DIVISION 1 – Quality Assurance and show written proof for each item listed to become an approved equal

2.02 ARCHITECTURAL MEMBRANE

A. Fabric Roof System
   1. Basis of Design of waterproof fabric shall be UV protected NovaShield ® RU ELITE as manufactured by IINTERTAPE POLYMER GROUP® and made of woven HDPE scrim and coated with White PE.
   2. Fabric Properties:
      a. Fabric Weight: 13.5 oz/sq yd
      b. Fabric Width: 144 inch
      c. Roll Length: 500 yards
   3. Fabric Attachment to Structure
      a. NovaShield Elite fabric shall be clamped to steel structure using a keder and aluminum extrusion (no lacing details will be accepted)

2.03 CABLE AND END FITTINGS

A. Materials
   1. All structural wire rope cables shall conform to the latest revision of ASTM A 603.
   2. All structural strand cables shall conform to the latest revision of ASTM A 586.
   3. All cables shall be coated to “Class A” zinc coating throughout.
   4. All cables in contact with the membrane shall be white PVC coated. All other cables may be galvanized only.
   5. Fabrication
      a. Cable fabricator shall provide effective quality control over all fabrication activities. Inspection of the place of fabrication may occur at any time to verify proper quality control. This inspection does not relieve the fabricator from meeting the requirements of this specification.
      b. Cables that are designated to be pre-stretched shall be pre-stretched per ASTM A 603 for wire rope and ASTM A 586 for structural strand. Cables of the same type shall have the same modulus of elasticity.
      c. All cables shall be manufactured to the following length tolerances at 70° Fahrenheit (23° Celsius):
         1) Length < 70 feet (213 meters) ¼ inch (6.4mm)
         2) Length 70 to 270 feet (32.3 to 82.3 meters) 0.03% of length
         3) Length > 270 feet (82.3 meters) 1 inch (25.4 mm)
      d. Cables shall have a continuous longitudinal paint stripe (1/8 inch wide max.) along their top surface unless noted otherwise.
      e. Index markings shown shall be a circumferential paint stripe (1/8 inch wide max.).
      f. All cables and end fittings shall be delivered clean and dry.
      g. All swaged and speltered fittings shall be designed and attached to develop the full breaking strength of the cable. Thimble end fittings shall develop a minimum of 90 percent of the cable breaking strength.
      h. Swaged end fittings, pins, nuts, and washers shall be electro-galvanized. Any damage to the zinc coating shall be cleaned and painted with gray zinc-rich paint per ASTM A 780.
      i. Speltered end fittings shall be hot dip galvanized per ASTM A 153. Any damage to the zinc coating shall be cleaned and painted with a gray zinc-rich paint per ASTM A 780.

2.04 ALUMINUM CLAMPING SYSTEM

A. Materials
   1. All structural aluminum clamping systems shall be ASTM alloy 6061-T6.
   2. Bent Plates shall be formed from ASTM B 221-08 alloy 6061 and then heat-treated to T6.

3. All structural “U straps” shall be ASTM B 221-08 Aluminum Alloy 6063, heat-treated to T5.
4. All structural aluminum clamping shall have the following finish:
    a. Polyester thermosetting powder coating with a tri-glycidyl di-isocyanurate (i.e. TGDI) curing agent/hardener per American Architectural Manufacturers Association (AAMA) 603 to a thickness of 3 mils, whit in color
        1) OR
        2) Clear anodized per MIL-A 8625C, Type 2, Class 1.
    b. Structural sheet aluminum shall be ASTM B 209 alloy 5052-H32.
    c. Non-structural sheet aluminum shall be ASTM B 209 alloy 1100 series.
5. Fabrication
    a. Aluminum fabricator shall provide effective quality control over all fabrication activities. Inspection of the place of fabrication may occur any time to verify proper quality control. This inspection does not relieve the fabricator from meeting requirements of this specification.
    b. Fabricated aluminum shall have no sharp edges.
    c. Stamp all parts with the appropriate mark number.
    d. All fabricated aluminum shall be free of oil, grease, and machining chips.
    e. Tolerances shall be as follows:
        1) Cross sectional dimensions +/- 10%, 0.03 in. (0.8 mm) max.
        2) Bolt hold locations +/- 1/32 in. (0.8 mm)
        3) Overall length +/- 1/16 in. (1.6 mm)
    f. All welded joints shall conform to AWS D1.2.

2.05 STRUCTURAL STEEL

A. General: The structural steel fabrication shall comply with the latest revision of all applicable codes, standards and regulations including the following:
    1. ASTM (as referenced)
    2. AISC: “Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings” and “Code of Standard Practice for Steel Buildings and Bridges”
    3. SSPC: “Steel Structures Painting Manual, Volumes 1 and 2”
    4. Research Council on Riveted and Bolted Structural Joints: “Specification for Structural Joints Using ASTM A 325 or A 490 Bolts”
    5. AWS D1.1 and AWS A2.4
    6. In the event of conflict between pertinent codes and regulations and the requirements of the references standards or these specifications, the provisions of the more stringent shall govern.
    7. Submittals
        a. General: Submit the following under provisions of Section 013300 – Submittal Procedures.
        b. Shop Drawings:
            1) The structural steel fabricator shall submit shop drawings to the Subcontractor for approval.
            2) The drawings shall show all shop and erection details including cuts, copes, connection holes, threaded fasteners, bolts, stands and spacing, etc.
            3) The drawings shall show all welds, both shop and field, by the currently recommended symbols of the AWS.
            4) A welding procedure must be submitted to the Subcontractor for approval of welds that are not pre-qualified.
            5) Shop drawings shall be carefully checked before being submitted for approval, and shall be submitted in the order in which they are needed for the executive of the work, well in advance and not all at one time. Submitted drawings shall show

all structural steel required for the work, whether or not indicated on the drawings.

6) The fabricator shall not fabricate any material until after receipt of approved shop drawings.
7) The fabricator shall immediately make all corrections to his drawings as required by the Subcontractor and shall keep a satisfactory history of all changes by separately numbered and dated revision block on a convenient portion of each drawing affected.
8) Certification of material conformance that includes chemical and physical properties for all structural elements shall be submitted to the Subcontractor.

8. Materials
   a. Structural steel for plates and bars shall conform to the requirements of ASTM A 36 or ASTM A 572, Grade 50, unless noted otherwise.
   b. Structural pipe shall conform to ASTM A 53, Types E or S, Grade B.
   c. Structural tubing shall conform to ASTM A 50, Grade B or C.
   d. Structural bolts
      1) High strength bolts: ASTM A 325, unless noted otherwise
      2) Common bolts and nuts: ASTM A 307
      3) Threaded rods: ASTM A 36, unless noted otherwise
   e. Other materials: All other materials, not specifically described but required for a complete and proper installation of structural steel, shall be provided and shall be new, free from rust, first quality of their respective kinds, and subject to the approval of the Subcontractor.
9. Accessories
   a. Base Plates and Anchor Bolts
      1) Base plates supported on concrete, whether shop attached or shipped loose, shall be furnished and set on shims or leveling plates. Grouting shall be by the General Contractor.
      2) Anchor bolt locations shall be furnished by the Subcontractor and used by the General Contractor to set the bolts. The General Contractor is to check carefully the setting of the bolts to their proper position prior to pouring of concrete. Anchor bolts, provided by the General Contractor, shall have two (2) nuts and washers. Damaged threads shall be repaired or be cut to permit full tightening of nuts.
10. Fabrication
   a. Workmanship: All members when finished shall be true and free of twists, bends, and open joints between the components parts. Members shall be thoroughly straightened in the shop by methods that will not injure them, before being worked on in any way.
      1) Properly mark materials, and match-mark when directed by the Subcontractor, for field assembly.
   b. Connections:
      1) Connections shall be as indicated on the drawings. When details are not shown the connections shall conform to the requirements of the AISC.
      2) Provide high-strength threaded fasteners for all structural steel bolted connections, unless noted otherwise.
      3) Combination of bolts and welds in the same connection are not permitted, unless otherwise detailed.
      4) Welded Connections
         (a) Definitions: All terms herein relating to the welds, welding and oxygen cutting shall be construed in accordance with the latest revision of “Standard Definitions of Welding Terms and Master Chart of Welding Processes” of the AWS.

(b) Operators: only operators who have been previously qualified by tests, as prescribed in AWS D1.1 to perform the type of work required shall make Welds.
(c) Welding equipment shall be of sufficient capacity and maintained in good working condition, capable of adjustment in full range of current settings. Welding cables shall be adequate size for the currents involved and ground methods shall be such as to insure proper machine operation.
(d) No welding shall begin until joint elements are clamped in proper alignment and adjusted to dimensions shown on the drawings and allowance for any weld shrinkage that is expected. No members are to be spliced without prior approval.
(e) All welding shall be done in accordance with the reference specifications, with the following modifications and additions:
(1) All field welding shall be done by manual shielded metal-arc welding.
(2) All groove welds shall have complete penetration, unless otherwise specified on the drawings.
(3) The minimum preheat and inter-pass temperature requirements shall be as required per AWS D1.1.
(f) Welding Sequence: Heavy sections and those having a high degree of restraint must be welded in a sequence with the proper preheat and post-weld heat treatment such that no permanent distortion occurs. Submit a welding sequence for approval for these types of connections.
(g) Oxygen Cutting: Manual oxygen cutting shall be done only with a mechanically guided torch. Alternatively, an unguided torch may be used provided the cut is not within ½ inch of the finished dimension and the final removal is completed by chipping or grinding to produce a surface quality equal to that of the base metal edges. The use of oxygen-cut holes for bolted connections will under no circumstances be permitted and violation of this clause will be sufficient cause for the rejection of any pieces in which oxygen-cut holes exist.

c. Tolerances: All tolerances shall be as per the AISC “Code of Standard Practice for Steel Buildings and Bridges”.
d. Paint System, Two-Part:
1) Source Quality Control: Primary materials shall be obtained from a single manufacturer. Second materials shall be those recommended by the primary manufacturer.
2) Surface Preparation and Base Coat
(a) The surface shall be commercial blast cleaned in conformance with SSPC-SP10/NANCE 2, after all fabrication operations such as machining and welding are completed. There shall be no more than an eight hour time lapse between the surface preparation and the application of the primate coat.
(b) The base coat shall be Sherman Williams Macropoxy 646 PW color mil white or light blue or approved equal, and shall conform to SSPC-Paint 22.
(c) The base coat shall be mixed and applied in accordance with the manufacturer’s instructions and shall meet the requirements of SSPC Paint Specification No. 22. The minimum thickness shall be 2.0 to 4.0 mils dft.
3) Finish Coat
(a) The finish coat shall be Sherman Williams Hi-Solid Polyurethane (semi-gloss) or approved equal, and shall conform to SSPC-paint number 36, level 3.
(b) The finish coat shall be mixed and applied in accordance with the manufacturer’s instructions and the minimum thickness shall be 3.0 to 4.0 mils dft.

4) Two-Part System Thickness: The minimum system thickness shall be 8.0 mils dft.
5) Color: The paint color shall be as selected by the Architect
6) Finish Quality: The dry paint shall be uniform and continuous with no voids or puddles and shall not be broken by scratches or nicks. Although the Subcontractor's Quality Assurance personnel may witness the painting operation, this does not relieve the painting subcontractor of the responsibility for meeting the quality and workmanship requirements of these specifications.
7) Care and Handling: The painting subcontractor shall make every reasonable effort to ensure that the painted steel is thoroughly dry and that it is handled carefully to prevent damage to the paint and to reduce field repairs. Nylon slings should be used when handling the painted steel.
8) Certification: The painting subcontractor shall be required to certify the paint manufacturer's name, paint identification, conformance with manufacturer's written instructions and the paint dry mil thickness.

11. Source Quality Control:
    a. Testing
        1) An independent testing laboratory paid for by the owner shall perform testing and inspection of the structural steel and welding. All welds shall be tested by visual, dye penetrant, magnetic particle methods in accordance with instructions from the Subcontractor.
        2) The Subcontractor and the testing laboratory inspector shall be permitted to inspect the work in the shop or field throughout fabrication and erection.
        3) The inspector shall check for workmanship of steel, both in the shop and field, and check general compliance with the contract documents and steel shop drawings. The inspector shall record types and locations of all defects found in the work and measures required and performed to correct such defects.
        4) The steel fabricator shall make all repairs to defective work to the satisfaction of the inspector and at no additional cost to the Subcontractor.
        5) The inspector shall submit reports of his inspection and test findings to the Subcontractor. He shall record all defects found with the subsequent repair operations and submit reports to the Subcontractor.
        6) The work of the independent inspector shall in no way relieve the steel fabricator of his responsibility to comply with all requirements of the contract documents.
12. Product Handling and Protection: Use all means necessary to protect structural steel before, during, and after installation, and to protect the installed work and materials of all other trades.
13. Rejection and Replacement:
    a. In the event of damage to the steel, immediately make all repairs and replacements necessary to the approval of, and at no additional cost, to the Subcontractor.
    b. Any materials or welding rejected through inspection either in the shop, mill, or field must be promptly replaced to the satisfaction of, and at no additional cost to, the Subcontractor.
14. Qualifications of Steel Fabricator: The steel fabricator shall have not less than five (5) years continuous experience in the fabrication of structural steel.

2.06 FASTENERS

A. General: Provide fasteners used to secure clamp systems to curbs and cables, assemblage of clamp systems, and other fasteners as required to complete the work specified herein.

B. Materials:
    1. All work shall comply with the latest edition of ASTM standards and American Iron and Steel Institute (AISI), as referenced herein.
    2. Fasteners used in membrane clamping systems shall be stainless steel. Bolts and studs shall conform to ASTM F 593, type 304. Nuts shall conform to ASTM F 594, Type 316. Washers shall be plain, narrow, and conform to AISI Type 18-8.

3. All clamping systems subjected to relative movement between clamping and curb shall receive a split-ring lock washer conforming to AISI Type 18-8.
4. Unless otherwise specified on the drawings, all other bolts and nuts shall conform to ASTM A 307-76B, zinc plated to conform to ASTM B 633 Class FE/ZN 8 type III.
5. Source Quality Control: The manufacturer shall certify that all fasteners comply with the above referenced specifications.

2.07 GASKETING

A. General: All work shall comply with the latest edition of ASTM standards, as referenced herein.

B. Sponge Neoprene Gasketing:
1. Material
   a. All sponge neoprene shall be of a cellular elastomeric compound of a firm grade, which has been manufactured in pre-formed shapes for use as gasket and sealing material, as specified in ASTM specification C 509.
   b. Cellular elastomeric materials furnished to this specification shall be manufactured from natural or synthetic rubber, or mixtures of these, with added compounds of such nature and quality that, with proper curing, the finished product will comply with this specification.
   c. The cured compounds shall be suitable for use where resistance to sunlight, weathering oxidation and permanent deformation under load are of prime importance.
   d. The manufacturing process shall be such as will ensure a homogeneous cellular material free of defects that may affect serviceability.
   e. The physical characteristics of the neoprene musht meet or excess ASTM C 509, “Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Materials.”
   f. Certification of material shall be provided that conforms to ASTM C 509.
2. Dense Neoprene Gasketing:
   a. All neoprene material shall conform to ASTM D 2000M hardness Grade 60. The material shall be homogenous, free from defects and shall be compounded and cured to meet the requirements specified herein.
   b. All neoprene shall be non-staining formulation and shall consist of at least 50 percent by weight of basic rubber hydrocarbon. Material shall not contain crude or reclaimed rubber.
   c. The physical characteristics of the neoprene must meet or exceed the following physical test requirements when tested using the standard ASTM test slab can compression set plug (or approved equal):

	PROPERTY	ASTM METHOD	UNITS
a.	Shore A Durometer	D2240	55-65
b.	Tensile Strength (Min.)	D 412	1,100 psi
c.	Percent Elongation (Min.)	D 412	300%
d.	Percent Compression Set (Max.)	D395, Method B, 22hrs at 212^{o} F	35%
e.	Heat Aging, Change from original properties:		
	● Hardness Change (Max.)	+15 Points Shore A	
	● Tensile Strength (Max.)		-15%
	● Elongation Change (Max.)	-40%	
f.	Flame Resistance		Must not propogate flame
g.	Temperature Range		-30^{o}C to -100^{o}C
h.	Ozone Resistance	D1171, Method A, 72 hrs @ 38^{o}C and 50 mPa Ozone	

i. Resistance to Oil Aging: D471, 70hrs @ 212ºF Immersion in ASTM Oil No.3

- Tensile Strength (Max.) -70%
- Elongation (Max.) -55%
- Volume Change (Max.) +120%

PART 3 – FABRICATION AND ERECTION

3.01 FABRICATION OF MEMBRANE PANELS

A. General

1. Membrane assembly design drawings shall include all information necessary for the fabrication by the Subcontractor of the tensile membrane structure. They shall include size and shape of envelope, type and location of shop and field connections, size, type and extent of all heat-welded seams.
2. The Subcontractor shall take necessary care to plan and assemble the fabricated sections such that the assembly has not shop patches. Splices, if any, shall be patterned into a symmetrical and repetitive geometric arrangement within the assembly, shown on the design drawings and, where feasible, hidden by structural members.
3. ERECTION OF MEMBRANE ASSEMBLIES
4. Prior installation of the membrane assemblies, the Subcontractor shall meet with the General Contractor to review the erection procedure and scheduling. The Subcontractor shall coordinate all work with other trades.
5. No trade shall have access to, or work from the membrane, unless authorized by the Subcontractor in writing.
6. Erection of structural steel
   a. The Subcontractor shall employ a competent foreman to supervise all work of steel erection. This foreman shall be present at all times during the Subcontractor's scope of work.
   b. All precautions shall be taken to ensure an accurately located and completely safe and stable structure at all times. Adequate guy cables shall be used throughout the work and all erection bolts shall be drawn up tight.
   c. All steel shall be accurately aligned before permanent connections are made.
   d. Temporary bracing shall be left in place as long as may be required for safety. The bracing shall be located so it does not interfere with the erection for the tensile membrane structure, and can be removed as required during construction.
      1) The structure is to be self-supporting and stable after the structure is fully completed. It is the Subcontractor's sole responsibility to determine the erection procedure and sequence and to ensure the safety of the structure and its component parts during erection. This includes the additional of whatever temporary bracing, guys or tie-downs that may be necessary. Such materials shall be removed by the Subcontractor and remain his property after completion of the property.
   e. Erection tolerances shall be specified in the AISC "Code of Standard Practice for Steel Buildings and Bridges", unless otherwise noted.

END OF SECTION

SECTION 321313
CONCRETE PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete sidewalks, stair steps, integral curbs, gutters, median barriers, parking areas, and roads.

1.02 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete.

1.03 REFERENCE STANDARDS

A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).

B. ACI 301 - Specifications for Structural Concrete; 2016.

C. ACI 305R - Guide to Hot Weather Concreting; 2010.

D. ACI 306R - Guide to Cold Weather Concreting; 2016.

E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2018a.

F. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

G. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2019.

H. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2018.

I. ASTM D1752 - Standard Specification for Preformed Sponge Rubber, Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction; 2018.

PART 2 PRODUCTS

2.01 PAVING ASSEMBLIES

A. Comply with applicable requirements of ACI 301.

2.02 FORM MATERIALS

A. Joint Filler: Preformed; non-extruding bituminous type (ASTM D1751) or sponge rubber or cork (ASTM D1752).

2.03 REINFORCEMENT

A. Steel Welded Wire Reinforcement: Plain type, ASTM A1064/A1064M; in flat sheets; galvanized.

2.04 CONCRETE MATERIALS

A. Obtain cementitious materials from same source throughout.

B. SR value of .35 or higher

C. Use fly ash, Silica Flume, and Calcined Pozzolan to the greateest extend allowabel to meet the performance and aesthetic requiremnts of the mix.

D. Fine and Coarse Mix Aggregates: ASTM C33/C33M.

E. Fly Ash: ASTM C618, Class C or F.

F. Calcined Pozzolan: ASTM C618, Class N.

G. Silica Fume: ACI 211.1.

H. Fiber Reinforcement: Synthetic fibers shown to have long-term resistance to deterioration when in contact with alkalis and moisture; 1/2 inch length.

2.05 ACCESSORIES

2.06 CONCRETE MIX DESIGN

A. Fiber Reinforcement: Add to mix at rate of 1.5 pounds per cubic yard, or as recommended by manufacturer for specific project conditions.

2.07 MIXING

PART 3 EXECUTION

3.01 SUBBASE

A. Prepare subbase in accordance with State of ALDOT Highways standards.

3.02 PREPARATION

A. Moisten base to minimize absorption of water from fresh concrete.

B. Coat surfaces of manhole frames with oil to prevent bond with concrete pavement.

3.03 FORMING

A. Place and secure forms to correct location, dimension, profile, and gradient.

B. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.04 REINFORCEMENT

A. Place reinforcement as indicated.

3.05 COLD AND HOT WEATHER CONCRETING

A. Follow recommendations of ACI 305R when concreting during hot weather.

B. Follow recommendations of ACI 306R when concreting during cold weather.

C. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

3.06 PLACING CONCRETE

A. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.

3.07 JOINTS

3.08 FINISHING

A. Area Paving: Light broom, texture perpendicular to pavement direction unless otherwise indicated on the plans.

3.09 TOLERANCES

A. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.

B. Maximum Variation From True Position: 1/4 inch.

3.10 PROTECTION

A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.

B. Do not permit pedestrian traffic over pavement until 75 percent design strength of concrete has been achieved.

END OF SECTION

SECTION 328423
UNDERGROUND SPRINKLERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe and fittings, valves, sprinkler heads, emitters, bubblers, and accessories.

B. Delegated design of automatic underground irrigation system.

C. Control system.

1.02 REFERENCE STANDARDS

A. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work with site backfilling, landscape grading and delivery of plant life.

B. Preinstallation Meeting: Convene one week prior to commencing work of this Section.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate piping layout to water source, location of sleeves under pavement, location and coverage of sprinkler heads, volume of water delivery in GPM, components, plant and landscaping features, site structures, schedule of fittings to be used.

C. Operation and Maintenance Data:
   1. Provide instructions for operation and maintenance of system and controls, seasonal activation and shutdown, and manufacturer's parts catalog.
   2. Provide schedule indicating length of time each valve is required to be open to provide a determined amount of water.

D. Record Documents: Record actual locations of all concealed components piping system.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Designer Qualifications: Company specializing in the design of automatic underground irrigation systems with a minimum of 5 years of experience.

C. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Comply with applicable code for piping and component requirements.

2.02 IRRIGATION SYSTEM

A. Electric solenoid controlled underground irrigation system, with low point self drain.

B. Manufacturers:
   1. Rain Bird Sales, Inc; ____: www.rainbird.com/#sle.
   2. Toro Company; ____: www.toro.com/#sle.
   3. Weathermatic; ____: www.weathermatic.com/#sle.

2.03 PIPE MATERIALS

2.04 OUTLETS

A. Spray Type Sprinkler Head: Fixed surface head.

B. Emitter: Adjustable outlet, non-clogging, with two trickle tubes.

2.05 VALVES

2.06 CONTROLS

A. Controller: Automatic controller, microprocessor solid state control with visible readout display, temporary override feature to bypass cycle for inclement weather, timer for a 4 station system, programmable for 7 days in quarter hour increments, with automatic start and shutdown.

B. Controller Housing: NEMA 250 Type 3; weatherproof, watertight, with lockable access door.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify location of existing utilities.

B. Verify that required utilities are available, in proper location, and ready for use.

3.02 PREPARATION

A. Piping layout indicated is diagrammatic only. Route piping to avoid plants, ground cover, and structures.

B. Layout and stake locations of system components.

C. Review layout requirements with other affected work. Coordinate locations of sleeves under paving to accommodate system.

3.03 INSTALLATION

A. Install pipe, valves, controls, and outlets in accordance with manufacturer's instructions.

B. Connect to utilities.

C. Set outlets and box covers at finish grade elevations.

D. Provide for thermal movement of components in system.

E. Use threaded nipples for risers to each outlet.

F. After piping is installed, but before outlets are installed and backfilling commences, open valves and flush system with full head of water.

3.04 BACKFILLING

A. Provide 3 inch sand cover over piping.

B. Backfill trench and compact to specified subgrade elevation. Protect piping from displacement.

3.05 SYSTEM STARTUP

A. Prepare and start system in accordance with manufacturer's instructions.

B. Adjust control system to achieve time cycles required.

C. Adjust head types for full water coverage as directed.

3.06 CLOSEOUT ACTIVITIES

A. Instruct Owner's personnel in operation and maintenance of system, including adjusting of sprinkler heads. Use operation and maintenance data as basis for demonstration.

END OF SECTION

SECTION 329300

PLANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparation of subsoil.

B. Topsoil bedding.

C. New trees, plants, and ground cover.

D. Mulch and Fertilizer.

E. Maintenance.

F. Tree Pruning.

1.02 DEFINITIONS

A. Weeds: Any plant life not specified or scheduled.

B. Plants: Living trees, plants, and ground cover specified in this Section, and described in ANSI Z60.1.

1.03 REFERENCE STANDARDS

A. ANSI/AHIA Z60.1 - American National Standard for Nursery Stock; 2014.

B. ANSI A300 Part 1 - American National Standard for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning); 2017.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Certificate: Certify fertilizer and herbicide mixture approval by authority having jurisdiction.

C. Certificate: Submit certificate for plants free of disease or hazardous insects; certified by federal department of agriculture; free of disease or hazardous insects.

1.05 QUALITY ASSURANCE

A. Nursery Qualifications: Company specializing in growing and cultivating the plants with three years documented experience.

B. Installer Qualifications: Company specializing in installing and planting the plants with 5 years experience.

C. Tree Pruner Qualifications: Company specializing in pruning trees with proof of Arborist Certification.

D. Maintenance Services: Performed by installer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

B. Store plant materials in an upright position.

C. Transport plants by supporting the root ball and top growth.

D. Protect and maintain plant life until planted.

E. Deliver plant life materials immediately prior to placement that are gfreee of damage and poests. Keep plants moist.

1.07 FIELD CONDITIONS

A. Do not install plant life when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.

B. Do not install plant life when wind velocity exceeds 30 mph.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide one year warranty from substantial completion

C. Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty commencing on date of replacement.

1.09 END OF SECTION

A. See Section 017000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Comply with regulatory agencies for fertilizer and herbicide composition.

2.02 PLANTS

A. Plants: Species and size identified in plant schedule, grown in climatic conditions similar to those in locality of the work.

2.03 SOIL MATERIALS

A. Backfill mix & planting mix: equal mix of suitable native topsoil, aged fines, sand mix and composted cow manure.

B. Soil Components

1. Native topsoil: mineral soil existing at the locations of proposed planting to be used for soil modification that is free deleterious materials and stones greater than 1/2" diameter.
2. Sand mix: consisting of approximately 60% medium sized sand with granules measuring between 0.25 - 0.50 mm, with 20% fine sand (granules between 0.1 - 0.25 mm) and 20% coarse sand (0.5 - 1.0 mm granules)
3. Compost: compost shall be us composting council-sta certified or meet the following requirements: A. Organic content between 35-65%, maturity test: seedling germination and vigor should be >80% of the control. B. Stability test: stable or very stable rating based on CO_2 respiration. C: carbon: nitrogen ratio should be 14-20, electrical conductivity to be <5.0 ds/m (or mmhos/cm) pathogens and metals. Meets or exceeds USEPA standards for class a biosolids, or state standards. D: contaminants: under 1% or 0.5% metal, glass, plastic, and other inert materials. Under 0.1% plastic film in mulch, or 0.25% for amending.

2.04 MULCH MATERIALS

A. Mulch: Mulch shall consist of 100% shredded hardwood fibers, aged a minimum of 1 year prior to installation, and free from pine mulch, wood chips, bark, soil, rocks, and weeds. The maximum length of any individual component shall be two inches (2”) and a minimum of seventy-five percent (75%) of the mulch shall pass through a one-inch (1”) screen. Mulch shall be free of germination-inhibiting ingredients. The mulch shall have the characteristics of retaining moisture, forming a mat not susceptible to spreading by wind, rain, or floating in ponding water, and provide a good growth medium for plants. Mulch shall not float in ponding water.

2.05 ACCESSORIES

A. Stakes: Softwood lumber, pointed end.

PART 3 EXECUTION

3.01 PREPARATION OF SUBSOIL

A. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated subsoil.

C. Scarify subsoil to a depth of 3 inches where plants are to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

D. Dig pits and beds 6 inches larger than plant root system.

3.02 PLACING TOPSOIL

A. Spread topsoil to a minimum depth of 4 inches over area to be planted. Rake smooth.

B. Place topsoil during dry weather and on dry unfrozen subgrade.

C. Remove vegetable matter and foreign non-organic material from topsoil while spreading.

D. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.

E. Install topsoil into pits and beds intended for plant root balls, to a minimum thickness of 6 inches.

3.03 FERTILIZING

A. Apply fertilizer in accordance with manufacturer's instructions.

B. Apply after initial raking of topsoil.

C. Mix thoroughly into upper 2 inches of topsoil.

D. Lightly water to aid the dissipation of fertilizer.

3.04 PLANTING

A. Set plants vertical.

B. Remove non-biodegradable root containers.

C. Set plants in pits or beds, partly filled with prepared plant mix, at a minimum depth of 6 inches under each plant. Remove burlap, ropes, and wires, from the root ball.

D. Place bare root plant materials so roots lie in a natural position. Backfill soil mixture in 6 inch layers. Maintain plant life in vertical position.

E. Saturate soil with water when the pit or bed is half full of topsoil and again when full.

3.05 PLANT SUPPORT

A. Brace plants vertically with plant protector wrapped guy wires and stakes to the following:
   1. Tree Caliper: 2 to 4 inches; Tree Support Method: 3 guy wires with eye bolts and turn buckles
   2. Tree Caliper: Over 4 inches; Tree Support Method: 4 guy wires with eye bolts and turn buckles
   3. Palm Trees: use BioPlex Palm Braces or similar.

3.06 TREE PRUNING

A. Prune trees as recommended in ANSI A300 Part 1.

B. Prune newly planted trees as required to remove dead, broken, and split branches.

3.07 FIELD QUALITY CONTROL

A. Plants will be inspected and approved prior to planting by the architect.

B. Provide trees with strong central leaders and uniform symetrical growth habit gree from scaring or trunk damage. Plants that dont meet thias standard will be rejected.

C. Provide shrubs and perennials with full growth habit that that have been cultivated in the specified container size for a minimum of 6 months at the time of planting.

D. Plants will be rejected if root ball has been disturbed or damaged prior to or during planting.

3.08 MAINTENANCE

A. Provide maintenance at no extra cost to Owner; Owner will pay for water.

B. Irrigate sufficiently to saturate root system and prevent soil from drying out.

C. Remove dead or broken branches and treat pruned areas or other wounds.

D. Neatly trim plants where necessary.

E. Immediately remove clippings after trimming.

F. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions.

G. Control insect damage and disease. Apply pesticides in accordance with manufacturers instructions.

H. Remedy damage from use of herbicides and pesticides.

I. Replace mulch when deteriorated.

J. Maintain wrappings, guys, turnbuckles, and stakes. Adjust turnbuckles to keep guy wires tight. Repair or replace accessories when required.

END OF SECTION

ATTACHMENT A
GEOTECHNICAL REPORT

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

MOBILE OFFICE
5460 Rangeline Road
Mobile, AL 36619

Tel: (251) 344-7711
Fax: (251) 443-9000
www.soearth.com

January 18, 2023

CITY OF MOBILE
c/o Volkert, Inc.
1110 Montlimar Drive
Mobile, AL 36609

ATTENTION: Mrs. Jordan Stringfellow, P.E.

REFERENCE: Addendum 1 to Report of Subsurface Investigation and Geotechnical Engineering Evaluation
Mobile Convention Center – Heroes Plaza
1 S Water Street
Mobile, AL
SESI Project No: M22-666

Dear Mrs. Stringfellow,

At your request, **Southern Earth Sciences, Inc (SES)** has issued this addendum to our October 25, 2022, Report of Subsurface Investigation and Geotechnical Evaluation to present the Seismic Site Classification for this project. This addendum should be attached to and made a permanent part of our Report of Subsurface Investigation and Geotechnical Evaluation.

Seismic Site Classification was not included as part of the original geotechnical exploration scope of services for this project. Therefore, the investigation performed at the project site did not extend deep enough to determine the seismic classification. Based on our review of historical subsurface exploration data performed near this site and reference to ASCE-7-2016 and the International Building Code (IBC) 2018, this site would best be categorized as **Site Class D**. This classification recommendation is based on equivalent N_{60} SPT, undrained shear strength values correlated from CPT sounding data and our experience along the Alabama Coast. The site is not within a special seismic hazard or earthquake fault zone. Based on subsurface information collected at the site and our experience in this geologic area, supplemental geologic hazard evaluations are not recommended for this site.

CITY OF MOBILE
Addendum 1 to Report of Subsurface Investigation and Geotechnical Engineering Evaluation
Mobile Convention Center – Heroes Plaza
Mobile, AL
SESI Project No: M22-666
January 18, 2023

We appreciate this opportunity to be of service and look forward to our continued involvement throughout Final Design and Construction Phases of this project. Please do not hesitate to contact us if you have any questions.

Sincerely,

SOUTHERN EARTH SCIENCES, INC.

Curran Nicholas, E.I.
Project Manager

Matt Coaker, P.E.
Vice President
Registered, AL 30835

CN/MC

Attachments

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

Mobile Convention Center

Heroes Plaza

1 S Water Street

Mobile, AL

Report of Subsurface Investigation and

Geotechnical Engineering Evaluation

Prepared for:
CITY OF MOBILE
SESI Project No: M22-666
October 25, 2022

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

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5460 Rangeline Road
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October 25, 2022

CITY OF MOBILE
c/o Volkert, Inc.
1110 Montlimar Drive
Mobile, AL 36609

ATTENTION: Mrs. Jordan Stringfellow, P.E.

REFERENCE: Report of Subsurface Investigation and Geotechnical Engineering Evaluation
Mobile Convention Center – Heroes Plaza
1 S Water Street
Mobile, AL
SESI Project No: M22-666

Dear Mrs. Stringfellow,

Southern Earth Sciences, Inc. (SESI) has completed the authorized scope of subsurface investigation and geotechnical engineering evaluation for the referenced project. This report presents our understanding of the available project information and outlines our soil related recommendations and comments regarding construction and foundation support for the proposed development.

We appreciate this opportunity to be of service and look forward to our continued involvement throughout construction phases of the project. Please do not hesitate to contact us if you have any questions.

Sincerely,

SOUTHERN EARTH SCIENCES, INC.

Curran Nicholas, E.I.
Project Manager

Matt Coaker, P.E.
Vice President
Registered, Alabama 30835

ALABAMA LICENSED No. 30835 PROFESSIONAL ENGINEER 10/25/22 ROBERT MATTHEW COAKER

MC/CN

Attachments

CITY OF MOBILE

Report of Subsurface Investigation and Geotechnical Engineering Evaluation
Mobile Convention Center – Heroes Plaza
Mobile, AL
SESI Project No: M22-666
October 25, 2022

CITY OF MOBILE
Report of Subsurface Investigation and Geotechnical Engineering Evaluation
Mobile Convention Center – Heroes Plaza
Mobile, AL
SESI Project No: M22-666
October 25, 2022

1.0 PROJECT INFORMATION

Based on our understanding of the provided information, the project will consist of a new canopy structure, brass statues, and affiliated parking and drive areas to replace the existing parking/drive areas. No structural loading information was available at the writing of this report. Each statue will weigh approximately 2,000 pounds and will stand roughly 9 feet tall. The statues will be connected to a concrete pad/foundation approximately 5 to 6 feet in diameter. For reporting purposes, we assume maximum column loads for the canopy structure are on the order of 70 kips.

No grading or topographic information was available at the writing of this report. We assume final site grade will be as much as approximately 3 feet above the existing ground/pavement surface in portions of the project area. Additional detailed project information was not available at this time.

2.0 FIELD INVESTIGATION

Four (4) Cone Penetrometer Test (CPT) sounding and five (5) soil test borings with Standard Penetration Tests (SPTs) were performed within the proposed canopy, statue, and pavement areas. Test locations were estimated using an overlay of the provided site plan and a handheld GPS with an accuracy of ±30 feet. The approximate locations of the soundings are shown on the Test Location Plan in **Appendix 1**. The provided site plan with proposed boring locations is attached for reference in **Appendix 4**.

The CPT soundings were performed in accordance with ASTM Specification D-5778 using a 20-ton Hogentogler Electronic CPT rig. CPT soundings were advanced to a depth of approximately 20 feet below the existing ground surface. Soil classifications were interpreted from methods recommended by Robertson and Campanella. Correlations between Cone Resistance values and Standard Penetration Testing "N" values were performed according to the methods developed by Robertson, Campanella and Wightman. The soil types and stratigraphy shown on the CPT Log sheets are based upon material parameters measured and evaluated as the cone is advanced. CPT Log sheets graphically showing the cone tip resistance, friction, equivalent N60-value and interpreted soil behavior type at each sounding location are attached in **Appendix 2**.

Soil borings with Standard Penetration Tests (SPTs) were advanced to depths ranging from approximately 6 to 22 feet below the existing ground surface using track mounted drilling equipment. Soil sampling and penetration testing in the soil test borings were performed in general accordance with ASTM Specification D 1586 using solid stem auger drilling techniques. At regular intervals during the process, the drill rods were removed, and soil samples were obtained with a standard 2-inch split tube sampler. Soils were sampled at 2.5 ft intervals to 10 feet and then at 5 ft sample intervals to boring termination.

Representative portions of soil samples obtained during the investigation were transported to our laboratory for classification testing. Samples were examined by an engineer and classified in accordance with the Unified Soil Classification System. Soil descriptions, penetration resistances and lab testing results are shown on the appropriate Soil Boring Log sheets attached in **Appendix 2**.

3.0 LABORATORY TESTING

Laboratory testing included physical examination and general classification testing of samples obtained during the soil test boring operation. Testing included Moisture Content Determination (ASTM D 2216), No. 200 Sieve Washes (ASTM D 1140) and Atterberg Limits Tests (ASTM D 4318). Test results are included on Soil Boring Logs attached in **Appendix 2** and on Laboratory Test Data Summary Sheets attached in **Appendix 3**.

4.0 GENERALIZED SUBSURFACE CONDITIONS

The subsurface descriptions below are generalized to highlight the major subsurface stratigraphy encountered across the site. The Soil Boring Logs and CPT Sounding Logs attached in **Appendix 2** present specific information at individual boring or CPT locations including soil description, stratification, ground water level, penetration resistance, and laboratory tests results. This information is representative of conditions encountered at the boring or CPT locations. Variations may occur and should be expected between the test locations. The stratification represents the approximate boundary between subsurface materials as the actual transition may be gradual.

Beneath approximately 4 to 5 inches of asphalt in pavement areas and 8 inches of concrete in sidewalk areas, soils encountered across the project site generally consist of medium dense to dense silty sands and sands with silt to depths ranging from approximately 2 to 5 feet below existing ground. Crushed aggregate base, crushed concrete, and gravel were frequently encountered within the upper 2 to 5 feet of the site.

Soil boring B-6 was pre-drilled after a failed attempt to advance the CPT sounding due to refusal. Soils were visually classified to approximately 6.5 feet and then backfilled. The upper 6.5 feet shown on the log for CPT-6 is backfilled material and not representative of the insitu soils at that test location.

Below depths ranging from approximately 2 to 6 feet, soils encountered generally consist of very loose to medium dense silty sands to approximately 7 feet below the existing ground surface. Soil boring B-8 encountered wood and brick from approximately 3 to 5 feet followed by soft silt to 8 feet before terminating in the medium dense silty sand to approximately 9.5 feet below the existing ground surface.

Below about 7 feet at test location CPT-4 and B-7, soft to medium stiff silt and clay were encountered to the termination of B-7 (approximately 12 feet below existing ground) and to approximately 10 feet at sounding CPT-4. Elsewhere, below about 7 feet, loose to medium dense sands were encountered to the termination of the investigation approximately 20 feet below existing ground surface. Detailed descriptions of soils encountered at each test location are shown on the appropriate CPT Sounding and Soil Boring logs included in **Appendix 2**.

5.0 GROUNDWATER

The soil borings encountered groundwater at depths ranging from approximately 2 to 3 feet below existing ground surface at the time of our investigation. The CPT soundings encountered groundwater at depths ranging from approximately 2.0 to 5.5 feet below the existing ground surface. The sounding holes caved in upon removal of the CPT rods and were noted as wet at the depth of collapse. A hole collapse often occurs at or slightly above the groundwater or saturated soil level but can also occur due to the presence of loose soils without the presence of groundwater.

Groundwater depths should be verified at the time of construction for cases where groundwater variations are potentially significant for construction. Fluctuation in the groundwater table will occur due to variances in rainfall, elevation, drainage, types of soil encountered and other factors not evident at the time measurements were made. Reference to depth has been made with respect to the existing ground surface encountered at the time of our field investigation. Groundwater levels encountered at each test location at the time of our investigation are shown on the appropriate CPT sounding or Soil Boring Logs attached in **Appendix 2.**

6.0 FOUNDATION CONSIDERATIONS AND CONCLUSIONS

Our evaluation of foundation conditions has been based on the project information previously described in this report and subsurface data obtained during the investigation. In evaluating the soil borings and CPT soundings, we have used empirical correlations previously established between standard penetration resistances, cone tip and side resistance values, soil index properties and foundation stability. Soil parameters used in the evaluation were derived from the CPT sounding data using the interpretation software RAPID CPT® by Dataforensics.

6.1 Overview

Beneath approximately 4 to 5 inches of asphalt in the pavement areas and 8 inches of concrete in the sidewalk areas, soils encountered within the upper 2 to 5 feet of this site consist of dense silty sands (likely fill imported during original construction) that, with limited undercutting, replacement,

and thorough compaction, will be capable of supporting the proposed lightly loaded statue and canopy structures using conventional shallow foundations. We have assumed the final site grade to be within approximately 3 feet of existing grade, and that less than 3 feet of fill will be placed to achieve final grade. SES should be notified if our assumption of final grade is not consistent with the design final grade. Recommendations for site preparation and subgrade stabilization for the canopy and statue foundation areas are provided in the following section. Recommendations for site preparation and subgrade stabilization for the pavement areas are provided in Section 7.0 of this report.

6.2 Site Preparation and Subgrade Stabilization

Effective site drainage and positive grading should be established during the initial stages of site demolition and grading and modified as necessary during construction. Establishing and maintaining drainage throughout construction will be a critical aspect of general site grading.

Once adequate site drainage is in place, the site should initially be stripped to remove all existing asphalt, concrete, foundations, abandoned utilities, and debris extending laterally to at least 5 feet outside the construction area. Excavations after site stripping should extend below foundation bearing elevation to a minimum depth of 2 feet below footings or deeper as needed to remove loose or otherwise unsuitable soils that cannot be improved by compaction. Organics and brick were encountered to approximately 5 feet below original grade at test location B-8 and may be present in other areas of the site as this is common for the downtown Mobile area. Excavated materials should be wasted and not reused in structural areas.

Exposed surfaces after site stripping and prior to fill placement should be leveled and compacted as much as conditions at the time of construction will allow. Subgrade soils in foundation areas that are too confined for compaction using conventional equipment should be evaluated by manual probing or Dynamic Cone Penetrometer (DCP) by an experienced soils technician under the direct supervision of the SES Geotechnical Engineer of Record. Soils that are observed to be soft or loose should be mitigated by undercutting and replacing with compacted Select Structural Fill.

Groundwater or saturated soil conditions will likely be encountered during excavations at this site. The initial lifts of backfill should consist of clean sand with less than about 10 percent (by weight) passing the No. 200 mesh sieve and 70 percent or less (by weight) passing the No. 40 mesh sieve. Below and within one foot of the groundwater/saturated soil level, in lieu of measured compaction tests, Clean Sand Fill should be thoroughly compacted with heavy tracked equipment to achieve some compaction and fill voids. Above the groundwater and saturated soil level, Clean Sand Fill

should be compacted to 98 percent of the Standard Proctor maximum dry density as determined by ASTM D-698 with a moisture content between 1 percentage point below and 3 percentage point above the optimum moisture content.

Imported Select Structural Fill soil placed to achieve final grade should consist of a sandy material with less than about 30 percent of the soil particles (by weight) passing the No. 200 mesh sieve, less than 70% passing the No. 40 sieve, and a Liquid Limit less than 15. Fill material should be compacted in 12-inch (maximum) lifts to at least 95 percent of the soil's Modified Proctor maximum dry density as determined by ASTM D 1557. In place density tests should be made at frequent intervals to measure the effectiveness of the compaction operations.

6.3 Dewatering

Groundwater/saturated soil conditions were encountered with the investigated depths. If groundwater is encountered during construction and dewatering is necessary, extensive groundwater drawdown (using a well point system) is not recommended as this could potentially cause settlement of in-situ soils and adjacent structures. Dewatering should be conducted by pumping from a gravel filled sump in the excavation bottom. Dewatering could be conducted for the minimum amount of time necessary to complete construction of the foundations. If dewatering is required in any isolated portions of the project, we should be contacted to evaluate the contractor's dewatering plan.

6.4 Shallow Foundations

After completion of the recommended subgrade improvements as outlined in the previous sections, shallow footings bearing at a depth of at least 18 inches below surrounding grade may be designed for an allowable soil bearing pressure of up to 1,500 psf. Minimum footing widths of 18 and 24 inches for strip and isolated (column) footings, respectively, should be observed.

The bottom of the foundation excavations must be dry, clean and free of loose, soft materials and construction debris prior to placement of steel or concrete. Excavations should be observed by a qualified inspector prior to steel or concrete placement. Concrete shall be poured as quickly as possible to avoid exposure of the footing materials to moisture changes (wetting or drying). Surface run-off water should be channeled away from the excavation and not be allowed to pond. If for any reason foundation excavations are required to be open for an extended period or if inclement weather is imminent, excavations should be protected to minimize moisture loss/gain. The bottom of all footing excavations should be stable, free of water, debris and should be compacted 95 percent

of the Modified Proctor maximum dry density as determined by ASTM D1557 with moisture content between 1 percentage points below and 3 percentage points above the optimum moisture content.

Assuming that the site will be prepared as previously outlined and structural loads will be consistent with our stated assumptions, footing settlements are expected to be less than 1-inch. SES should be notified if our assumptions of foundation loadings and proposed fill heights above existing grade are not consistent with final design loads and grading plans.

6.5 Lateral Earth Pressures

Presented in the following table are our recommended design values of Equivalent Fluid Pressure and soil-foundation Friction Coefficients for calculation of resistance to lateral loadings. These values have been generalized to be representative of imported structural fill soils and improved subgrade conditions anticipated to be present within the upper couple of feet of the site. These values are not intended to be representative of any soft or loose, saturated soils that are present below depths of approximately 2 feet at this site.

Empirical correlation and data obtained from the soil borings and CPT soundings have been used to estimate active, passive, at-rest earth pressure coefficients and equivalent fluid densities presented in the following tables for select structural fill and shallow in-situ sands. These parameters have been developed using information derived from soil boring and CPT sounding data, as well as correlation laboratory test results with accepted geotechnical references and our general knowledge of and experience with similar soil conditions.

This information may be used for lateral resistance calculations for relatively small retaining structures (less than 3 feet tall) and shallow foundations bearing within approximately 2 feet of existing grade. Foundation elements extending more than about 2 feet below original site elevation should be brought to our attention and evaluated on a case-by-case structure specific basis. The designers should exercise sound engineering judgment when using these parameters for design and should apply an appropriate Factor of Safety, typically between 2.0 and 3.0.

Soil Unit Weight values and Equivalent Fluid Density values have been presented in terms of Total Soil Unit Weight. The Total Soil Unit Weight Scenario is applicable to foundation elements anticipated to be constructed well above groundwater levels where in-situ and fill soils are expected to be near their natural moist unit weight. These parameters do not include hydrostatic pressures. Positive grading and adequate drainage are assumed to be installed behind retaining structures to prevent buildup of hydrostatic pressure that could act differentially on shallow retaining structures, sumps,

etc. If failsafe positive drainage provisions are not provided behind retaining walls/subsurface walls, then hydrostatic pressure should be included in the design loadings in addition to the lateral earth pressures.

At-rest earth pressures should be used for foundation walls that will be restrained from deflecting by adjacent floor slabs or structures. Active and Passive pressures should be used in situations where shallow walls will not be restrained and will be allowed to deflect.

TABLE 1

GENERALIZED EARTH PRESSURE COEFFICIENTS AND EQUIVALENT FLUID PRESSURES

Total Moist Soil Unit Weight Scenario (Above Groundwater level)

Soil	Earth Pressure Condition	Total Moist Unit Weight (pcf)	Equivalent Fluid Density (pcf)	Internal Angle of Friction ϕ (deg)	Cohesion c (psf)	Lateral Earth Pressure Coefficient
Imported Select Structural Fill	Active (k_a)	120	36	32	--	0.30
	Passive (k_p)		360	32	--	3.25
	At Rest (k_o)		56	32	--	0.47
In-situ Silty Sands*	Active (k_a)	120	43	28	--	0.36
	Passive (k_p)		300	28	--	2.75
	At Rest (k_o)		64	28	--	0.53

*** NOT representative of in-situ soft/loose silty and clayey soils that will be over-excavated and replaced as required to create stable construction surfaces and to provide separation beneath shallow foundations and grade supported slabs.**

6.6 Coefficient of Friction for Sliding Resistance

A Coefficient of Friction equal to 0.40 may be used for cast-in-place concrete footings and floor slabs in direct contact with Select Structural Fill.

7.0 PAVEMENT EVALUATION

Our evaluation of site paving has been based on subsurface information obtained from the site, references to empirical correlations previously established between soil index properties and pavement/subgrade stability observed in soil conditions similar to those encountered at the subject site. Design traffic

information assumptions used in the pavement design for this project have been made based on our experience with similar projects.

Traffic loading and volume information was not available at the writing of this report. Light duty pavement build-up recommendations for automobile parking areas have been based on the assumption that traffic will consist of passenger cars and light trucks and no truck traffic. An Average Daily Traffic (ADT) volume of approximately 1 garbage truck, 2 light delivery type trucks and 250 passenger vehicles was assumed for the design traffic volume estimate for Medium Duty Pavements for this project. This daily volume totals less than 100,000 ESALs over a 20-year Design Life. An ADT volume of approximately 50 loaded semi-tractor trailer vehicles, 20 Delivery Trucks and 500 passenger vehicles was assumed for the design traffic volume estimate for Heavy Duty Pavements for this project. This daily volume would total up to approximately 1,000,000 ESALs over a 20-year Design Life. We should be notified if actual traffic information differs so that we may determine how these changes affect the design.

7.1 Flexible Pavements

The 1993 AASHTO Flexible Pavement Structural Design Methods were utilized for structural evaluation of flexible pavements for this project. This method utilizes inputs of the anticipated magnitude and frequency of axle loads, the supporting capability of the subgrade soils and the strengths of the pavement materials to yield a "Structural Number" (SN) which represents the structural strength of the pavement section. Once determined, the structural number is converted to thickness of the various courses of a pavement (surface, base, and sub-base) utilizing coefficients representing the strengths of various component materials.

TABLE 2

RECOMMENDED MINIMUM FLEXIBLE PAVEMENT SECTION

Paved Area	Compacted Granular Fill	Crushed Aggregate Base Course (ALDOT 825)	Bituminous Binder Course (ALDOT 429B)	Bituminous Surface Course (ALDOT 429A)
Automobile Parking Areas	In Place or Imported - 18 inches minimum (95% of ASTM D 1557)	6 inches (100% of ASTM D 1557)	----	1.5 inches
Medium Duty Access Drives	In Place or Imported - 18 inches minimum (95% of ASTM D 1557)	6 inches (100% of ASTM D 1557)	2.0 inches	1.5 inches
Heavy Duty Access Drives	In Place or Imported - 18 inches minimum (95% of ASTM D 1557)	8 inches (100% of ASTM D 1557)	3.0 inches	2.0 inches

7.2 Rigid Concrete Pavements

Rigid pavements are recommended specifically in areas where frequent maneuvering (i.e., turning and braking) of truck traffic is expected. Rigid pavements will provide better distribution of surface loads to the subgrade without causing deformation of the paved surface. Asphalt pavements are not recommended in heavy truck traffic areas due to the potential for rutting and shoving, particularly during periods of extreme summer heat.

Proper finishing of concrete pavement requires the use of appropriate construction joints to reduce cracking. Construction joints should be designed in accordance with the current Portland Cement Association and the American Concrete Institute guidelines. Joints should be sealed to reduce the potential for water infiltration into the supporting soils. Rigid concrete pavements should be constructed with load transfer mechanisms between panels. Portland Cement Concrete (PCC) mixes should be specified to achieve minimum 28-day compression and flexural strengths of 4,000 psi and 650 psi, respectively.

TABLE 3

RECOMMENDED MINIMUM RIGID PAVEMENT SECTION

Paved Area	Compacted Granular Fill	Crushed Limestone Base (ALDOT 825B)	Concrete (4,000 psi)
Light Duty/ Automobile Parking Areas	In Place or Imported - 18 inches minimum (95% of ASTM D 1557)	4 inches (100% of ASTM D 1557)	6 inches
Medium Duty Access Drives	In Place or Imported - 18 inches minimum (95% of ASTM D 1557)	4 inches (100% of ASTM D 1557)	7 inches
Heavy Duty Access Drives	In Place or Imported - 18 inches minimum (95% of ASTM D 1557)	6 inches (100% of ASTM D 1557)	8 inches

7.3 Pavement Subgrade Preparation

Soil borings performed within the existing asphalt parking and drive areas encountered about 4 to 5 inches of asphalt over 2 to 3 feet of medium dense to dense sandy soils that were likely placed as backfill after undercutting during previous construction. These in-place soils will generally be suitable with respect to pavement support assuming that final subgrade elevations will not be lowered and that a minimum of 2 feet of suitable sand fill will remain below subgrade elevation. Organics and brick were encountered to approximately 5 feet below original grade at test location B-8 and may be present in other areas of the site. Excavations in the existing pavement areas should extend to depths as required to completely remove all existing pavements, foundations, abandoned utilities, organics, and debris and to facilitate fill compaction and allow placement of the recommended pavement build-up outlined above.

Base materials should consist of Crushed Aggregate Base Course, Type B, Plant Mixed as specified by ALDOT and as outlined in this report for the respective pavement section. Crushed Aggregate Base material should be compacted to 100 percent ASTM D1557 Modified Proctor Density prior to paving.

7.4 Moisture Control

One of the most destructive elements that a pavement will be subjected to in its design lifetime is the presence of excess moisture. Pavements should be adequately sloped, and sufficient drainage provided such that excess water is allowed to run off before it can migrate into the pavement system. Sprinkler systems, if utilized in landscaped areas, should be properly installed and aimed such that they do not continually wet the paved surfaces. The use of clayey soils as backfill in nonstructural landscape islands and areas adjacent to pavements may be considered to help reduce moisture infiltration of rainfall and irrigation water into subgrade soils.

8.0 GENERAL COMMENTS AND LIMITATIONS

While the soil borings and the CPT soundings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and may be encountered. The delineation between soil types shown on the logs is approximate and the description represents our interpretation of subsurface conditions at the designated test locations and on the particular date explored.

This report has been prepared in order to aid in the evaluation of this project and to assist the engineers in the project planning and structural design. At the time of writing, changes were still being considered to foundations, site grading, and other aspects of the project that could have a significant impact on the applicability or relevance of the recommendations provided in this report. SESI should be consulted as the design process continues to ensure that the recommendations provided in this report are still applicable, and that they are being properly interpreted.

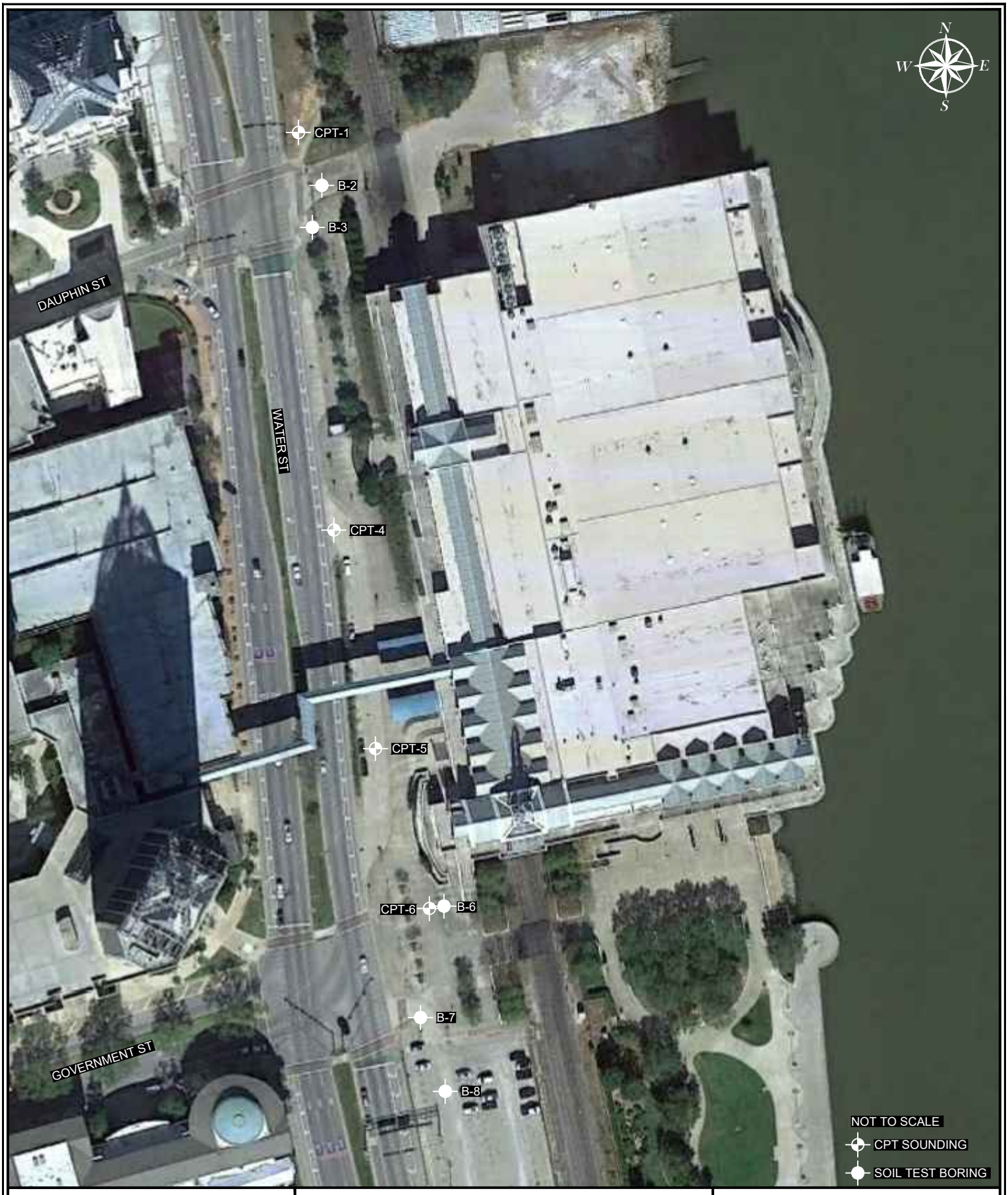
This report is intended for use with regard to the specific project discussed herein as we understand it at this time, and any substantial changes in the project, loads, locations, or assumed grades should be brought to our attention so that we may determine how such changes may affect our conclusions and recommendations. We would appreciate the opportunity to review the plans and specifications for construction to ensure that our conclusions and recommendations are interpreted correctly.

Professional judgments on design alternatives and criteria are presented in this report. These are based partly on our evaluations of technical information gathered, partly on our understanding of the characteristics of the project being planned, and partly on our general experience with subsurface conditions in the area. We do not guarantee performance of the project in any respect, only that our engineering work and judgments rendered meet the standard of care of our profession.

The Geotechnical Engineer of Record should be retained by the Owner in the construction phase of the project so they can observe subsurface conditions revealed during construction, confirm that design assumptions are still applicable or provide revised recommendations based on conditions encountered during construction, and to help ensure that our recommendations are properly interpreted. We recommend that Southern Earth Sciences, Inc. be retained to perform observation and field-testing services during the site preparation and foundation construction.

APPENDIX 1

Test Location Plan



MOBILE CONVENTION CENTER
HEROES PLAZA
MOBILE, AL

SOUTHERN EARTH SCIENCES
Geotechnical | Environmental | Materials Testing

TEST LOCATION PLAN
SESI JOB #: M22-666

APPENDIX 2

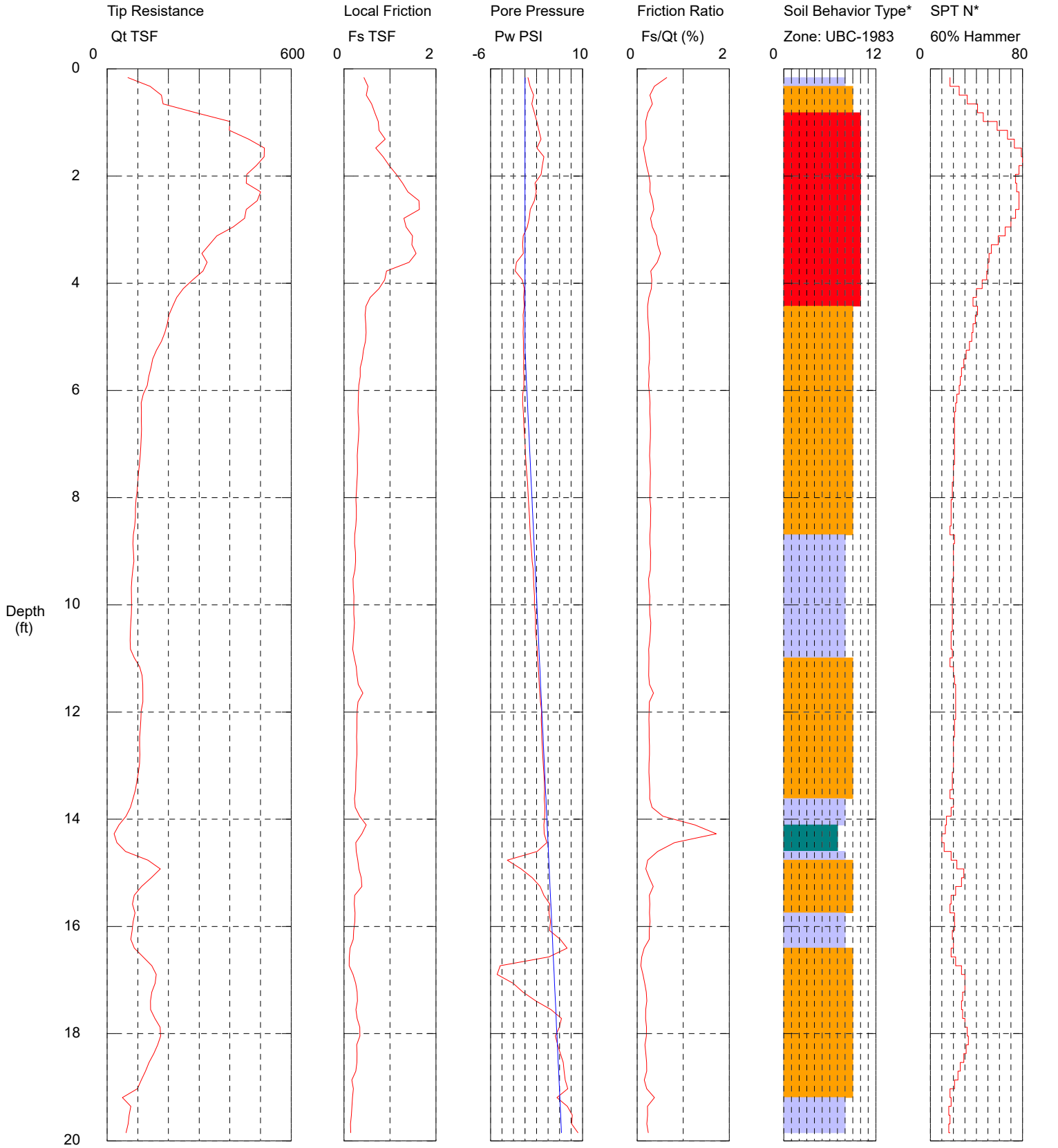
CPT Sounding Logs

Soil Boring Logs

Southern Earth Sciences

Operator: Danny Hines
Sounding: CPT-1
Cone Used: DDG1485
GPS Data: N30.69307 W88.03900

CPT Date/Time: 9/21/2022 11:39:07 AM
Location: Heroes Plaza
Job Number: M22-666
Groundwater measured at 5.5-ft.



Maximum Depth = 20.18 feet

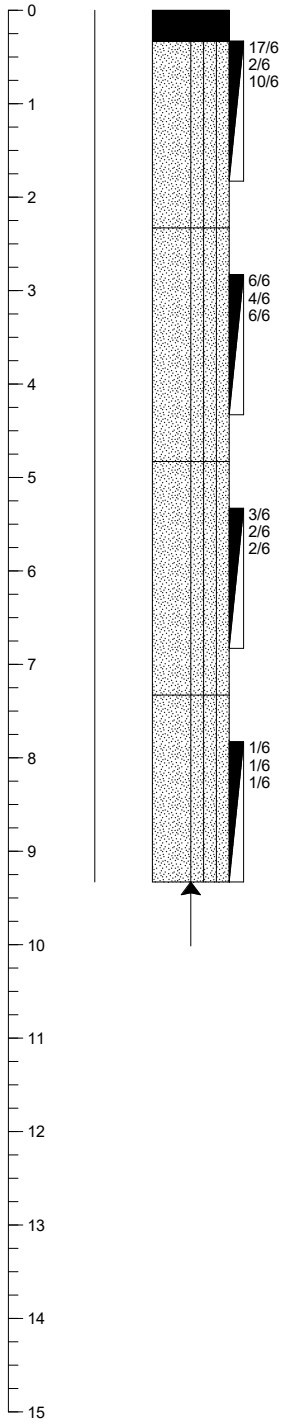
Depth Increment = 0.164 feet

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*Soil behavior type and SPT based on data from UBC-1983

SOIL BORING LOG

BORING NO.: B-2
PROJECT: HEROES PLAZA
PROJECT NO.: M22-666
PROJECT LOCATION: MOBILE, AL
METHOD: FLIGHT AUGER
BORING LOCATION: SEE TEST LOCATION PLAN
BORING ELEVATION: EXISTING GROUND
DATE DRILLED: 09/20/22
DATE COMPLETED: 09/20/22
WATER LEVEL: NOT MEASURED
WATER LEVEL DATE: 09/20/22
GEOL / ENGR: C. NICHOLAS
DRILLER: P. BYRD



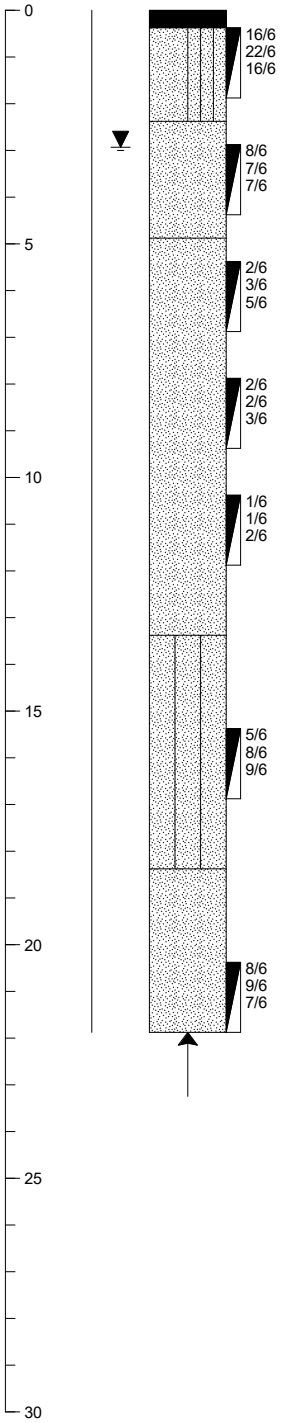
Elevation / Depth	Soil Symbols Sampler Symbols and Field Test Data	USCS	Description	SPT N	Moist. %	LL %	PI %	% passing #200 / #40 sieve
			4" ASPHALT					
		SP-SM	Medium Dense Orange SAND with Silt and Asphalt	12				
		SP-SM	Loose Brown and Tan SAND with Silt, Rock and Silt Lenses	10				
		SP-SM	Very Loose Gray SAND with Silt	4	21.9	NP	NP	6 / 81
		SP-SM	Very Loose Gray SAND with Silt and Shells	2				

Remarks: N30.69292
W88.03894

SES SOUTHERN EARTH SCIENCES

SOIL BORING LOG

BORING NO.: B-3
PROJECT: HEROES PLAZA
PROJECT NO.: M22-666
PROJECT LOCATION: MOBILE, AL
METHOD: FLIGHT/MUD DRILLING
BORING LOCATION: SEE TEST LOCATION PLAN
BORING ELEVATION: EXISTING GROUND
DATE DRILLED: 09/20/22
DATE COMPLETED: 09/20/22
WATER LEVEL: 3 ft
WATER LEVEL DATE: 09/20/22
GEOL / ENGR: C. NICHOLAS
DRILLER: P. BYRD



Elevation / Depth	USCS	Description	SPT N	Moist. %	LL %	PI %	% passing #200 / #40 sieve
	SP-SM	4.5" ASPHALT / Dense Red SAND with Silt and Crushed Aggregate Base	38				
	SP	Medium Dense Tan SAND	14	18.4	NP	NP	2 / 82
	SP	Loose to Very Loose Tan Coarse SAND	8				
			5				
			3				
	SM	Medium Dense Light Gray Silty SAND	17	21.7	NP	NP	16 / 85
	SP	Medium Dense Tan Coarse SAND	16				

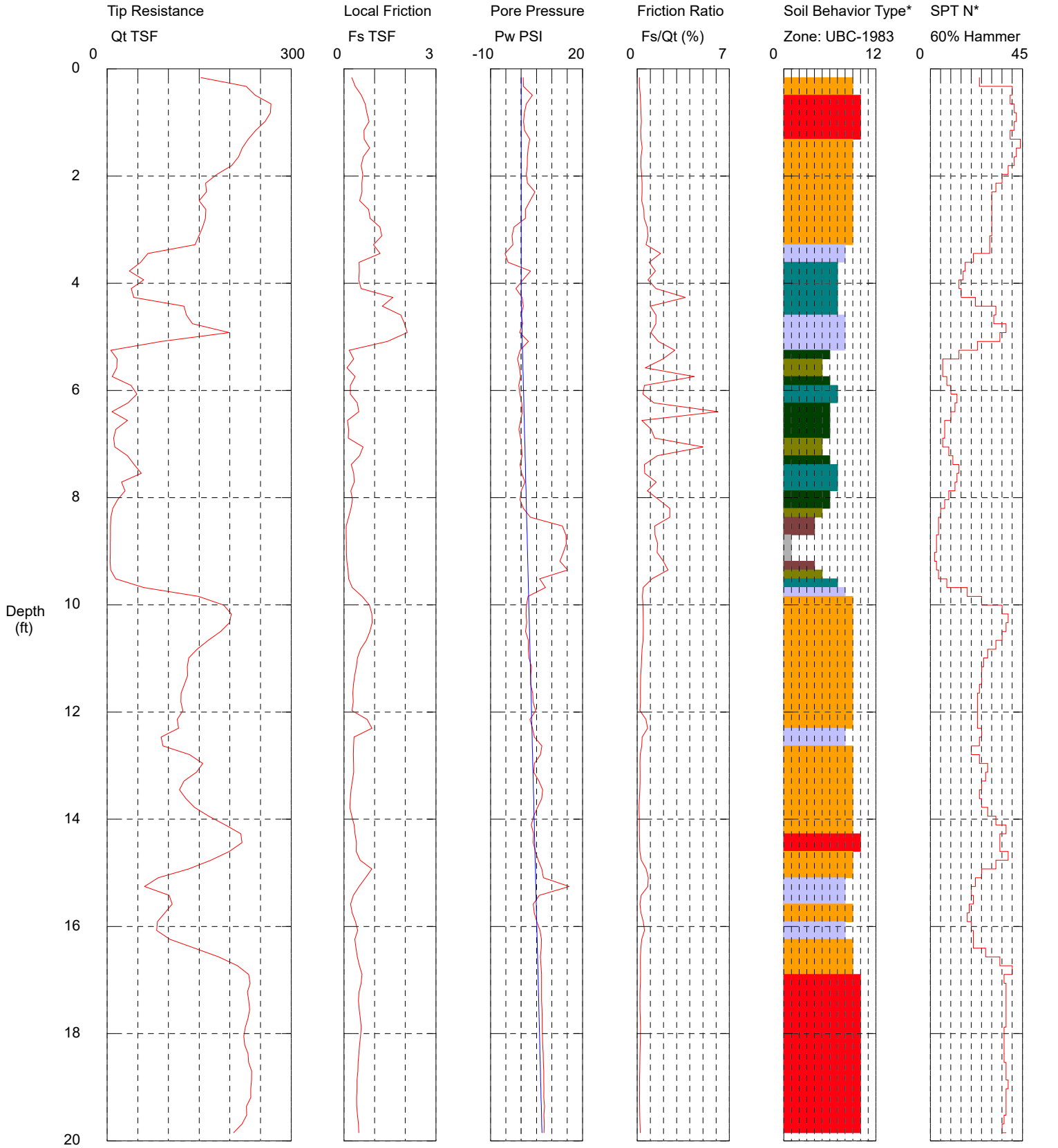
Remarks: N30.69282
W88.03961

SES SOUTHERN EARTH SCIENCES

Southern Earth Sciences

Operator: Danny Hines
Sounding: CPT-4
Cone Used: DDG1485
GPS Data: N30.69176 W88.03876

CPT Date/Time: 9/22/2022 10:16:31 AM
Location: Heroes Plaza
Job Number: M22-666
Groundwater measured at 4.5-ft.



Maximum Depth = 20.18 feet

Depth Increment = 0.164 feet

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

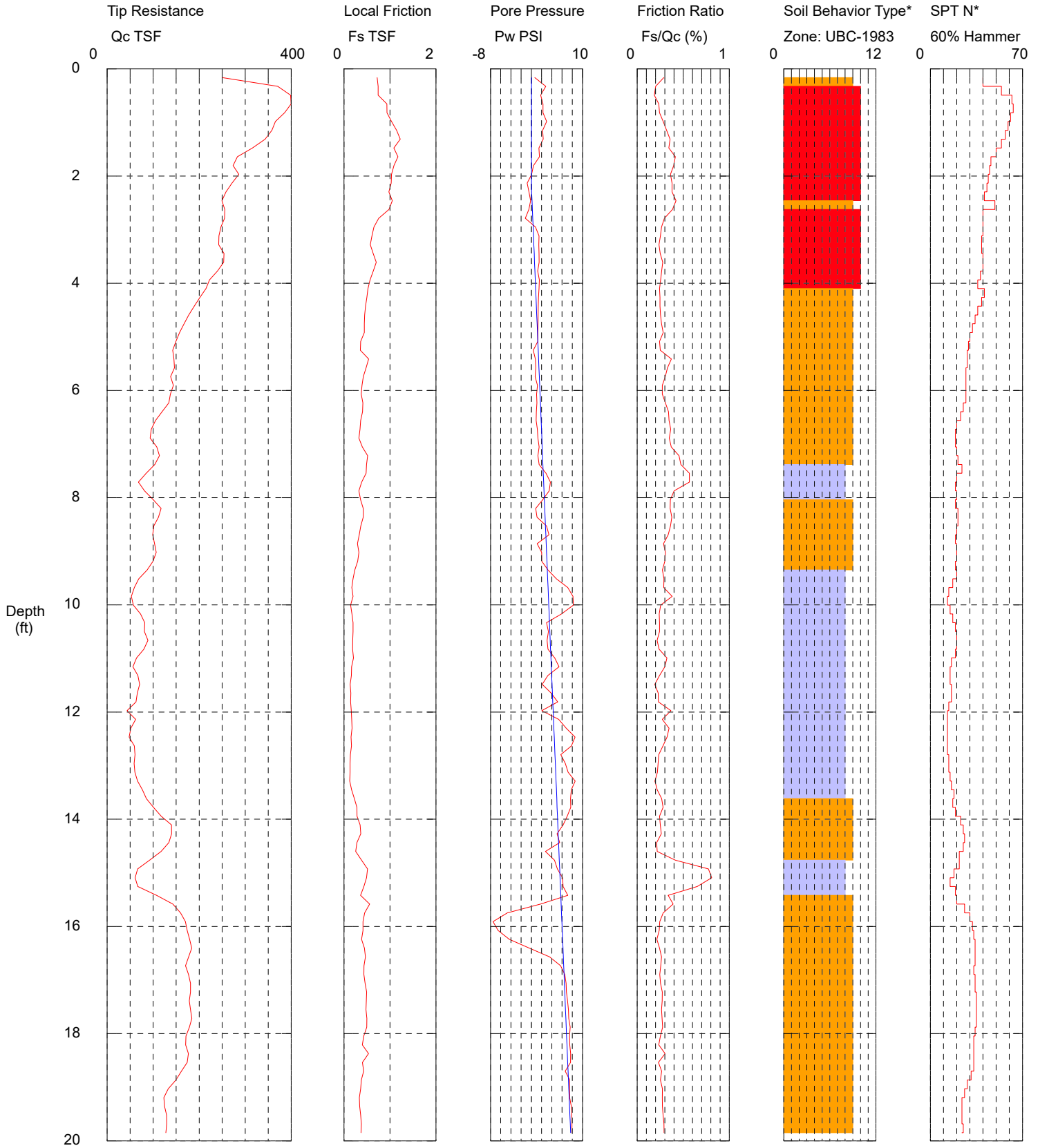
Concrete cored 6-in.

*Soil behavior type and SPT based on data from UBC-1983

Southern Earth Sciences

Operator: Danny Hines
Sounding: CPT-5
Cone Used: DDG1485
GPS Data: N30.69136 W88.03877

CPT Date/Time: 9/20/2022 1:13:49 PM
Location: Heroes Plaza
Job Number: M22-666
Groundwater measured at 2.2-ft.



Maximum Depth = 20.18 feet

Depth Increment = 0.164 feet

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

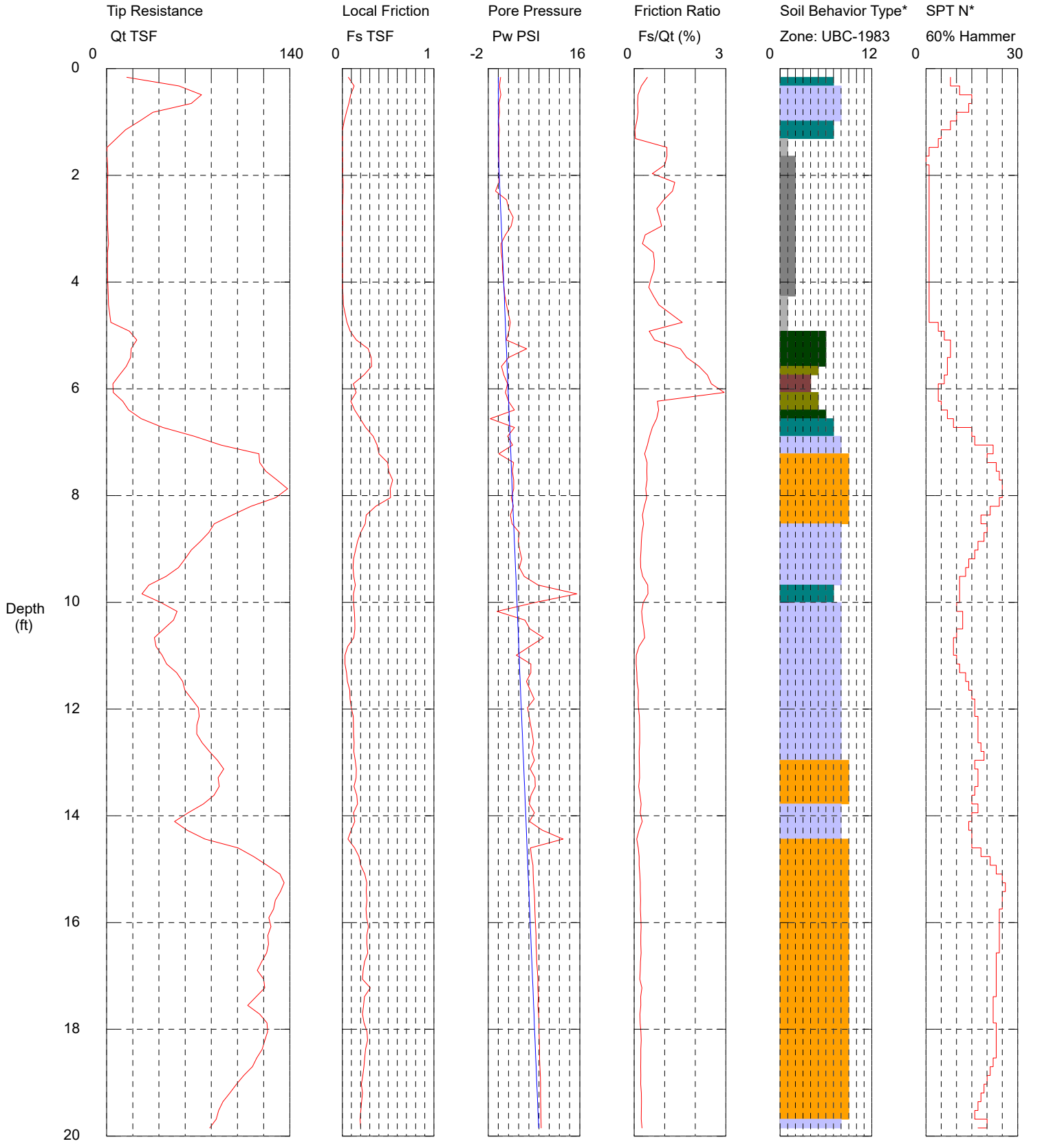
Concrete cored 8-in.

*Soil behavior type and SPT based on data from UBC-1983

Southern Earth Sciences

Operator: Danny Hines
Sounding: CPT-6
Cone Used: DDG1485
GPS Data: N30.69093 W88.03862

CPT Date/Time: 9/21/2022 10:44:44 AM
Location: Heroes Plaza
Job Number: M22-666
Groundwater: collapsed at 1.6-ft.



Maximum Depth = 20.18 feet

Depth Increment = 0.164 feet

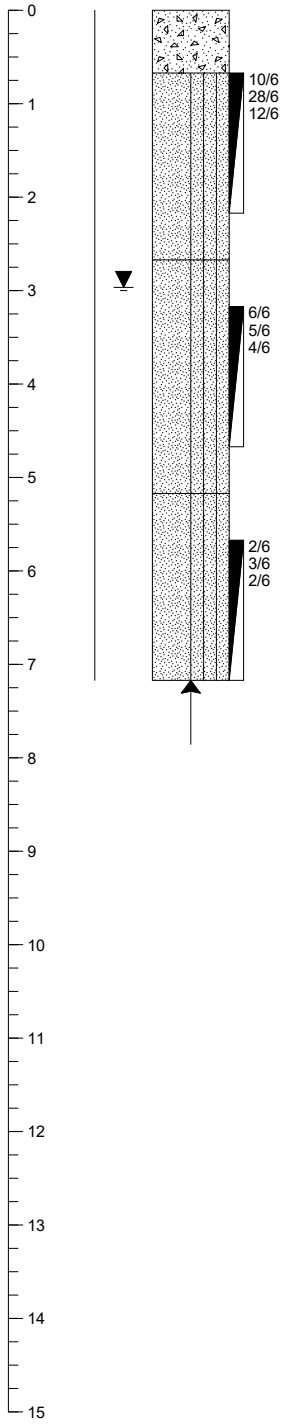
1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

Sounding location cored 8-in, pre-drilled/sampled and back-filled 6.5-ft.

*Soil behavior type and SPT based on data from UBC-1983

SOIL BORING LOG

BORING NO.: B-6
PROJECT: HEROES PLAZA
PROJECT NO.: M22-666
PROJECT LOCATION: MOBILE, AL
METHOD: FLIGHT AUGER
BORING LOCATION: SEE TEST LOCATION PLAN
BORING ELEVATION: EXISTING GROUND
DATE DRILLED: 09/20/22
DATE COMPLETED: 09/20/22
WATER LEVEL: 3 ft
WATER LEVEL DATE: 09/20/22
GEOL / ENGR: C. NICHOLAS
DRILLER: P. BYRD



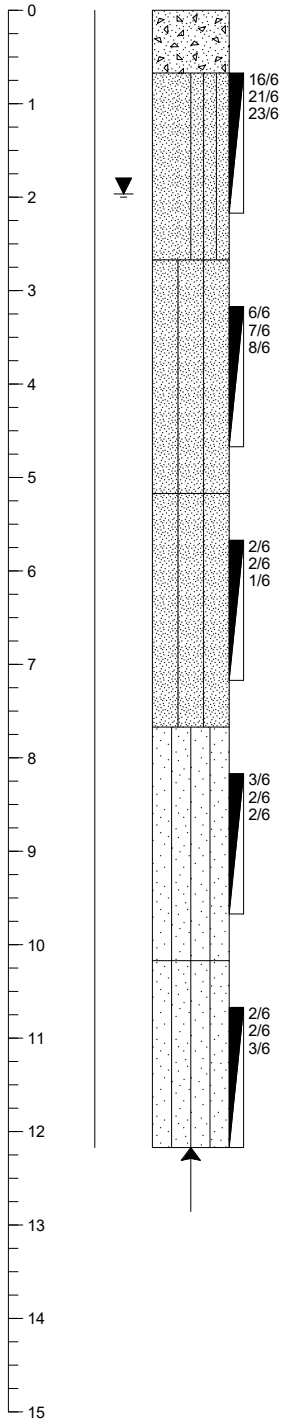
Elevation / Depth	Soil Symbols Sampler Symbols and Field Test Data	USCS	Description	SPT N
			8" CONCRETE	
		SP-SM	Dense Orange SAND with Silt and Rocks	40
		SP-SM	Loose Orange SAND with Silt	9
		SP-SM	Loose Orange and Gray SAND with Silt and Shells	5

Remarks: N30.69090
W88.03859
Auger Refusal encountered at two different locations

SOUTHERN EARTH SCIENCES

SOIL BORING LOG

BORING NO.: B-7
PROJECT: HEROES PLAZA
PROJECT NO.: M22-666
PROJECT LOCATION: MOBILE, AL
METHOD: FLIGHT AUGER
BORING LOCATION: SEE TEST LOCATION PLAN
BORING ELEVATION: EXISTING GROUND
DATE DRILLED: 09/20/22
DATE COMPLETED: 09/20/22
WATER LEVEL: 2 ft
WATER LEVEL DATE: 09/20/22
GEOL / ENGR: C. NICHOLAS
DRILLER: P. BYRD



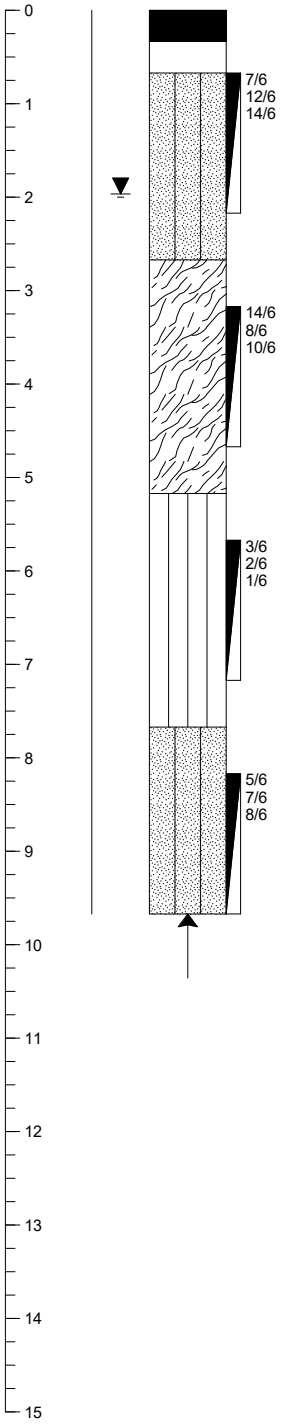
Elevation / Depth	Soil Symbols Sampler Symbols and Field Test Data	USCS	Description	SPT N
			8" CONCRETE	
		SP-SM	Dense Orange SAND with Silt and Gravel	44
		SM	Medium Dense Gray Silty SAND with Crushed Concrete	15
		SM	Very Loose Gray and Tan Silty SAND with Gravel and Silt Lenses	3
		ML	Soft Gray SILT with Shells	4
		ML	Medium Stiff Gray SILT with Shell Fragments	5

Remarks: N30.69049
W88.03869

SES SOUTHERN EARTH SCIENCES

SOIL BORING LOG

BORING NO.: B-8
PROJECT: HEROES PLAZA
PROJECT NO.: M22-666
PROJECT LOCATION: MOBILE, AL
METHOD: FLIGHT AUGER
BORING LOCATION: SEE TEST LOCATION PLAN
BORING ELEVATION: EXISTING GROUND
DATE DRILLED: 09/20/22
DATE COMPLETED: 09/20/22
WATER LEVEL: 2 ft
WATER LEVEL DATE: 09/20/22
GEOL / ENGR: C. NICHOLAS
DRILLER: P. BYRD



Elevation / Depth	USCS	Description	SPT N	Moist. %	LL %	PI %	% passing #200 / #40 sieve
		4" ASPHALT					
		4" BRICK					
	SM	Medium Dense Red Silty SAND with Gravel	26				
		WOOD and BRICK	18				
	ML	Soft Gray SILT	3	51.8	NP	NP	55 / 90
	SM	Medium Dense Gray Silty SAND	15	22.0	NP	NP	23 / 96

Remarks: N30.69039
W88.03857

SOUTHERN EARTH SCIENCES

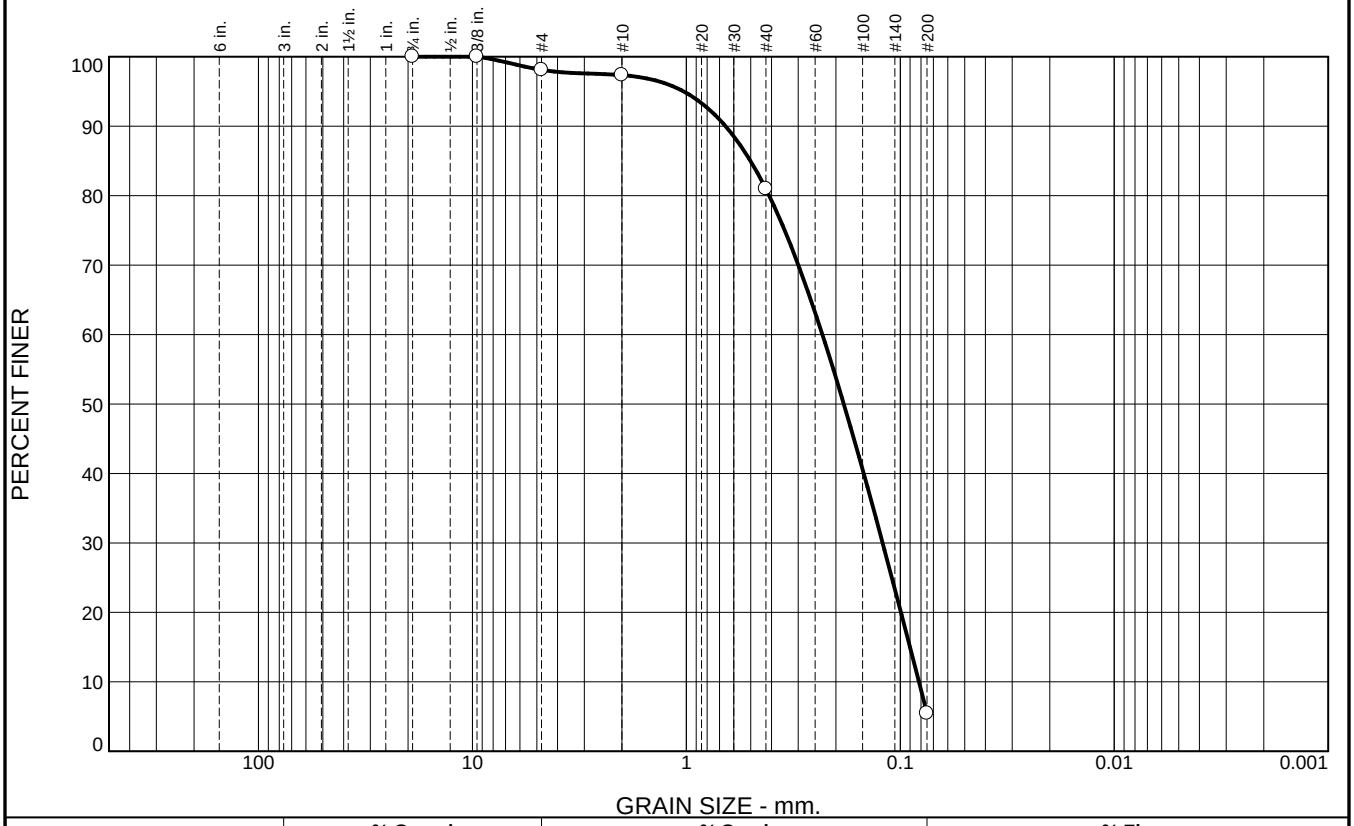
APPENDIX 3

Laboratory Data

Materials Testing Report	SOUTHERN EARTH SCIENCES Geotechnical | Environmental | Materials Testing	Tabulated Data Sheet
Client:	City of Mobile C/O Volkert Inc.	**Date:** 09/27/22
Project:	Mobile Convention Center Heroes Plaza	**SESI Project No.** M22-666

Boring No.	*Sample No.*	*Sample Depth (ft)*	*USCS Symbol*	*AASHTO Symbol*	*Moisture Content (%)*	*Atterberg Limits*		*Passing No. 200 (%)*	*Passing No. 40 (%)*
						LL	*PI*		
B-2	S-3	5.0-6.5	SP-SM	A-3	21.9	NV	NP	5.5	81.0
B-3	S-2	2.5-4.0	SP	A-3	18.4	NV	NP	1.6	82.1
B-3	S-6	15.0-16.5	SM	A-2-4(0)	21.7	NV	NP	15.8	85.2
B-8	S-3	5.0-6.5	ML	A-4(0)	51.8	NV	NP	54.8	90.0
B-8	S-4	7.5-9.0	SM	A-2-4(0)	22.0	NV	NP	22.9	96.1

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	0.8	16.3	75.5	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
3/8"	100.0		
#4	98.1		
#10	97.3		
#40	81.0		
#200	5.5		

* (no specification provided)

Material Description

Grayish Brown Sand with Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.6557 D_{85}= 0.5017 D_{60}= 0.2314
D_{50}= 0.1837 D_{30}= 0.1210 D_{15}= 0.0901
D_{10}= 0.0819 C_u= 2.83 C_c= 0.77

Classification

USCS= SP-SM AASHTO= A-3

Remarks

Source of Sample: B-2 **Depth:** 5.0'-6.5'
Sample Number: S-3 **Date:**

SOUTHERN EARTH SCIENCES
Mobile, Alabama

Client: City of Mobile C/O Volkert, Inc.
Project: Mobile Convention Center Heroes Plaza

Project No: M22-666 **Figure**

Particle Size Distribution Report

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	17.8	80.5	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
3/8"	100.0		
#4	100.0		
#10	99.9		
#40	82.1		
#200	1.6		

* (no specification provided)

Material Description

Tan Sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.5938 D_{85}= 0.4741 D_{60}= 0.2332
D_{50}= 0.1875 D_{30}= 0.1263 D_{15}= 0.0956
D_{10}= 0.0873 C_u= 2.67 C_c= 0.78

Classification

USCS= SP AASHTO= A-3

Remarks

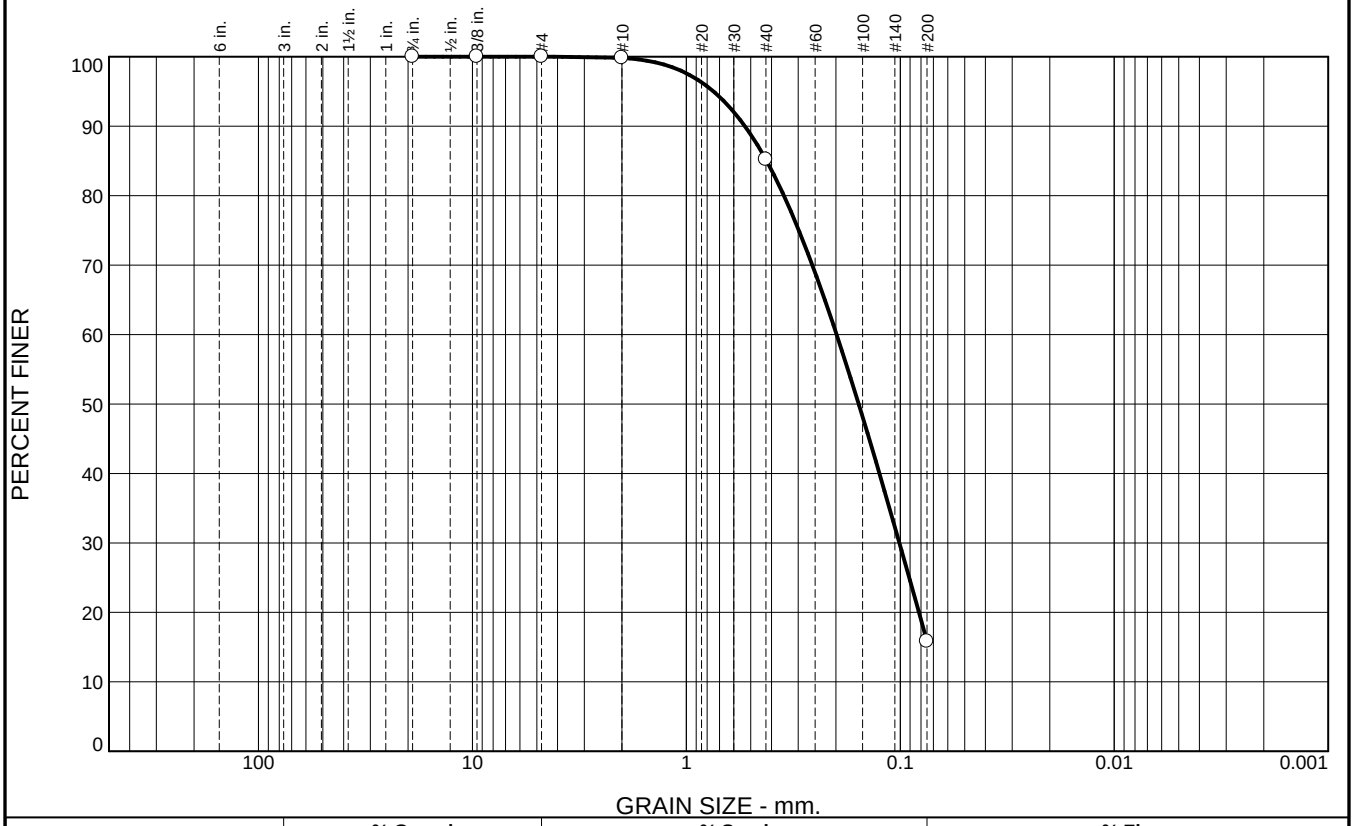
Source of Sample: B-3 **Depth:** 2.5'-4.0'
Sample Number: S-2 **Date:**

SOUTHERN EARTH SCIENCES
Mobile, Alabama

Client: City of Mobile C/O Volkert, Inc.
Project: Mobile Convention Center Heroes Plaza

Project No: M22-666 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	14.6	69.4	15.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
3/8"	100.0		
#4	100.0		
#10	99.8		
#40	85.2		
#200	15.8		

* (no specification provided)

Material Description

Gray Sand with Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.5327 D_{85}= 0.4217 D_{60}= 0.1985
D_{50}= 0.1565 D_{30}= 0.1010 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

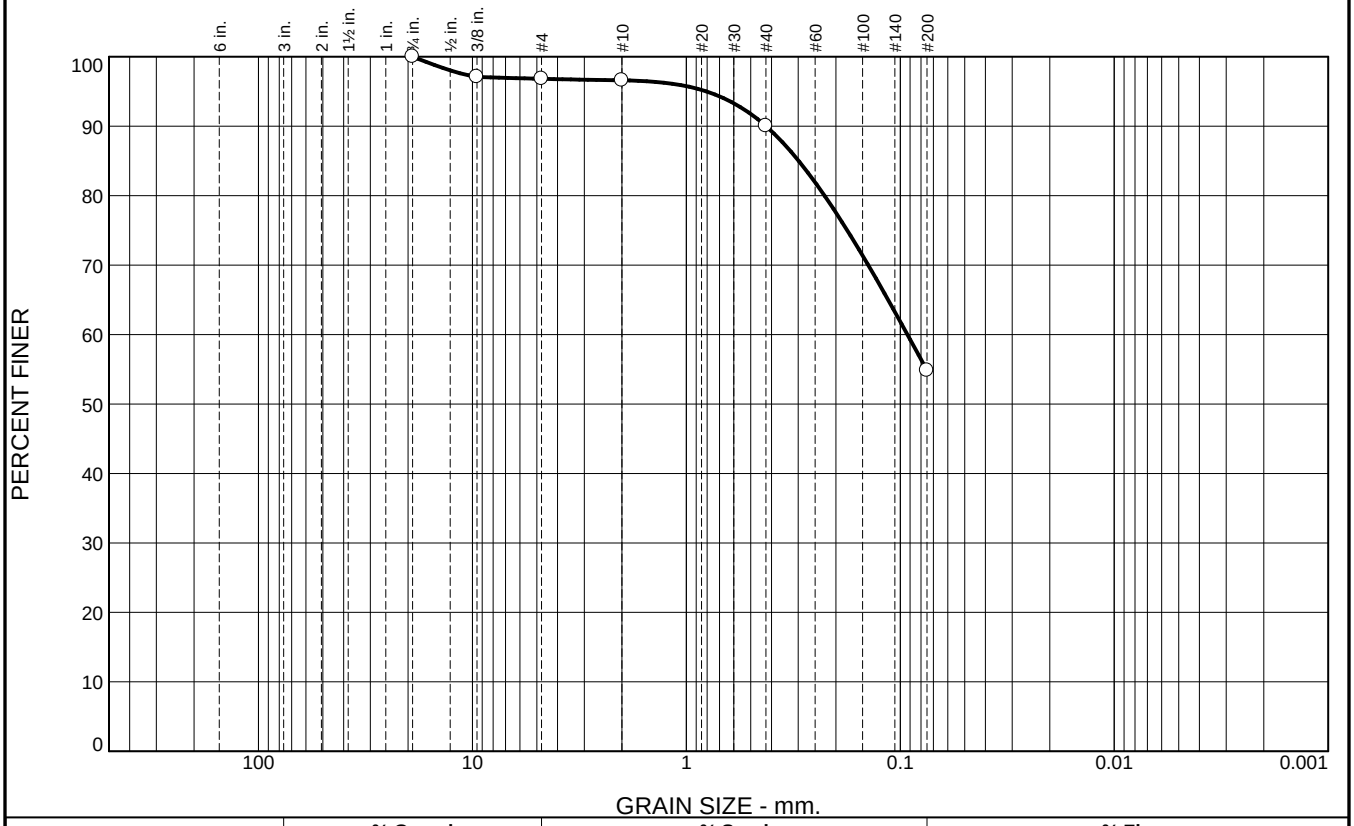
Source of Sample: B-3 **Depth:** 15.0'-16.5'
Sample Number: S-6 **Date:**

SOUTHERN EARTH SCIENCES
Mobile, Alabama

Client: City of Mobile C/O Volkert, Inc.
Project: Mobile Convention Center Heroes Plaza

Project No: M22-666 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.2	0.2	6.6	35.2	54.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
3/8"	97.1		
#4	96.8		
#10	96.6		
#40	90.0		
#200	54.8		

* (no specification provided)

Material Description

Dark Gray Silty Sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.4243 D_{85}= 0.2986 D_{60}= 0.0927
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

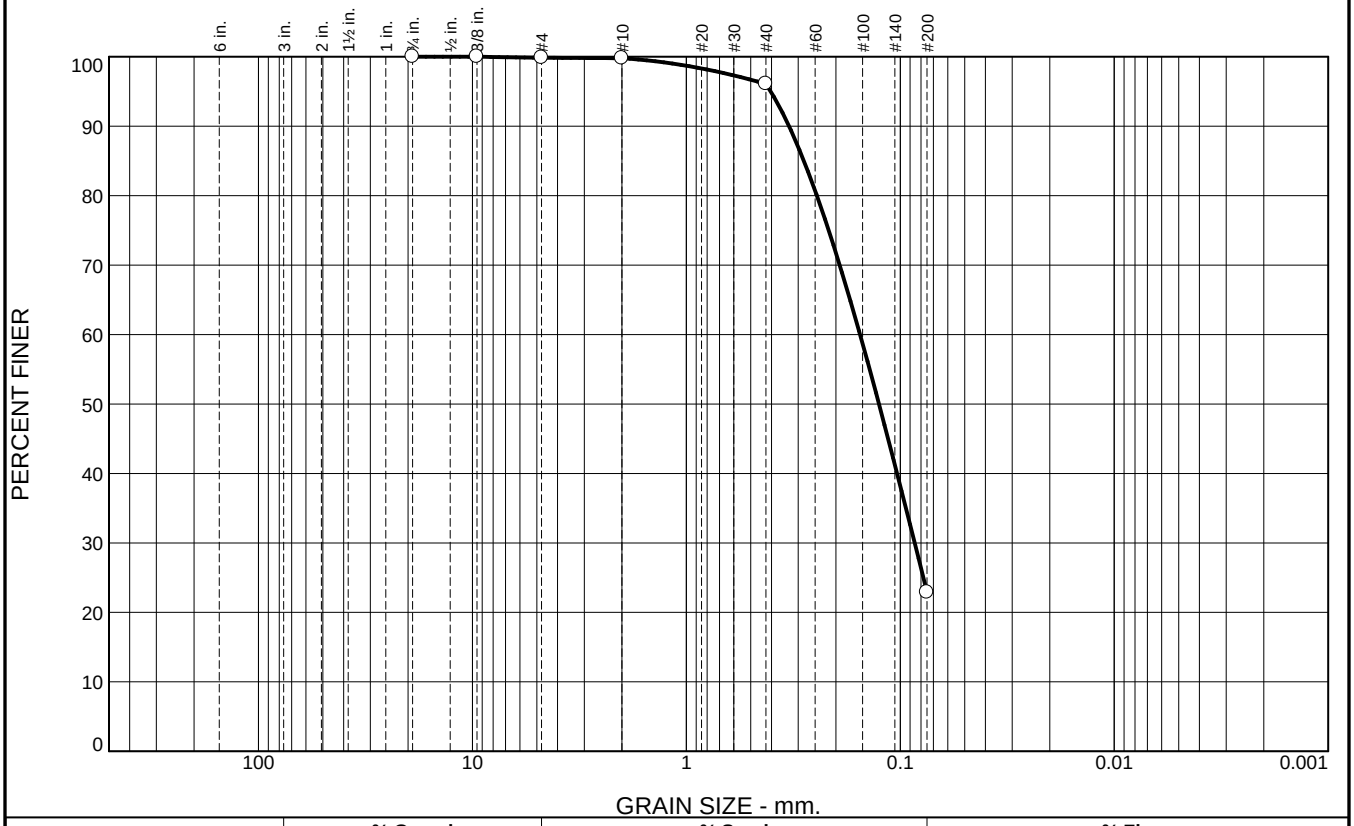
Source of Sample: B-8 **Depth:** 5.0'-6.5'
Sample Number: S-3 **Date:**

SOUTHERN EARTH SCIENCES
Mobile, Alabama

Client: City of Mobile C/O Volkert, Inc.
Project: Mobile Convention Center Heroes Plaza

Project No: M22-666 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.0	3.7	73.2	22.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
3/8"	100.0		
#4	99.8		
#10	99.8		
#40	96.1		
#200	22.9		

* (no specification provided)

Material Description

Gray Sand with Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.3312 D_{85}= 0.2823 D_{60}= 0.1543
D_{50}= 0.1258 D_{30}= 0.0857 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: B-8 **Depth:** 7.5'-9.0'
Sample Number: S-4 **Date:**

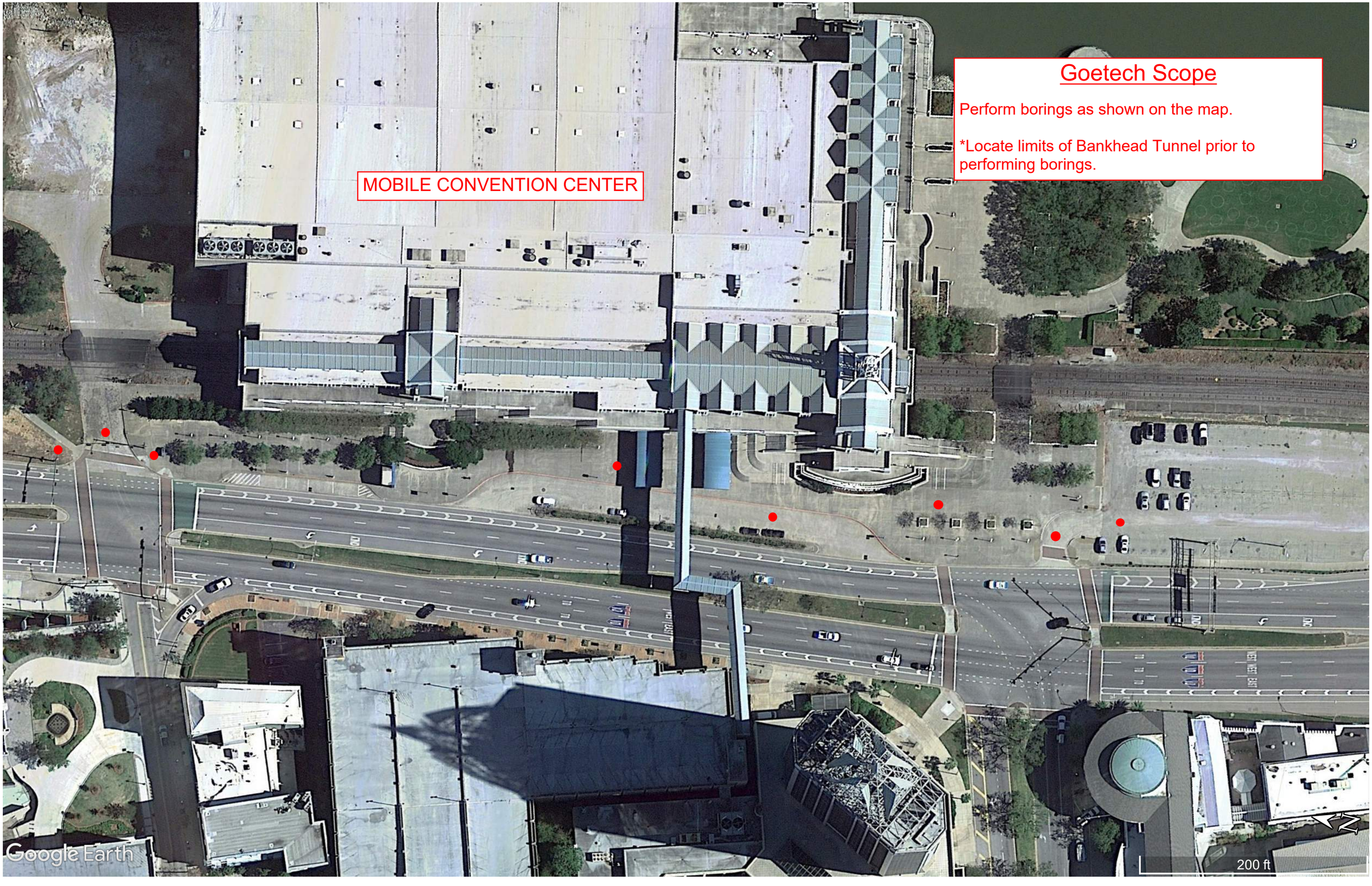
SOUTHERN EARTH SCIENCES
Mobile, Alabama

Client: City of Mobile C/O Volkert, Inc.
Project: Mobile Convention Center Heroes Plaza

Project No: M22-666 **Figure**

APPENDIX 4

Provided Plans


MOBILE CONVENTION CENTER
Goetech Scope
Perform borings as shown on the map.
*Locate limits of Bankhead Tunnel prior to performing borings.
Google Earth
200 ft

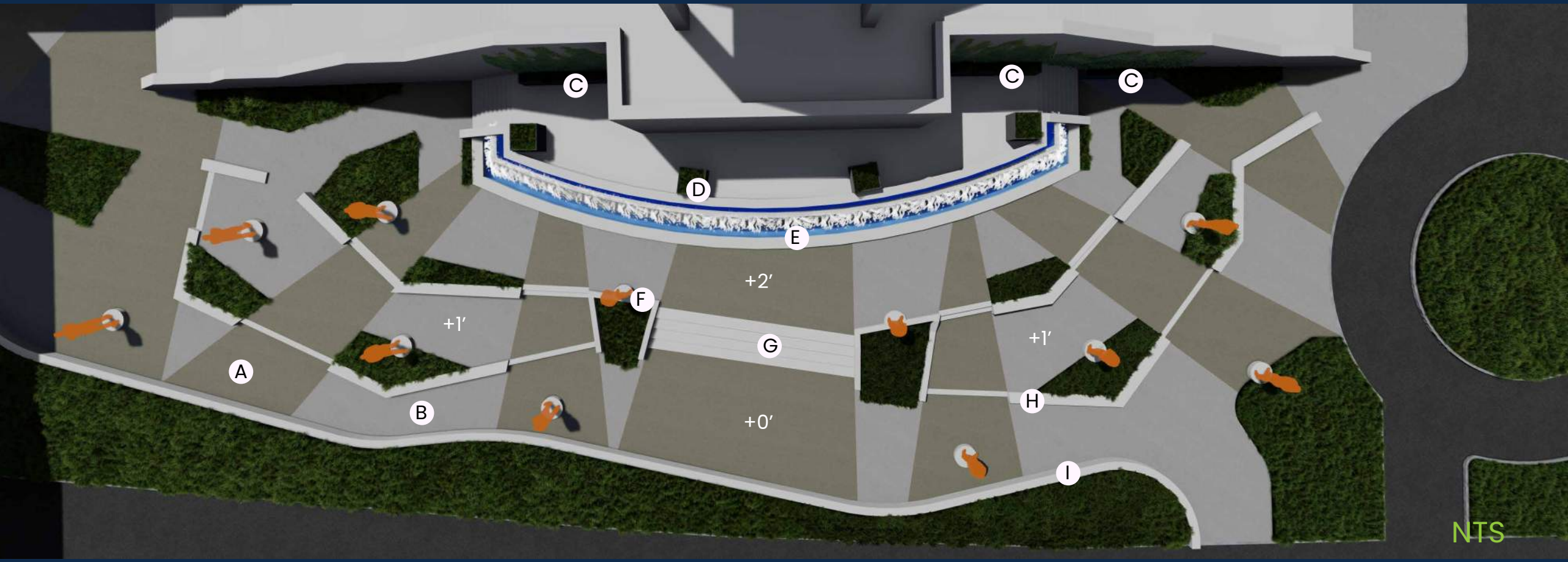
CONVENTION CENTER PLAZA HEROES PARK (PROJECT #2A)

NTS

CONVENTION CENTER PLAZA HEROES PARK (PROJECT #2A)

MATERIALS

A. Dark Pedestrian Paver
B. Light Pedestrian Paver
C. 2’ Wide Rectangular Planter with climbing vines
D. 4’-6” Square Planter
E. Renovated Fountain
F. Statue on 18” ht. stone base
G. Concrete steps
H. Seat wall
I. Sculptural seat wall



HERO PLAZA PHASE 1

MOBILE, ALABAMA

100% CONSTRUCTION PLANS

SHEET LIST	
SHEET NUMBER	SHEET TITLE
--	LANDSCAPE DRAWINGS
L-0.00	COVER PAGE
L-0.10	GENERAL NOTES
L-0.20	SURVEY
L-1.01	DEMOLITION PLAN - NORTH
L-1.02	DEMOLITION PLAN - SOUTH
L-2.00	LAYOUT PLAN - KEY PLAN
L-2.01	LAYOUT PLAN - NORTH
L-2.02	LAYOUT PLAN - CENTRAL
L-2.03	LAYOUT PLAN - SOUTH
L-2.04	LAYOUT PLAN - GOVT. STREET INTERSECTION
L-2.11	JOINTING PLAN - NORTH
L-2.12	JOINTING PLAN - CENTRAL
L-2.13	JOINTING PLAN - SOUTH
L-2.14	JOINTING PLAN - GOVT. STREET INTERSECTION
L-2.21	WALL PLAN - NORTH
L-2.22	WALL PLAN - CENTRAL
L-2.23	WALL PLAN - SOUTH
L-3.01	GRADING PLAN - NORTH
L-3.02	GRADING PLAN - CENTRAL
L-3.03	GRADING PLAN - SOUTH
L-3.04	GRADING PLAN - GOVT. STREET INTERSECTION
L-4.01	LIGHT FIXTURE PLAN - NORTH
L-4.02	LIGHT FIXTURE PLAN - CENTRAL
L-4.03	LIGHT FIXTURE PLAN - SOUTH
L-4.04	LIGHT FIXTURE PLAN - GOVT. STREET INTERSECTION
L-4.11	SUPPLEMENTARY DRAINAGE PLAN - NORTH
L-4.12	SUPPLEMENTARY DRAINAGE PLAN - CENTRAL
L-4.13	SUPPLEMENTARY DRAINAGE PLAN - SOUTH
L-4.14	SUPPLEMENTARY DRAINAGE PLAN - GOVT. STREET INTERSECTION
L-5.00	CONSTRUCTION DETAILS - MATERIAL FINISHES SCHEDULE
L-5.10	CONSTRUCTION DETAILS - CURB DETAILS
L-5.11	CONSTRUCTION DETAILS - PAVING DETAILS
L-5.12	CONSTRUCTION DETAILS - PAVING DETAILS
L-5.20	CONSTRUCTION DETAILS - STAIRS AND RAIL DETAILS
L-5.21	CONSTRUCTION DETAILS - STAIRS AND RAIL DETAILS
L-5.30	CONSTRUCTION DETAILS - WALL DETAILS
L-5.31	CONSTRUCTION DETAILS - WALL DETAILS
L-5.32	CONSTRUCTION DETAILS - WALL DETAILS
L-5.33	CONSTRUCTION DETAILS - WALL DETAILS
L-5.34	CONSTRUCTION DETAILS - WALL DETAILS
L-5.35	CONSTRUCTION DETAILS - WALL DETAILS
L-5.36	CONSTRUCTION DETAILS - WALL DETAILS
L-5.40	CONSTRUCTION DETAILS - FOUNTAIN DETAILS
L-5.41	CONSTRUCTION DETAILS - FOUNTAIN DETAILS
L-5.50	CONSTRUCTION DETAILS - BENCH DETAILS
L-5.51	CONSTRUCTION DETAILS - BENCH DETAILS
L-5.52	CONSTRUCTION DETAILS - BENCH DETAILS
L-5.60	CONSTRUCTION DETAILS - STATUE BASE DETAILS
L-5.61	CONSTRUCTION DETAILS - STATUE BASE DETAILS
L-5.62	CONSTRUCTION DETAILS - STATUE BASE DETAILS
L-5.63	CONSTRUCTION DETAILS - STATUE BASE DETAILS
L-5.64	CONSTRUCTION DETAILS - STATUE BASE DETAILS
L-5.70	CONSTRUCTION DETAILS - DESIGN DETAILS
L-5.80	CONSTRUCTION DETAILS - DESIGN DETAILS
L-5.90	CONSTRUCTION DETAILS - FIXED FURNITURE SCHEDULE
L-5.91	CONSTRUCTION DETAILS - MEP SCHEDULE
LP-1.01	LANDSCAPE PLAN - NORTH
LP-1.02	LANDSCAPE PLAN - CENTRAL
LP-1.03	LANDSCAPE PLAN - SOUTH
LP-1.10	LANDSCAPE SCHEDULE
LP-2.00	LANDSCAPE DETAILS

--	CIVIL DRAWINGS
C-1.01	INDEX TO SHEETS
C-1.02 - C-1.03	STANDARD AND SPECIAL DRAWINGS
C-1.04	PLANS LEGEND SHEET
C-1.05	PLANS LEGEND SHEET ABBREVIATIONS
C-2.01 - C-2.02	PROJECT DETAILS
C-2.00 - C-2.01	TYPICAL SECTIONS
C-2.02 - C-2.03	PROJECT DETAILS
C-2.04 - C-2.05	OMITTED
C-2.06	PROJECT NOTE SHEET
C-2.07	GENERAL TRAFFIC CONTROL PLAN NOTES
C-2.08	TRAFFIC SIGNAL NOTES
C-4.00 - C-4.04	DRAINAGE PLAN SHEET
C-5.00 - C-5.02	DRAINAGE SECTIONS
C-5.03 - C-5.06	SPECIAL PROJECT DETAILS
C-6.00 - C-6.03	STRIPING AND SIGNING SHEET
C-6.04	INTERSECTION LAYOUT SHEET
C-6.05 - C-6.09	OMITTED
C-6.10	PAVING LIMITS SHEET
C-7.00	TRAFFIC SIGNAL AND ITS LEGEND
C-7.01	TRAFFIC SIGNAL LAYOUT SHEET
C-8.00	TRAFFIC CONTROL PLAN - SEQUENCE OF CONSTRUCTION
C-8.01	TRAFFIC CONTROL PLAN - LEGEND & ESTIMATED QUANTITIES
C-8.02 - C.8.06	TRAFFIC CONTROL PLAN - PHASE II
C-8.07	TRAFFIC CONTROL PLAN - PHASE II - INTERSECTION
C-8.08 - C-8.11	TEMPORARY TRAFFIC CONTROL PLAN SHEET - SPECIAL PROJECT DETAIL
C-9.00	EROSION AND SEDIMENT CONTROL PLANS LEGEND
C-9.01 - C-9.05	EROSION AND SEDIMENT CONTROL PLAN SHEET
C-10.00	LIGHTING NOTE SHEET
C-10.01 - C-10.03	REQUIRED LIGHTING PLAN SHEET
C-10.04	REQUIRED LIGHTING DETAIL SHEET
C-10.10 - C-10.13	REQUIRED LIGHTING PLAN SHEET
C-11.00 - C-11.02	EXISTING UTILITY SHEET
C-11.10 - C-11.13	UTILITY RELOCATION SHEET
C-11.14	WATERLINE CONSTRUCTION DETAILS
--	STRUCTURAL DRAWINGS
S0.00	STRUCTURAL - COVER SHEET
S0.01	STRUCTURAL - GENERAL NOTES
S0.02	STRUCTURAL - SPECIAL INSPECTIONS
S0.02.1	STRUCTURAL - SPECIAL INSPECTIONS
S0.02.2	STRUCTURAL - SPECIAL INSPECTIONS
S0.03	STRUCTURAL - GRAVITY AND LATERAL LOADS
S1.10	STRUCTURAL - PARTIAL PLAN - NORTH PORTION
S1.11	STRUCTURAL - PARTIAL PLAN - CENTRAL PORTION
S1.12	STRUCTURAL - PARTIAL PLAN - SOUTH PORTION
S2.00	STRUCTURAL - FOUNDATION NOTES, SECTIONS, AND DETAILS
S2.01	FOUNDATION SECTIONS AND DETAILS
S3.00	STRUCTURAL - CONCRETE NOTES AND TYPICAL DETAILS

S3.01	CONCRETE DETAILS
S4.00	STRUCTURAL - MASONRY NOTES AND TYPICAL DETAILS
S5.00	STRUCTURAL - STEEL SECTIONS AND DETAILS
--	FOUNTAIN DRAWINGS
WFN-1	FOUNTAIN EQUIPMENT LIST, PERFORMANCE CRITERIA, & PUMP CURVE
WFN-2	FOUNTAIN - GENERAL INSTALLATION NOTES
WFM-1	FOUNTAIN SITE PLAN
WFM-1A	FOUNTAIN PIPING & INSTRUMENTATION DIAGRAM
WFM-1B	FOUNTAIN EMBED DIMENSIONS
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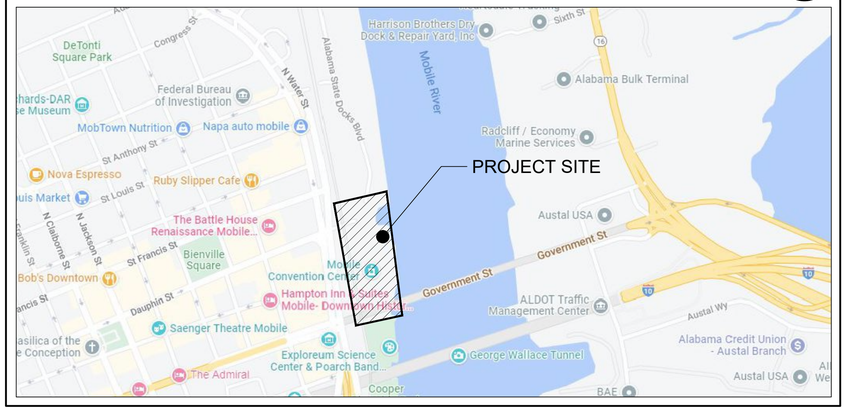
WFM-3	FOUNTAIN DISCHARGE & FILL PIPING PLAN
WFM-4	FOUNTAIN MECHANICAL ROOM DETAILS
WFE-1	FOUNTAIN ELECTRICAL CONDUIT PLAN
WFE-2	FOUNTAIN ELECTRICAL PANEL SCHEMATIC
WFI-1	TYPICAL ELECTRICAL DETAILS & ARTICLE 680 NEC REQUIREMENTS

PROJECT LOCATION MAP



1 S WATER ST.
MOBILE, AL 36609

TAX PARCEL ID #2906400001005

ZONING:
B-4
TITLE OF ZONING DISTRICT: GENERAL BUSINESS

PREPARED FOR:

CITY OF MOBILE

P.O. BOX 1827

MOBILE, AL 36633

PREPARED BY:

TSW

1447 PEACHTREE ST, STE 850
ATLANTA, GA 30309
404.873.6730

DATE: APRIL 14, 2023
PROJECT No: 22089

PROJECT DIRECTORY

OWNER / DEVELOPER
City of Mobile
P.O. Box 1827
Mobile, AL 36633
P: 251.208.7886

LANDSCAPE ARCHITECTURE
TSW
1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
Contact: Mr. Bryan Bays, bbays@tsw-design.com
P: 404.873.6730

CIVIL ENGINEER
VOLKERT
1110 Montlimar Drive, Suite 1050
Mobile, AL 36609
Contact: Mr. Drew Davis, drew.davis@volkert.com
P: 251.342.1070 (ext.1292)

STRUCTURAL ENGINEER
Browder + LeGuizamon and Associates, Inc.
Contact: Mr. Zach White, zachwhite@blaengineers.com
P: 404-851-9580 x 245
6285 Barfield Road
Suite 200, Atlanta, GA 30328

FOUNTAIN DESIGNER
Roman Fountains
Contact: Mr. Jim Hoffman, jimh@romanfountains.com
P: 770-702-0693
1125 Commerce Blvd N,
Sarasota, FL 34243

SHADE CANOPY DESIGNER
USA Shade and Fabric Structures, Inc.
Contact: Mr. Jay Rivera, jay.rivera@usa-shade.com
P: 707-738-8974

STATUE DESIGNER
JBG Sculpture
Contact: Mr.Brett Grill, grilljb@gmail.com
P: 718-473-5539
2250 Clyde Park Ave, SW
Grand Rapids, MI49509

811 Know what's below. Call before you dig.

ALL EROSION AND SEDIMENTATION CONTROLS AND TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO GRADING.

TSW
PLANNING • ARCHITECTURE
LANDSCAPE ARCHITECTURE
Atlanta, GA | Tulsa, OK | Chattanooga, TN

1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

consultant

revisions

north arrow + scale

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date
APRIL 14, 2023

sheet title
COVER PAGE

sheet number
L-0.00

GENERAL NOTES:

1. ALL WORK DESCRIBED IN THE PLAN NOTES SHALL BE INCLUDED IN THE CONTRACTORS BID.
2. THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY IF PLAN DISCREPANCIES, SITE CONFLICTS, OR OTHER UNFORESEEN CONDITIONS ARE DISCOVERED THAT IMPACT THE WORK.
3. EROSION CONTROL: THE CONTRACTOR SHALL INSTALL AND MAINTAIN STORMWATER EROSION CONTROL MEASURES TO PREVENT EROSION WITHIN THE PROJECT AREA PER THE PLANS AND IN ACCORDANCE WITH LOCAL REGULATIONS. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL MEASURES NECESSARY TO STABILIZE THE SITE THROUGHOUT FINAL COMPLETION AT NO ADDITIONAL COST TO THE OWNER. THIS WORK MAY INCLUDE BUT IS NOT LIMITED TO: TEMPORARY GRADING, ESTABLISHING TEMPORARY BERMS, TEMPORARY SEEDING, TEMPORARY SODDING, DEPLOYING EROSION MATS, HAY BALES, COCONUT ROLLS, SILT PONDS, INLET PROTECTION, AND SILT FENCE.
4. UTILITIES: THE GENERAL CONTRACTOR SHALL MARK AND PROTECT ALL UTILITIES WITHIN THE LIMITS OF WORK AND IDENTIFY POTENTIAL CONFLICTS WITH PROPOSED WORK FOR THE DURATION OF THE PROJECT. COST OF REPAIRS TO UTILITIES DAMAGED FROM CONSTRUCTION ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. CONTRACTOR IS RESPONSIBLE FOR PULLING APPLICABLE PERMITS AND SCHEDULING REQUIRED INSPECTIONS AS REQUIRED TO COMPLETE THE WORK.
6. ALL REFUSE, DEBRIS, AND MISCELLANEOUS ITEMS TO BE REMOVED SHALL BE RECYCLED TO THE GREATEST EXTENT POSSIBLE. NON-RECYCLED MATERIALS SHALL BE LEGALLY DISPOSED OF OFF SITE BY THE CONTRACTOR.
7. THE GENERAL CONTRACTOR SHALL NOT ENCROACH ON PRIVATE PROPERTY WITHOUT A WRITTEN TEMPORARY OR PERMANENT ACCESS AGREEMENT.
8. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED AS REQUIRED BY THE AUTHORITY WITH JURISDICTION. IN THE ABSENCE OF REQUIREMENTS, THE CONTRACTOR SHALL EMPLOY BEST PRACTICES TO PREVENT MUD AND CONSTRUCTION DEBRIS FROM ENTERING THE PUBLIC WAYS AND MAINTAIN A CLEAN CONSTRUCTION ACCESS POINT.
9. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND MAINTAIN OPERATION OF TRAFFIC SIGNAL SYSTEMS AND TRAFFIC MOVEMENT DURING CONSTRUCTION.
10. THE CONTRACTOR SHALL VERIFY VERTICAL AND HORIZONTAL LAYOUT DIMENSIONS PRIOR TO CONSTRUCTION AND IS RESPONSIBLE FOR REWORK, AT THEIR OWN EXPENSE, OF AREAS THAT ARE NOT BUILT PER THE PLANS.
11. ALL CONSTRUCTION SHALL CONFORM TO APPLICABLE JURISDICTIONAL STANDARDS, SPECIFICATIONS, AND DETAILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACQUIRE THESE DOCUMENTS, BE FAMILIAR WITH THEM, AND HAVE THEM ON THE JOB SITE AT ALL TIMES.
12. ROADWAY SIGNAGE AND STRIPING SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION WITH ALL REVISIONS INCLUDED.
13. ALL CONSTRUCTION VEHICLES SHALL PARK IN AREAS DESIGNATED BY THE OWNER.
14. THE CONTRACTOR SHALL PROVIDE LOCKABLE TEMPORARY ACCESS CONTROL FENCING AT THE PROJECT LIMITS FOR THE DURATION OF THE PROJECT.

DEMOLITION PLAN NOTES:

1. STRIP SITE TO REMOVE ALL EXISTING ASPHALT, CONCRETE, FOUNDATIONS, ABANDONED UTILITIES, AND DEBRIS EXTENDING LATERALLY TO AT LEAST 5 FEET OUTSIDE THE CONSTRUCTION AREA. EXCAVATIONS AFTER SITE STRIPPING SHOULD EXTEND BELOW FOUNDATION BEARING ELEVATION TO A MINIMUM DEPTH OF 2 FEET BELOW FOOTINGS OR DEEPER AS NEEDED TO REMOVE LOOSE OR OTHERWISE UNSUITABLE SOILS THAT CANNOT BE IMPROVED BY COMPACTION. EXCAVATED MATERIALS SHOULD BE WASTED AND NOT REUSED IN STRUCTURAL AREAS.

TREE PROTECTION NOTES:

1. TREE PROTECTION ZONES (TPZ) SHALL BE DELINEATED WITH TREE PROTECTION MEASURES INCLUDING, AT A MINIMUM, TEMPORARY FENCING AND SIGNAGE THAT SAYS "TREE PROTECTION ZONE - NO ENTRY".
2. TREE PROTECTION MEASURES TO BE MAINTAINED AT ALL TIMES.
3. ONCE ALL TREE PROTECTION MEASURES HAVE BEEN INSTALLED, CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OR ARBORIST TO ARRANGE INSPECTION OF SITE AND APPROVAL OF SITE PROTECTION MEASURES.
4. NO GRADING, EQUIPMENT OR MATERIAL STORAGE, OR DISPOSAL OF MATERIALS MAY OCCUR WITHIN A TPZ UNLESS SPECIFICALLY NOTED.
5. AREAS WITHIN A TPZ ARE DESIGNATED SENSITIVE ROOT ZONES.
6. DIRECTIONAL TUNNELING AND BORING MAY BE PERMITTED WITHIN A TPZ IF APPROVED BY ARBORIST.
7. IN AREAS IDENTIFIED AS SENSITIVE ROOT ZONES, THE FOLLOWING MEASURES SHALL BE USED TO PROTECT TREE ROOTS: TEMPORARY ROOT PROTECTION SHALL CONSIST OF A COMBINATION OF FILTER FABRIC, 6" OF CLEAN CRUSHED STONE, AND PLYWOOD OR GROUND PROTECTION CONSTRUCTION MATS AS APPROVED BY LANDSCAPE ARCHITECT OR ARBORIST.

LAYOUT PLAN NOTES:

1. DO NOT SCALE FROM DRAWINGS.
2. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE AT FACE OF WALL, FACE OF BUILDING, FACE OF CURB, EDGE OF PAVEMENT, OR CENTERLINE OF PAVEMENT.
3. ALL EDGES OF PAVEMENT ARE TO BE STRAIGHT AND RADII CONSISTENT.
4. CONSTRUCTION LAYOUT STAKING FOR ALL PROJECT ELEMENTS SHALL BE PERFORMED BY A LAND SURVEYOR OR APPROVED PROFESSIONAL USING DIGITAL DRAWINGS PROVIDED BY THE DESIGN TEAM.
5. ALL CONSTRUCTION STAKING SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
6. IF DIMENSIONS VARY BY 1/2" OR MORE OR ALTER THE DRAINAGE FLOW DIRECTION, NOTIFY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE FOR REVIEW AND CONFIRMATION PRIOR TO PROCEEDING WITH CONSTRUCTION.
7. ALL +/- DIMENSIONS SHOULD NOT VARY MORE THAN 1". IF VARIATIONS ARE GREATER THAN 1", CONTACT THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH CONSTRUCTION.
8. PROVIDE EXPANSION JOINTS AT ALL VERTICAL SURFACES INCLUDING BUT NOT LIMITED TO BUILDING WALLS, SITE WALLS, STEP RISERS AND CURBS.
9. PROVIDE EXPANSION JOINTS AT THE BACK OF ALL CURBS ADJACENT TO CONCRETE SIDEWALKS AND A MAXIMUM OF 30' APART ON ALL CONCRETE WALLS AND PAVING. PROVIDE CONTROL JOINTS AT REGULAR INTERVALS PER THE AMERICAN CONCRETE INSTITUTE BEST PRACTICES TO CONTROL CRACKING. IF EXPANSION JOINTS AND CONTROL JOINTS ARE NOT SHOWN ON THE PLANS THE CONTRACTOR SHALL PROVIDE A PLAN MARKUP SHOWING PROPOSED LOCATIONS FOR APPROVAL BY LANDSCAPE ARCHITECT.
10. ALL EXPANSION AND CONTROL JOINTS SHALL ALIGN WHEREVER PROPOSED WORK MEETS EXISTING.
11. THE CONTRACTOR SHALL HAVE ALL SUB-SURFACE UTILITY AND SLEEVING WORK INSPECTED AND APPROVED PRIOR TO BEGINNING OF HARDSCAPE STAKING AND CONSTRUCTION.
12. AT ALL LOCATIONS WHERE EXISTING CURB OR PAVEMENT ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE.

GRADING PLAN NOTES:

ABBREVIATIONS:

TC:	TOP OF CURB	TW:	TOP OF WALL
BC:	BOTTOM OF CURB	BW:	BOTTOM OF WALL
TR:	TOP OF RAMP	BR:	BOTTOM OF RAMP
FG:	FINISH GRADE	FFE:	FINISH FLOOR ELEVATION
TS:	TOP OF STAIRS	TD:	TOP OF DRAIN
BS:	BOTTOM OF STAIRS	(EX):	ELEVATION IS BOTH EXISTING & PROPOSED

1. GROUNDWATER OR SATURATED SOIL CONDITIONS WILL LIKELY BE ENCOUNTERED DURING EXCAVATIONS AT THIS SITE. THE INITIAL LIFTS OF BACKFILL SHOULD CONSIST OF CLEAN SAND WITH LESS THAN ABOUT 10 PERCENT (BY WEIGHT) PASSING THE NO.200 MESH SIEVE AND 70 PERCENT OR LESS (BY WEIGHT) PASSING THE NO.40 MESH SIEVE. BELOW AND WITHIN ONE FOOT OF THE GROUNDWATER/SATURATED SOIL LEVEL, IN LIEU OF MEASURED COMPACTION TESTS, CLEAN SAND FILL SHOULD BE THOROUGHLY COMPACTED WITH HEAVY TRACKED EQUIPMENT TO ACHIEVE SOME COMPACTION AND FILL VOIDS. ABOVE THE GROUNDWATER AND SATURATED SOIL LEVEL, CLEAN SAND FILL SHOULD BE COMPACTED TO 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 WITH A MOISTURE CONTENT BETWEEN 1 PERCENTAGE POINT BELOW AND 3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT. IMPORTED SELECT STRUCTURAL FILL SOIL PLACED TO ACHIEVE FINAL GRADE SHOULD CONSIST OF A SANDY MATERIAL WITH LESS THAN ABOUT 30 PERCENT OF THE SOIL PARTICLES (BY WEIGHT) PASSING THE NO.200 MESH SIEVE, LESS THAN 70% PASSING THE NO.40 SIEVE, AND A LIQUID LIMIT LESS THAN 15. FILL MATERIAL SHOULD BE COMPACTED IN 12-INCH (MAXIMUM) LIFTS TO AT LEAST 95 PERCENT OF THE SOIL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557. IN PLACE DENSITY TESTS SHOULD BE MADE AT FREQUENT INTERVALS TO MEASURE THE EFFECTIVENESS OF THE COMPACTION OPERATIONS.
2. ALL BUILDING DOWNSPOUTS SHALL BE PIPED TO AREAS BEYOND THE LANDSCAPE BEDS AND DAYLIGHTED IN AREAS WITH POSITIVE DRAINAGE OR CONNECTED DIRECTLY TO THE STORM WATER DRAINAGE SYSTEM UNLESS OTHERWISE SPECIFIED.
3. CONTRACTOR SHALL ESTABLISH AND PROTECT A TEMPORARY BENCHMARK (T.B.M.) TO BE USED DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT THE (T.B.M) LOCATION AND ELEVATION TO THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
4. ALL FORM WORK ELEVATIONS SHALL BE SET AND CHECKED RELATIVE TO THE (T.B.M.) PRIOR TO CONSTRUCTING HARDSCAPE ELEMENTS INCLUDING BUT NOT LIMITED TO CURBS, SIDEWALKS, STEPS, AND WALLS.
5. THE CONTRACTOR SHALL CLEAN ALL CURBS, PAVEMENTS, AND MASONRY SURFACES PRIOR TO THE SUBSTANTIAL COMPLETION PUNCH WALK.
6. GRADES BETWEEN SPOT ELEVATIONS SHALL BE CONSTANT SLOPES.
7. FINISHED HARDSCAPE SLOPES SHALL BE GREATER THAN 1 PERCENT AND POSITIVE FLOW WITHOUT PUDDLING OR PONDING.
8. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL STORM INLETS UNTIL THE FINAL ASPHALT REPAIR WORK IS INSTALLED. COORDINATE AND REVIEW PROCEDURES WITH OWNER'S REPRESENTATIVE AND THE CITY PUBLIC WORKS DEPARTMENT INSPECTOR.
9. THE CONTRACTOR SHALL CONFIRM DRAIN INVERT ELEVATIONS OF ALL INLETS PRIOR TO BEGINNING DEMOLITION WORK. ANY DISCREPANCY BETWEEN EXISTING CONDITIONS AND THE SURVEY SHALL BE REPORTED TO THE OWNER AND/OR OWNERS REPRESENTATIVE.
10. RAMPS - MAXIMUM SLOPE IS 8.33%.
11. FLOW LINE AGAINST CURB - MINIMUM SLOPE IS 0.5%
12. PIPES - MINIMUM SLOPE IS 0.75%
13. CURBS - CURB HEIGHT MAY VARY FROM 4" - 7"
14. THE GENERAL CONTRACTOR SHALL MAINTAIN OR ADJUST TO NEW FINISH GRADE AS NECESSARY ALL UTILITY AND SITE STRUCTURES SUCH AS LIGHT POLES, SIGN POLES, MANHOLES, CATCH BASINS, HAND HOLES, WATER AND GAS GATES, HYDRANTS, ETC. UNLESS OTHERWISE NOTED ON THE PLANS OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. IN THE EVENT A UTILITY OWNER IS TO RELOCATE ITS OWN FACILITIES, THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THESE COMPANIES AND SHALL NOTIFY THEM OF WORK AFFECTING THEIR FACILITIES IN ADVANCE.
15. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS FROM EXISTING DRAINAGE STRUCTURES, PIPES, AND CULVERTS THAT ARE RETAINED BEFORE ANY WORK BEGINS AND AT THE COMPLETION OF THE PROJECT.
16. WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING WITH NEW CONSTRUCTION.
17. FINISH GRADES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL NEW PAVED AREAS ARE GRADED TO DRAIN, EITHER TO EXISTING OR NEW STRUCTURES AND FREE OF PONDING OR STANDING WATER THAT WILL NOT COMPLETELY EVAPORATE WITHIN 24 HOURS. PAVING AREAS THAT DO NOT MEET THESE REQUIREMENTS WILL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL ACCESSIBILITY CODES.

CONCRETE CONSTRUCTION NOTES:

1. DEPTH OF THE SAWCUT CONTRACTION JOINT SHALL BE 1/2" IF CUT WITHIN 6 HOURS OF POUR (IF SAWCUTTING OCCURS AFTER 6 HOURS OF POUR, THE DEPTH OF THE CONTRACTION JOINT SHALL BE 1/3 THE THICKNESS OF CONCRETE).
2. THE CONTRACTOR SHALL INCLUDE MICROMESH ADDITIVE, CONTROL AND EXPANSION JOINTS AND #57 STONE WITHIN THE COST FOR CONCRETE SIDEWALK.
3. REFER TO HARDSCAPE SCHEDULE FOR CONCRETE SPECIFICATIONS.

LANDSCAPE NOTES:

1. ALL PLANT MATERIALS ARE TO CONFORM TO THE LATEST EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMAN STANDARDS FOR NURSERY STOCK (AANSNS).
2. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT WHEN SITE CONDITIONS PROHIBIT THE INSTALLATION OF PLANT MATERIALS AS DESIGNED.
3. FINE GRADING: CONTRACTOR SHALL FINE GRADE LANDSCAPE BEDS TO DRAIN WATER AWAY FROM BUILDINGS AND PROVIDE POSITIVE DRAINAGE BEYOND THE LIMITS OF THE PLANTING BED. PUDDLING AND STANDING WATER WITHIN LANDSCAPE BEDS OTHER THAN BIORETENTION SHALL NOT BE ACCEPTED.
4. SOIL AMENDMENTS: UNLESS OTHERWISE SPECIFIED, A 3" DEPTH OF EQUAL-MIX MINERAL TOPSOIL, AGED FINES, AND COMPOSTED COW MANURE SHALL BE ROTO-TILLED TO A DEPTH OF 6" INTO NATIVE SOILS OF LANDSCAPE PLANTING BEDS. SOIL MIXES APPROVED AS EQUALS MAY BE APPROVED AT THE DISCRETION OF LANDSCAPE ARCHITECT.
5. MULCH: ALL PLANTING BEDS, EXCEPT SEED BEDS, ARE TO BE MULCHED TO A MINIMUM DEPTH OF 4". FREE-STANDING TREES ARE TO BE MULCHED IN A MIN. 5' DIAMETER UNLESS IMPEDED BY HARDSCAPE.
6. ALL TREE STAKING AND EARTHEN TREE RINGS SHALL REMOVED BY THE CONTRACTOR THE END OF THE WARRANTY PERIOD. REPLACE MULCH TREE RING AREAS AS ORIGINALLY SPECIFIED.
7. SUBSTITUTIONS OF PLANT CULTIVARS AND SPECIES SHALL BE PERMITTED ONLY IF MATERIALS ARE NOT AVAILABLE FROM MULTIPLE SOURCES WITHIN 500 MILES OF THE PROJECT. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED TO LANDSCAPE ARCHITECT IN WRITING WITH A LIST OF SOURCES CHECKED FOR THE ORIGINAL PLANT. ALL SUBSTITUTIONS SHALL BE APPROVED BY LANDSCAPE ARCHITECT BEFORE PLANTING.
8. CONTRACTOR SHALL PROVIDE IRRIGATION AS A DELEGATED DESIGN ITEM. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING LANDSCAPE AREAS INCLUDING WATERING, WEEDING, MULCHING, APPLICATION OF PESTICIDES, HERBICIDES, AND FERTILIZER UNTIL FINAL ACCEPTANCE BY OWNER. THE CONTRACTOR SHALL COORDINATE NEW WORK WITH THE EXISTING IRRIGATION SYSTEM (IF APPLICABLE) TO ENSURE THEY ARE COMPATIBLE AND PROVIDE FULL COVERAGE THROUGHOUT CONSTRUCTION AND THE WARRANTY PERIOD. INCIDENTAL WORK REQUIRED TO REPAIR OR REPLACE DAMAGED OR MISSING IRRIGATION WITHIN ANY AREA DISTURBED BY CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
9. BURLAP SHALL BE PULLED BACK TO EXPOSE TOP OF ROOT BALL AND THE TOPS OF WIRE BASKETS ARE TO BE CUT OR BENT BACK INTO PLANTING HOLE.
10. TOPS OF ROOT BALLS FOR TREES SHALL BE PLANTED 1 INCH ABOVE SURROUNDING GRADE.
11. PLANTING HOLES FOR TREES AND SHRUBS NOT IN PLANTING BEDS SHOULD BE A MINIMUM OF TWO TIMES THE DIAMETER OF THE ROOT BALL.
12. WARRANTY: CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR 1-YEAR FROM FINAL ACCEPTANCE UNLESS OTHERWISE SPECIFIED. PLANTS THAT DON'T MEET THE STANDARDS FOR HEALTH AS SET FORTH IN THE AANSNS SHALL BE REPLACED BY CONTRACTOR AT THE EARLIEST TIME SEASONABLE AND PRACTICAL TO PLANT.

LANDSCAPE PLANTING MIXES

1. BACKFILL MIX AND PLANTING MIX: EQUAL MIX OF SUITABLE NATIVE SOIL, AGED FINES, AND COMPOSTED COW MANURE.

LANDSCAPE SOIL COMPONENTS AND MULCH

1. NATIVE SOIL: MINERAL SOIL EXISTING AT THE LOCATIONS OF PROPOSED PLANTING TO BE USED FOR SOIL MODIFICATION THAT IS FREE OF DELETERIOUS MATERIALS AND STONES GREATER THAN 1/2" DIAMETER.
2. SAND MIX: CONSISTING OF APPROXIMATELY 60% MEDIUM SIZED SAND WITH GRANULES MEASURING BETWEEN 0.25 - 0.50 MM, WITH 20% FINE SAND (GRANULES BETWEEN 0.1 - 0.25 MM) AND 20% COARSE SAND (0.5 - 1.0 MM GRANULES)
3. COMPOST: COMPOST SHALL BE US COMPOSTING COUNCIL-STA CERTIFIED OR MEET THE FOLLOWING REQUIREMENTS:
   A. ORGANIC CONTENT BETWEEN 35-65%, MATURITY TEST: SEEDLING GERMINATION AND VIGOR SHOULD BE >80% OF THE CONTROL.
   B. STABILITY TEST: STABLE OR VERY STABLE RATING BASED ON CO2 RESPIRATION.
   C. CARBON: NITROGEN RATIO SHOULD BE 14-20, ELECTRICAL CONDUCTIVITY TO BE <5.0 DS/M (OR MMHOS/CM)PATHOGENS AND METALS. MEETS OR EXCEEDS USEPA STANDARDS FOR CLASS A BIOSOLIDS, OR STATE STANDARDS.
   D. CONTAMINANTS: UNDER 0.5% METAL, GLASS, PLASTIC AND OTHER INERT MATERIALS. UNDER 0.1% PLASTIC FILM IN MULCH, OR 0.25% FOR AMENDING
4. MULCH: MULCH SHALL CONSIST OF 100% SHREDDED HARDWOOD FIBERS, AGED A MINIMUM OF 1 YEAR PRIOR TO INSTALLATION, AND FREE FROM PINE MULCH, WOOD CHIPS, BARK, SOIL, ROCKS, AND WEEDS. THE MAXIMUM LENGTH OF ANY INDIVIDUAL COMPONENT SHALL BE TWO INCHES (2") AND A MINIMUM OF SEVENTY-FIVE PERCENT (75%) OF THE MULCH SHALL PASS THROUGH A ONE INCH (1") SCREEN. MULCH SHALL BE FREE OF GERMINATION-INHIBITING INGREDIENTS. THE MULCH SHALL HAVE THE CHARACTERISTICS OF RETAINING MOISTURE, FORMING A MAT NOT SUSCEPTIBLE TO SPREADING BY WIND, RAIN, OR FLOATING IN PONDING WATER, AND PROVIDE A GOOD GROWTH MEDIUM FOR PLANTS. MULCH SHALL NOT FLOAT IN PONDING WATER.

MOCK-UPS SCHEDULE:

1. PLAIN CONCRETE - PEDESTRIAN
2. PLAIN CONCRETE - VEHICULAR
3. PAVERS - VEHICULAR
4. GRANITE COBBLE PAVER - VEHICULAR
5. TRUNCATED DOME PAVERS
6. PAVERS - PEDESTRIAN
7. PAVING BAND 'A'
8. PAVING BAND 'B'
9. PLAIN GRAY CONCRETE STAIRS
10. INTEGRAL COLOR CONCRETE STAIRS
11. CIP SEAT WALL
12. SEAT WALL CAP
13. PRECAST FOUNTAIN WALL CAP
14. UP TO (3) 4'X10' MOCKUPS OF FOUNTAIN FAÇADE WITH DIFFERENT FORMLINER FINISHES AND MATERIAL VARIATIONS AS DETERMINED BY LANDSCAPE ARCHITECT TO EVALUATE HYDRAULIC EFFECT AND SELECT FINAL MATERIALS.
15. CHEEK WALL BETWEEN STAIRS AND ADA RAMP
16. CHEEK WALL AT LARGE STAIRCASE
17. FOUNTAIN WING WALL

SHOP DRAWINGS SCHEDULE:

1. HANDRAILS
2. GUARDRAILS
3. STATUE BASES
4. PRECAST CHEEK AND WING WALL CAPS
5. PRECAST PLAQUE MARKER
6. INTERPRETIVE LETTERS

SUBMITTALS SCHEDULE:

1. PHOTO DOCUMENTATION AND WRITTEN INVENTORY OF REUSE ITEMS: STOCKPILED MASONRY VENEER, GRANITE COBBLES, TREE GRATES, BRONZE PLAQUE
2. HANDRAIL AND GUARDRAIL FINISH COLOR
3. STAIN FINISH COLOR OPTIONS FOR SEAT WALL CAP WOOD COMPONENTS
4. TREE GRATE
5. BIKE RACK
6. TRASH RECEPTACLE
7. PRECAST MODULAR BENCHES
8. PRECAST FREESTANDING BENCHES A, B, & C
9. ALL LIGHT FIXTURES (INCLUDING FOUNTAIN UPLIGHTS)
10. LED LIGHT STRIP DRIVERS
11. FOUNTAIN UPLIGHT DRIVERS
12. DRIVER CABINET
13. HARDSCAPE DRAIN GRATE
14. WATERLINE TILE
15. CONCRETE FORMLINER
16. SKATE STOPS A & B

DELEGATED DESIGN ITEMS:

1. LANDSCAPE IRRIGATION
2. FOUNTAIN WATERPROOFING
3. TENSILE MEMBRANE STRUCTURE

TSW
PLANNING • ARCHITECTURE
LANDSCAPE ARCHITECTURE
Atlanta, GA | Tulsa, OK | Chattanooga, TN

1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

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HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

GENERAL NOTES

sheet number

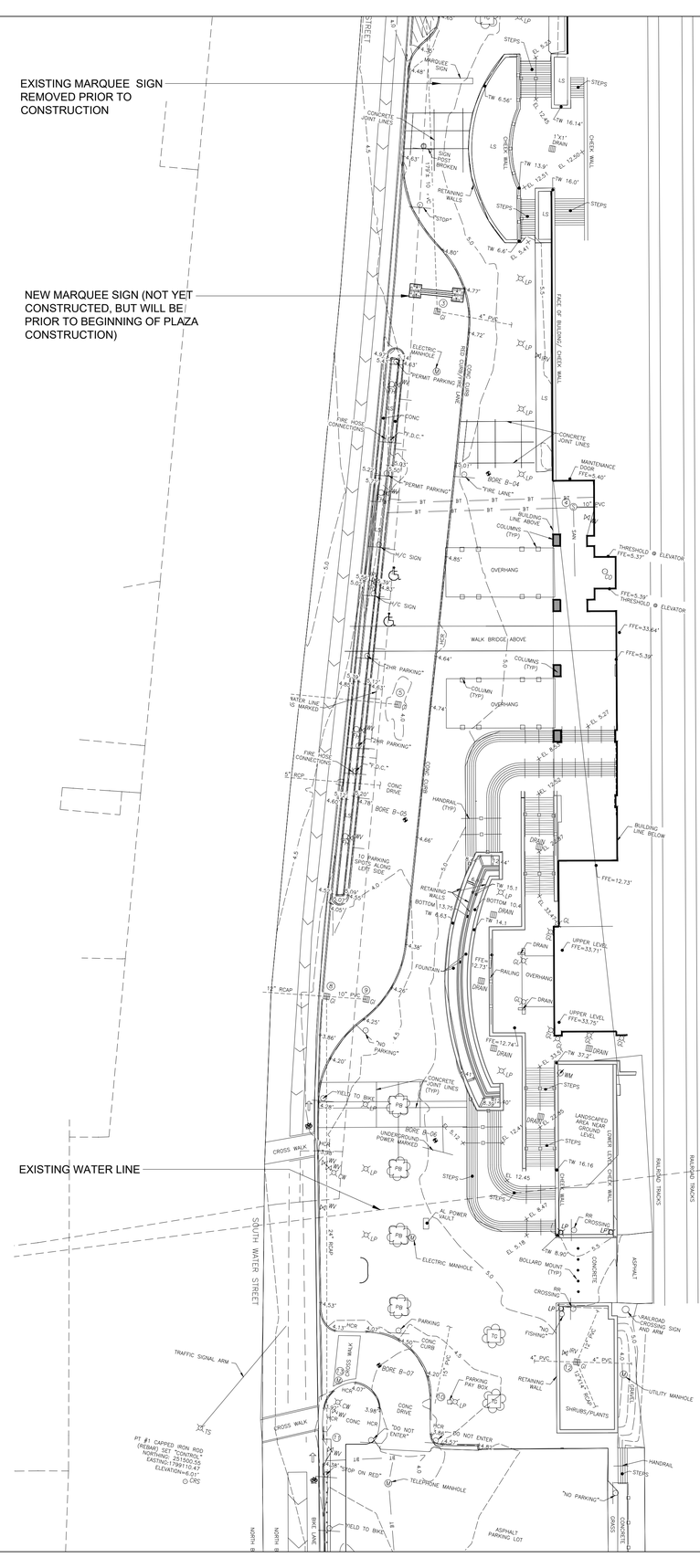
L-0.10

100% CONSTRUCTION PLANS

EXISTING MARQUEE SIGN REMOVED PRIOR TO CONSTRUCTION

NEW MARQUEE SIGN (NOT YET CONSTRUCTED, BUT WILL BE PRIOR TO BEGINNING OF PLAZA CONSTRUCTION)

EXISTING WATER LINE



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revisions

north arrow + scale

scale: 1" = 30'-0"

0 15 30 45 75

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

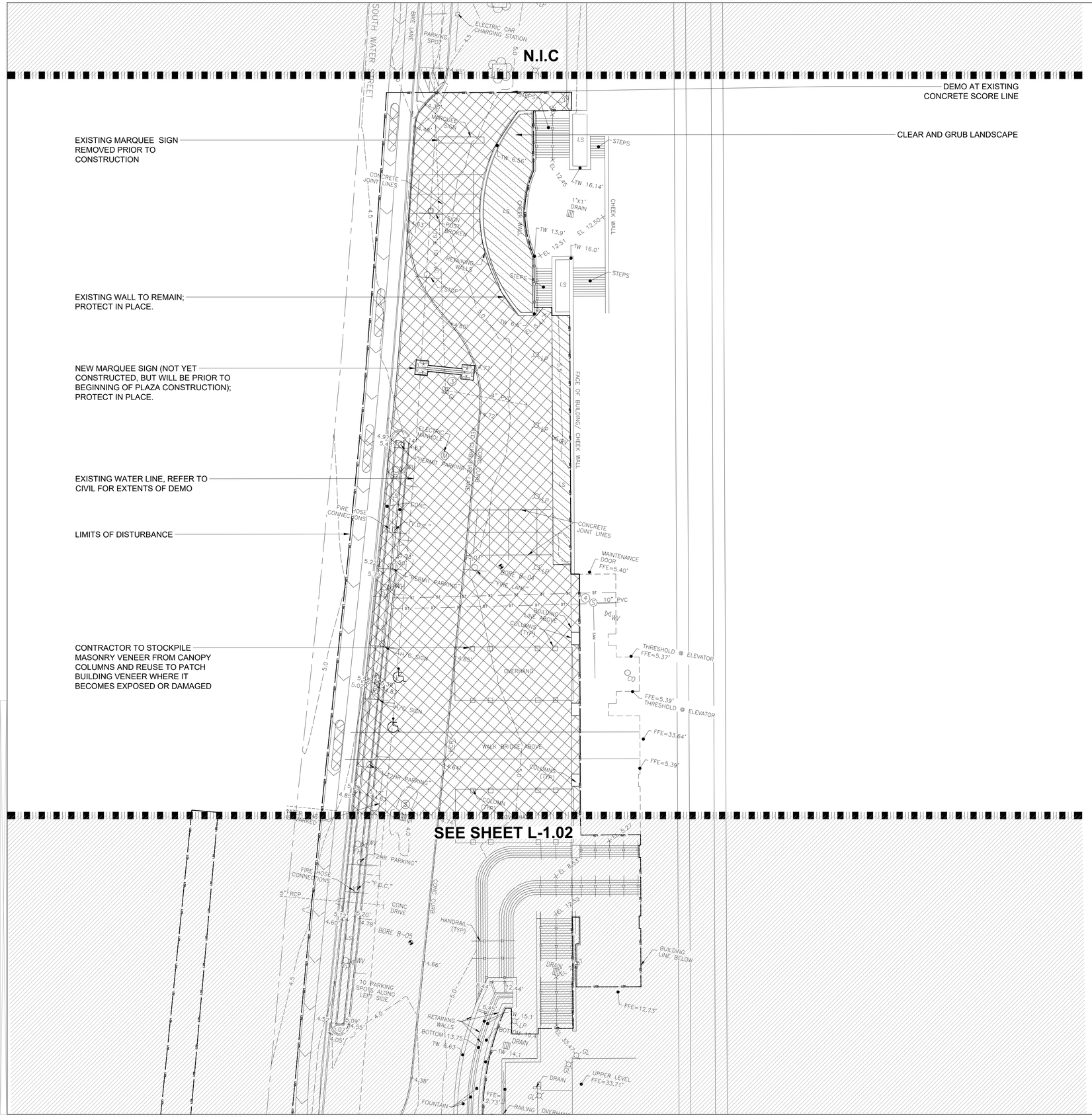
APRIL 14, 2023

sheet title

SURVEY

sheet number

L-0.20



DEMOLITION KEY

EXTENT OF DEMOLITION

CLEAR AND GRUB LANDSCAPE

DEMOLITION PLAN NOTES:

1. CONTRACTOR TO PROVIDE A DETAILED WORK PLAN FOR DEMOLITION DESCRIBING THE THE PHASING AND EXECUTION OF THE WORK.
2. CONTRACTOR SHALL HOLD A PRE CONSTRUCTION MEETING FOR DEMOLITION WORK.
3. STRIP SITE TO REMOVE ALL EXISTING ASPHALT, CONCRETE, FOUNDATIONS, ABANDONED UTILITIES, AND DEBRIS EXTENDING LATERALLY TO AT LEAST 5 FEET OUTSIDE THE CONSTRUCTION AREA. EXCAVATIONS AFTER SITE STRIPPING SHOULD EXTEND BELOW FOUNDATION BEARING ELEVATION TO A MINIMUM DEPTH OF 2 FEET BELOW FOOTINGS OR DEEPER AS NEEDED TO REMOVE LOOSE OR OTHERWISE UNSUITABLE SOILS THAT CANNOT BE IMPROVED BY COMPACTION. EXCAVATED MATERIALS SHOULD BE WASTED AND NOT REUSED IN STRUCTURAL AREAS.
4. CONTRACTOR TO STOCKPILE MASONRY VENEER FROM CANOPY COLUMNS AND REUSE TO PATCH BUILDING WALLS WHERE THEY BECOME EXPOSED OR DAMAGE.
5. CONTRACTOR TO PROVIDE TEMPORARY AND PERMANENT SUPPORT AND SHORING FOR AREAS ADJACENT TO THE BUILDING AS NECESSARY TO PROTECT THE INTEGRITY OF THE STRUCTURE AND SUBGRADE.

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north arrow + scale

scale: 1" = 20'-0"

0 10 20 30 50

project information

HERO PLAZA PHASE 1

project address

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MOBILE, AL 36609

client information

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MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
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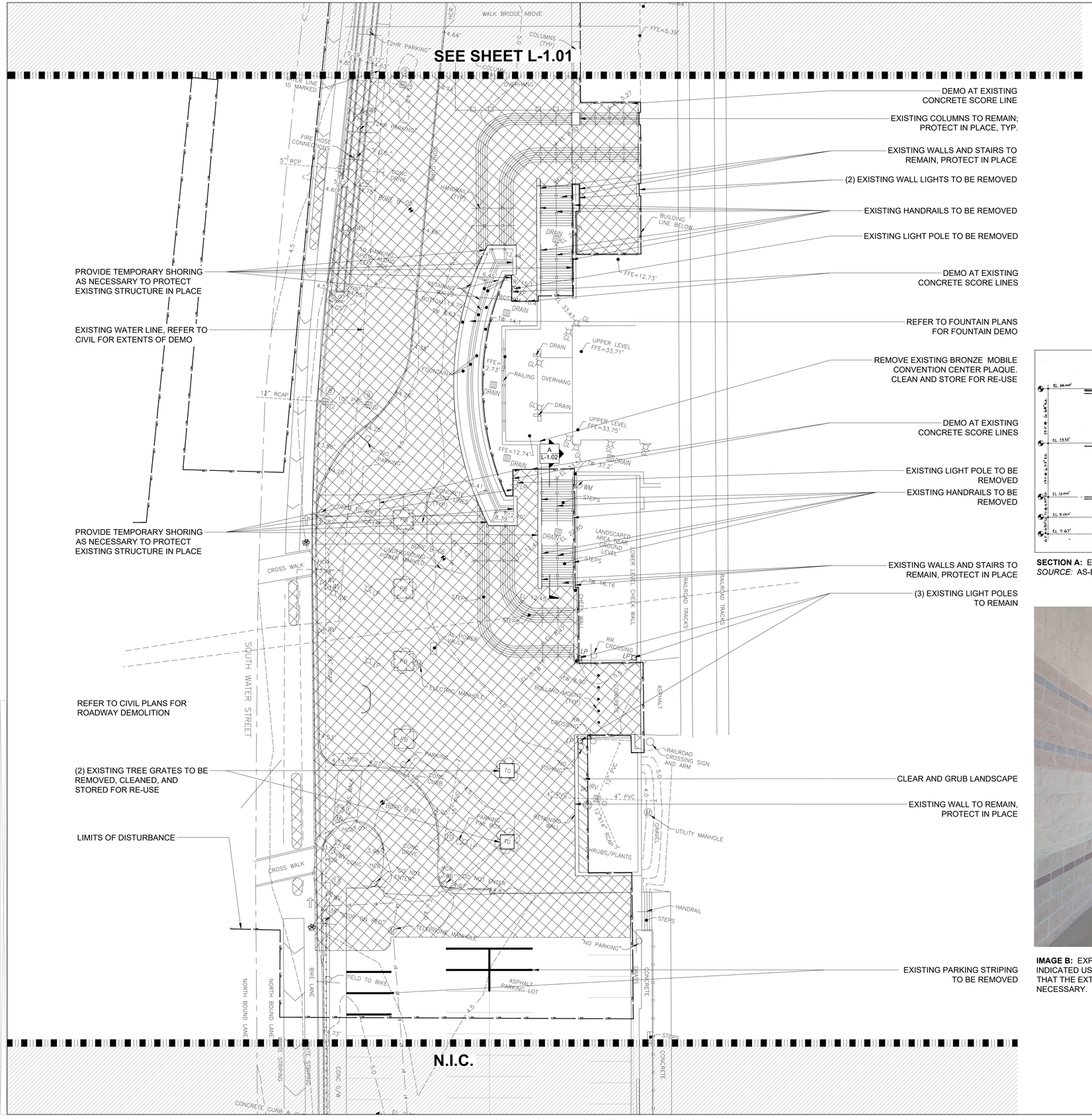
sheet title

DEMOLITION PLAN - NORTH

sheet number

L-1.01



DEMOLITION KEY

EXTENT OF DEMOLITION

CLEAR AND GRUB LANDSCAPE

DEMOLITION PLAN NOTES:

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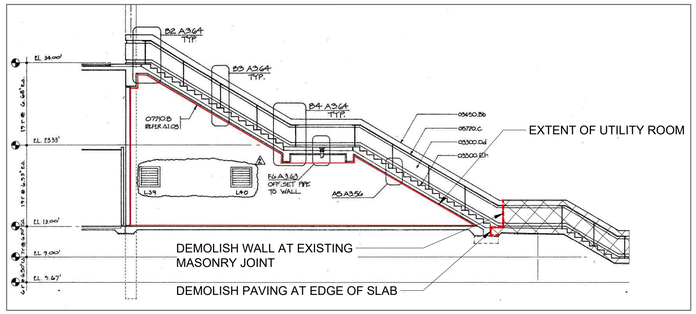
3. STRIP SITE TO REMOVE ALL EXISTING ASPHALT, CONCRETE, FOUNDATIONS, ABANDONED UTILITIES, AND DEBRIS EXTENDING LATERALLY TO AT LEAST 5 FEET OUTSIDE THE CONSTRUCTION AREA. EXCAVATIONS AFTER SITE STRIPPING SHOULD EXTEND BELOW FOUNDATION BEARING ELEVATION TO A MINIMUM DEPTH OF 2 FEET BELOW FOOTINGS OR DEEPER AS NEEDED TO REMOVE LOOSE OR OTHERWISE UNSUITABLE SOILS THAT CANNOT BE IMPROVED BY COMPACTION. EXCAVATED MATERIALS SHOULD BE WASTED AND NOT REUSED IN STRUCTURAL AREAS.
4. CONTRACTOR TO STOCKPILE MASONRY VENEER FROM CANOPY COLUMNS AND REUSE TO PATCH BUILDING WALLS WHERE THEY BECOME EXPOSED OR DAMAGE. REFER TO **IMAGE B** FOR MASONRY PATCH LOCATIONS
5. CONTRACTOR TO PROVIDE TEMPORARY AND PERMANENT SUPPORT AND SHORING FOR AREAS ADJACENT TO THE BUILDING AS NECESSARY TO PROTECT THE INTEGRITY OF THE STRUCTURE AND SUBGRADE.



SECTION A: EXTENT OF WALL AND PAVING DEMOLITION, TYP. FOR BOTH SIDES
SOURCE: AS-BUILT CONVENTION CENTER PLANS SHEET A3.56

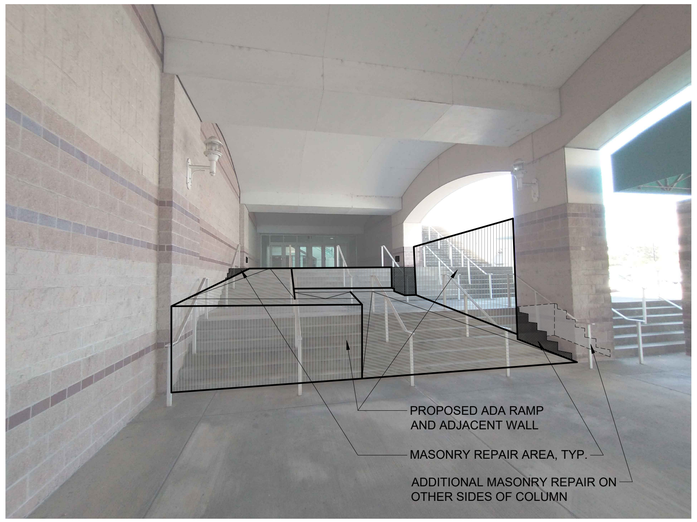


IMAGE B: EXPOSED WALL FACE AT ADA RAMP AREA. CONTRACTOR TO PATCH WALL MASONRY WHERE INDICATED USING STOCKPILED MASONRY VENEER FROM DEMOLITION OF EXISTING CANOPY COLUMNS. NOTE THAT THE EXTENTS OF EXPOSED WALL FACES SHOWN ARE APPROXIMATE AND ADDITIONAL REPAIRS MAY BE NECESSARY.

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north arrow + scale

scale: 1" = 20'-0"

0 10 20 30 50

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HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

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P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

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project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

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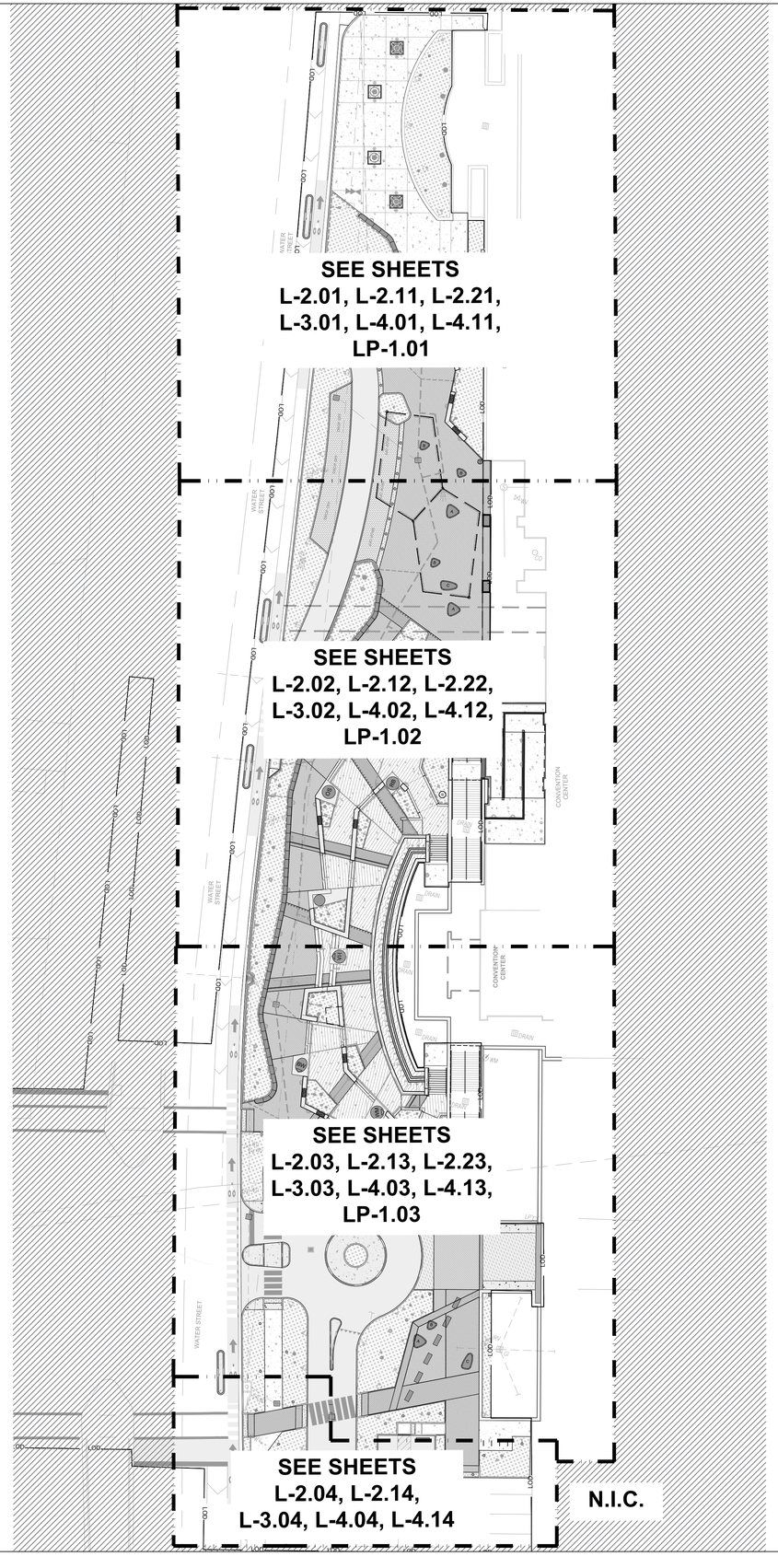
APRIL 14, 2023

sheet title

DEMOLITION PLAN - SOUTH

sheet number

L-1.02



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north arrow + scale

scale: 1" = 30'-0"

0 15 30 45 75

project information

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PHASE 1

project address

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client information

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MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

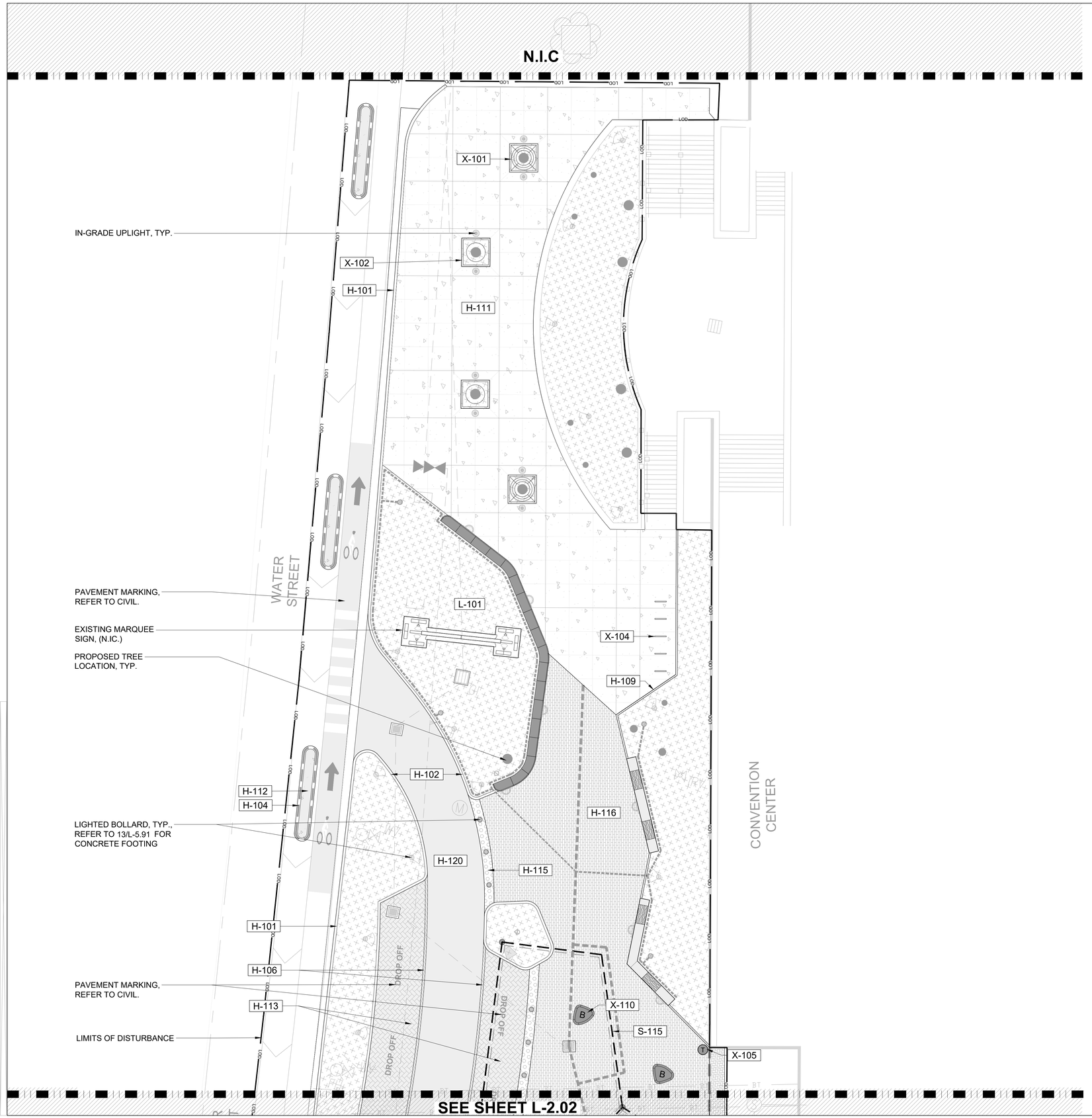
sheet title

LAYOUT PLAN - KEY PLAN

sheet number

L-2.00

100% CONSTRUCTION PLANS



MATERIALS LEGEND AND SCHEDULE

CODE	HARDSCAPE DESCRIPTION	DETAIL
H-101	COMBINATION CURB AND GUTTER (ALDOT `TYPE C`)	1/L-5.10
H-102	6" CONCRETE CURB (ALDOT `TYPE A`)	2/L-5.10
H-103	RAISED CURB	3/L-5.10
H-104	MOUNTABLE CURB (ALDOT `TYPE N`)	4/L-5.10
H-105	1` CONCRETE CURB	5/L-5.10
H-106	6" CONCRETE CURB - FLUSH	6/L-5.10
H-107	RIBBON CURB	7/L-5.10
H-108	CURB RAMP	10/L-5.10
H-109	4" CONCRETE CURB	8/L-5.10
H-110	4" CONCRETE CURB - FLUSH	9/L-5.10
H-111	PLAIN CONCRETE - PEDESTRIAN	1/L-5.11
H-112	PLAIN CONCRETE - VEHICULAR	2/L-5.00
H-113	PERMEABLE PAVERS - VEHICULAR	4/L-5.00
H-114	GRANITE COBBLE PAVER - VEHICULAR	6/L-5.00
H-115	TRUNCATED DOME PAVERS	5/L-5.11
H-116	PERMEABLE PAVERS - PEDESTRIAN	3/L-5.00
H-117	PERMEABLE PAVING BAND `A`	3/L-5.12
H-118	PERMEABLE PAVING BAND `B`	4/L-5.12
H-119	PERMEABLE PAVING BAND 'C'	5/L-5.12
H-120	HEAVY DUTY ASPHALT PAVING (SEE CIVIL)	
H-121	PLAIN GRAY CONCRETE STAIRS	1/L-5.20
H-122	INTEGRAL COLOR CONCRETE STAIRS (1` TREAD)	1/L-5.20
H-123	INTEGRAL COLOR CONCRETE STAIRS (1.5` TREAD)	1/L-5.20

CODE	SOFTSCAPE DESCRIPTION	DETAIL
L-101	LANDSCAPE	

CODE	STRUCTURE DESCRIPTION	DETAIL
S-101	FOUNTAIN	1/L-5.40
S-113	PLAQUE MARKER	1/L-5.70
S-114	INTERPRETIVE LETTERS	2/L-5.70
S-115	TENSILE MEMBRANE STRUCTURE	1/L-5.80

CODE	FIXED FURNISHING DESCRIPTION	DETAIL
X-101	REFURBISHED TREE GRATE	4/L-5.90
X-102	TREE GRATE	3/L-5.90
X-104	BIKE RACK	1/L-5.90
X-105	TRASH RECEPTACLE	2/L-5.90
X-106	HANDRAIL	2/L-5.20
X-107	HANDRAIL - WALL-MOUNTED	3/L-5.20
X-108	GUARDRAIL	1/L-5.21
X-109	PRECAST FREESTANDING BENCH 'A'	8/L-5.90
X-110	PRECAST FREESTANDING BENCH 'B'	9/L-5.90
X-111	PRECAST FREESTANDING BENCH 'C'	10/L-5.90

REFER TO WALL PLANS (L-2.21 - L-2.23) FOR WALLS, PRECAST BENCHES, AND STATUE BASES.

REFER TO UTILITY FIXTURE PLANS (L-4.01 - L-4.03) FOR LIGHT FIXTURES.

ALL PAVERS TO BE INSTALLED IN THE DIRECTION SHOWN.

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BRYAN BAYS
NUMBER 796
REGISTERED LANDSCAPE ARCHITECT

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revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

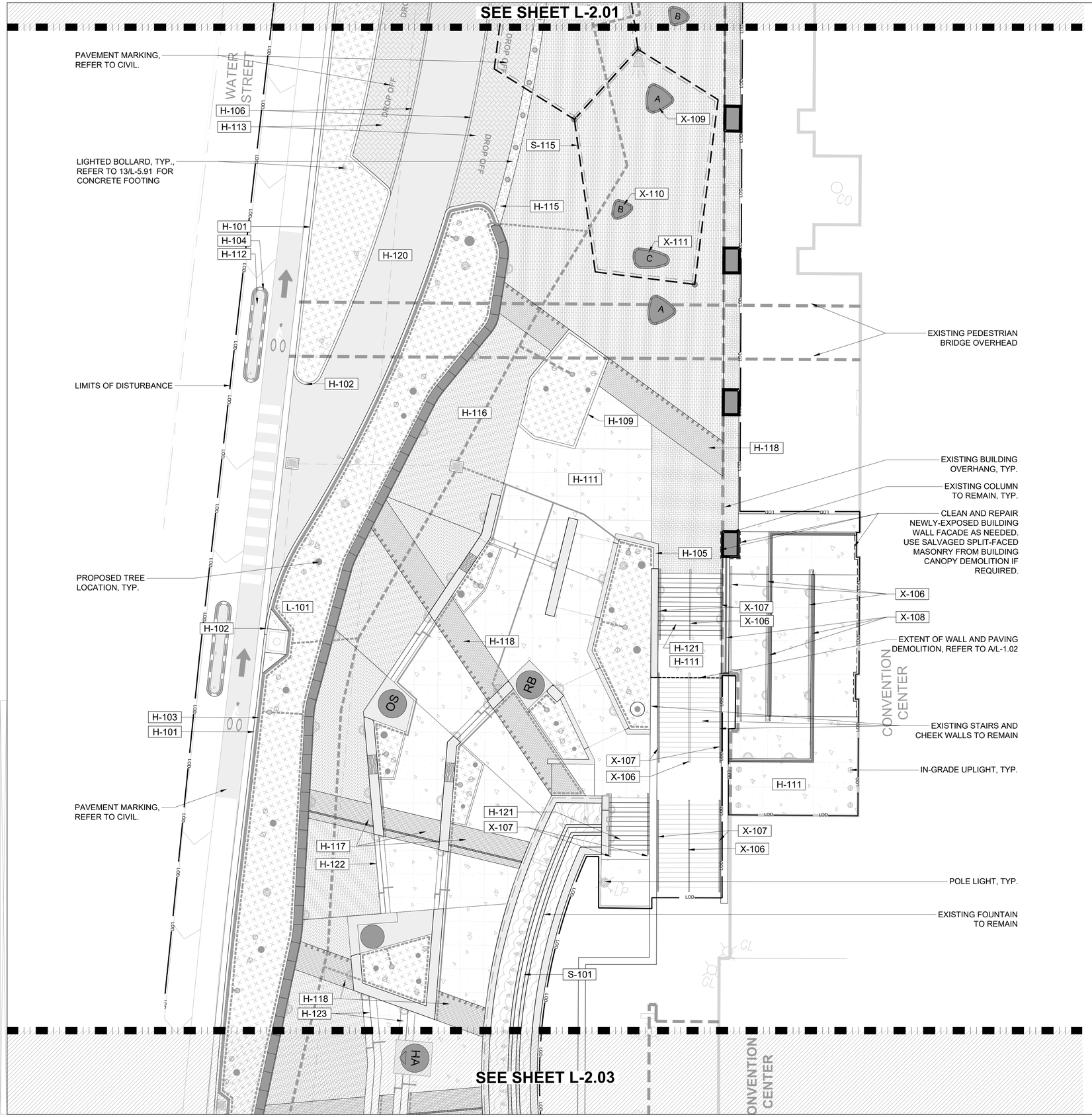
APRIL 14, 2023

sheet title

LAYOUT PLAN - NORTH

sheet number

L-2.01



MATERIALS LEGEND AND SCHEDULE

CODE	HARDSCAPE DESCRIPTION	DETAIL
H-101	COMBINATION CURB AND GUTTER (ALDOT `TYPE C`)	1/L-5.10
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H-112	PLAIN CONCRETE - VEHICULAR	2/L-5.00
H-113	PERMEABLE PAVERS - VEHICULAR	4/L-5.00
H-114	GRANITE COBBLE PAVER - VEHICULAR	6/L-5.00
H-115	TRUNCATED DOME PAVERS	5/L-5.11
H-116	PERMEABLE PAVERS - PEDESTRIAN	3/L-5.00
H-117	PERMEABLE PAVING BAND `A`	3/L-5.12
H-118	PERMEABLE PAVING BAND `B`	4/L-5.12
H-119	PERMEABLE PAVING BAND 'C'	5/L-5.12
H-120	HEAVY DUTY ASPHALT PAVING (SEE CIVIL)	
H-121	PLAIN GRAY CONCRETE STAIRS	1/L-5.20
H-122	INTEGRAL COLOR CONCRETE STAIRS (1` TREAD)	1/L-5.20
H-123	INTEGRAL COLOR CONCRETE STAIRS (1.5` TREAD)	1/L-5.20

CODE	SOFTSCAPE DESCRIPTION	DETAIL
L-101	LANDSCAPE	

CODE	STRUCTURE DESCRIPTION	DETAIL
S-101	FOUNTAIN	1/L-5.40
S-113	PLAQUE MARKER	1/L-5.70
S-114	INTERPRETIVE LETTERS	2/L-5.70
S-115	TENSILE MEMBRANE STRUCTURE	1/L-5.80

CODE	FIXED FURNISHING DESCRIPTION	DETAIL
X-101	REFURBISHED TREE GRATE	4/L-5.90
X-102	TREE GRATE	3/L-5.90
X-104	BIKE RACK	1/L-5.90
X-105	TRASH RECEPTACLE	2/L-5.90
X-106	HANDRAIL	2/L-5.20
X-107	HANDRAIL - WALL-MOUNTED	3/L-5.20
X-108	GUARDRAIL	1/L-5.21
X-109	PRECAST FREESTANDING BENCH 'A'	8/L-5.90
X-110	PRECAST FREESTANDING BENCH 'B'	9/L-5.90
X-111	PRECAST FREESTANDING BENCH 'C'	10/L-5.90

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100% CONSTRUCTION PLANS

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revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

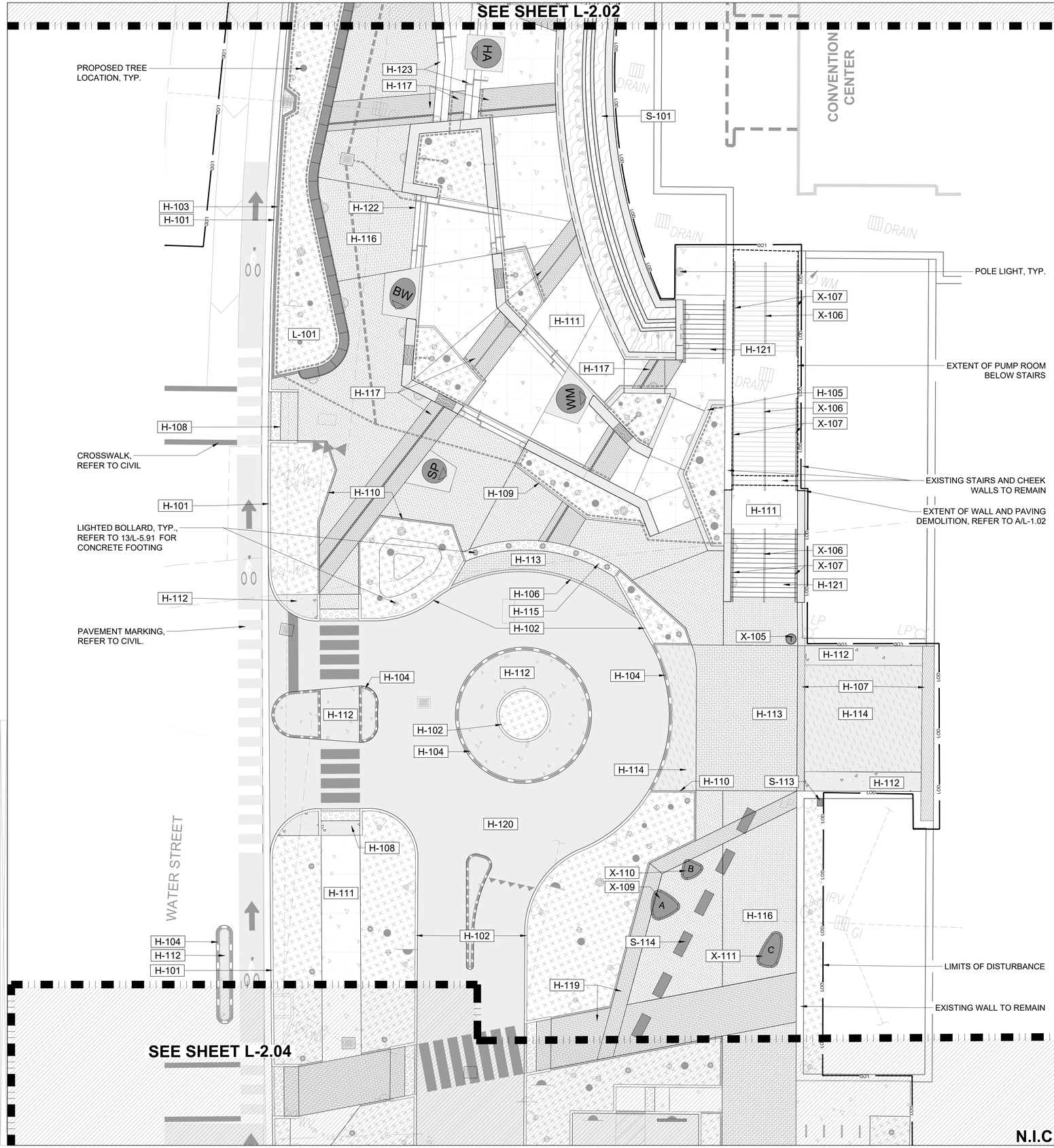
APRIL 14, 2023

sheet title

LAYOUT PLAN - CENTRAL

sheet number

L-2.02



MATERIALS LEGEND AND SCHEDULE

CODE	HARDSCAPE DESCRIPTION	DETAIL
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H-107	RIBBON CURB	7/L-5.10
H-108	CURB RAMP	10/L-5.10
H-109	4" CONCRETE CURB	8/L-5.10
H-110	4" CONCRETE CURB - FLUSH	9/L-5.10
H-111	PLAIN CONCRETE - PEDESTRIAN	1/L-5.11
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H-113	PERMEABLE PAVERS - VEHICULAR	4/L-5.00
H-114	GRANITE COBBLE PAVER - VEHICULAR	6/L-5.00
H-115	TRUNCATED DOME PAVERS	5/L-5.11
H-116	PERMEABLE PAVERS - PEDESTRIAN	3/L-5.00
H-117	PERMEABLE PAVING BAND `A`	3/L-5.12
H-118	PERMEABLE PAVING BAND `B`	4/L-5.12
H-119	PERMEABLE PAVING BAND 'C'	5/L-5.12
H-120	HEAVY DUTY ASPHALT PAVING (SEE CIVIL)	
H-121	PLAIN GRAY CONCRETE STAIRS	1/L-5.20
H-122	INTEGRAL COLOR CONCRETE STAIRS (1` TREAD)	1/L-5.20
H-123	INTEGRAL COLOR CONCRETE STAIRS (1.5` TREAD)	1/L-5.20

CODE	SOFTSCAPE DESCRIPTION	DETAIL
L-101	LANDSCAPE	

CODE	STRUCTURE DESCRIPTION	DETAIL
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S-113	PLAQUE MARKER	1/L-5.70
S-114	INTERPRETIVE LETTERS	2/L-5.70
S-115	TENSILE MEMBRANE STRUCTURE	1/L-5.80

CODE	FIXED FURNISHING DESCRIPTION	DETAIL
X-101	REFURBISHED TREE GRATE	4/L-5.90
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X-104	BIKE RACK	1/L-5.90
X-105	TRASH RECEPTACLE	2/L-5.90
X-106	HANDRAIL	2/L-5.20
X-107	HANDRAIL - WALL-MOUNTED	3/L-5.20
X-108	GUARDRAIL	1/L-5.21
X-109	PRECAST FREESTANDING BENCH 'A'	8/L-5.90
X-110	PRECAST FREESTANDING BENCH 'B'	9/L-5.90
X-111	PRECAST FREESTANDING BENCH 'C'	10/L-5.90

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revisions

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scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
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client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

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sheet title

LAYOUT PLAN - SOUTH

sheet number

L-2.03

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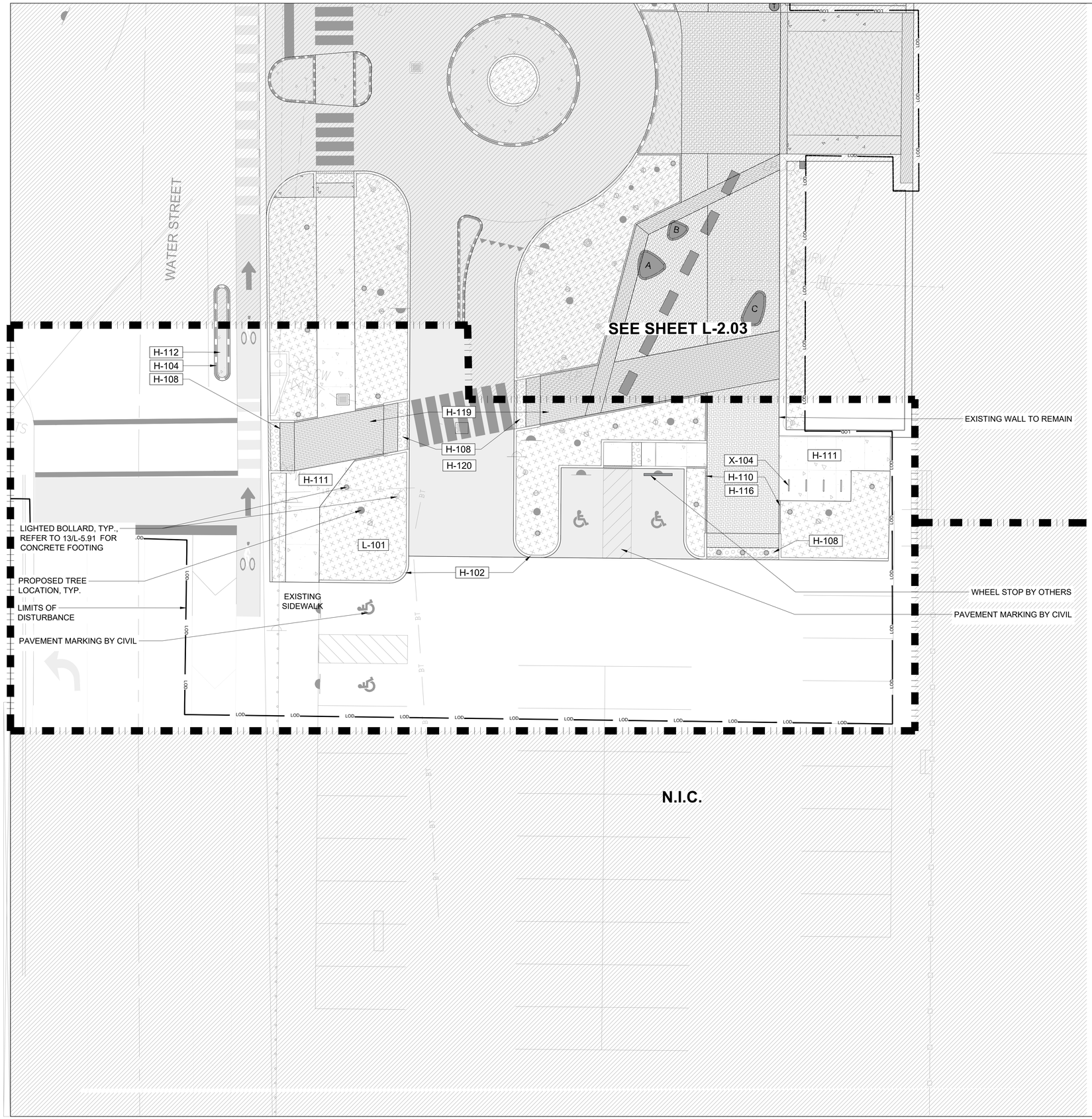

MATERIALS LEGEND AND SCHEDULE

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H-106	6" CONCRETE CURB - FLUSH	6/L-5.10
H-107	RIBBON CURB	7/L-5.10
H-108	CURB RAMP	10/L-5.10
H-109	4" CONCRETE CURB	8/L-5.10
H-110	4" CONCRETE CURB - FLUSH	9/L-5.10
H-111	PLAIN CONCRETE - PEDESTRIAN	1/L-5.11
H-112	PLAIN CONCRETE - VEHICULAR	2/L-5.00
H-113	PERMEABLE PAVERS - VEHICULAR	4/L-5.00
H-114	GRANITE COBBLE PAVER - VEHICULAR	6/L-5.00
H-115	TRUNCATED DOME PAVERS	5/L-5.11
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H-121	PLAIN GRAY CONCRETE STAIRS	1/L-5.20
H-122	INTEGRAL COLOR CONCRETE STAIRS (1` TREAD)	1/L-5.20
H-123	INTEGRAL COLOR CONCRETE STAIRS (1.5` TREAD)	1/L-5.20

CODE	SOFTSCAPE DESCRIPTION	DETAIL
L-101	LANDSCAPE	

CODE	STRUCTURE DESCRIPTION	DETAIL
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S-113	PLAQUE MARKER	1/L-5.70
S-114	INTERPRETIVE LETTERS	2/L-5.70
S-115	TENSILE MEMBRANE STRUCTURE	1/L-5.80

CODE	FIXED FURNISHING DESCRIPTION	DETAIL
X-101	REFURBISHED TREE GRATE	4/L-5.90
X-102	TREE GRATE	3/L-5.90
X-104	BIKE RACK	1/L-5.90
X-105	TRASH RECEPTACLE	2/L-5.90
X-106	HANDRAIL	2/L-5.20
X-107	HANDRAIL - WALL-MOUNTED	3/L-5.20
X-108	GUARDRAIL	1/L-5.21
X-109	PRECAST FREESTANDING BENCH 'A'	8/L-5.90
X-110	PRECAST FREESTANDING BENCH 'B'	9/L-5.90
X-111	PRECAST FREESTANDING BENCH 'C'	10/L-5.90

REFER TO WALL PLANS (L-2.21 - L-2.23) FOR WALLS, PRECAST BENCHES, AND STATUE BASES.

REFER TO UTILITY FIXTURE PLANS (L-4.01 - L-4.03) FOR LIGHT FIXTURES.

ALL PAVERS TO BE INSTALLED IN THE DIRECTION SHOWN.

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revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

APRIL 14, 2023

sheet title

LAYOUT PLAN - GOVT. STREET INTERSECTION

sheet number

L-2.04

N.I.C

BROOM FINISH IN THIS AREA PARALLEL WITH E-W JOINTS

CONTROL JOINT, TYP.

EXPANSION JOINT, TYP.

5', TYP.

5', TYP.

WATER STREET

CONVENTION CENTER

DROP OFF

DROP OFF

DROP OFF

LIMITS OF DISTURBANCE

SEE SHEET L-2.12

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BRYAN BAYS
NUMBER 796
REGISTERED LANDSCAPE ARCHITECT

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project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
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drawing date

APRIL 14, 2023

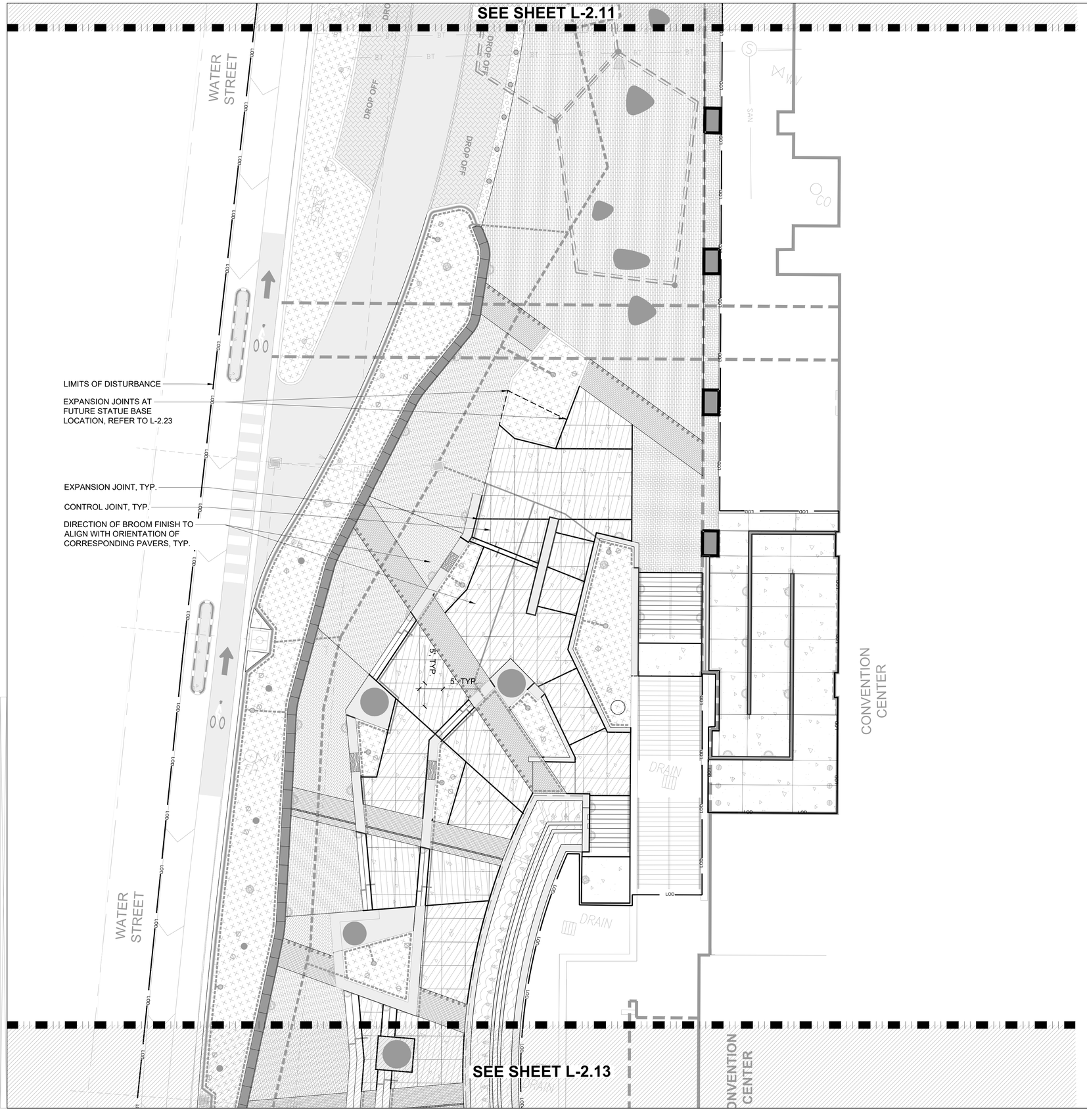
sheet title

JOINTING PLAN - NORTH

sheet number

L-2.11

SEE SHEET L-2.11



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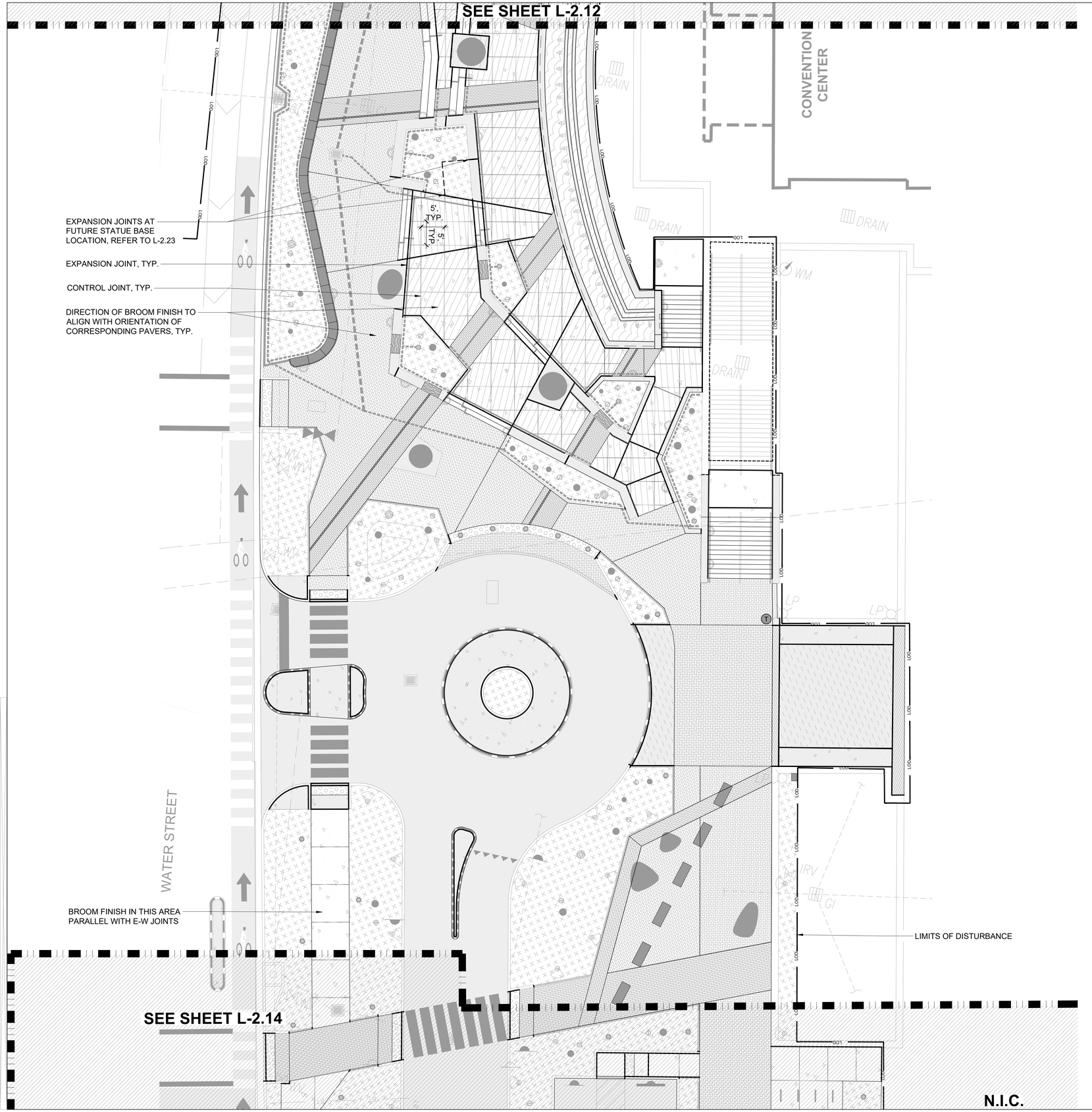
sheet title

JOINTING PLAN - CENTRAL

sheet number

L-2.12



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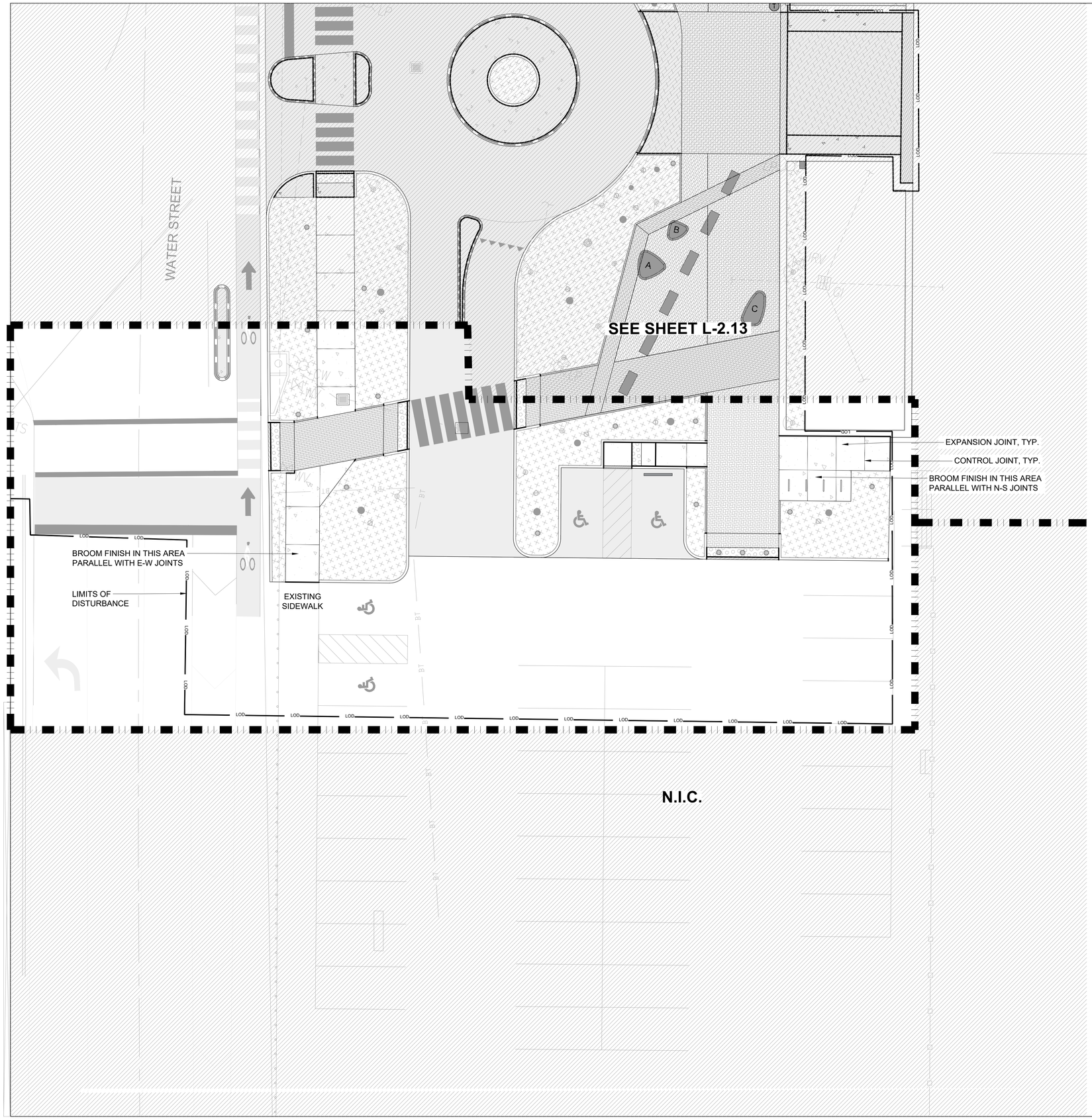
sheet title

JOINTING PLAN - SOUTH

sheet number

L-2.13



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APRIL 14, 2023

sheet title

JOINTING PLAN - GOVT. STREET INTERSECTION

sheet number

L-2.14

MATERIALS LEGEND AND SCHEDULE

CODE	HARDSCAPE DESCRIPTION	DETAIL
H-124	CHEEK WALL AT LARGE STAIRCASE	1/L-5.32
H-125	CHEEK WALL BETWEEN STAIRS AND ADA RAMP	4/L-5.30
H-126	FOUNTAIN WING WALL	1/L-5.33
H-127	ADA RAMP WALL	1/L-5.30
H-128	CAST-IN-PLACE SEAT WALL	1/L-5.34
H-129	SEAT WALL CAP	2/L-5.34

CODE	STRUCTURE DESCRIPTION	DETAIL
S-101	FOUNTAIN	1/L-5.40
S-102	PRECAST MODULAR BENCH `A`	1/L-5.50
S-103	PRECAST MODULAR BENCH `B`	2/L-5.50
S-104	STATUE BASE 'A'	1/L-5.60
S-105	STATUE BASE `B`	2/L-5.60
S-106	STATUE BASE `C`	1/L-5.61
S-107	STATUE BASE `D`	2/L-5.61
S-108	STATUE BASE `E`	1/L-5.62
S-109	STATUE BASE `F`	2/L-5.62
S-110	STATUE BASE `G` - SELFIE PLINTH	1/L-5.63
S-111	FUTURE STATUE BASE 1	1/L-5.64
S-112	FUTURE STATUE BASE 2	2/L-5.64

REFER TO LIGHT FIXTURE PLANS (L-4.01 - L-4.03) FOR LIGHT FIXTURES

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APRIL 14, 2023

sheet title

WALL PLAN - NORTH

sheet number

L-2.21

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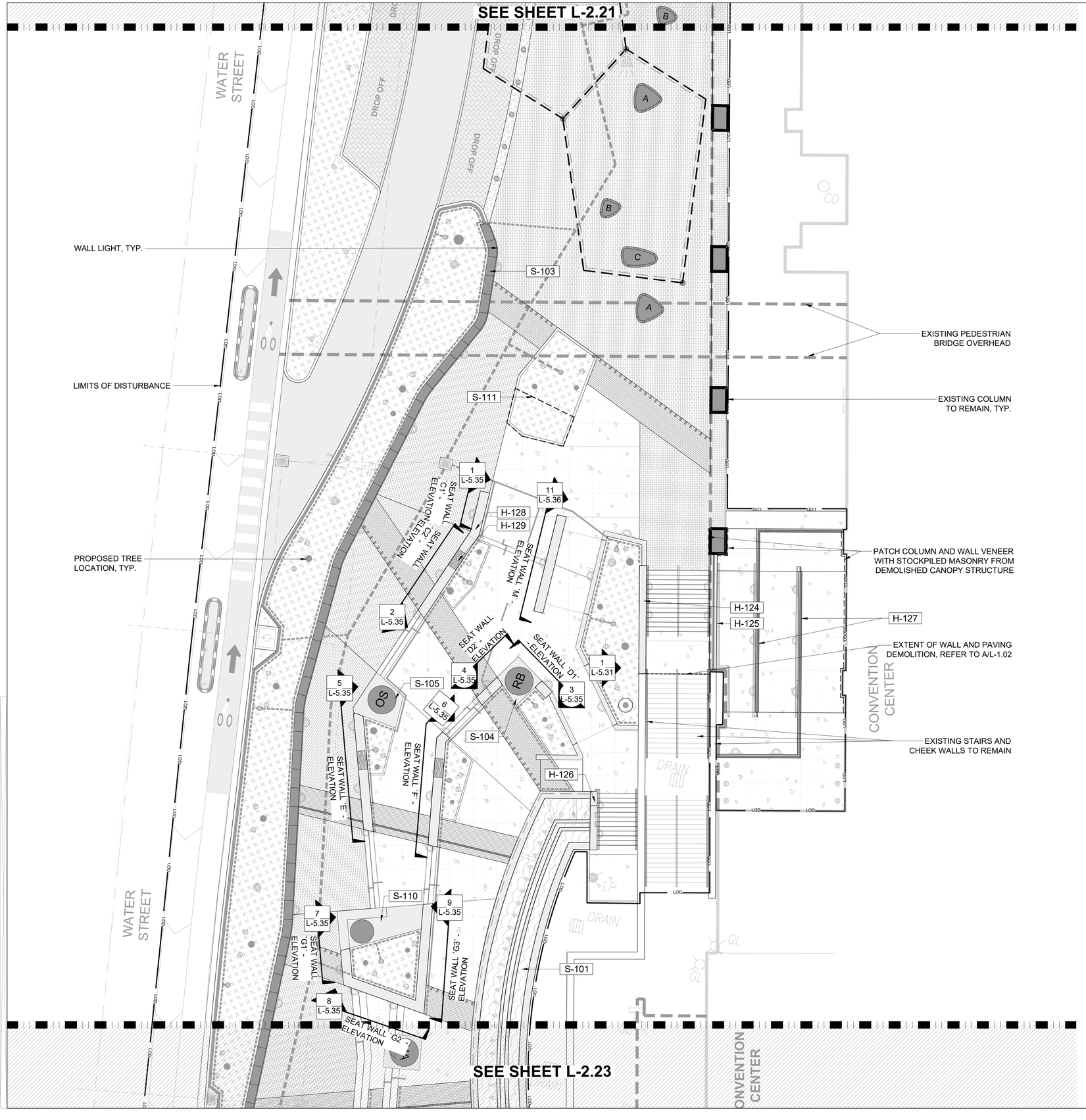

MATERIALS LEGEND AND SCHEDULE

CODE	HARDSCAPE DESCRIPTION	DETAIL
H-124	CHEEK WALL AT LARGE STAIRCASE	1/L-5.32
H-125	CHEEK WALL BETWEEN STAIRS AND ADA RAMP	4/L-5.30
H-126	FOUNTAIN WING WALL	1/L-5.33
H-127	ADA RAMP WALL	1/L-5.30
H-128	CAST-IN-PLACE SEAT WALL	1/L-5.34
H-129	SEAT WALL CAP	2/L-5.34

CODE	STRUCTURE DESCRIPTION	DETAIL
S-101	FOUNTAIN	1/L-5.40
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S-105	STATUE BASE `B`	2/L-5.60
S-106	STATUE BASE `C`	1/L-5.61
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project information

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project address

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MOBILE, AL 36633
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drawing information

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drawn by:	CM
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APRIL 14, 2023

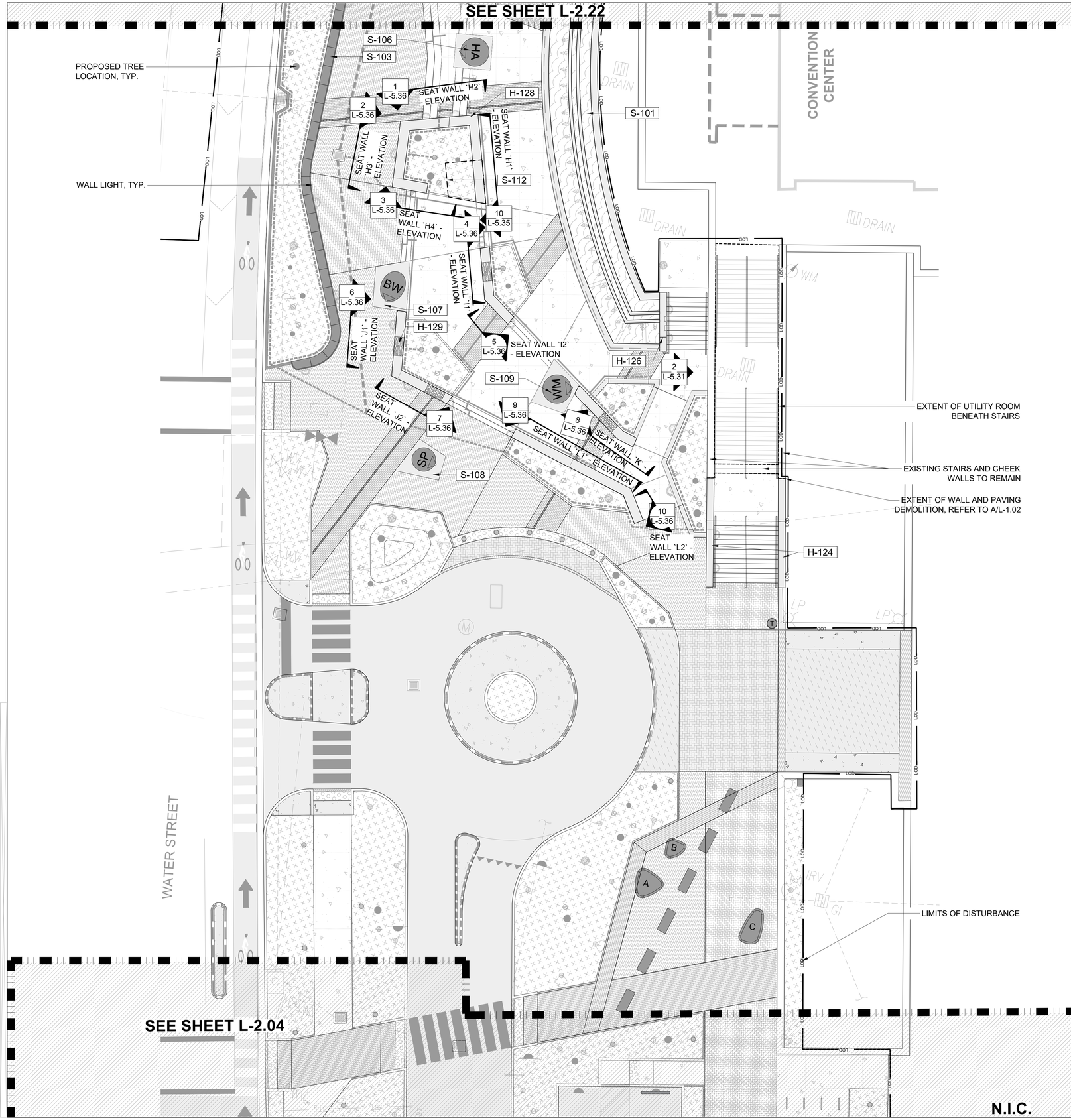
sheet title

WALL PLAN - CENTRAL

sheet number

L-2.22

SEE SHEET L-2.22



MATERIALS LEGEND AND SCHEDULE

CODE	HARDSCAPE DESCRIPTION	DETAIL
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HERO PLAZA PHASE 1

project address

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client information

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P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

APRIL 14, 2023

sheet title

WALL PLAN - SOUTH

sheet number

L-2.23

100% CONSTRUCTION PLANS

GRADING PLAN NOTES:

ABBREVIATIONS:

TC:	TOP OF CURB	TW:	TOP OF WALL
BC:	BOTTOM OF CURB	BW:	BOTTOM OF WALL
TR:	TOP OF RAMP	BR:	BOTTOM OF RAMP
FG:	FINISH GRADE	FFE:	FINISH FLOOR ELEVATION
TS:	TOP OF STAIRS	TD:	TOP OF DRAIN
BS:	BOTTOM OF STAIRS	(EX):	ELEVATION IS BOTH EXISTING & PROPOSED

1. GROUNDWATER OR SATURATED SOIL CONDITIONS WILL LIKELY BE ENCOUNTERED DURING EXCAVATIONS AT THIS SITE. THE INITIAL LIFTS OF BACKFILL SHOULD CONSIST OF CLEAN SAND WITH LESS THAN ABOUT 10 PERCENT (BY WEIGHT) PASSING THE NO.200 MESH SIEVE AND 70 PERCENT OR LESS (BY WEIGHT) PASSING THE NO.40 MESH SIEVE. BELOW AND WITHIN ONE FOOT OF THE GROUNDWATER/SATURATED SOIL LEVEL, IN LIEU OF MEASURED COMPACTION TESTS, CLEAN SAND FILL SHOULD BE THOROUGHLY COMPACTED WITH HEAVY TRACKED EQUIPMENT TO ACHIEVE SOME COMPACTION AND FILL VOIDS. ABOVE THE GROUNDWATER AND SATURATED SOIL LEVEL, CLEAN SAND FILL SHOULD BE COMPACTED TO 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 WITH A MOISTURE CONTENT BETWEEN 1 PERCENTAGE POINT BELOW AND 3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT. IMPORTED SELECT STRUCTURAL FILL SOIL PLACED TO ACHIEVE FINAL GRADE SHOULD CONSIST OF A SANDY MATERIAL WITH LESS THAN ABOUT 30 PERCENT OF THE SOIL PARTICLES (BY WEIGHT) PASSING THE NO.200 MESH SIEVE, LESS THAN 70% PASSING THE NO.40 SIEVE, AND A LIQUID LIMIT LESS THAN 15. FILL MATERIAL SHOULD BE COMPACTED IN 12-INCH (MAXIMUM) LIFTS TO AT LEAST 95 PERCENT OF THE SOIL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557. IN PLACE DENSITY TESTS SHOULD BE MADE AT FREQUENT INTERVALS TO MEASURE THE EFFECTIVENESS OF THE COMPACTION OPERATIONS.
2. ALL BUILDING DOWNSPOUTS SHALL BE PIPED TO AREAS BEYOND THE LANDSCAPE BEDS AND DAYLIGHTED IN AREAS WITH POSITIVE DRAINAGE OR CONNECTED DIRECTLY TO THE STORM WATER DRAINAGE SYSTEM UNLESS OTHERWISE SPECIFIED.
3. CONTRACTOR SHALL ESTABLISH AND PROTECT A TEMPORARY BENCHMARK (T.B.M.) TO BE USED DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT THE (T.B.M) LOCATION AND ELEVATION TO THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
4. ALL FORM WORK ELEVATIONS SHALL BE SET AND CHECKED RELATIVE TO THE (T.B.M.) PRIOR TO CONSTRUCTING HARDSCAPE ELEMENTS INCLUDING BUT NOT LIMITED TO CURBS, SIDEWALKS, STEPS, AND WALLS.
5. THE CONTRACTOR SHALL CLEAN ALL CURBS, PAVEMENTS, AND MASONRY SURFACES PRIOR TO THE SUBSTANTIAL COMPLETION PUNCH WALK.
6. GRADES BETWEEN SPOT ELEVATIONS SHALL BE CONSTANT SLOPES.
7. FINISHED HARDSCAPE SLOPES SHALL BE GREATER THAN 1 PERCENT AND POSITIVE FLOW WITHOUT PUDDLING OR PONDING.
8. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL STORM INLETS UNTIL THE FINAL ASPHALT REPAIR WORK IS INSTALLED. COORDINATE AND REVIEW PROCEDURES WITH OWNER'S REPRESENTATIVE AND THE CITY PUBLIC WORKS DEPARTMENT INSPECTOR.
9. THE CONTRACTOR SHALL CONFIRM DRAIN INVERT ELEVATIONS OF ALL INLETS PRIOR TO BEGINNING DEMOLITION WORK. ANY DISCREPANCY BETWEEN EXISTING CONDITIONS AND THE SURVEY SHALL BE REPORTED TO THE OWNER AND/OR OWNERS REPRESENTATIVE.
10. RAMPS - MAXIMUM SLOPE IS 8.33%.
11. FLOW LINE AGAINST CURB - MINIMUM SLOPE IS 0.5%
12. PIPES - MINIMUM SLOPE IS 0.75%
13. CURBS - SOIL TO BE RETAINED 3" BELOW TOP OF CURB.
14. THE GENERAL CONTRACTOR SHALL MAINTAIN OR ADJUST TO NEW FINISH GRADE AS NECESSARY ALL UTILITY AND SITE STRUCTURES SUCH AS LIGHT POLES, SIGN POLES, MANHOLES, CATCH BASINS, HAND HOLES, WATER AND GAS GATES, HYDRANTS, ETC. UNLESS OTHERWISE NOTED ON THE PLANS OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. IN THE EVENT A UTILITY OWNER IS TO RELOCATE ITS OWN FACILITIES, THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THESE COMPANIES AND SHALL NOTIFY THEM OF WORK AFFECTING THEIR FACILITIES IN ADVANCE.
15. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS FROM EXISTING DRAINAGE STRUCTURES, PIPES, AND CULVERTS THAT ARE RETAINED BEFORE ANY WORK BEGINS AND AT THE COMPLETION OF THE PROJECT.
16. WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING WITH NEW CONSTRUCTION.
17. FINISH GRADES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL NEW PAVED AREAS ARE GRADED TO DRAIN, EITHER TO EXISTING OR NEW STRUCTURES AND FREE OF PONDING OR STANDING WATER THAT WILL NOT COMPLETELY EVAPORATE WITHIN 24 HOURS. PAVING AREAS THAT DO NOT MEET THESE REQUIREMENTS WILL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL ACCESSIBILITY CODES.

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north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

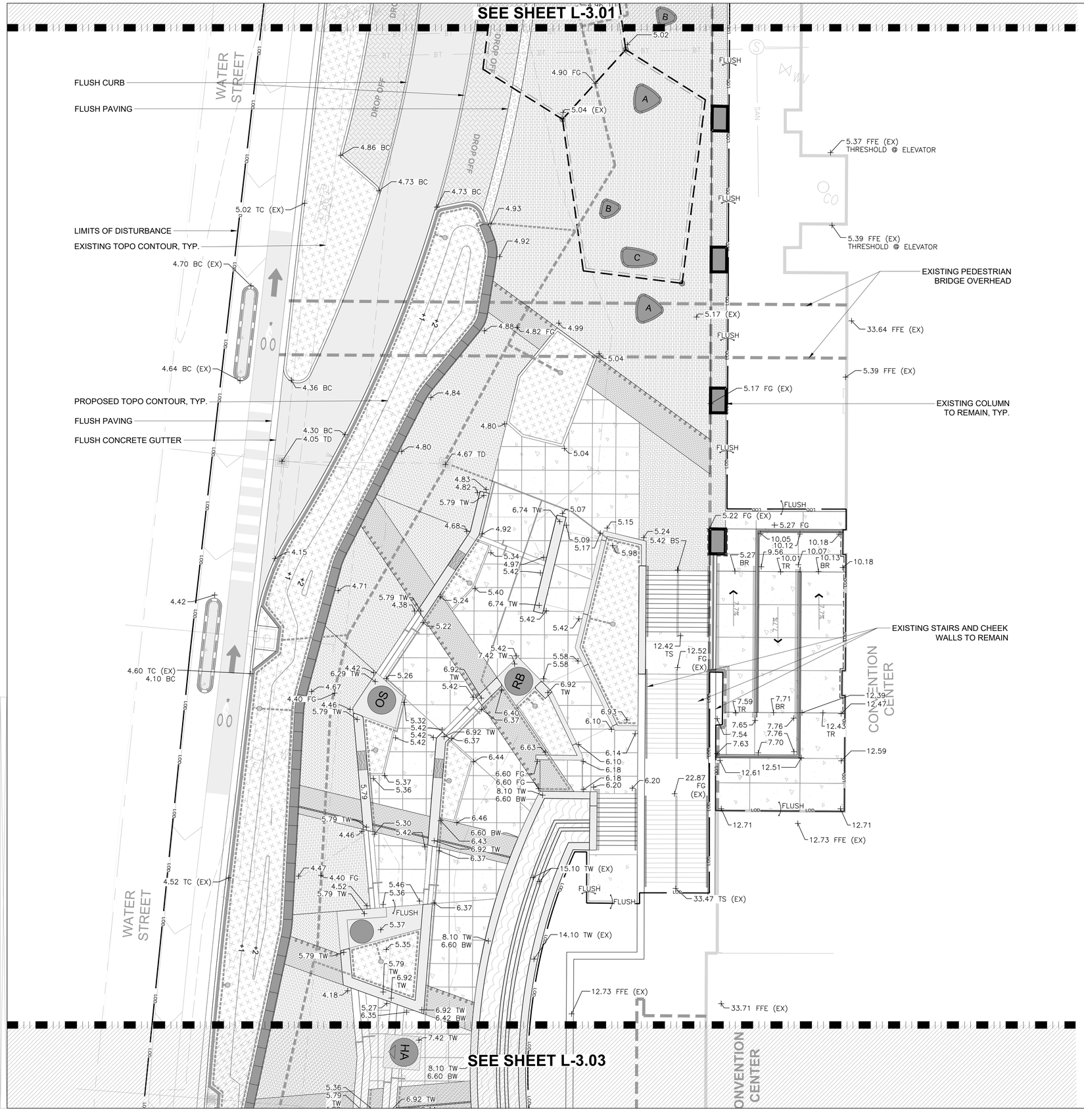
APRIL 14, 2023

sheet title

GRADING PLAN - NORTH

sheet number

L-3.01



GRADING PLAN NOTES:

ABBREVIATIONS:

TC:	TOP OF CURB	TW:	TOP OF WALL
BC:	BOTTOM OF CURB	BW:	BOTTOM OF WALL
TR:	TOP OF RAMP	BR:	BOTTOM OF RAMP
FG:	FINISH GRADE	FFE:	FINISH FLOOR ELEVATION
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12. PIPES - MINIMUM SLOPE IS 0.75%
13. CURBS - SOIL TO BE RETAINED 3" BELOW TOP OF CURB.
14. THE GENERAL CONTRACTOR SHALL MAINTAIN OR ADJUST TO NEW FINISH GRADE AS NECESSARY ALL UTILITY AND SITE STRUCTURES SUCH AS LIGHT POLES, SIGN POLES, MANHOLES, CATCH BASINS, HAND HOLES, WATER AND GAS GATES, HYDRANTS, ETC. UNLESS OTHERWISE NOTED ON THE PLANS OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. IN THE EVENT A UTILITY OWNER IS TO RELOCATE ITS OWN FACILITIES, THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THESE COMPANIES AND SHALL NOTIFY THEM OF WORK AFFECTING THEIR FACILITIES IN ADVANCE.
15. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS FROM EXISTING DRAINAGE STRUCTURES, PIPES, AND CULVERTS THAT ARE RETAINED BEFORE ANY WORK BEGINS AND AT THE COMPLETION OF THE PROJECT.
16. WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING WITH NEW CONSTRUCTION.
17. FINISH GRADES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL NEW PAVED AREAS ARE GRADED TO DRAIN, EITHER TO EXISTING OR NEW STRUCTURES AND FREE OF PONDING OR STANDING WATER THAT WILL NOT COMPLETELY EVAPORATE WITHIN 24 HOURS. PAVING AREAS THAT DO NOT MEET THESE REQUIREMENTS WILL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL ACCESSIBILITY CODES.

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revisions

north arrow + scale

scale: 1" = 10'-0"

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

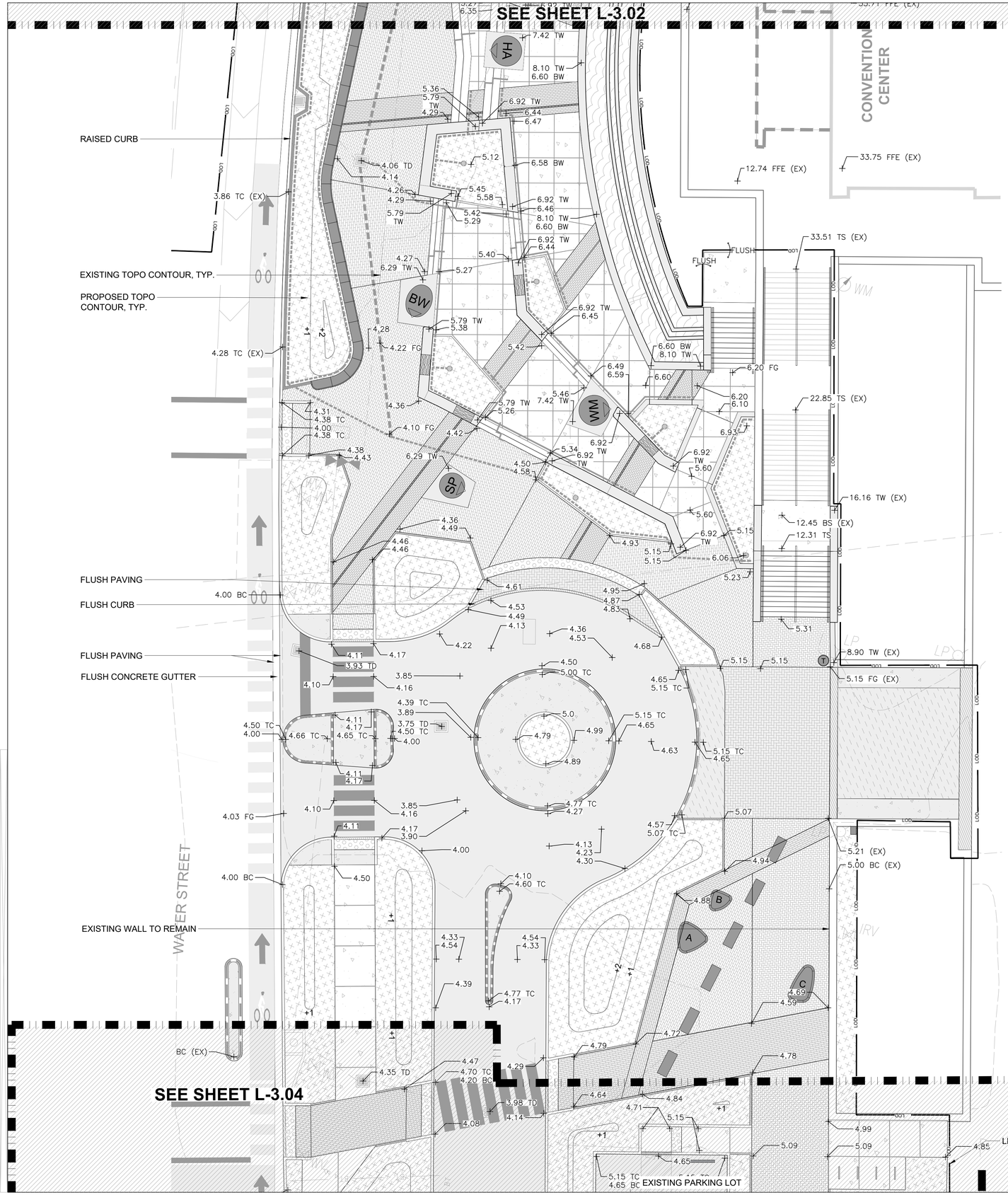
APRIL 14, 2023

sheet title

GRADING PLAN - CENTRAL

sheet number

L-3.02



GRADING PLAN NOTES:

ABBREVIATIONS:

TC:	TOP OF CURB	TW:	TOP OF WALL
BC:	BOTTOM OF CURB	BW:	BOTTOM OF WALL
TR:	TOP OF RAMP	BR:	BOTTOM OF RAMP
FG:	FINISH GRADE	FFE:	FINISH FLOOR ELEVATION
TS:	TOP OF STAIRS	TD:	TOP OF DRAIN
BS:	BOTTOM OF STAIRS	(EX):	ELEVATION IS BOTH EXISTING & PROPOSED

1. GROUNDWATER OR SATURATED SOIL CONDITIONS WILL LIKELY BE ENCOUNTERED DURING EXCAVATIONS AT THIS SITE. THE INITIAL LIFTS OF BACKFILL SHOULD CONSIST OF CLEAN SAND WITH LESS THAN ABOUT 10 PERCENT (BY WEIGHT) PASSING THE NO.200 MESH SIEVE AND 70 PERCENT OR LESS (BY WEIGHT) PASSING THE NO.40 MESH SIEVE. BELOW AND WITHIN ONE FOOT OF THE GROUNDWATER/SATURATED SOIL LEVEL, IN LIEU OF MEASURED COMPACTION TESTS, CLEAN SAND FILL SHOULD BE THOROUGHLY COMPACTED WITH HEAVY TRACKED EQUIPMENT TO ACHIEVE SOME COMPACTION AND FILL VOIDS. ABOVE THE GROUNDWATER AND SATURATED SOIL LEVEL, CLEAN SAND FILL SHOULD BE COMPACTED TO 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 WITH A MOISTURE CONTENT BETWEEN 1 PERCENTAGE POINT BELOW AND 3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT. IMPORTED SELECT STRUCTURAL FILL SOIL PLACED TO ACHIEVE FINAL GRADE SHOULD CONSIST OF A SANDY MATERIAL WITH LESS THAN ABOUT 30 PERCENT OF THE SOIL PARTICLES (BY WEIGHT) PASSING THE NO.200 MESH SIEVE, LESS THAN 70% PASSING THE NO.40 SIEVE, AND A LIQUID LIMIT LESS THAN 15. FILL MATERIAL SHOULD BE COMPACTED IN 12-INCH (MAXIMUM) LIFTS TO AT LEAST 95 PERCENT OF THE SOIL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557. IN PLACE DENSITY TESTS SHOULD BE MADE AT FREQUENT INTERVALS TO MEASURE THE EFFECTIVENESS OF THE COMPACTION OPERATIONS.
2. ALL BUILDING DOWNSPOUTS SHALL BE PIPED TO AREAS BEYOND THE LANDSCAPE BEDS AND DAYLIGHTED IN AREAS WITH POSITIVE DRAINAGE OR CONNECTED DIRECTLY TO THE STORM WATER DRAINAGE SYSTEM UNLESS OTHERWISE SPECIFIED.
3. CONTRACTOR SHALL ESTABLISH AND PROTECT A TEMPORARY BENCHMARK (T.B.M.) TO BE USED DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT THE (T.B.M) LOCATION AND ELEVATION TO THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
4. ALL FORM WORK ELEVATIONS SHALL BE SET AND CHECKED RELATIVE TO THE (T.B.M.) PRIOR TO CONSTRUCTING HARDSCAPE ELEMENTS INCLUDING BUT NOT LIMITED TO CURBS, SIDEWALKS, STEPS, AND WALLS.
5. THE CONTRACTOR SHALL CLEAN ALL CURBS, PAVEMENTS, AND MASONRY SURFACES PRIOR TO THE SUBSTANTIAL COMPLETION PUNCH WALK.
6. GRADES BETWEEN SPOT ELEVATIONS SHALL BE CONSTANT SLOPES.
7. FINISHED HARDSCAPE SLOPES SHALL BE GREATER THAN 1 PERCENT AND POSITIVE FLOW WITHOUT PUDDLING OR PONDING.
8. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL STORM INLETS UNTIL THE FINAL ASPHALT REPAIR WORK IS INSTALLED. COORDINATE AND REVIEW PROCEDURES WITH OWNER'S REPRESENTATIVE AND THE CITY PUBLIC WORKS DEPARTMENT INSPECTOR.
9. THE CONTRACTOR SHALL CONFIRM DRAIN INVERT ELEVATIONS OF ALL INLETS PRIOR TO BEGINNING DEMOLITION WORK. ANY DISCREPANCY BETWEEN EXISTING CONDITIONS AND THE SURVEY SHALL BE REPORTED TO THE OWNER AND/OR OWNERS REPRESENTATIVE.
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11. FLOW LINE AGAINST CURB - MINIMUM SLOPE IS 0.5%
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project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

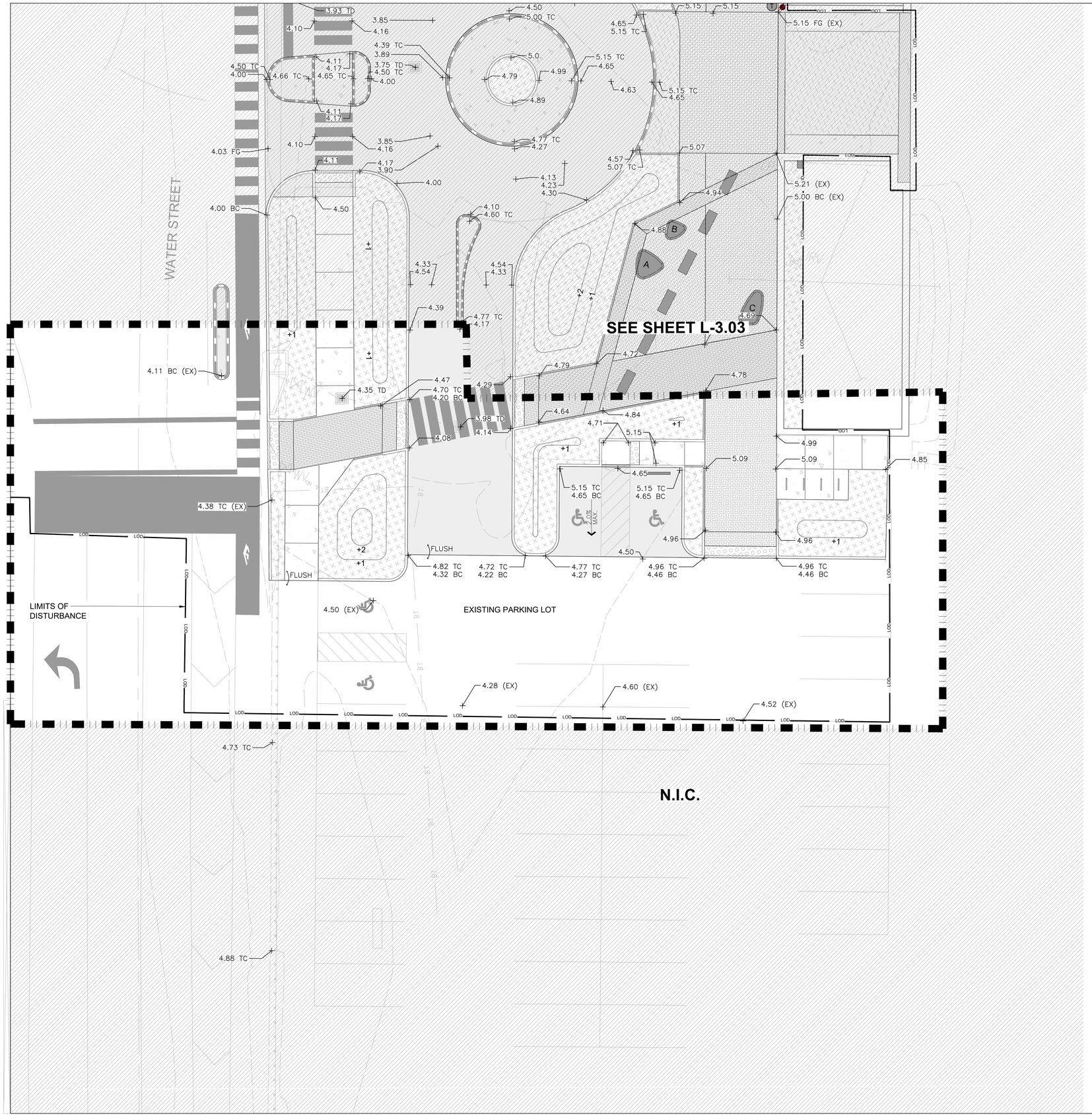
APRIL 14, 2023

sheet title

GRADING PLAN - SOUTH

sheet number

L-3.03



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project information

HERO PLAZA PHASE 1

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1 S WATER ST.
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drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

GRADING PLAN - GOVT. STREET INTERSECTION

sheet number

L-3.04

UTILITY_FIXTURE_SCHEDULE

SYMBOL	DESCRIPTION	QTY	DETAIL
U-101	WALL LIGHT	73	6/L-5.91
U-102	LIGHTED BOLLARD 'A', 19" HT., 180 DEGREES	39	2/L-5.91
U-103	LIGHTED BOLLARD 'B', 39.5" HT., 360 DEGREES	33	3/L-5.91
U-104	INGRADE LIGHT - TREES	8	11/L-5.91
U-105	INGRADE LIGHT - ARCADE	6	12/L-5.91
U-106	LIGHT POLE	10	1/L-5.91
U-107	LED LIGHT STRIP - CANOPY	260 LF	7/L-5.91
U-108	LED LIGHT STRIP - FOUNTAIN	143 LF	8/L-5.91
U-109	FOUNTAIN UPLIGHT	47	REFER TO FOUNTAIN PLANS
U-110	TREE UPLIGHT	67	4/L-5.91
U-111	GOBO LIGHT	2	5/L-5.91
U-112	LANDSCAPE DRAIN	31	REFER TO CIVIL PLANS

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project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

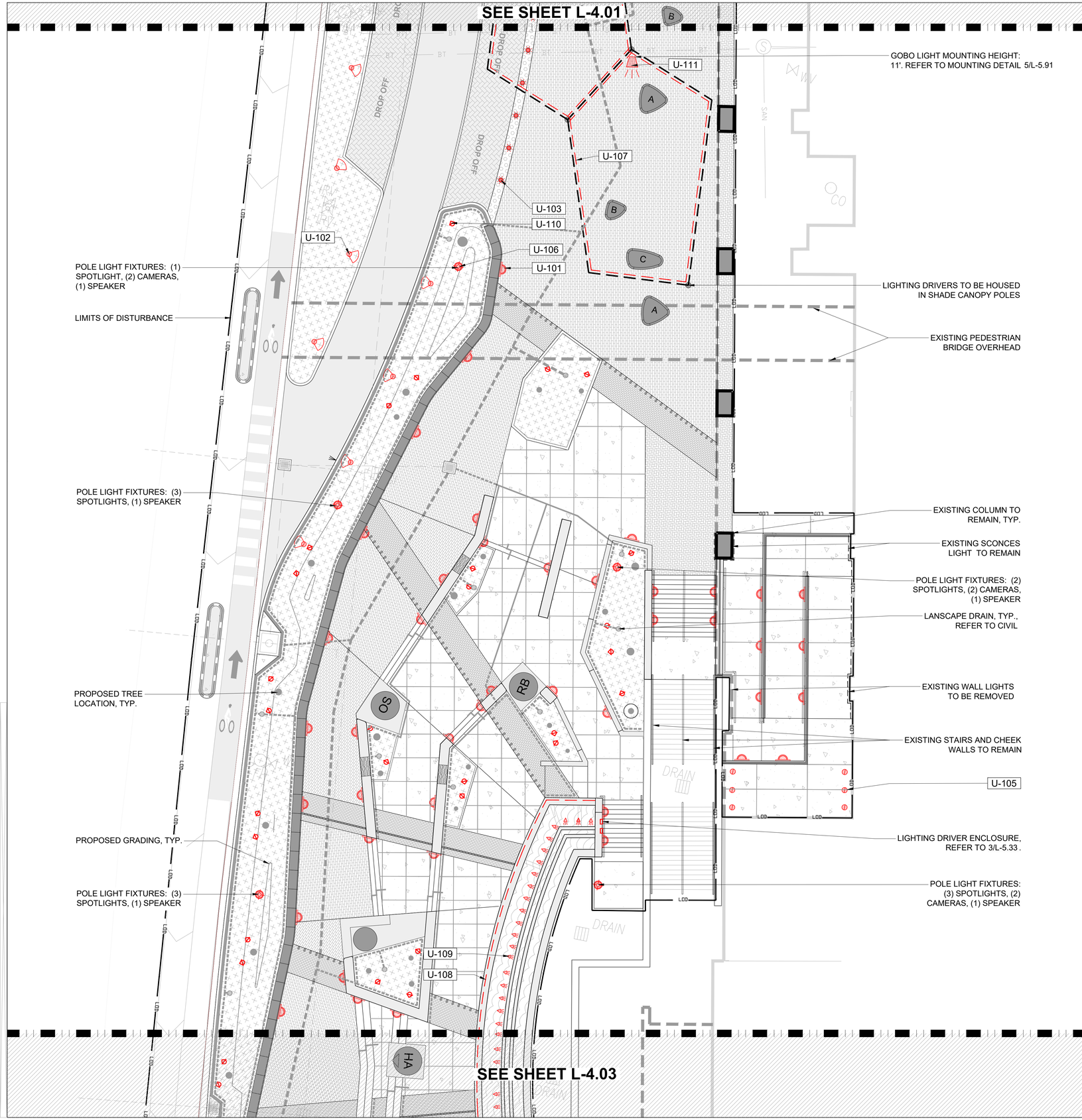
LIGHT FIXTURE PLAN - NORTH

sheet number

L-4.01

100% CONSTRUCTION PLANS

SEE SHEET L-4.01



SEE SHEET L-4.03

UTILITY_FIXTURE_SCHEDULE

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APRIL 14, 2023

sheet title

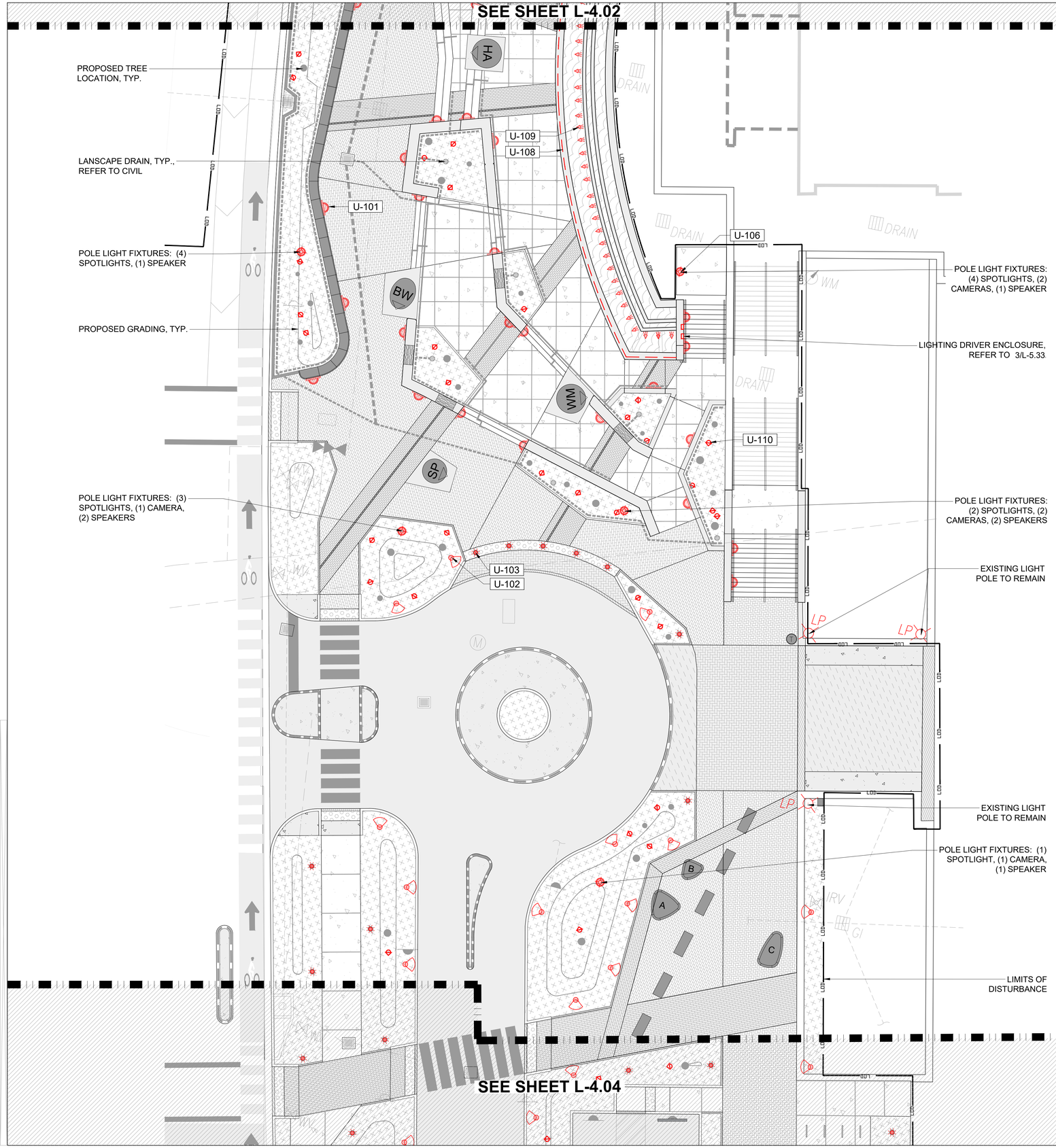
LIGHT FIXTURE PLAN - CENTRAL

sheet number

L-4.02

100% CONSTRUCTION PLANS

SEE SHEET L-4.02



SEE SHEET L-4.04

UTILITY_FIXTURE_SCHEDULE

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drawing information

project number: 22089
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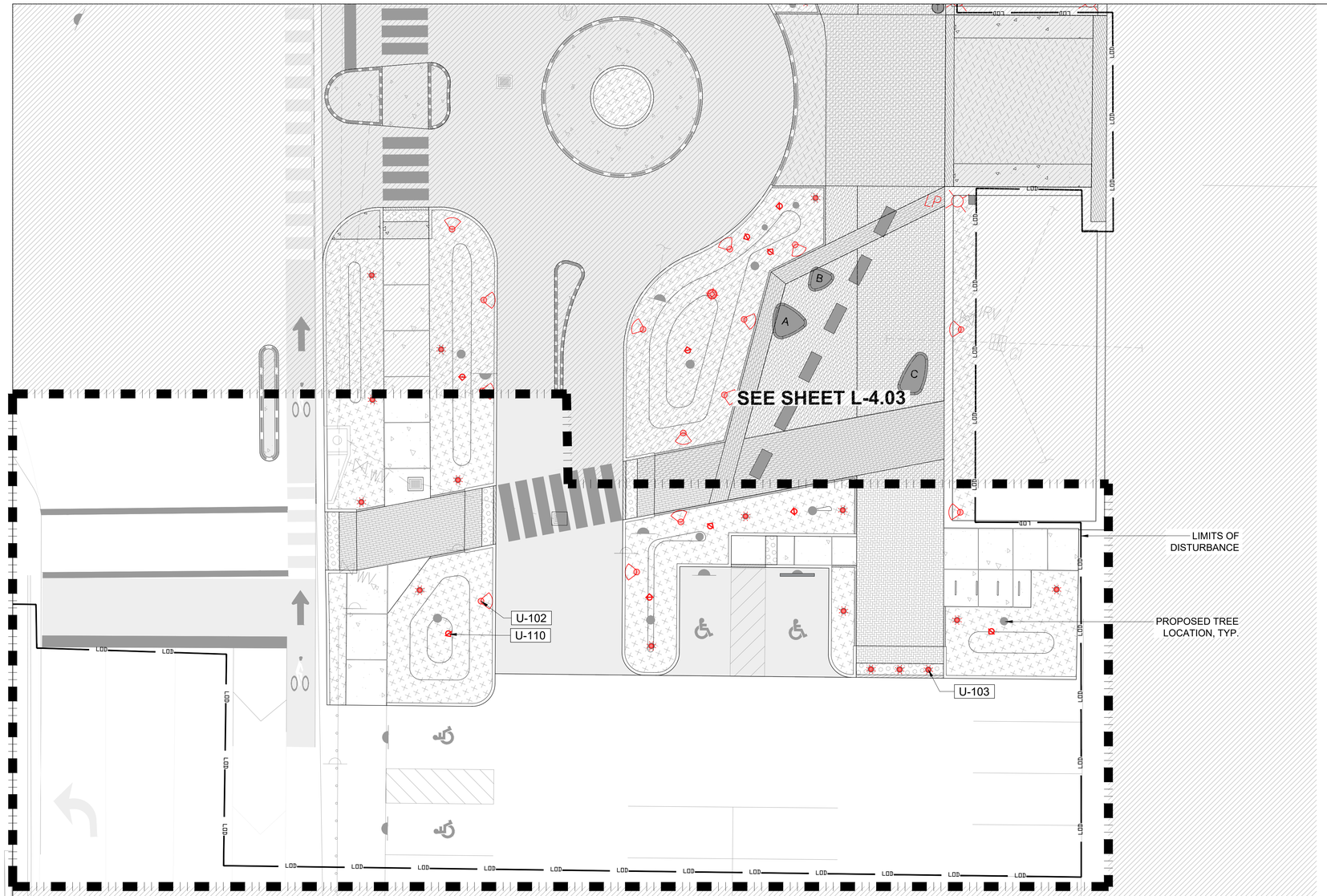
sheet title

LIGHT FIXTURE PLAN - SOUTH

sheet number

L-4.03

100% CONSTRUCTION PLANS



N.I.C.

UTILITY_FIXTURE_SCHEDULE

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LIGHT FIXTURE PLAN - GOVT. STREET INTERSECTION

sheet number

L-4.04

N.I.C

LANDSCAPE DRAIN, TYP., REFER TO CIVIL

PROPOSED GRADING

EXISTING LED MARQUEE SIGN

DRAIN INLET TO BE RELOCATED

4" SCHEDULE 40 PERFORATED PIPE, TYP

PROPOSED DRAIN INLET, REFER TO 5/L-5.90

PROPOSED TREE LOCATION, TYP.

EXISTING FIRE HYDRANT AND WATER VALVE TO REMAIN

EXISTING FIRE HOSE CONNECTIONS TO REMAIN

LIMITS OF DISTURBANCE

EXISTING FIRE HYDRANT AND WATER VALVE TO REMAIN

2 L-5.12 PERMEABLE PAVERS UNDERDRAIN SYSTEM

EXISTING IRRIGATION VALVE TO REMAIN

PROPOSED 6" SCHEDULE 40 PERFORATED PIPE, REFER TO 2/L-5.12

SHADE CANOPY FOOTING, REFER TO STRUCTURAL

PROPOSED DRAIN INLET, REFER TO 5/L-5.90

DROP OFF

DROP OFF

DROP OFF

SEE SHEET L-4.12

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client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

APRIL 14, 2023

sheet title

SUPPLEMENTARY DRAINAGE PLAN - NORTH

sheet number

L-4.11

SEE SHEET L-4.11

EXISTING IRRIGATION VALVES

PROPOSED TREE LOCATION, TYP.

LIMITS OF DISTURBANCE

PROPOSED RELOCATED DRAIN INLET

EXISTING DRAIN INLET TO BE RELOCATED

PROPOSED DRAIN INLET, REFER TO 5/L-5.90

PROPOSED FIRE HYDRANT

EXISTING WATER VALVE TO BE REMOVED

4" SCHEDULE 40 PERFORATED PIPE, TYP

EXISTING FIRE HOSE CONNECTIONS TO REMAIN

EXISTING FIRE HYDRANT AND WATER VALVE TO REMAIN

PROPOSED 4" SCHEDULE 40 NON-PERFORATED PIPE, TYP.

PROPOSED 6" SCHEDULE 40 PERFORATED PIPE, REFER TO 2/L-5.12

2 L-5.12

PERMEABLE PAVERS UNDERDRAIN SYSTEM

SHADE CANOPY FOOTING, REFER TO STRUCTURAL

LANDSCAPE DRAIN, TYP., REFER TO CIVIL

EXISTING DRAIN INLET TO REMAIN

EXISTING DRAIN INLET TO REMAIN

SEE SHEET L-4.13

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revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

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sheet title

SUPPLEMENTARY DRAINAGE PLAN - CENTRAL

sheet number

L-4.12

SEE SHEET L-4.12

PROPOSED TREE LOCATION, TYP.

EXISTING CURB DRAIN TO BE RELOCATED

PROPOSED RELOCATED CURB DRAIN

PROPOSED 6" SCHEDULE 40 PERFORATED PIPE, REFER TO 2/L-5.12

EXISTING DRAIN INLET TO BE RELOCATED

PROPOSED RELOCATED DRAIN INLET

PROPOSED 4" SCHEDULE 40 NON-PERFORATED PIPE, TYP.

2 L-5.12 PERMEABLE PAVERS UNDERDRAIN SYSTEM

4" SCHEDULE 40 PERFORATED PIPE, TYP

EXISTING DRAIN INLETS TO REMAIN

EXISTING DRAIN INLET TO REMAIN

EXISTING WATER VALVES TO REMAIN

LANDSCAPE DRAIN, TYP., REFER TO CIVIL

EXISTING WATER VALVE TO BE REMOVED

PROPOSED DRAIN INLET

EXISTING MANHOLE TO REMAIN

PROPOSED DRAIN INLET, REFER TO 5/L-5.90

LIMITS OF DISTURBANCE

EXISTING IRRIGATION VALVE AND DRAIN INLET TO REMAIN

EXISTING MANHOLE TO BE REMOVED

SEE SHEET L-4.14

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north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

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client information

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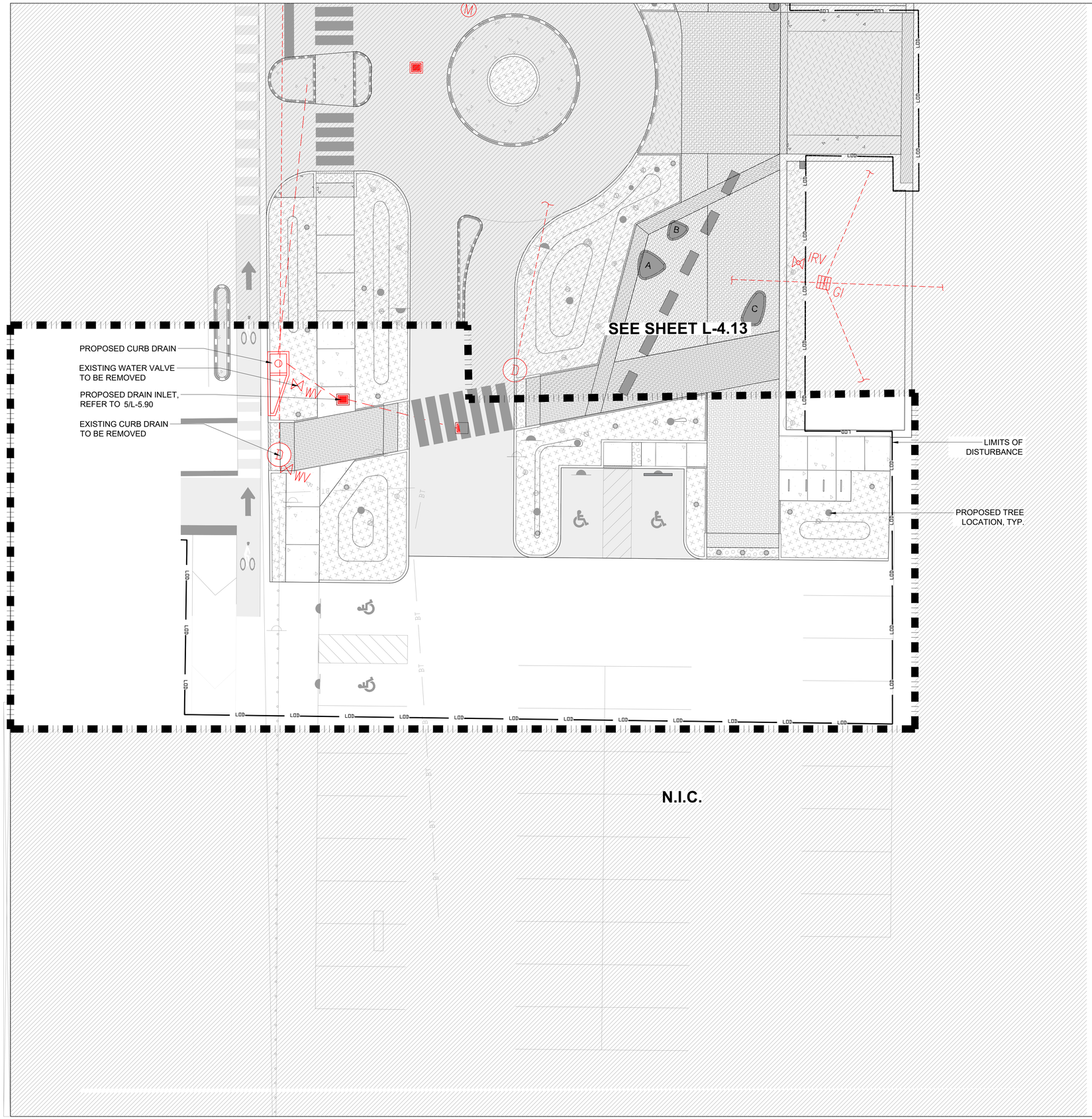
sheet title

SUPPLEMENTARY DRAINAGE PLAN - SOUTH

sheet number

L-4.13



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north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

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sheet title

SUPPLEMENTARY DRAINAGE PLAN - GOVT. STREET INTERSECTION

sheet number

L-4.14

NOTE: REFER TO L-0.10 FOR A LIST OF REQUIRED MOCK-UPS, SHOP DRAWINGS, SUBMITTALS, AND DELEGATED DESIGN ITEMS.

HARDSCAPE SCHEDULE

DETAIL	MATERIAL	SPECIFICATIONS	NOTES	MANUFACTURER	IMAGE
1	PLAIN CONCRETE - PEDESTRIAN	TYPE: 3,000 PSI STANDARD CONCRETE WITH MICROMESH ADDITIVE FINISH: BROOM FINISH LOCATION: SEE PLANS CONTROL JOINTS: TROWELED COLOR: PLAIN GRAY	HARDSCAPE MATERIAL SELECTION NOTES: 1. SEE DETAIL 1/L-5.11 FOR DETAILS. 2. CONTRACTOR TO PROVIDE MOCKUP FOR APPROVAL.		
2	PLAIN CONCRETE - VEHICULAR	TYPE: 4,000 PSI STANDARD CONCRETE FINISH: BROOM FINISH COLOR: PLAIN GRAY LOCATION: SEE PLANS CONTROL JOINTS: TROWELED	HARDSCAPE MATERIAL SELECTION NOTES: 1. CONTRACTOR TO PROVIDE MOCKUP FOR APPROVAL. 2. SEE 2/L-5.11 FOR DETAIL.		
3	PEDESTRIAN PAVER	MANUFACTURER: HANOVER TYPE: PERMEABLE 4"x8" COLOR: CUSTOM COLOR SELECTED FROM THE MANUFACTURER'S FULL LINE OF COLORS. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT.	HARDSCAPE MATERIAL SELECTION NOTES: 1. CONTRACTOR TO PROVIDE MOCKUP FOR APPROVAL. 2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 3. SEE 1/L-5.12 FOR DETAIL.	CONTACT: HANOVER PHONE: (800) 426-4242	
4	VEHICULAR PAVER	MANUFACTURER: HANOVER TYPE: PERMEABLE 4"x8" COLOR: CUSTOM COLOR SELECTED FROM THE MANUFACTURER'S FULL LINE OF COLORS. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT.	HARDSCAPE MATERIAL SELECTION NOTES: 1. CONTRACTOR TO PROVIDE MOCKUP FOR APPROVAL. 2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 3. SEE 3/L-5.11 FOR DETAILS.	CONTACT: HANOVER PHONE: (800) 426-4242	
5	HEAVY DUTY ASPHALT	REFER TO CIVIL FOR SPECIFICATIONS			
6	GRANITE COBBLE VEHICULAR PAVER	PAVERS ARE RECYCLED GRANITE STONES FROM FOUNTAIN FACADE	HARDSCAPE MATERIAL SELECTION NOTES: 1. CONTRACTOR TO PROVIDE MOCKUP FOR APPROVAL. 2. SEE 3/L-5.11 FOR DETAIL.		
7	TRUNCATED DOME PAVER	MANUFACTURER: HANOVER TYPE: PREST 2'X2' DETECTABLE WARNING PAVER COLOR: RED 15	HARDSCAPE MATERIAL SELECTION NOTES: 1. CONTRACTOR TO PROVIDE MOCKUP FOR APPROVAL. 2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 3. SEE 5/L-5.11 FOR DETAILS.	CONTACT: HANOVER PHONE: (800) 426-4242	Red 15
8	INTEGRAL COLORED ARCHITECTURAL CONCRETE	FINISH: MEDIUM SANDBLAST WITH MATTE CONCRETE SEALER COLOR: LANDSCAPE ARCHITECT TO SELECT FROM MANUFACTURER'S FULL LINE OF COLORS LOCATION: SEAT WALLS, PLAZA STAIRS, AND FOUNTAIN FACADE. REFER TO PLANS.	HARDSCAPE MATERIAL SELECTION NOTES: 1. CONTRACTOR TO PROVIDE MOCKUP FOR APPROVAL. 2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 3. SEE 1/L-5.20 1/L-5.11 AND 3/L-5.40 FOR DETAILS.	MANUFACTURER: DAVIS COLORS WEB: https://www.daviscolors.com/	
9	STATUE BASE	MATERIAL: POLISHED PRE-CAST CONCRETE WITH FLUSH INSET PRECAST CONCRETE LETTERS COLOR: BASE COLOR TO BE SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL LINE OF COLORS. LETTERING TO BE BRONZE. LOCATION: REFER TO PLAN	HARDSCAPE MATERIAL SELECTION NOTES: 1. REFER TO PLAN FOR DIMENSIONS 2. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL.		
10	PRECAST CONCRETE		NOTES: 1. INSTALLATION PER MANUFACTURER SPECIFICATIONS. 2. LIMESTONE COLOR AND SAND BLAST FINISH TO MATCH EXISTING PRECAST ARCHITECTURAL ELEMENTS. 3. REFER TO DETAIL FOR PRECAST DIMENSIONS.		
11	GROUTED FINISH CONCRETE	NOTES: 1. PROVIDE GROUT CLEANED FINISH (SACK FINISH) TO CONCRETE SURFACES WHERE INDICATED WHICH HAVE RECEIVED SMOOTH FORM FINISH TREATMENT. 2. COMBINE ONE PART PORTLAND CEMENT TO 1-1/2 PARTS FINE SAND BY VOLUME, AND MIX WITH WATER TO CONSISTENCY OF THICK PAINT. PROPRIETARY ADDITIVES MAY BE USED AT CONTRACTOR'S OPTION. BLEND STANDARD PORTLAND CEMENT AND WHITE PORTLAND CEMENT, AMOUNTS DETERMINED BY TRIAL PATCHES, SO THAT FINAL COLOR OF DRY GROUT WILL MATCH ADJACENT SURFACES. 3. THOROUGHLY WET CONCRETE SURFACES AND APPLY GROUT TO COAT SURFACES AND FILL SMALL HOLES. REMOVE EXCESS GROUT BY SCRAPING AND RUBBING WITH CLEAN BURLAP. KEEP DAMP BY FOG SPRAY FOR AT LEAST 36 HOURS AFTER RUBBING. 4. PAINT GROUTED FINISH CONCRETE WITH COLOR AND FINISH TO MATCH EXISTING ADJACENT WALLS.			
12	FORMLINER FINISH CONCRETE	MANUFACTURER: SPEC FORMLINERS, SIKA, RECKLI, OR EQUAL AS APPROVED BY LANDSCAPE ARCHITECT. MATERIAL: RIBBED OR FLUTED FORMLINER PATTERN. DIMENSIONS TO BE SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL RANGE OF OPTIONS. LOCATION: FOUNTAIN FACADE WALL, REFER TO 3/L-5.40 CONCRETE TO HAVE INTEGRAL COLOR ARCHITECTURAL FINISH, REFER TO 8/L-5.00	HARDSCAPE MATERIAL SELECTION NOTES: 1. APPLY FORMLINER PATTERN PER MANUFACTURER SPECIFICATIONS. 2. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT TO PROVIDE UP TO (3) 4'X10' MOCKUPS OF FOUNTAIN FAÇADE WITH DIFFERENT FORMLINER FINISHES AS DETERMINED BY LANDSCAPE ARCHITECT TO EVALUATE HYDRAULIC EFFECT AND SELECT FINAL MATERIALS.		
13	WATERLINE TILE	MANUFACTURER: DALTILE MATERIAL: COLOR AND MATERIAL SELECTED FROM THE MANUFACTURER'S FULL LINE OF POOL PRODUCTS. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT. LOCATION: REFER TO FOUNTAIN DETAILS 2/L-5.33 & 5/L-5.33 .	HARDSCAPE MATERIAL SELECTION NOTES: 1. TILE INSTALLATION PER MANUFACTURER SPECIFICATIONS.	WWW.DALTILE.COM	

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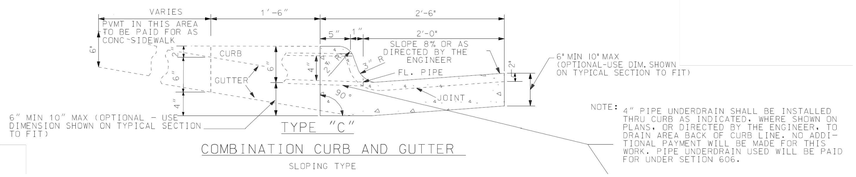
CONSTRUCTION DETAILS - MATERIAL FINISHES SCHEDULE

sheet number

L-5.00

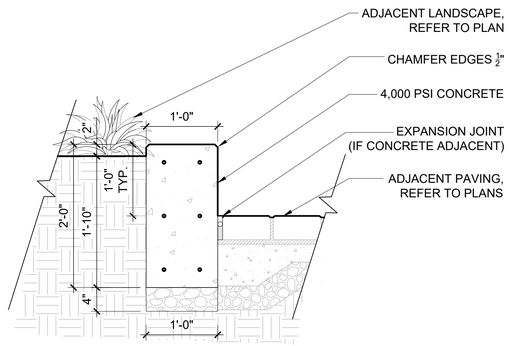
IMPORTANT!
1. CONTRACTOR TO FOLLOW ALDOT GUIDELINES.



1 COMBINATION CURB AND GUTTER (ALDOT TYPE 'C')
1" = 1'-0"

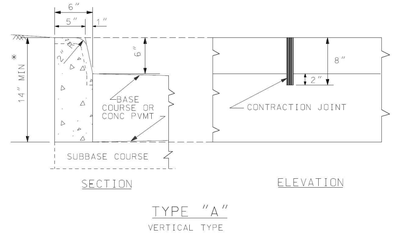
IMPORTANT!
1. CONTRACTOR TO FOLLOW ALDOT GUIDELINES.

IMPORTANT!
1. REFER TO SHEET L-0.10 FOR NOTES ON CONCRETE CONSTRUCTION.

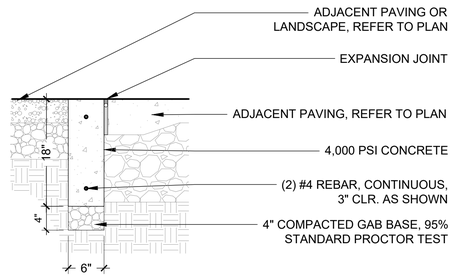


2 6" CONCRETE CURB (ALDOT TYPE 'A')
1" = 1'-0"

IMPORTANT!
1. CONTRACTOR TO FOLLOW ALDOT GUIDELINES.

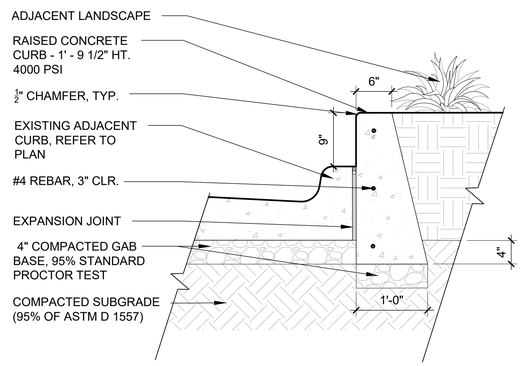


IMPORTANT!
1. REFER TO SHEET L-0.10 FOR NOTES ON CONCRETE CONSTRUCTION.

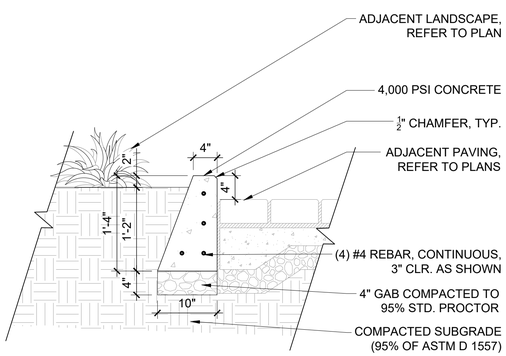


3 RAISED CURB (BEHIND 6" CURB)
1" = 1'-0"

IMPORTANT!
1. REFER TO SHEET L-0.10 FOR NOTES ON CONCRETE CONSTRUCTION.

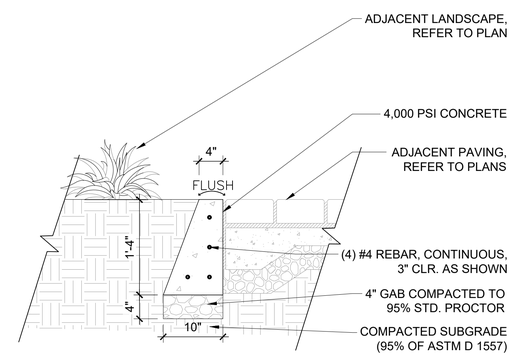


IMPORTANT!
1. REFER TO SHEET L-0.10 FOR NOTES ON CONCRETE CONSTRUCTION.



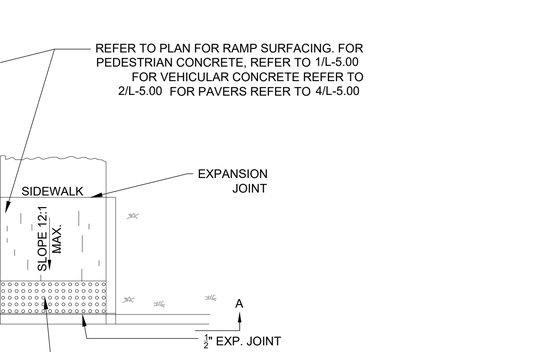
4 MOUNTABLE CURB (ALDOT TYPE 'N')
1" = 1'-0"

IMPORTANT!
1. REFER TO SHEET L-0.10 FOR NOTES ON CONCRETE CONSTRUCTION.



5 1' CONCRETE CURB
1" = 1'-0"

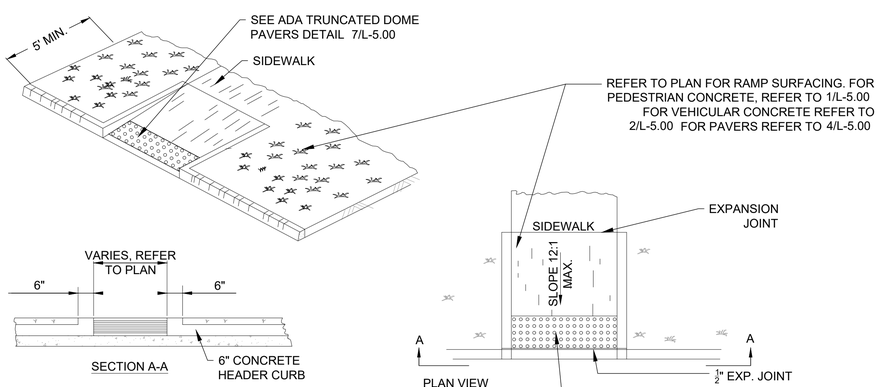
IMPORTANT!
1. REFER TO SHEET L-0.10 FOR NOTES ON CONCRETE CONSTRUCTION.



6 6" CONCRETE CURB - FLUSH
1" = 1'-0"

7 RIBBON CURB
1" = 1'-0"

IMPORTANT!
1. REFER TO SHEET L-0.10 FOR NOTES ON CONCRETE CONSTRUCTION.



8 4" CONCRETE CURB
1" = 1'-0"

9 4" CONCRETE CURB - FLUSH
1" = 1'-0"

10 CURB RAMP
3/4" = 1'-0"

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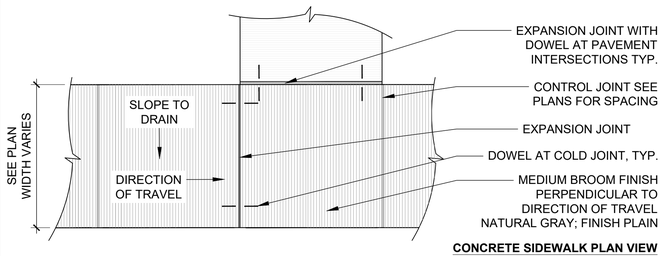
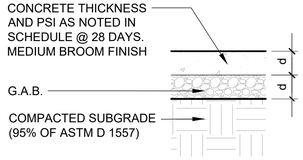
CONSTRUCTION DETAILS - CURB DETAILS

sheet number

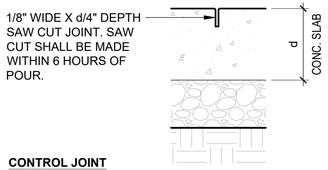
L-5.10



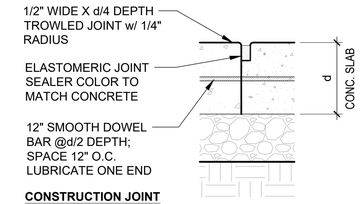
CONCRETE SIDEWALK PLAN VIEW



CONCRETE SECTION ON GRADE

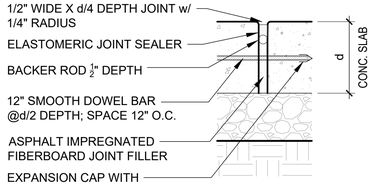


CONTROL JOINT

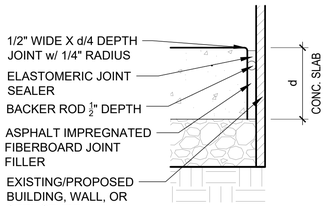


CONSTRUCTION JOINT

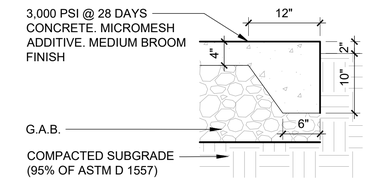
NOTES:
1. FOR ALL CONCRETE FINISHES SEE HARDSCAPE SCHEDULE SHEET IN THIS SET.
2. CONTRACTOR TO CONSTRUCT MOCKUPS ON SITE OF ALL CONCRETE FINISHES FOR OWNER & LANDSCAPE ARCHITECT TO REVIEW. MOCKUPS ARE TO BE REMOVED FROM SITE BEFORE COMPLETION OF PROJECT.
3. CAULK JOINTS WITH LITHOSEAL (COLOR TO MATCH CONCRETE COLOR).
4. EXPANSION JOINT TRANSITION TO BE USED WHERE CONCRETE SIDEWALK ADJOINS BUILDING, SITE WALLS, OR OTHER STRUCTURES. (SEE SECTIONS AND JOINTS DETAILS)
5. SAW CUT JOINTS AS SHOWN ON PLANS
6. TIE HORIZONTAL SURFACES AS NECESSARY WHERE FLUSH TRANSITIONS OCCUR
7. MAXIMUM CROSS SLOPE TO BE 2%.



EXPANSION JOINT



EXPANSION JOINT AT BUILDING, WALL OR STRUCTURE



TURNDOWN / THICKENED EDGE

1 PLAIN CONCRETE - PEDESTRIAN

IMPORTANT!
1. CONTRACTOR TO FOLLOW ALDOT GUIDELINES.
2. REFER TO SHEET L-0.10 FOR NOTES ON CONCRETE CONSTRUCTION.
3. EXTEND VEHICULAR RATED CONCRETE 6" FROM CONCRETE APRON.

2 PLAIN CONCRETE - VEHICULAR

1" = 1'-0"

NOTES:
1. FOR MANUFACTURER AND SPECIFICATIONS REFER 1/L-7.00
2. PAVERS TO BE INSTALLED IN PATTERN SHOWN IN PLANS

3 PAVERS - VEHICULAR

1" = 1'-0"

NOTES:
1. CONTRACTOR TO VERIFY THAT 8"x8" RE-PURPOSED COBBLE STONE ARE REMOVED MANUALLY, TO MAXIMIZE QUANTITY EXTRACTED.

4 GRANITE COBBLE PAVER - VEHICULAR

1" = 1'-0"

5 TRUNCATED DOME PAVERS

1" = 1'-0"

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checked by:	CM

drawing date

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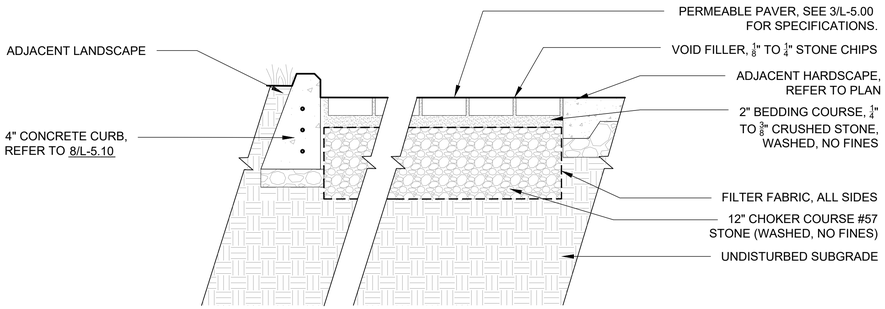
sheet title

CONSTRUCTION DETAILS - PAVING DETAILS

sheet number

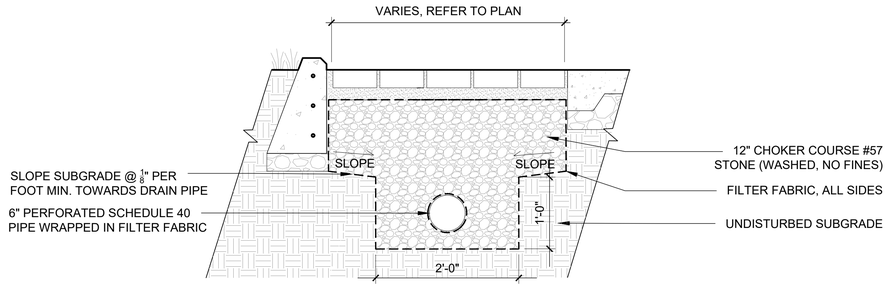
L-5.11

NOTES:
1. FOR MANUFACTURER AND SPECIFICATIONS SEE HARDSCAPE SCHEDULE.
2. INSTALL ALL PAVERS PER MANUFACTURER'S RECOMMENDATIONS
3. PAVERS TO BE INSTALLED IN PATTERN SHOWN IN PLANS

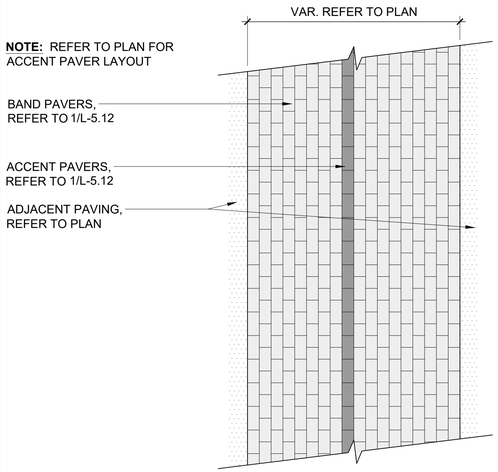


1 PERMEABLE PAVERS - PEDESTRIAN
1" = 1'-0"

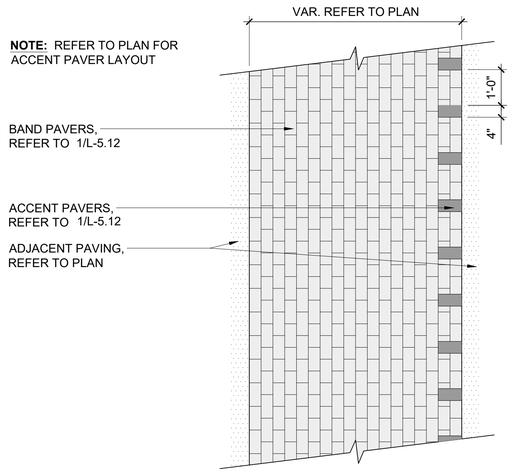
NOTES:
1. REFER TO CIVIL PLANS
2. INSTALL ALL PAVERS PER MANUFACTURER'S RECOMMENDATIONS
3. PAVERS TO BE INSTALLED IN PATTERN SHOWN IN LANDSCAPE LAYOUT PLANS



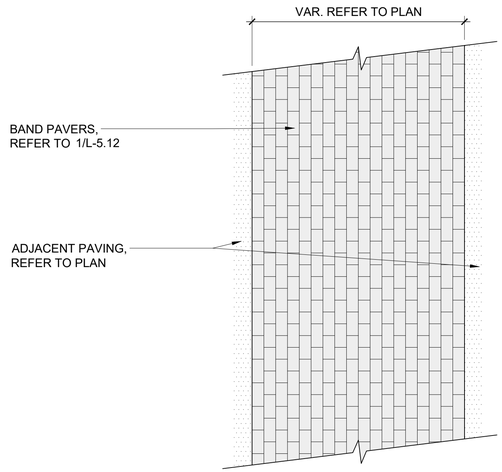
2 PERMEABLE PAVERS UNDERDRAIN SYSTEM
1" = 1'-0"



3 PERMEABLE PAVING BAND 'A'
1/2" = 1'-0"



4 PERMEABLE PAVING BAND 'B'
1/2" = 1'-0"



5 PERMEABLE PAVING BAND 'C'
1/2" = 1'-0"

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

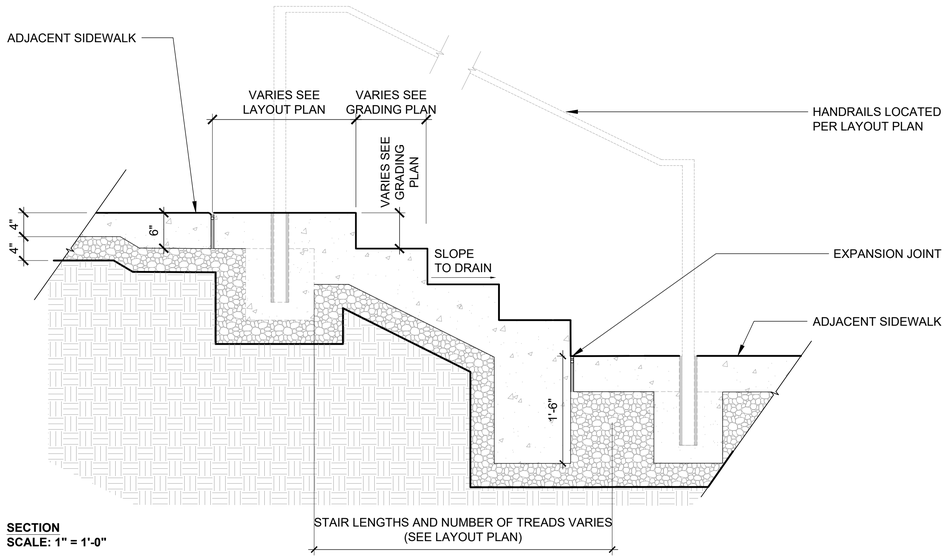
sheet title

CONSTRUCTION DETAILS - PAVING DETAILS

sheet number

L-5.12

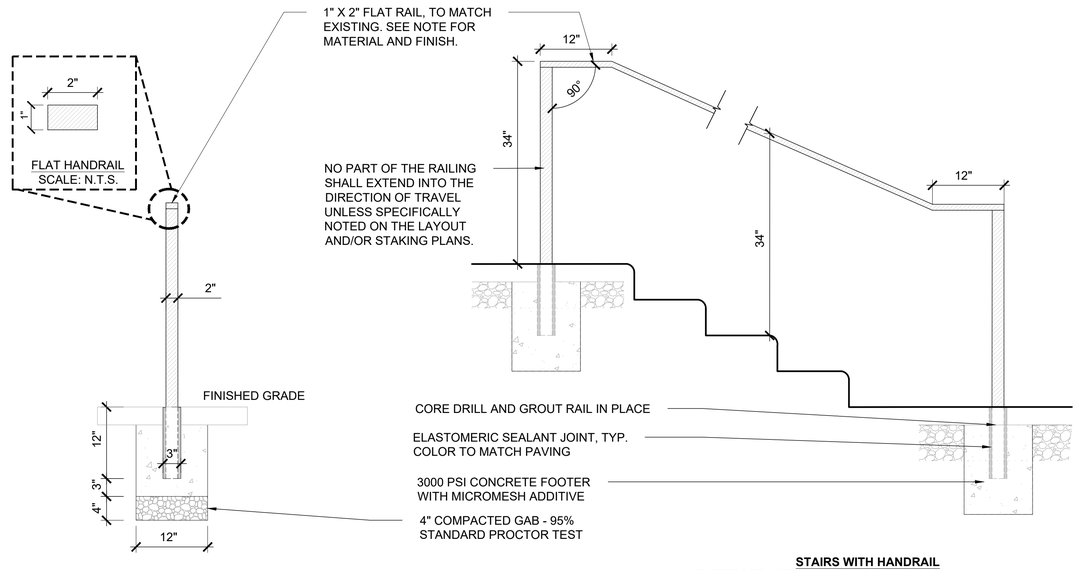
STAIR NOTES:
1. NUMBER OF STAIRS VARIES - SEE PLANS
2. RISER HEIGHTS SHALL BE EQUAL (4" MIN - 7" MAX)
3. CAULK JOINT WITH ELASTOMERIC SEALANT (COLOR TO MATCH CONCRETE COLOR).
4. REFER TO SHEETS 1/L-5.00 AND 8/L-5.00 FOR CONCRETE FINISHES.
5. CONTRACTOR TO PROVIDE MOCKUP FOR APPROVAL BY LANDSCAPE ARCHITECT.



SECTION
SCALE: 1" = 1'-0"

1 CONCRETE STAIRS
AS NOTED

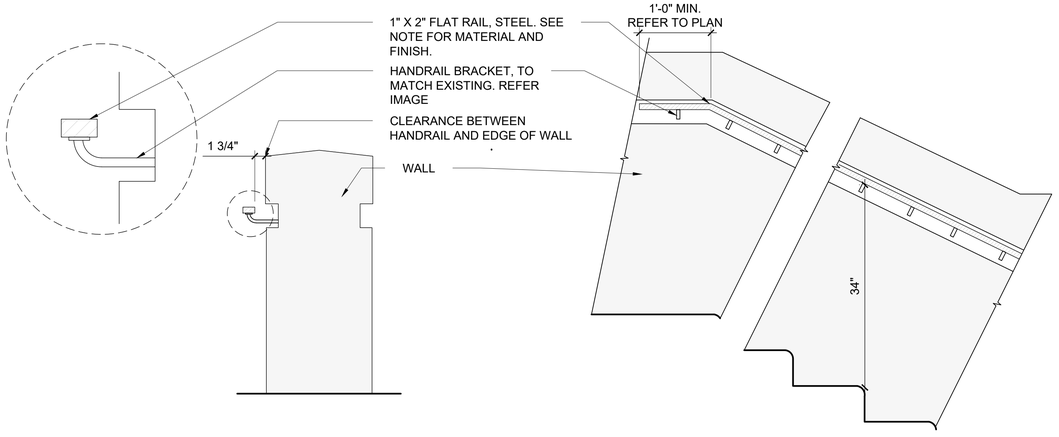
HANDRAIL NOTES:
1. HANDRAILS SHALL NOT EXTEND INTO ADJACENT PEDESTRIAN AND VEHICULAR TRAFFIC FLOW.
2. FABRICATE FROM STEEL BARS. ALL EXPOSED STEEL COMPONENTS TO BE GALVANIZED, PRIMED AND PAINTED WITH A MINIMUM OF 2 COATS EACH OF MARINE GRADE ACRYLIC. COLORS AND FINISHES TO BE SELECTED FROM MANUFACTURER'S FULL RANGE OF CUSTOM COLORS. SUBMITTAL REQUIRED.
3. POST SPACING TO BE 6' O.C., MAX.
4. **HANDRAILS THAT REQUIRE INTERMITTENT RETURNS DUE TO SPAN LENGTHS SHOULD HAVE EQUALLY SPACED POSTS.**
5. PROVIDE JOINTS AS NEEDED IN HANDRAILS TO ALLOW FOR THERMAL EXPANSION.
6. IF SITE INSPECTOR REQUIRES ADDITIONAL HANDRAILS TO BE IMPLEMENTED THEN THE CONTRACTOR SHALL CONSULT WITH THE LANDSCAPE ARCHITECT ON THE LOCATION AND DESIGN OF SUCH HANDRAILS.
7. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.



STAIRS WITH HANDRAIL
(EMBEDDED INTO CONCRETE SIDEWALK)

2 HANDRAIL
1" = 1'-0"

HANDRAIL NOTES:
1. HANDRAILS SHALL NOT EXTEND INTO ADJACENT PEDESTRIAN AND VEHICULAR TRAFFIC FLOW.
2. FABRICATE FROM STEEL BARS. ALL EXPOSED STEEL COMPONENTS TO BE GALVANIZED, PRIMED AND PAINTED WITH A MINIMUM OF 2 COATS EACH OF MARINE GRADE ACRYLIC. COLORS AND FINISHES TO BE SELECTED FROM MANUFACTURER'S FULL RANGE OF CUSTOM COLORS. SUBMITTAL REQUIRED.
3. POST SPACING TO BE 6' O.C., MAX.
4. **HANDRAILS THAT REQUIRE INTERMITTENT RETURNS DUE TO SPAN LENGTHS SHOULD HAVE EQUALLY SPACED POSTS.**
5. PROVIDE JOINTS AS NEEDED IN HANDRAILS TO ALLOW FOR THERMAL EXPANSION.
6. IF SITE INSPECTOR REQUIRES ADDITIONAL HANDRAILS TO BE IMPLEMENTED THEN THE CONTRACTOR SHALL CONSULT WITH THE LANDSCAPE ARCHITECT ON THE LOCATION AND DESIGN OF SUCH HANDRAILS.
7. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.



3 HANDRAIL - WALL-MOUNTED
1" = 1'-0"

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PHASE 1

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1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

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checked by:	CM

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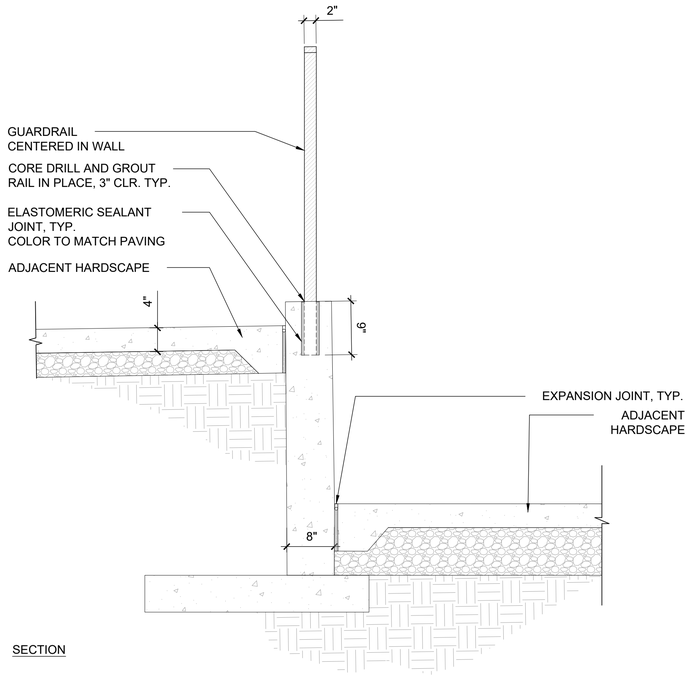
sheet title

CONSTRUCTION DETAILS - STAIRS AND RAIL DETAILS

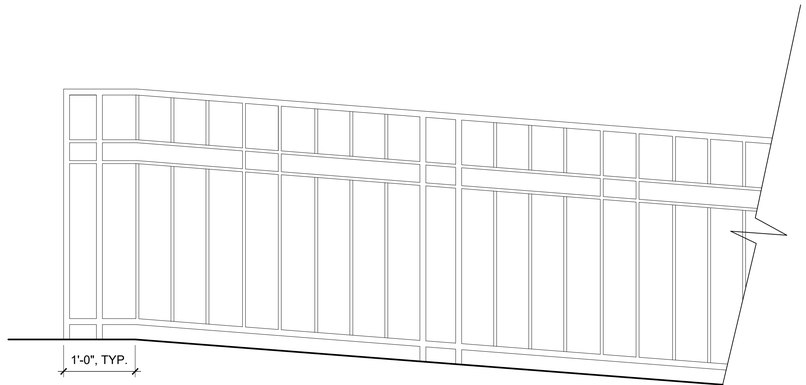
sheet number

L-5.20

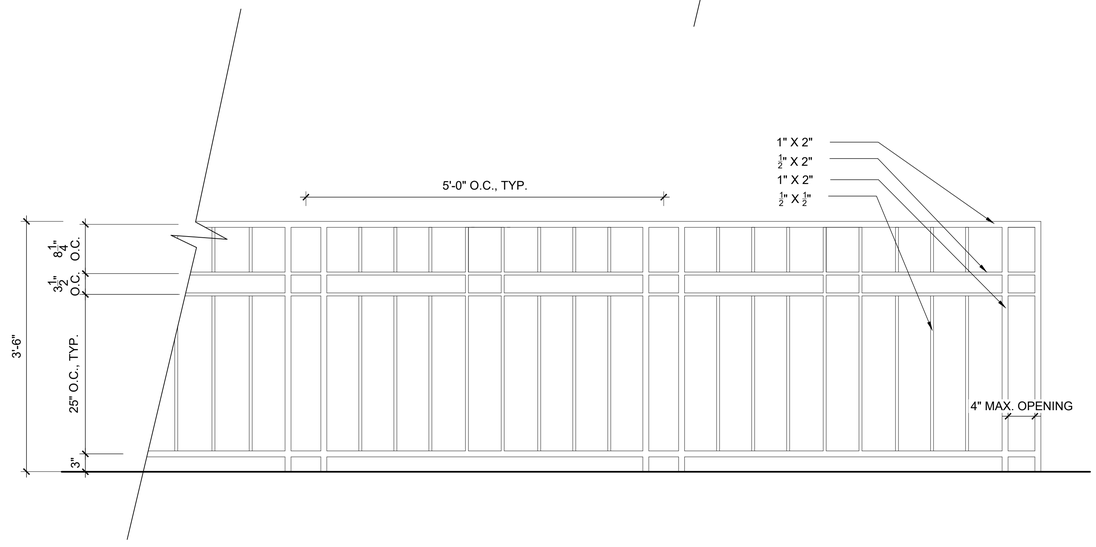
NOTES
1. GUARDRAIL TO MATCH EXISTING ORNAMENTAL GUARDRAILS ON BUILDING.
2. FABRICATE FROM STEEL BARS. ALL EXPOSED STEEL COMPONENTS TO BE GALVANIZED, PRIMED AND PAINTED WITH A MINIMUM OF 2 COATS EACH OF MARINE GRADE ACRYLIC. COLORS AND FINISHES TO BE SELECTED FROM MANUFACTURER'S FULL RANGE OF CUSTOM COLORS. SUBMITTAL REQUIRED.
3. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.



SECTION



GUARDRAIL ON SLOPE ELEVATION



TYPICAL ELEVATION

1 GUARDRAIL
1" = 1'-0"

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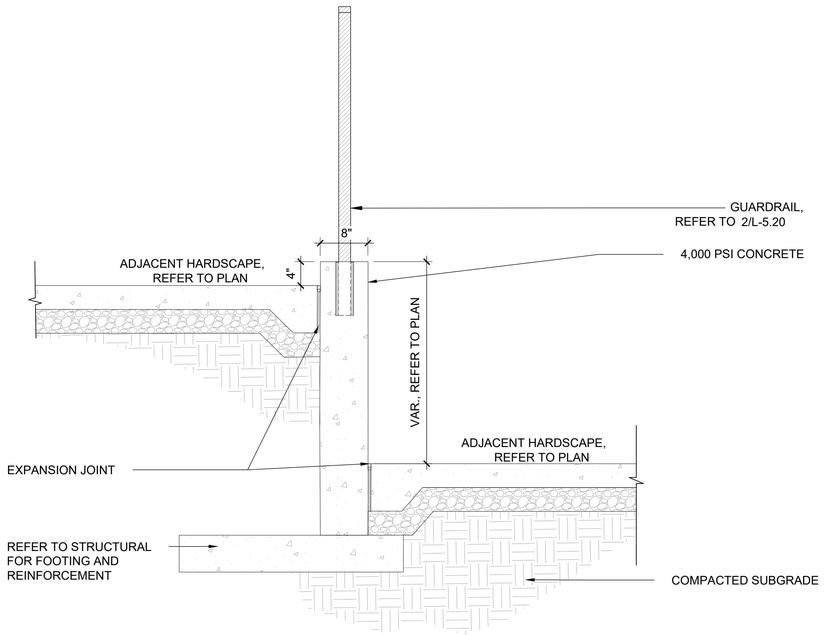
sheet title

CONSTRUCTION DETAILS - STAIRS AND RAIL DETAILS

sheet number

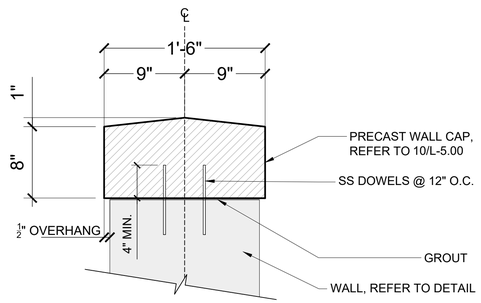
L-5.21



1 ADA RAMP WALL - SECTION

1" = 1'-0"

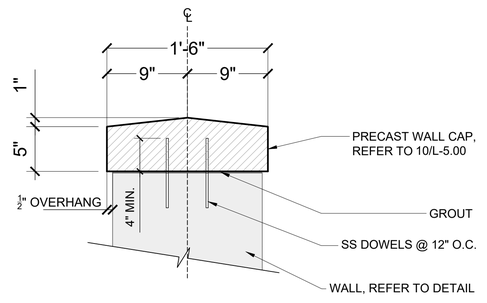
NOTE: CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.



2 9" PRECAST WALL CAP

1 1/2" = 1'-0"

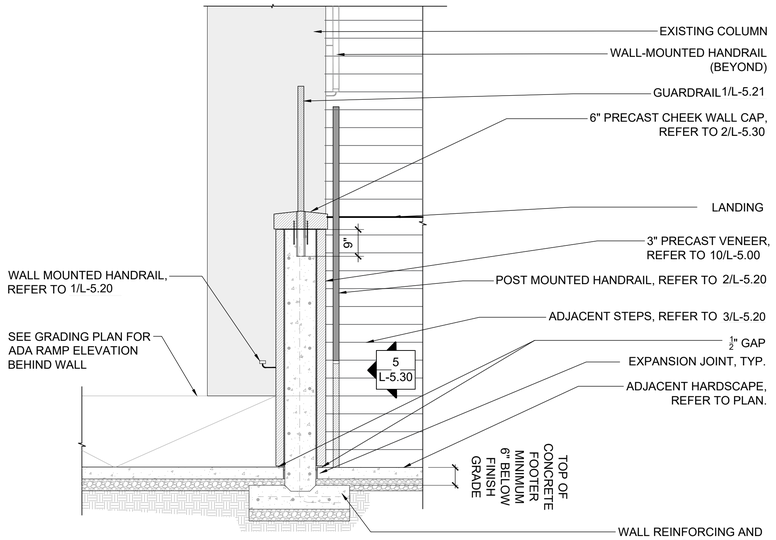
NOTE: CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.



3 6" PRECAST WALL CAP

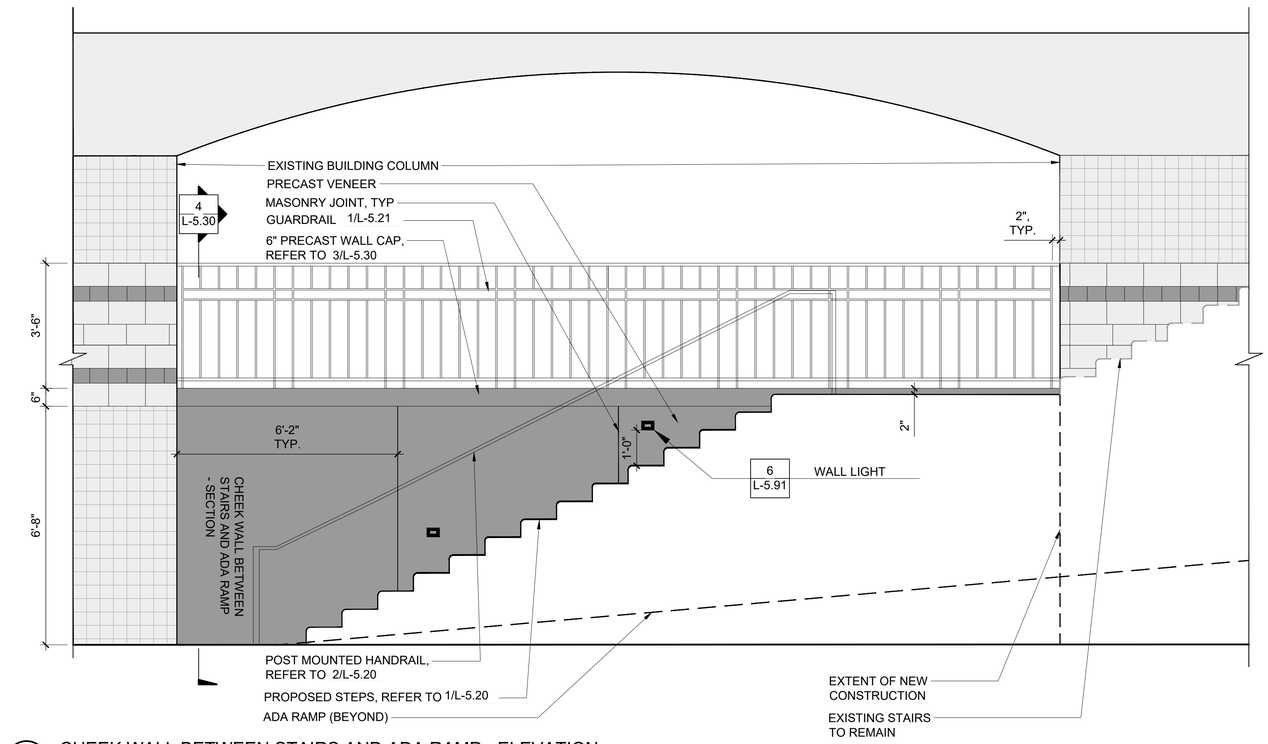
1 1/2" = 1'-0"

NOTE: BOTTOM OF PRECAST WALL CAP AND TOP OF GUARDRAIL ARE TO ALIGN WITH EXISTING MASONRY BANDING AS SHOWN. CONTRACTOR TO FIELD VERIFY DIMENSIONS AND NOTIFY LANDSCAPE ARCHITECT IF ANY DISCREPANCIES WITH THE PLAN ARE OBSERVED.



4 CHEEK WALL BETWEEN STAIRS AND ADA RAMP - SECTION

1/2" = 1'-0"



5 CHEEK WALL BETWEEN STAIRS AND ADA RAMP - ELEVATION

1/2" = 1'-0"

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sheet title

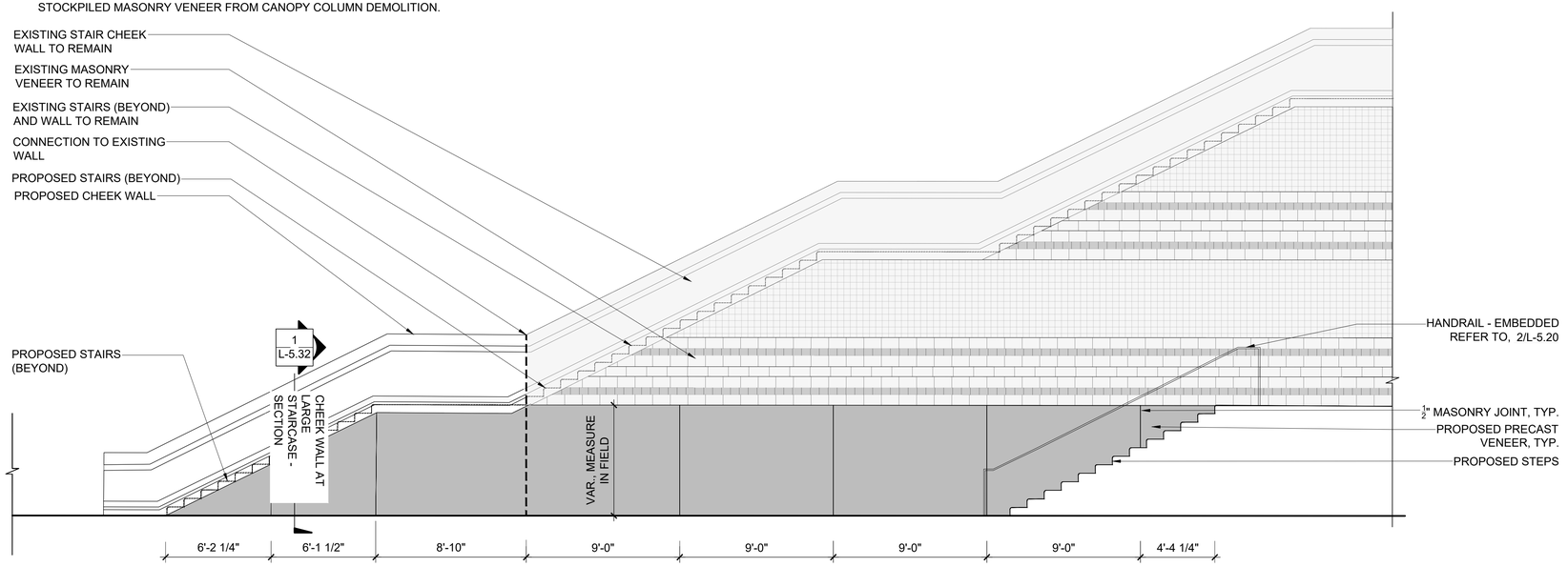
CONSTRUCTION DETAILS - WALL DETAILS

sheet number

L-5.30

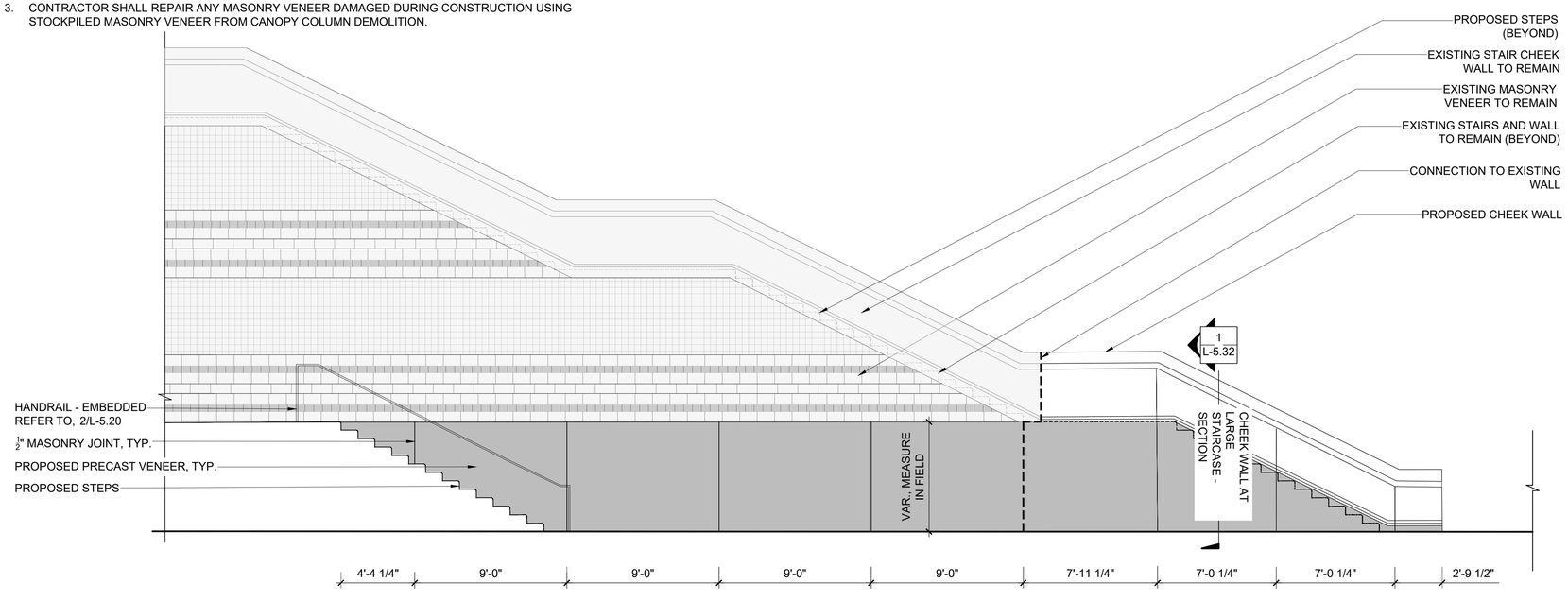
100% CONSTRUCTION PLANS

NOTES:
1. CONTRACTOR TO VERIFY EXISTING CONDITIONS BELOW EXISTING SPLIT-FACE BLOCK VENEER.
2. PROTECT AND SUPPORT EXISTING MASONRY VENEER AS NECESSARY TO MAINTAIN INTEGRITY DURING AND AFTER CONSTRUCTION.
3. CONTRACTOR SHALL REPAIR ANY MASONRY VENEER DAMAGED DURING CONSTRUCTION USING STOCKPILED MASONRY VENEER FROM CANOPY COLUMN DEMOLITION.



1 NORTH CHEEK WALL AT LARGE STAIRCASE - ELEVATION
1/4" = 1'-0"

NOTES:
1. CONTRACTOR TO VERIFY EXISTING CONDITIONS BELOW EXISTING SPLIT-FACE BLOCK VENEER.
2. PROTECT AND SUPPORT EXISTING MASONRY VENEER AS NECESSARY TO MAINTAIN INTEGRITY DURING AND AFTER CONSTRUCTION.
3. CONTRACTOR SHALL REPAIR ANY MASONRY VENEER DAMAGED DURING CONSTRUCTION USING STOCKPILED MASONRY VENEER FROM CANOPY COLUMN DEMOLITION.



2 SOUTH CHEEK WALL AT LARGE STAIRCASE - ELEVATION
1/4" = 1'-0"

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APRIL 14, 2023

sheet title

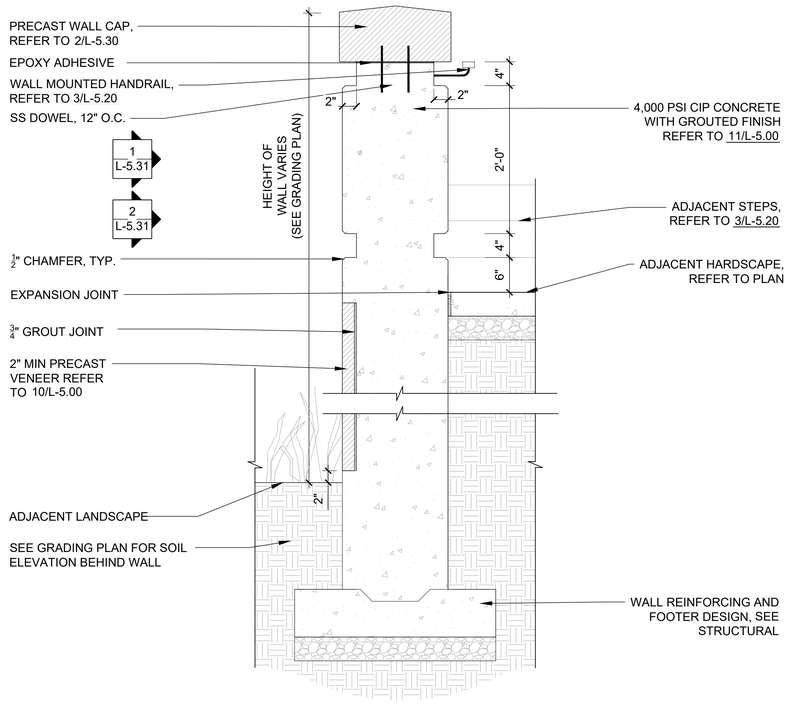
CONSTRUCTION DETAILS - WALL DETAILS

sheet number

L-5.31

NOTES:

1. THE CONTRACTOR SHALL DEVELOP WALL MOCK UPS IN COLLABORATION WITH THE LANDSCAPE ARCHITECT IN ORDER TO DEVELOP A TECHNIQUE THAT MEETS THE AESTHETIC REQUIREMENTS OF THE PROJECT. THIS WORK MAY REQUIRE MULTIPLE ITERATIONS OF THE MOCK UP IN ORDER TO ESTABLISH THE STANDARD FOR THE PROJECT.
2. THE FINAL WALL MOCK UPS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND MAINTAINED ON SITE THROUGH THE COMPLETION OF THE PUNCH WALK AS A STANDARD FOR COMPARISON.
3. SEE HARDSCAPE SCHEDULE FOR CONCRETE FINISH.
4. CONTRACTOR TO FIELD VERIFY VENEER INSET DEPTH. MATCH EXISTING AND COORDINATE WITH LANDSCAPE ARCHITECT.



1 CHEEK WALL AT LARGE STAIRCASE - SECTION

1" = 1'-0"

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HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

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checked by:	CM

drawing date

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sheet title

CONSTRUCTION DETAILS - WALL DETAILS

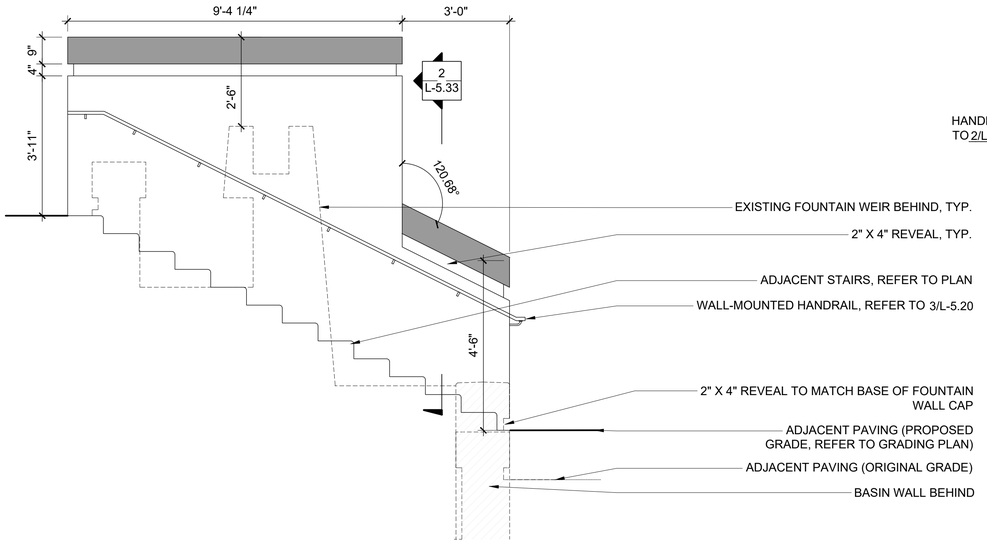
sheet number

L-5.32

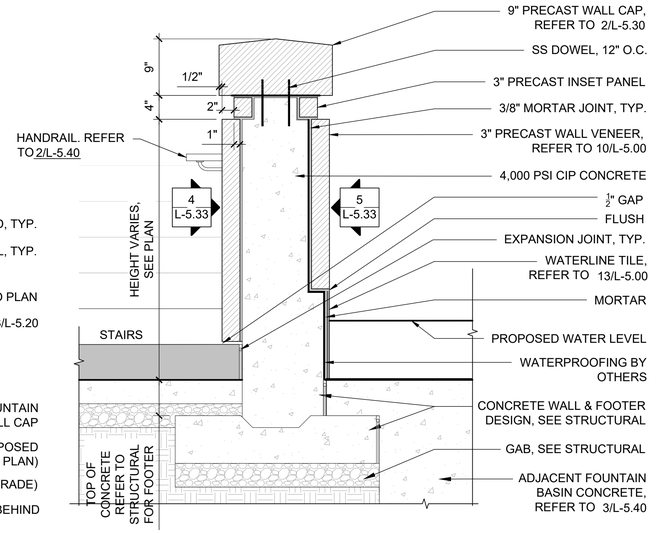
100% CONSTRUCTION PLANS

NOTES:
1. THE CONTRACTOR SHALL DEVELOP WALL MOCK UPS IN COLLABORATION WITH THE LANDSCAPE ARCHITECT IN ORDER TO DEVELOP A TECHNIQUE THAT MEETS THE AESTHETIC REQUIREMENTS OF THE PROJECT. THIS WORK MAY REQUIRE MULTIPLE ITERATIONS OF THE MOCK UP IN ORDER TO ESTABLISH THE STANDARD FOR THE PROJECT.
2. THE FINAL WALL MOCK UPS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND MAINTAINED ON SITE THROUGH THE COMPLETION OF THE PUNCH WALK AS A STANDARD FOR COMPARISON.

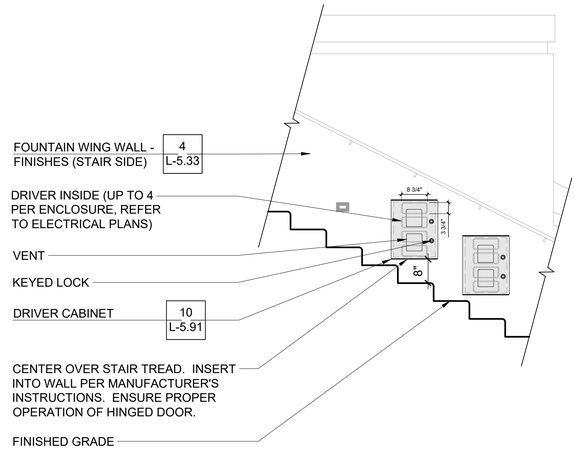
EXISTING WALL NOTE:
1. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO EVALUATE EXISTING WALLS AND RETAIN AS MUCH OF EXISTING WALLS AND FOOTINGS AS POSSIBLE.



1 FOUNTAIN WING WALL - LAYOUT
1/2" = 1'-0"

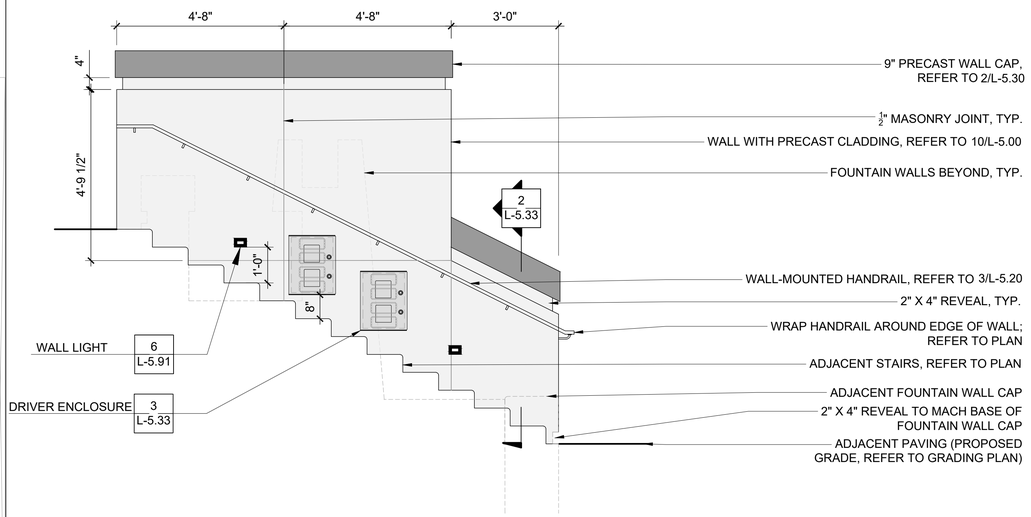


2 FOUNTAIN WING WALL - SECTION
1" = 1'-0"



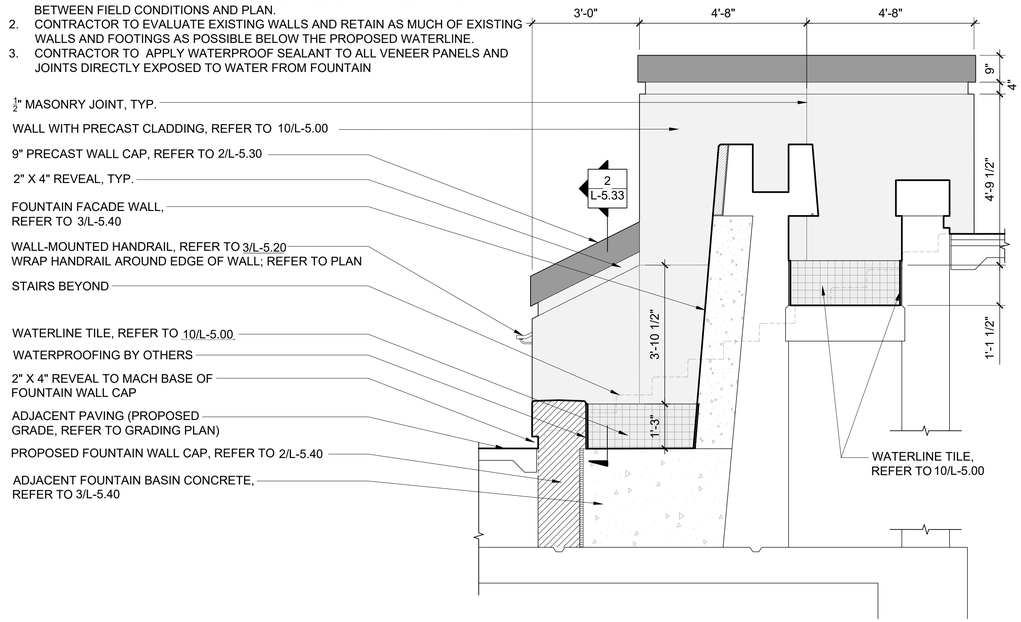
3 DRIVER ENCLOSURE
1/2" = 1'-0"

EXISTING WALL NOTE:
1. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO EVALUATE EXISTING WALLS AND RETAIN AS MUCH OF EXISTING WALLS AND FOOTINGS AS POSSIBLE.



4 FOUNTAIN WING WALL - FINISHES (STAIR SIDE)
1/2" = 1'-0"

EXISTING WALL NOTE:
1. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND PLAN.
2. CONTRACTOR TO EVALUATE EXISTING WALLS AND RETAIN AS MUCH OF EXISTING WALLS AND FOOTINGS AS POSSIBLE BELOW THE PROPOSED WATERLINE.
3. CONTRACTOR TO APPLY WATERPROOF SEALANT TO ALL VENEER PANELS AND JOINTS DIRECTLY EXPOSED TO WATER FROM FOUNTAIN



5 FOUNTAIN WING WALL - FINISHES (FOUNTAIN SIDE)
1/2" = 1'-0"

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project address

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MOBILE, AL 36609

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CITY OF MOBILE
P.O. BOX 1827
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checked by:	CM

drawing date

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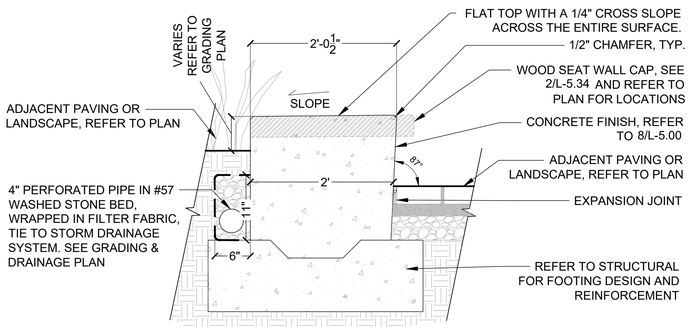
sheet title

CONSTRUCTION DETAILS - WALL DETAILS

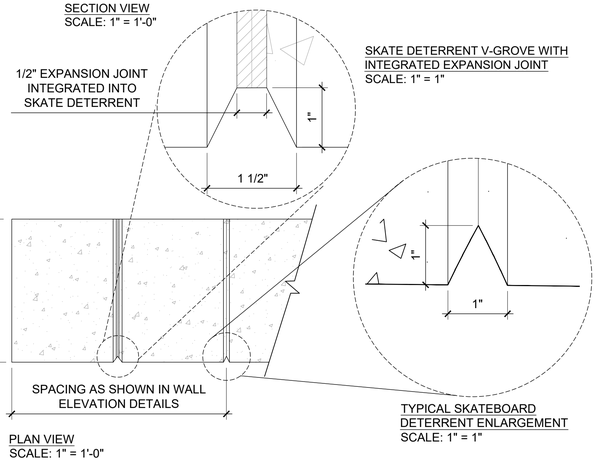
sheet number

L-5.33

NOTES:
1. THE CONTRACTOR SHALL DEVELOP WALL MOCK UPS IN COLLABORATION WITH THE LANDSCAPE ARCHITECT IN ORDER TO DEVELOP A TECHNIQUE THAT MEETS THE AESTHETIC REQUIREMENTS OF THE PROJECT. THIS WORK MAY REQUIRE MULTIPLE ITERATIONS OF THE MOCK UP IN ORDER TO ESTABLISH THE STANDARD FOR THE PROJECT.
2. THE FINAL WALL MOCK UPS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND MAINTAINED ON SITE THROUGH THE COMPLETION OF THE PUNCH WALK AS A STANDARD FOR COMPARISON.
3. SEE HARDSCAPE SCHEDULE FOR CONCRETE FINISH.
4. ALL EXPANSION JOINTS IN WALL TO BE FILLED WITH CAULK; COLOR TO MATCH WALL FINISH



SECTION VIEW
SCALE: 1" = 1'-0"



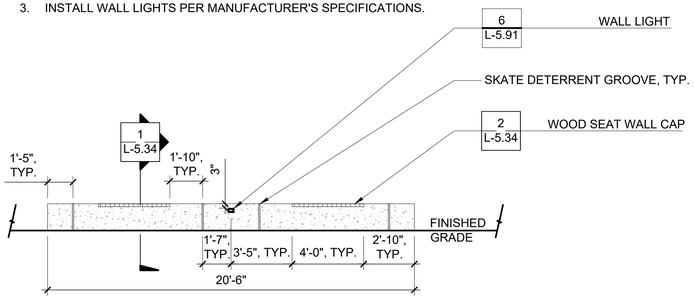
SKATE DETERRENT V-GROVE WITH INTEGRATED EXPANSION JOINT
SCALE: 1" = 1"

PLAN VIEW
SCALE: 1" = 1'-0"

TYPICAL SKATEBOARD DETERRENT ENLARGEMENT
SCALE: 1" = 1"

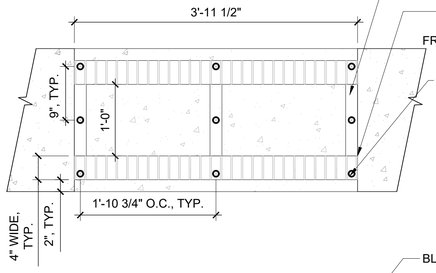
1 CAST-IN-PLACE SEAT WALL
1" = 1'-0"

SEAT WALL NOTES:
1. REFERENCE LAYOUT PLAN FOR SEAT WALL LOCATIONS AND ADJACENT CONDITIONS.
2. REFER TO GRADING PLAN FOR SEAT WALL HEIGHT.
3. INSTALL WALL LIGHTS PER MANUFACTURER'S SPECIFICATIONS.

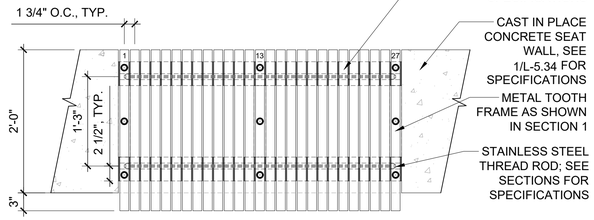


3 SEAT WALL 'A' - ELEVATION
1/4" = 1'-0"

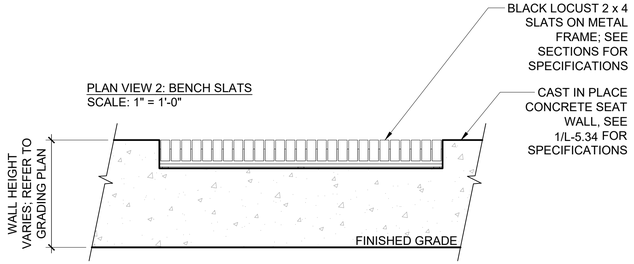
NOTES:
1. BENCH WOOD CAP DRAWINGS FOR DESIGN INTENT ONLY. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.
2. ALL WOOD CAP INSTALLATION TO BE FLUSH WITH CONCRETE BENCH.
3. ALL WOOD COMPONENTS TO BE STAINED WITH A MATTE EXTERIOR GRADE SEALANT. COLOR TO BE SELECTED FROM MANUFACTURER'S FULL RANGE OF COLORS, SUBMITTAL REQUIRED.
4. WOOD AND ANCHORING MATERIAL SAMPLE TO BE PROVIDED PRIOR TO INSTALLATION.
5. REFER TO LAYOUT PLAN SHEETS FOR SEAT WALL CAP LOCATIONS AND ADJACENT CONDITIONS.
6. REFER TO GRADING PLAN FOR WALL HEIGHTS.



PLAN VIEW 1: METAL FRAME
SCALE: 1" = 1'-0"

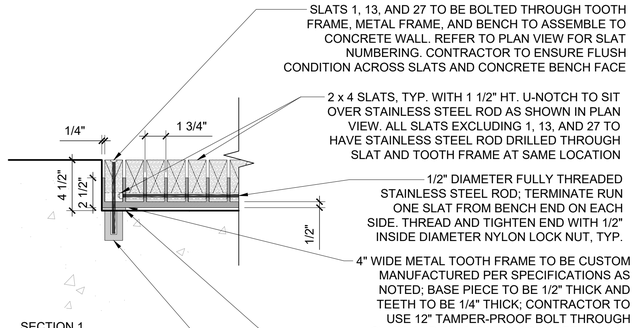


PLAN VIEW 2: BENCH SLATS
SCALE: 1" = 1'-0"

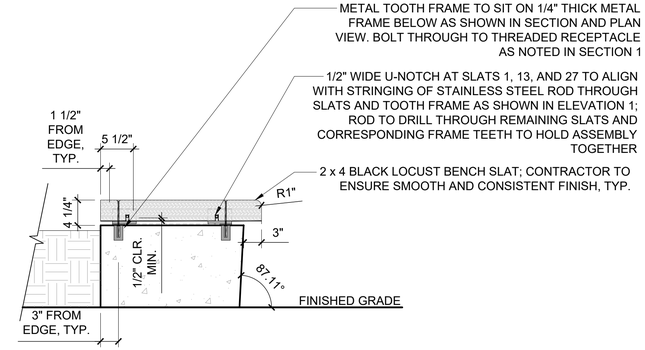


ELEVATION VIEW
SCALE: 1" = 1'-0"

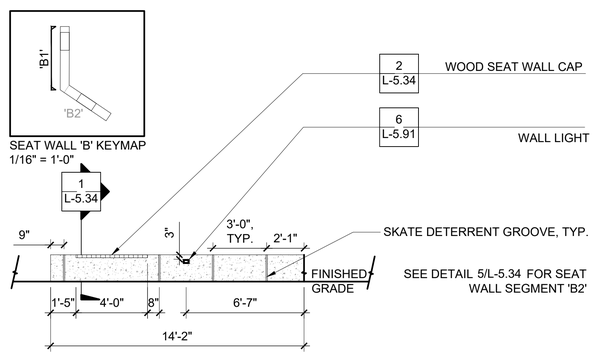
2 WOOD SEAT WALL CAP
1" = 1'-0"



SECTION 1
SCALE: 1/2" = 1'-0"

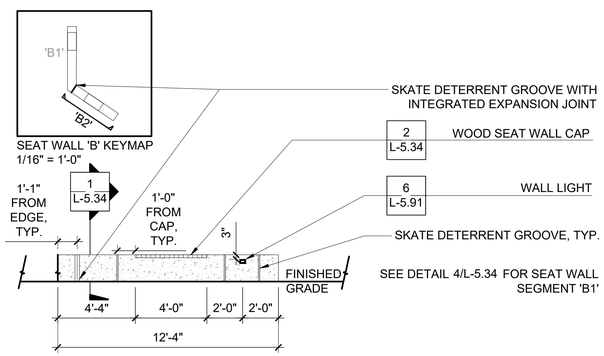


SECTION 2
SCALE: 1" = 1'-0"



SEE DETAIL 5/L-5.34 FOR SEAT WALL SEGMENT 'B2'

4 SEAT WALL 'B1' - ELEVATION
1/4" = 1'-0"



SEE DETAIL 4/L-5.34 FOR SEAT WALL SEGMENT 'B1'

5 SEAT WALL 'B2' - ELEVATION
1/4" = 1'-0"

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

APRIL 14, 2023

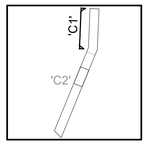
sheet title

CONSTRUCTION DETAILS - WALL DETAILS

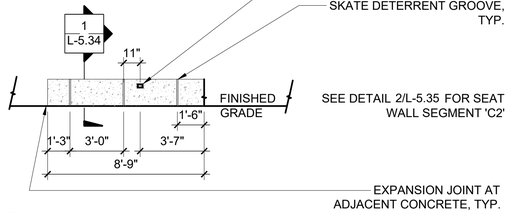
sheet number

L-5.34

SEAT WALL NOTES:
1. REFERENCE LAYOUT PLAN FOR SEAT WALL LOCATIONS AND ADJACENT CONDITIONS.
2. REFER TO GRADING PLAN FOR SEAT WALL HEIGHT.
3. INSTALL WALL LIGHTS PER MANUFACTURER'S SPECIFICATIONS.

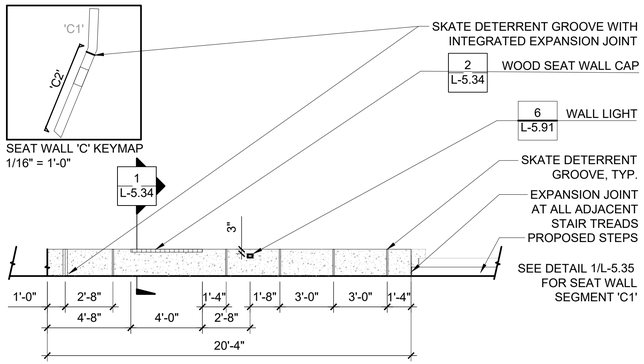


SEAT WALL 'C' KEYMAP
1/16" = 1'-0"

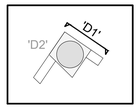


1 SEAT WALL 'C1' - ELEVATION
1/4" = 1'-0"

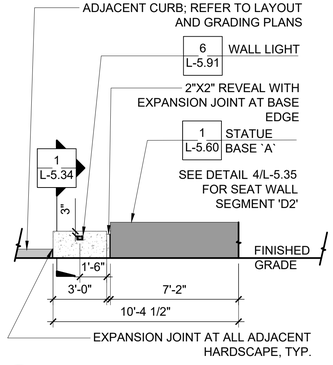
SEAT WALL 'C' KEYMAP
1/16" = 1'-0"



2 SEAT WALL 'C2' - ELEVATION
1/4" = 1'-0"

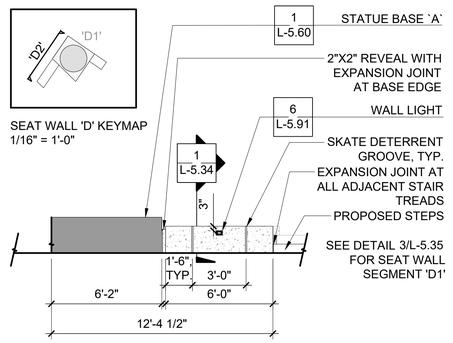


SEAT WALL 'D' KEYMAP
1/16" = 1'-0"

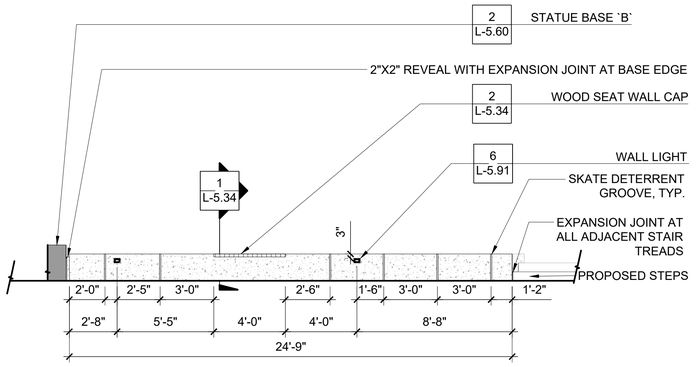


3 SEAT WALL 'D1' - ELEVATION
1/4" = 1'-0"

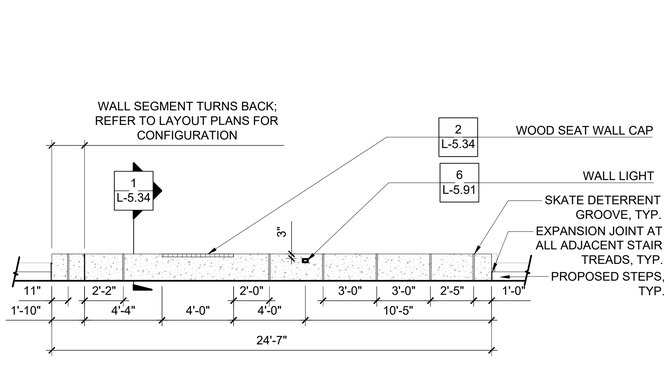
SEAT WALL 'D' KEYMAP
1/16" = 1'-0"



4 SEAT WALL 'D2' - ELEVATION
1/4" = 1'-0"

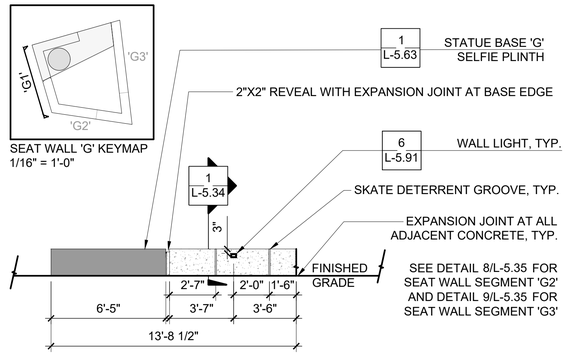


5 SEAT WALL 'E' - ELEVATION
1/4" = 1'-0"



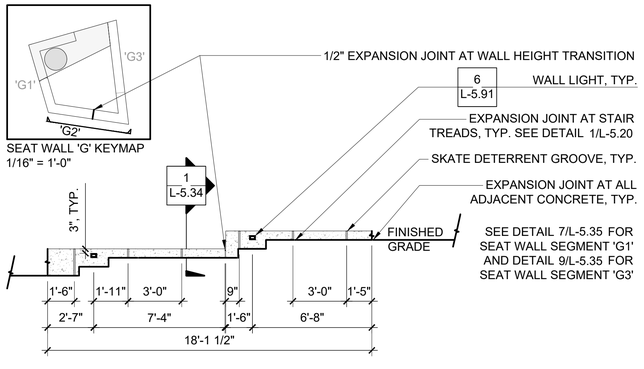
6 SEAT WALL 'F' - ELEVATION
1/4" = 1'-0"

SEAT WALL 'G' KEYMAP
1/16" = 1'-0"



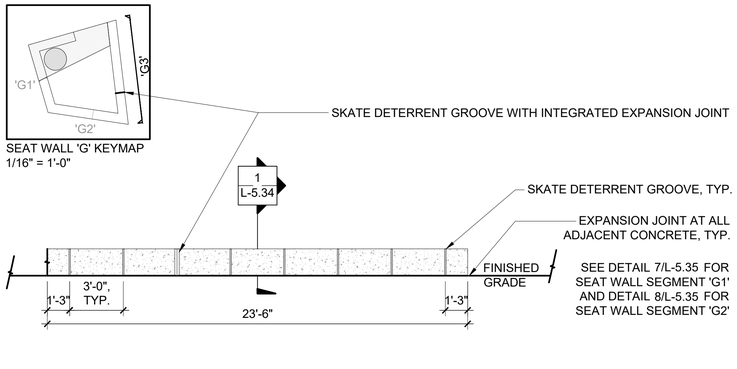
7 SEAT WALL 'G1' - ELEVATION
1/4" = 1'-0"

SEAT WALL 'G' KEYMAP
1/16" = 1'-0"



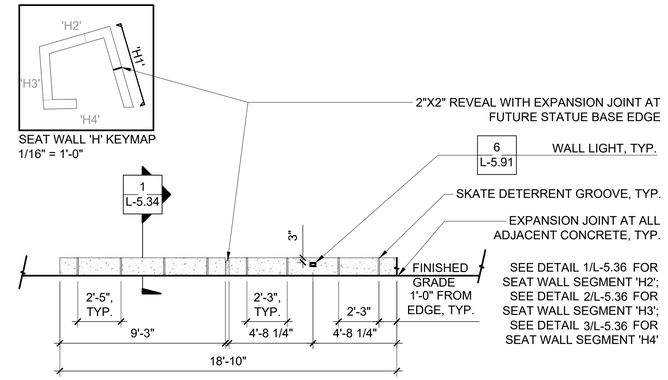
8 SEAT WALL 'G2' - ELEVATION
1/4" = 1'-0"

SEAT WALL 'G' KEYMAP
1/16" = 1'-0"



9 SEAT WALL 'G3' - ELEVATION
1/4" = 1'-0"

SEAT WALL 'H' KEYMAP
1/16" = 1'-0"



10 SEAT WALL 'H1' - ELEVATION
1/4" = 1'-0"

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HERO PLAZA
PHASE 1

project address

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MOBILE, AL 36609

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P.O. BOX 1827
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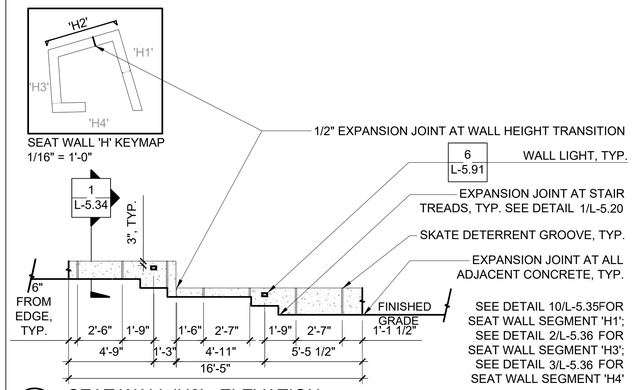
sheet title

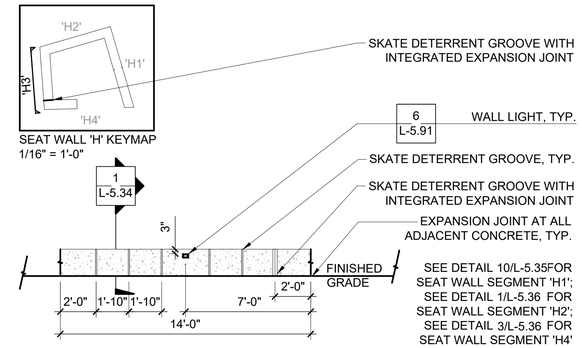
CONSTRUCTION DETAILS - WALL DETAILS

sheet number

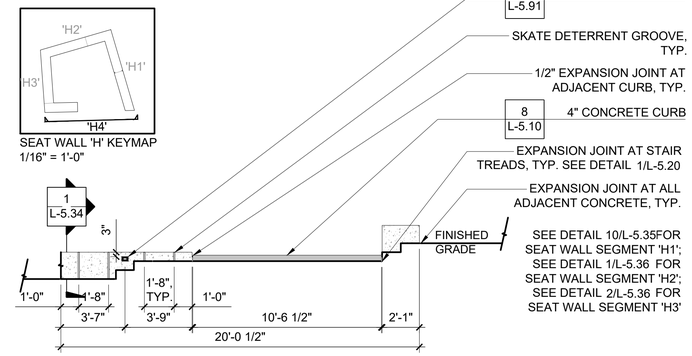
L-5.35



1 SEAT WALL 'H2' - ELEVATION
1/4" = 1'-0"



2 SEAT WALL 'H3' - ELEVATION
1/4" = 1'-0"



3 SEAT WALL 'H4' - ELEVATION
1/4" = 1'-0"

SEAT WALL NOTES:
1. REFERENCE LAYOUT PLAN FOR SEAT WALL LOCATIONS AND ADJACENT CONDITIONS.
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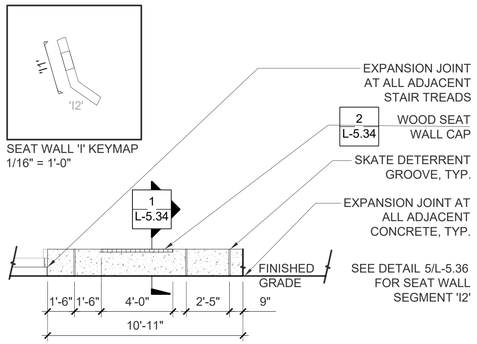
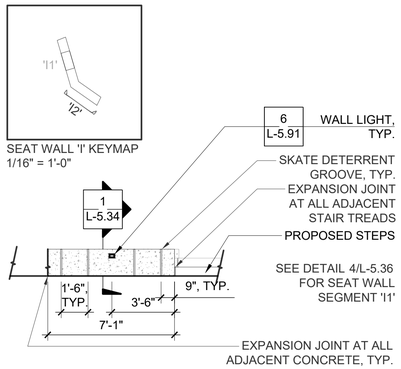
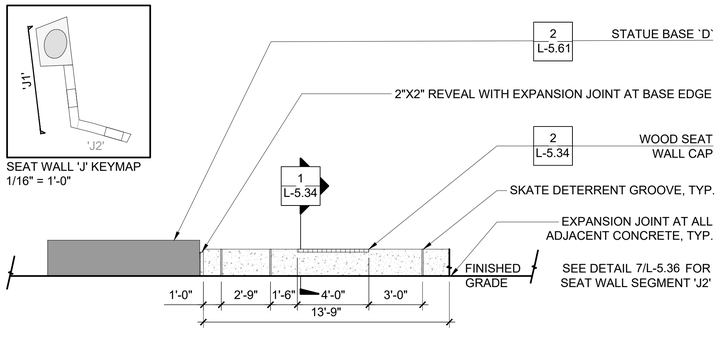


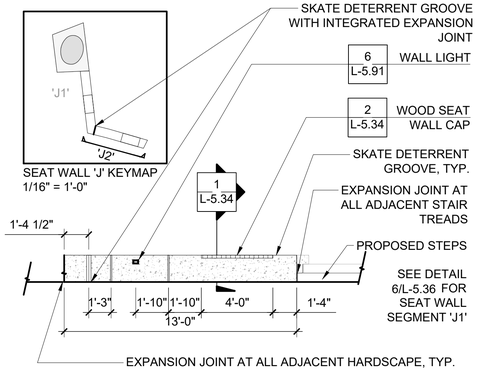
4 SEAT WALL 'I1' - ELEVATION
1/4" = 1'-0"



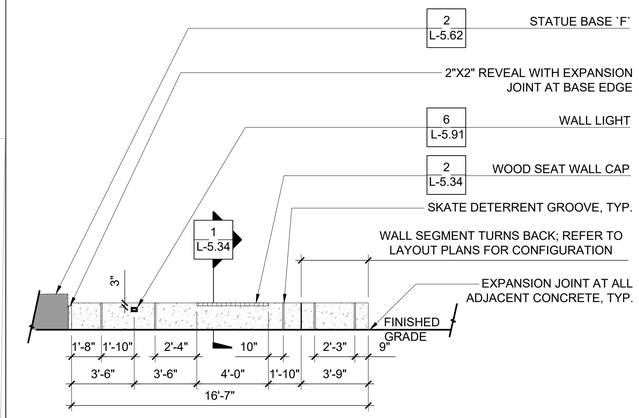
5 SEAT WALL 'I2' - ELEVATION
1/4" = 1'-0"



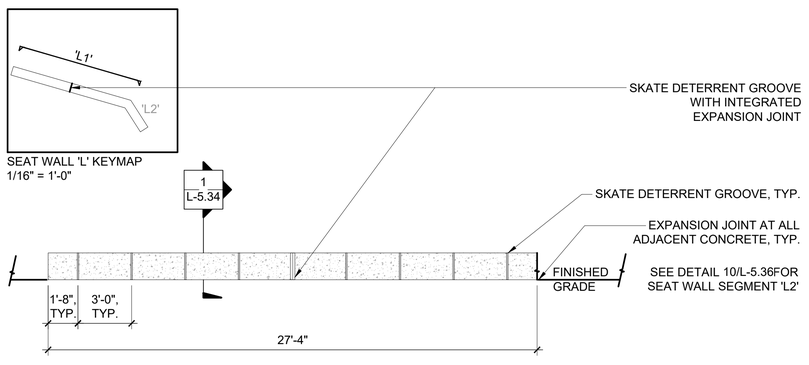
6 SEAT WALL 'J1' - ELEVATION
1/4" = 1'-0"



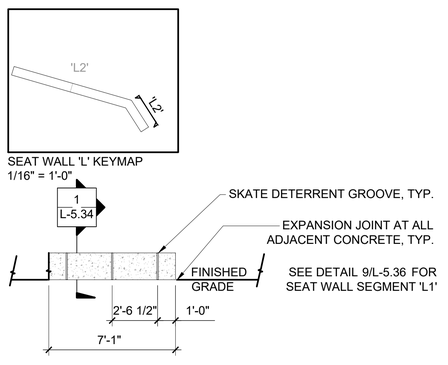
7 SEAT WALL 'J2' - ELEVATION
1/4" = 1'-0"



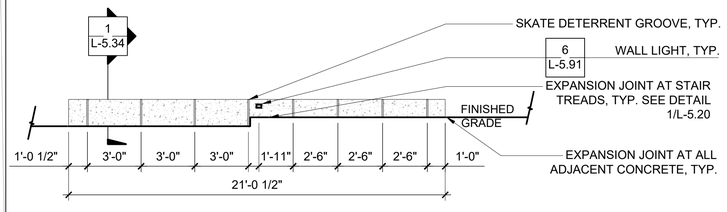
8 SEAT WALL 'K' - ELEVATION
1/4" = 1'-0"



9 SEAT WALL 'L1' - ELEVATION
1/4" = 1'-0"



10 SEAT WALL 'L2' - ELEVATION
1/4" = 1'-0"



11 SEAT WALL 'M' - ELEVATION
1/4" = 1'-0"

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
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drawing information

project number:	22089
contact:	BRYAN BAYS
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checked by:	CM

drawing date

APRIL 14, 2023

sheet title

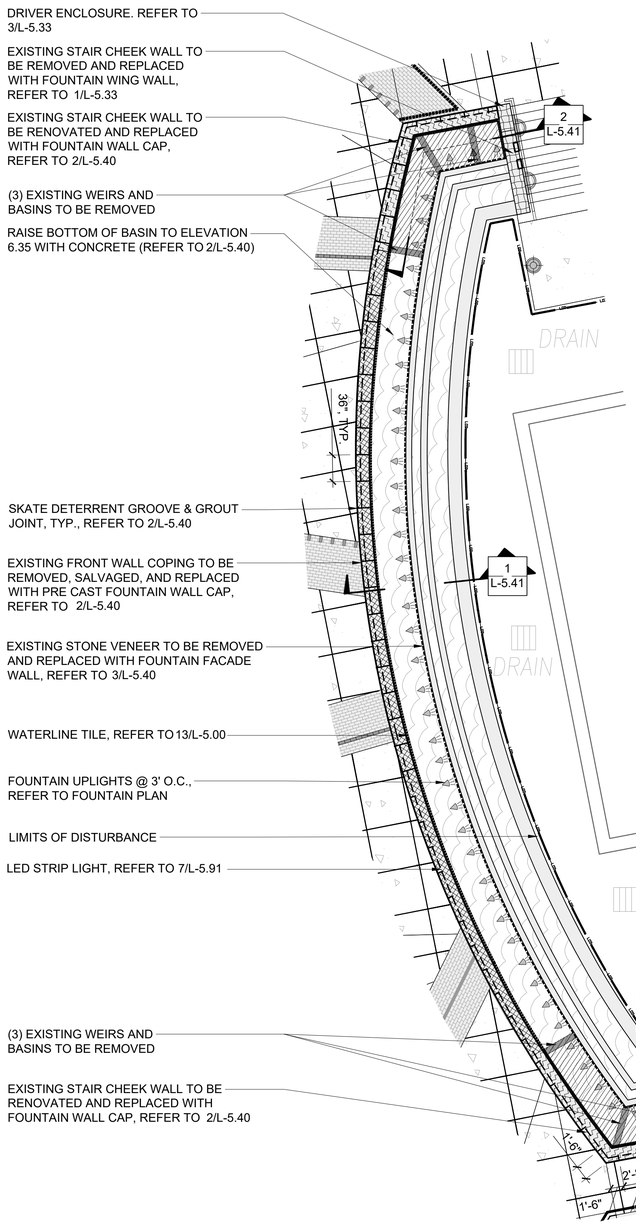
CONSTRUCTION DETAILS - WALL DETAILS

sheet number

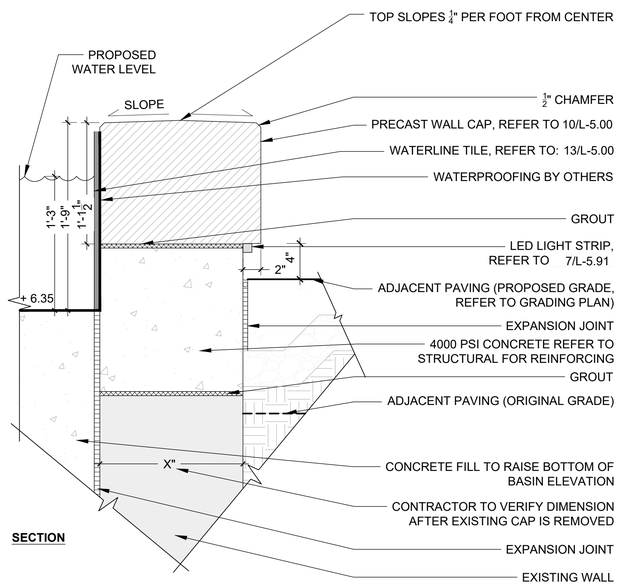
L-5.36

NOTE:
1. REFER TO FOUNTAIN PLANS FOR ADDITIONAL INFORMATION.
2. REFER TO FOUNTAIN PLANS FOR FOUNTAIN DRAIN LOCATIONS.
3. CONTRACTOR TO PROVIDE FOUNTAIN DEMOLITION PLANS AND ELEVATIONS DEMONSTRATING THE EXTENTS OF THE AREAS TO BE DEMOLISHED AND RENOVATED.
4. CONTRACTOR TO VERIFY FOUNTAIN DIMENSIONS AND FIELD CONDITIONS.

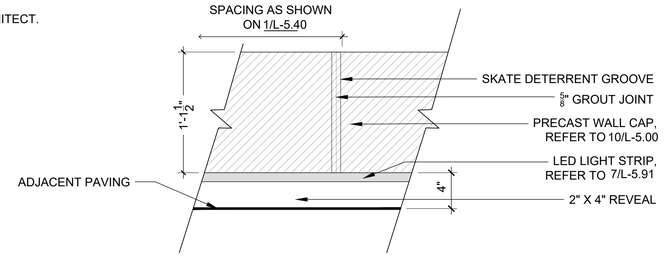
EXISTING WALL NOTE:
1. CONTRACTOR TO EVALUATE EXISTING WALLS AND RETAIN AS MUCH OF EXISTING WALLS AND FOOTINGS AS POSSIBLE BELOW THE PROPOSED WATERLINE.
2. CONTRACTOR TO CLEAN ALL SURFACES PRIOR TO CONSTRUCTION OF NEW FOUNTAIN ELEMENTS.



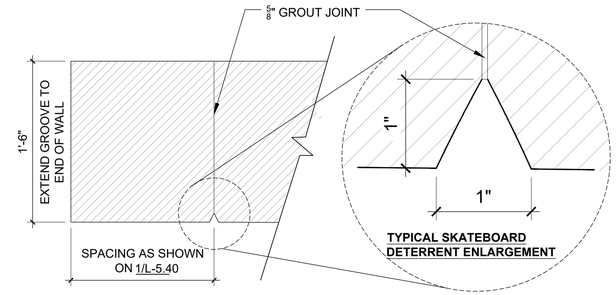
1 FOUNTAIN PLAN - ENLARGEMENT
1/8" = 1'-0"



SECTION



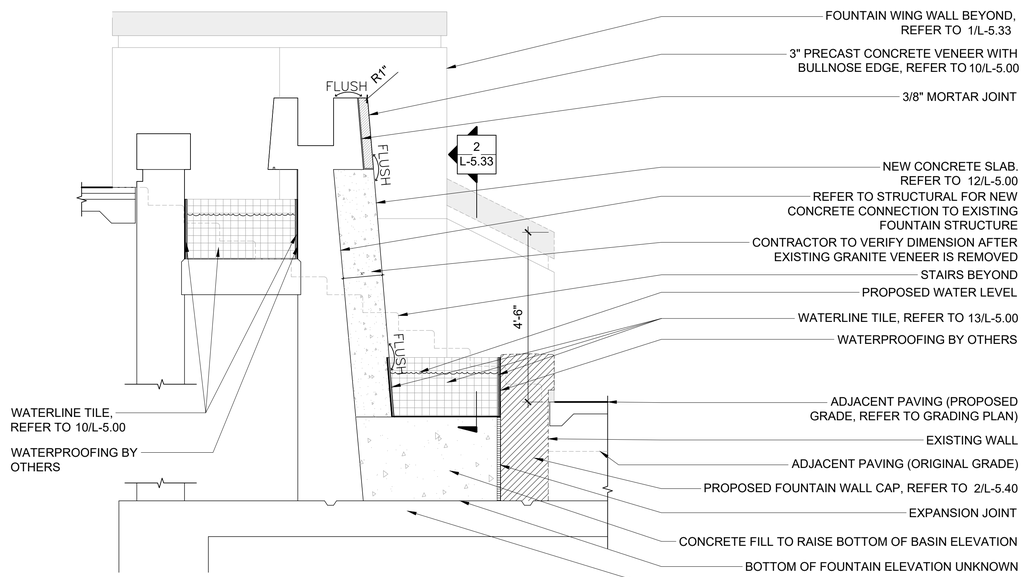
ELEVATION



PLAN VIEW

2 FOUNTAIN WALL CAP
1 1/2" = 1'-0"

EXISTING WALL NOTE:
1. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO EVALUATE EXISTING WALLS AND RETAIN AS MUCH OF EXISTING WALLS AND FOOTINGS AS POSSIBLE BELOW THE PROPOSED WATERLINE.
3. CONTRACTOR TO PROVIDE MOCKUP OF PRECAST CONCRETE VENEER WITH BULLNOSE EDGE FOR APPROVAL BY LANDSCAPE ARCHITECT.
4. CONTRACTOR TO CLEAN ALL SURFACES PRIOR TO CONSTRUCTION OF NEW FOUNTAIN ELEMENTS.
5. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT TO CONSTRUCT UP TO (3) 4'X10' MOCKUPS WITH DIFFERENT CONCRETE FORMLINER FINISHES AND MATERIAL VARIATIONS TO EVALUATE HYDRAULIC EFFECT AND SELECT FINAL MATERIALS.



3 FOUNTAIN SECTION 'A'
1/2" = 1'-0"

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checked by:	CM

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sheet title

CONSTRUCTION DETAILS - FOUNTAIN DETAILS

sheet number

L-5.40

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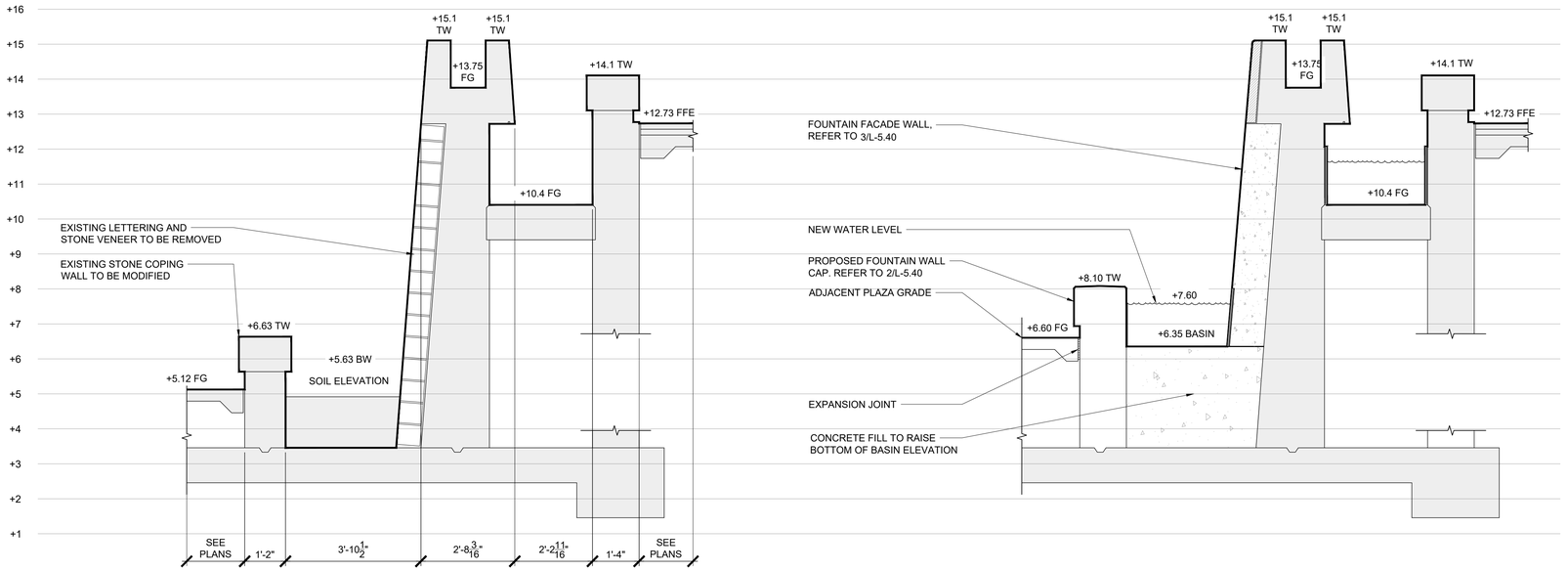
EXISTING WALL NOTE:
1. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO EVALUATE EXISTING WALLS AND RETAIN AS MUCH OF EXISTING WALLS AND FOOTINGS AS POSSIBLE BELOW THE PROPOSED WATERLINE.
3. CONTRACTOR TO CLEAN ALL SURFACES PRIOR TO CONSTRUCTION OF NEW FOUNTAIN ELEMENTS.



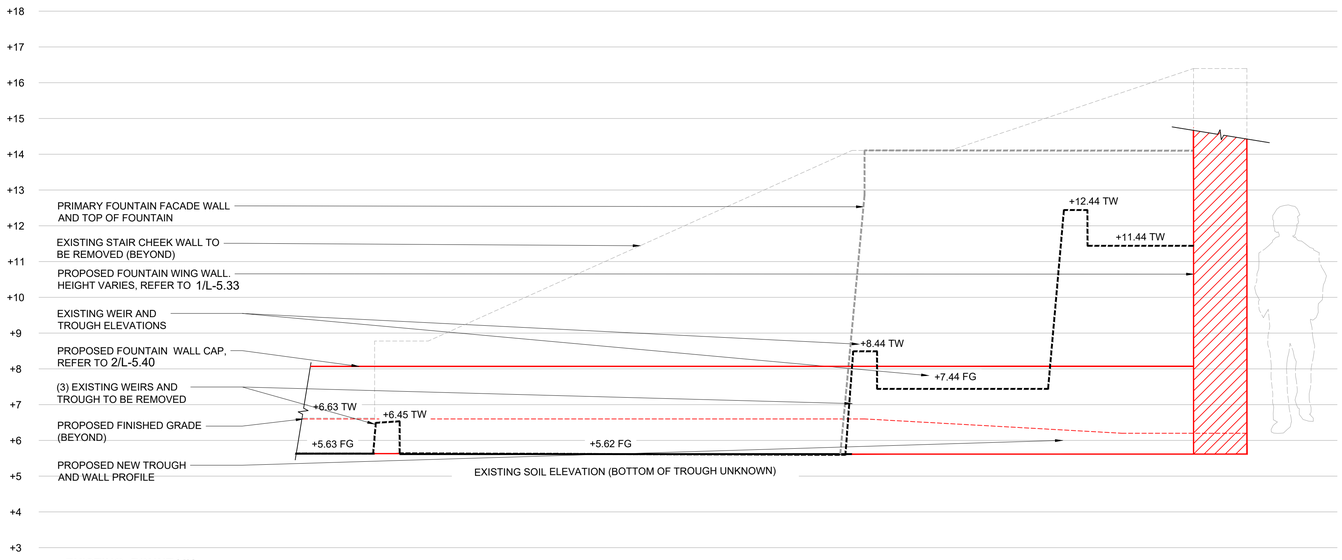
EXISTING CONDITIONS

PROPOSED FOUNTAIN

1 FOUNTAIN SECTION 'B'

1/2" = 1'-0"

EXISTING WALL NOTE:
1. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO EVALUATE EXISTING WALLS AND RETAIN AS MUCH OF EXISTING WALLS AND FOOTINGS AS POSSIBLE BELOW THE PROPOSED WATERLINE.
3. CONTRACTOR TO CLEAN ALL SURFACES PRIOR TO CONSTRUCTION OF NEW FOUNTAIN ELEMENTS.



EXISTING FOUNTAIN

2 FOUNTAIN SECTION 'C'

1/2" = 1'-0"

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

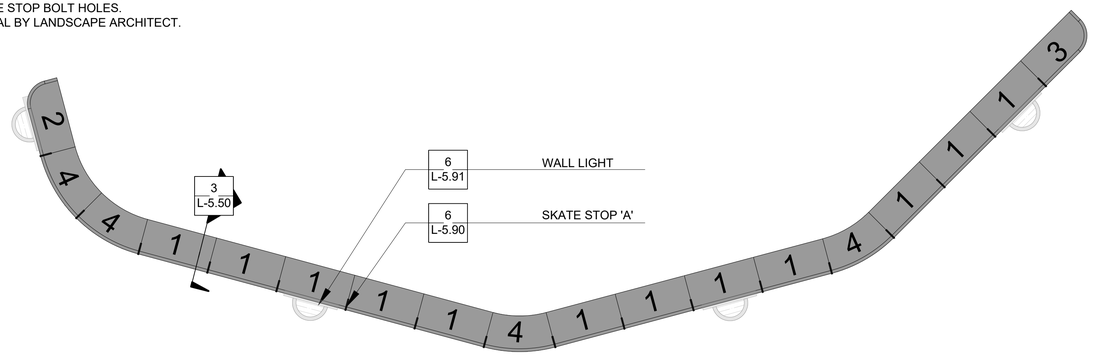
sheet title

CONSTRUCTION DETAILS - FOUNTAIN DETAILS

sheet number

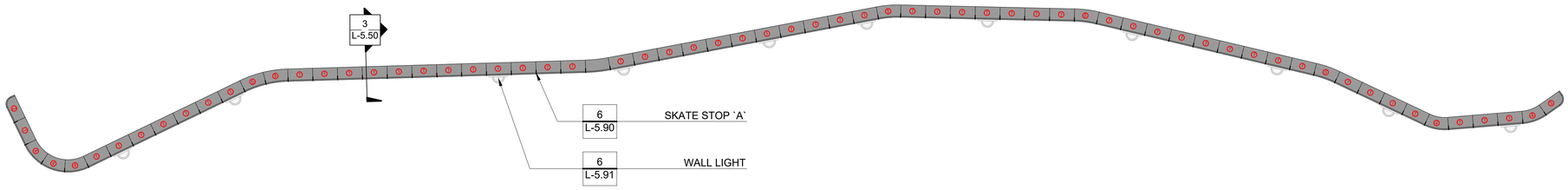
L-5.41

NOTES:
1. MANUFACTURER: WASAU (PRODUCT: CENTENAIRE BENCH), GEORGIA PRECAST SOLUTIONS, OR APPROVED EQUAL.
2. SEE SHEET L-5.51 & L-5.52 FOR PRECAST BENCH MODULE TYPE (1-6).
3. REFERENCE LAYOUT PLAN FOR BENCH LOCATION.
4. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.
5. CUTOUTS FOR WALL LIGHTS TO BE FABRICATED BY MANUFACTURER. CONTRACTOR TO COORDINATE WITH MANUFACTURER REGARDING PLACEMENT OF WALL LIGHT CUTOUTS AND SKATE STOP BOLT HOLES.
6. SUBMITTAL REQUIRED FOR APPROVAL BY LANDSCAPE ARCHITECT.

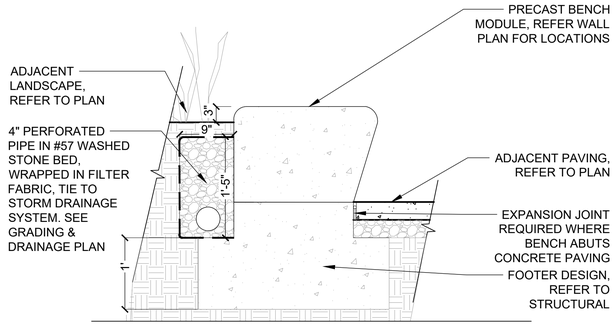


1 PRECAST MODULAR BENCH 'A'
1/4" = 1'-0"

NOTES:
1. MANUFACTURER: WASAU (PRODUCT: CENTENAIRE BENCH), GEORGIA PRECAST SOLUTIONS, OR APPROVED EQUAL.
2. SEE SHEET L-5.51 & L-5.52 FOR PRECAST BENCH MODULE TYPE (1-6).
3. REFERENCE LAYOUT PLAN FOR BENCH LOCATION.
4. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.
5. CUTOUTS FOR WALL LIGHTS TO BE FABRICATED BY MANUFACTURER. CONTRACTOR TO COORDINATE WITH MANUFACTURER REGARDINGWALL LIGHT CUTOUT PLACEMENT AND DIMENSIONS.
6. SUBMITTAL REQUIRED FOR APPROVAL BY LANDSCAPE ARCHITECT.



2 PRECAST MODULAR BENCH 'B'
1" = 10'



3 PRECAST BENCH MODULE - DRAINAGE
1" = 1'-0"

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P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

APRIL 14, 2023

sheet title

CONSTRUCTION DETAILS - BENCH DETAILS

sheet number

L-5.50

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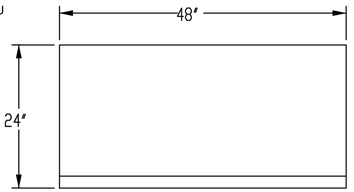
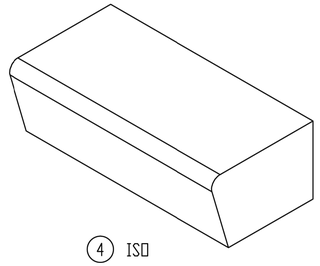
1 PRECAST BENCH MODULE 1

1" = 1'-0"

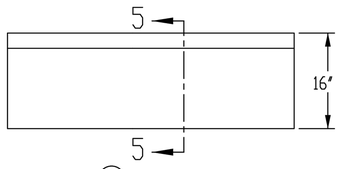
NOTES:
1. MANUFACTURER: WASAU PRODUCT: CENTENAIRE ZB.CE.01
2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.



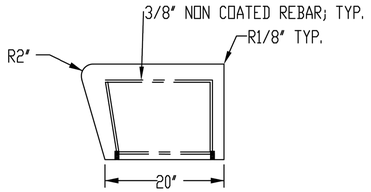
1 TOP VIEW



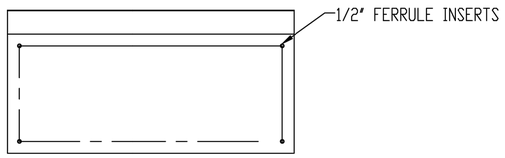
4 ISO



2 FRONT VIEW



5 SECTION

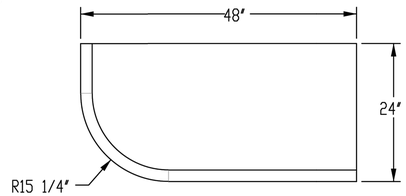


3 BOTTOM VIEW

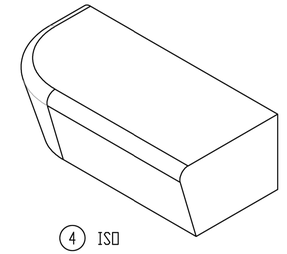
2 PRECAST BENCH MODULE 2

1" = 1'-0"

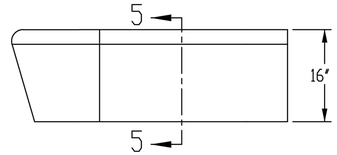
NOTES:
1. MANUFACTURER: WASAU PRODUCT: CENTENAIRE ZB.CE.02
2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.



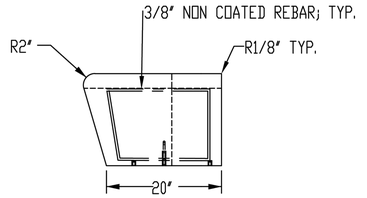
1 TOP VIEW



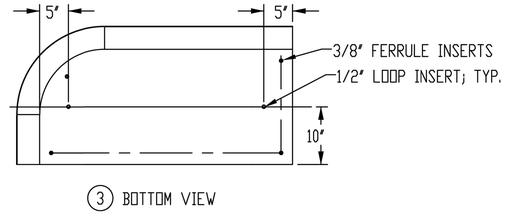
4 ISO



2 FRONT VIEW



5 SECTION

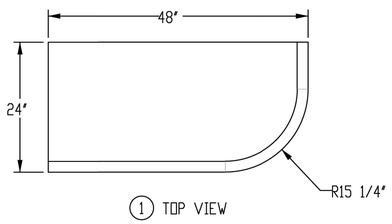


3 BOTTOM VIEW

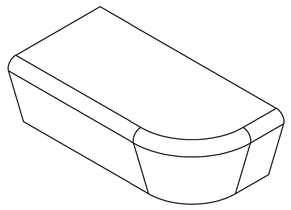
3 PRECAST BENCH MODULE 3

1" = 1'-0"

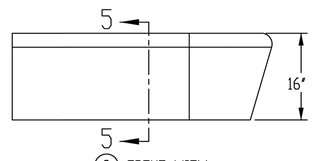
NOTES:
1. MANUFACTURER: WASAU PRODUCT: CENTENAIRE ZB.CE.03
2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.



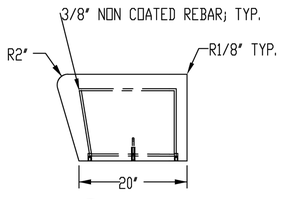
1 TOP VIEW



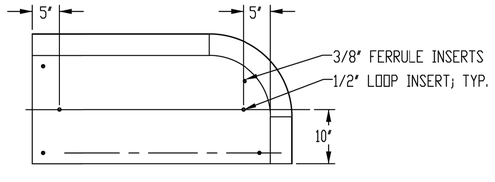
4 ISO



2 FRONT VIEW



5 SECTION

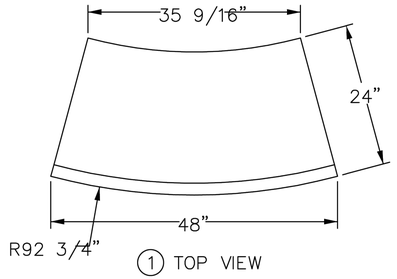


3 BOTTOM VIEW

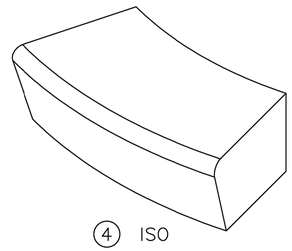
4 PRECAST BENCH MODULE 4

1" = 1'-0"

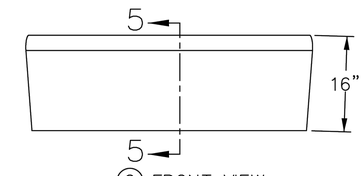
NOTES:
1. MANUFACTURER: WASAU PRODUCT: CENTENAIRE ZB.CE.05
2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.



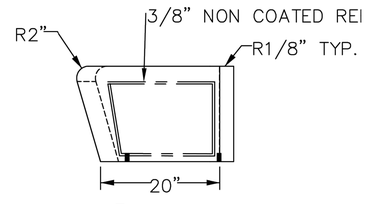
1 TOP VIEW



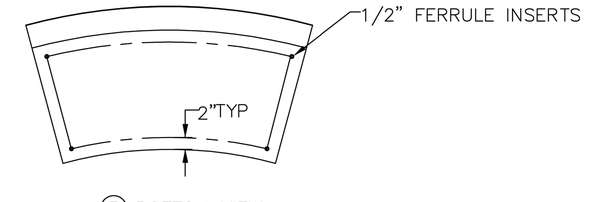
4 ISO



2 FRONT VIEW



5 SECTION



3 BOTTOM VIEW

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PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

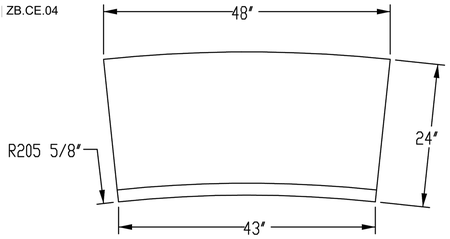
sheet title

CONSTRUCTION DETAILS - BENCH DETAILS

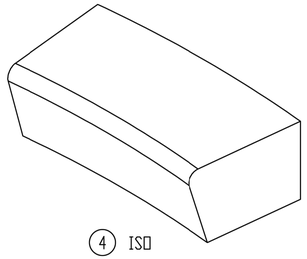
sheet number

L-5.51

NOTES:
1. MANUFACTURER: WASAU
2. PRODUCT: CENTENAIRE | ZB.CE.04
3. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.



1 TOP VIEW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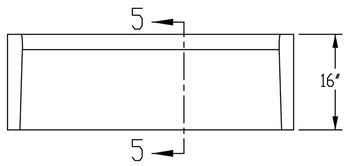
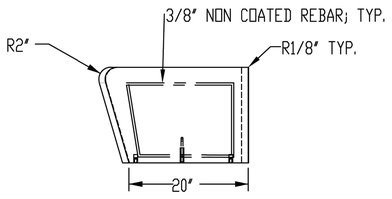
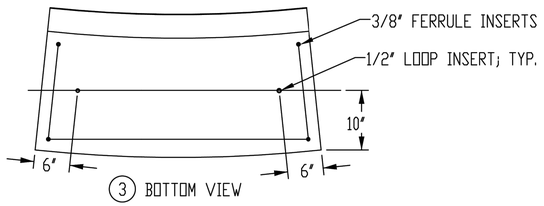


2 FRONT VIEW



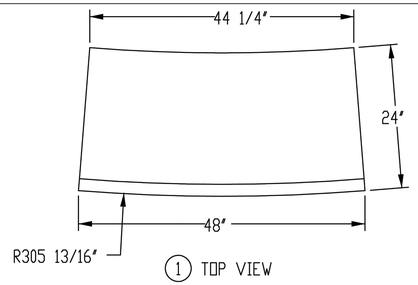
5 SECTION



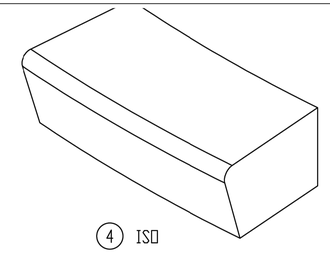
3 BOTTOM VIEW

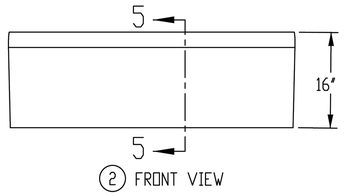
1 PRECAST BENCH MODULE 5
1" = 1'-0"

NOTES:
1. MANUFACTURER: WASAU
PRODUCT: CENTENAIRE ZB.CE.06
2. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.

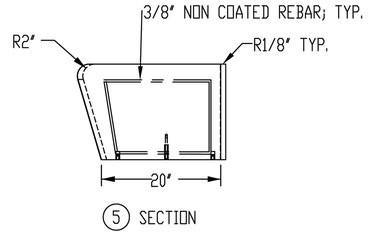


1 TOP VIEW

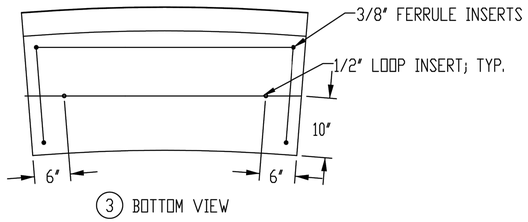

4 ISO



2 FRONT VIEW



5 SECTION



3 BOTTOM VIEW

2 PRECAST BENCH MODULE 6
1" = 1'-0"

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P.O. BOX 1827
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drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

CONSTRUCTION DETAILS - BENCH DETAILS

sheet number

L-5.52

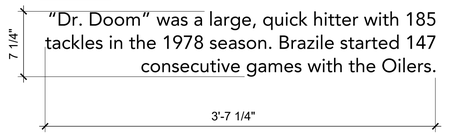
1 STATUE BASE 'A'

1/2" = 1'-0"

LETTERING NOTES:
1. LETTERING TO BE INSET PRECAST STONE, FLUSH, BRONZE COLOR.
2. FONT TO BE Avenir LT Std 55

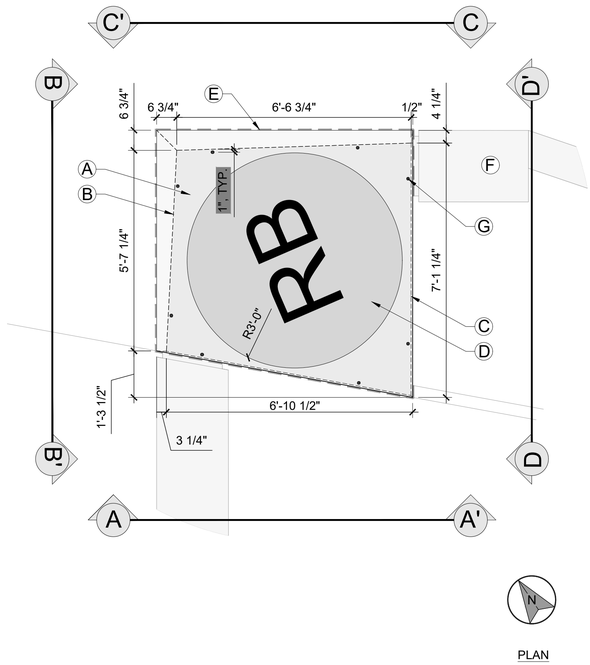
NAME:

DESCRIPTION:

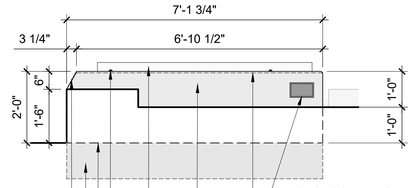


NOTES:
1. BASE PLATE DRAWINGS FOR DESIGN INTENT ONLY. ALL SIZING AND ATTACHMENTS ARE SHOWN FOR SCALE AND AESTHETIC REFERENCE. CONTRACTOR SHALL SUBMIT FULLY COORDINATED SHOP DRAWINGS FOR EACH COMPONENT OF STRUCTURE THAT ARE STAMPED BY A STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.
2. MAKE VISIBLE JOINTS BUTT TIGHT, FLUSH, AND HAIRLINE; USE METHODS THAT AVOID DISCOLORATION AND DAMAGE OF FINISH; GRIND SMOOTH, POLISH, AND RESTORE TO REQUIRED FINISH.
3. FOR ALL FINISHES, REFER TO HARDSCAPE SCHEDULE.
4. SPONSOR PLAQUE TO BE 5"X8", 316 STAINLESS STEEL, 1/4" THICK, DESIGN PROVIDED BY OWNER.

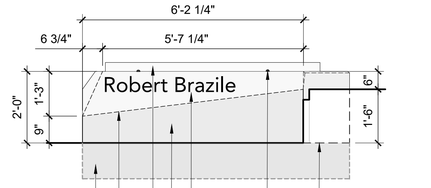
LEGEND:
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
- (C) 1/2" CHAMFER, TYP.
- (D) BRONZE BASE PLATE, BY OTHERS
- (E) EXPANSION JOINTS AT ADJACENT PAVEMENT, WALLS, AND CURBS, TYP.
- (F) ADJACENT HARDSCAPE - SEE PLAN.
- (G) SKATE STOP 'B', TYP. REFER TO 7/L-5.90



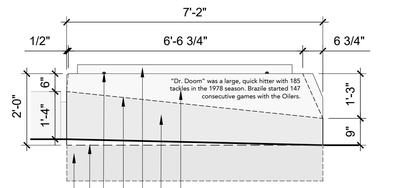
PLAN



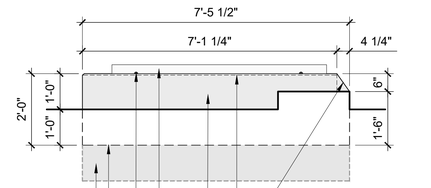
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



ELEVATION D - D'

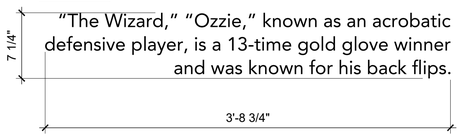
2 STATUE BASE 'B'

1/2" = 1'-0"

LETTERING NOTES:
1. LETTERING TO BE INSET PRECAST STONE, FLUSH, BRONZE COLOR.
2. FONT TO BE Avenir LT Std 55

NAME:

DESCRIPTION:



NOTES:
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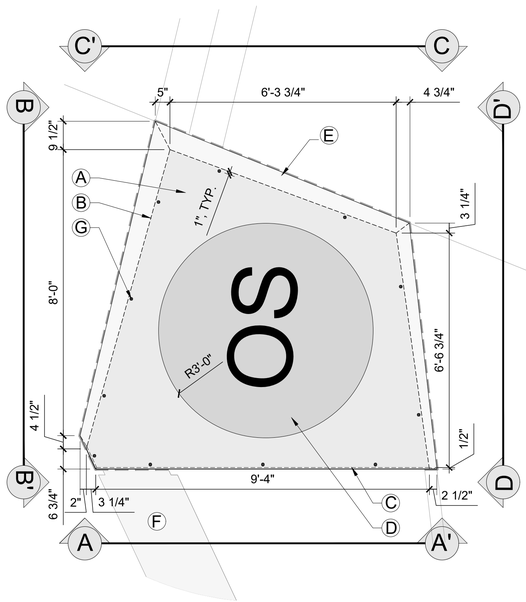
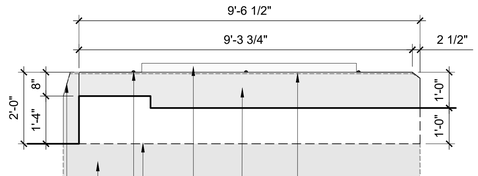
2. MAKE VISIBLE JOINTS BUTT TIGHT, FLUSH, AND HAIRLINE; USE METHODS THAT AVOID DISCOLORATION AND DAMAGE OF FINISH; GRIND SMOOTH, POLISH, AND RESTORE TO REQUIRED FINISH.
3. FOR ALL FINISHES, REFER TO HARDSCAPE SCHEDULE.
4. SPONSOR PLAQUE TO BE 5"X8", 316 STAINLESS STEEL, 1/4" THICK, DESIGN PROVIDED BY OWNER.

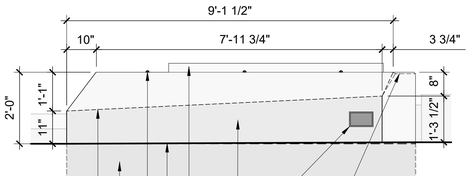
LEGEND:
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
- (C) 1/2" CHAMFER, TYP.
- (D) BRONZE BASE PLATE, BY OTHERS
- (E) EXPANSION JOINTS AT ADJACENT PAVEMENT, WALLS, AND CURBS, TYP.
- (F) ADJACENT HARDSCAPE - SEE PLAN.
- (G) SKATE STOP 'B', TYP. REFER TO 7/L-5.90



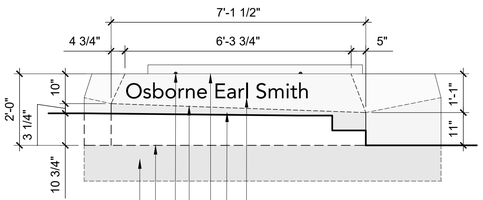
PLAN



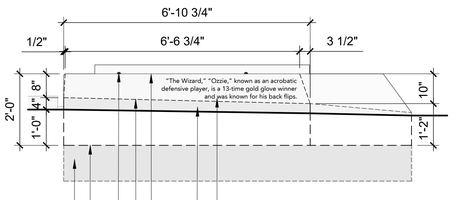
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



ELEVATION D - D'

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revisions

north arrow + scale

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

APRIL 14, 2023

sheet title

CONSTRUCTION DETAILS - STATUE BASE DETAILS

sheet number

L-5.60

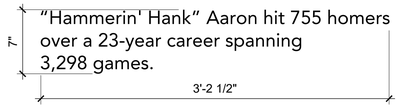
1 STATUE BASE 'C'

1/2" = 1'-0"

LETTERING NOTES:
1. LETTERING TO BE INSET PRECAST STONE, FLUSH, BRONZE COLOR.
2. FONT TO BE Avenir LT Std 55

NAME:

DESCRIPTION:



NOTES:
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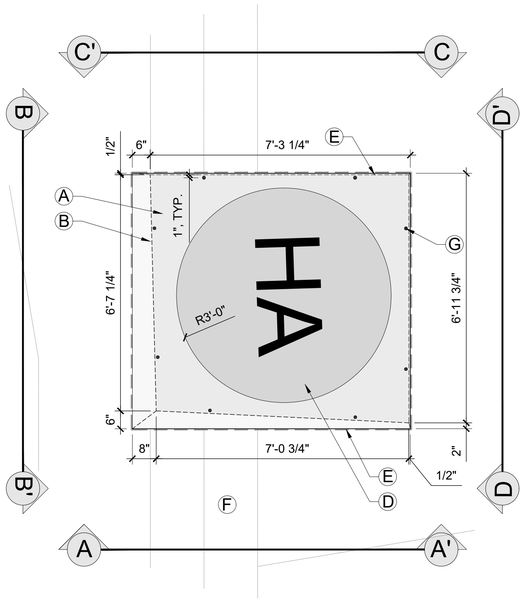
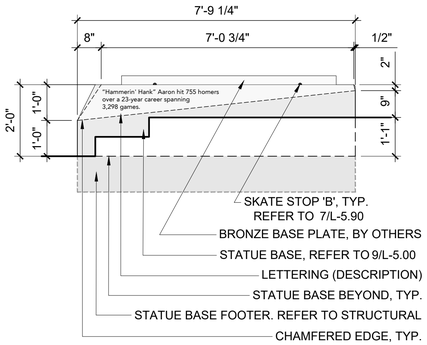
2. MAKE VISIBLE JOINTS BUTT TIGHT, FLUSH, AND HAIRLINE; USE METHODS THAT AVOID DISCOLORATION AND DAMAGE OF FINISH; GRIND SMOOTH, POLISH, AND RESTORE TO REQUIRED FINISH.
3. FOR ALL FINISHES, REFER TO HARDSCAPE SCHEDULE.
4. SPONSOR PLAQUE TO BE 5"X8", 316 STAINLESS STEEL, 1/4" THICK, DESIGN PROVIDED BY OWNER.

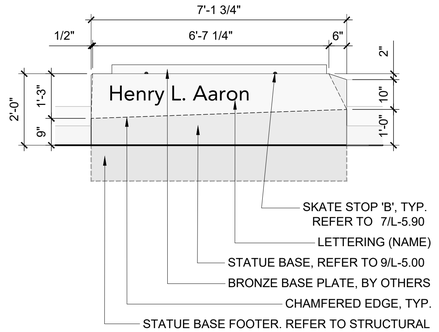
LEGEND:
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
- (C) 1/2" CHAMFER, TYP.
- (D) BRONZE BASE PLATE, BY OTHERS
- (E) EXPANSION JOINTS AT ADJACENT PAVEMENT, WALLS, AND CURBS, TYP.
- (F) ADJACENT HARDSCAPE - SEE PLAN.
- (G) SKATE STOP 'B'. REFER TO 7/L-5.90



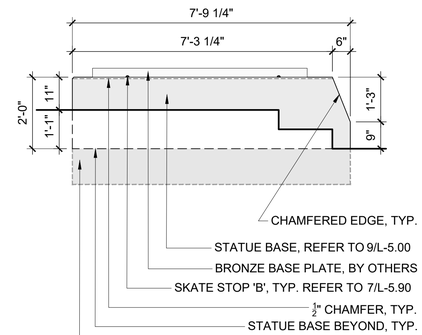
PLAN



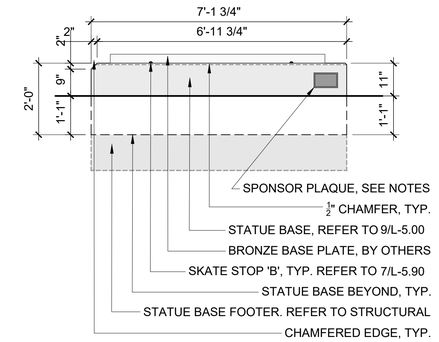
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



ELEVATION D - D'

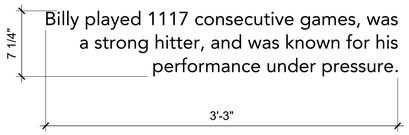
2 STATUE BASE 'D'

1/2" = 1'-0"

LETTERING NOTES:
1. LETTERING TO BE INSET PRECAST STONE, FLUSH, BRONZE COLOR.
2. FONT TO BE Avenir LT Std 55

NAME:

DESCRIPTION:



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4. SPONSOR PLAQUE TO BE 5"X8", 316 STAINLESS STEEL, 1/4" THICK, DESIGN PROVIDED BY OWNER.

LEGEND:
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
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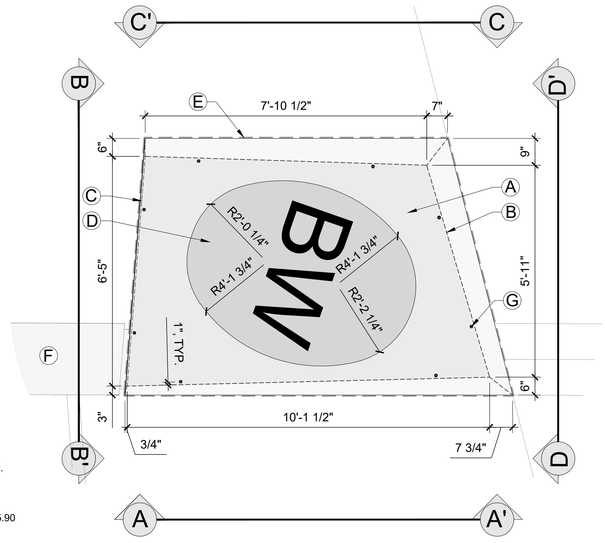
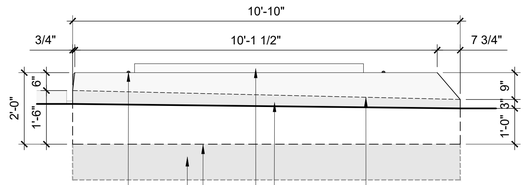
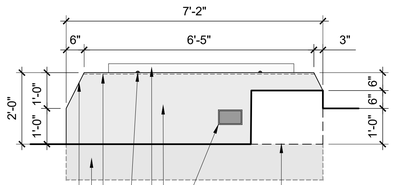
- (D) BRONZE BASE PLATE, BY OTHERS
- (E) EXPANSION JOINTS AT ADJACENT PAVEMENT, WALLS, AND CURBS, TYP.
- (F) ADJACENT HARDSCAPE - SEE PLAN.
- (G) SKATE STOP 'B', TYP. REFER TO 7/L-5.90



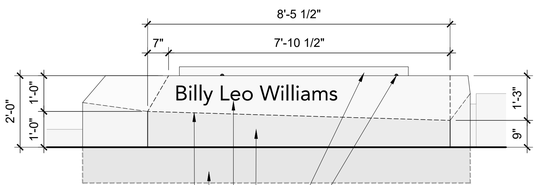
PLAN



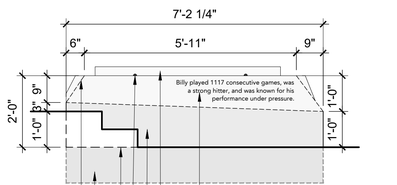
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



ELEVATION D - D'

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drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

CONSTRUCTION DETAILS - STATUE BASE DETAILS

sheet number

L-5.61

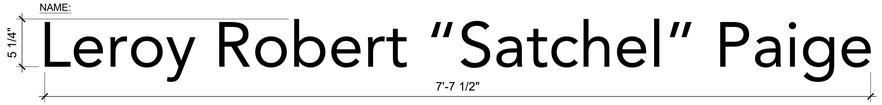
100% CONSTRUCTION PLANS

1 STATUE BASE 'E'

1/2" = 1'-0"

LETTERING NOTES:
1. LETTERING TO BE INSET PRECAST STONE, FLUSH, BRONZE COLOR.
2. FONT TO BE Avenir LT Std 55

NAME:



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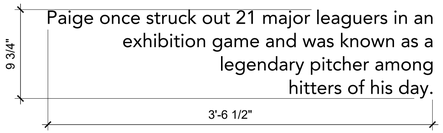

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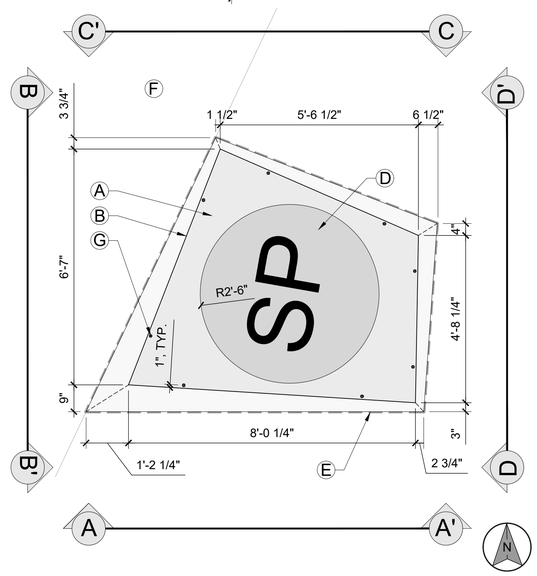
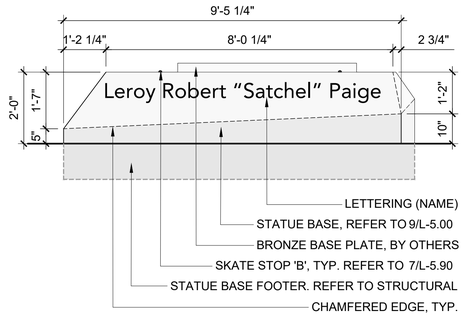
3. FOR ALL FINISHES, REFER TO HARDSCAPE SCHEDULE.
4. SPONSOR PLAQUE TO BE 5"X8", 316 STAINLESS STEEL, 1/4" THICK, DESIGN PROVIDED BY OWNER.

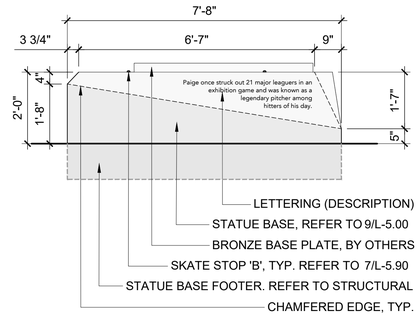
LEGEND:
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
- (C) 1/2" CHAMFER, TYP.
- (D) BRONZE BASE PLATE, BY OTHERS
- (E) EXPANSION JOINTS AT ADJACENT PAVEMENT, WALLS, AND CURBS, TYP.
- (F) ADJACENT HARDSCAPE - SEE PLAN.
- (G) SKATE STOP 'B', TYP. REFER TO 7/L-5.90



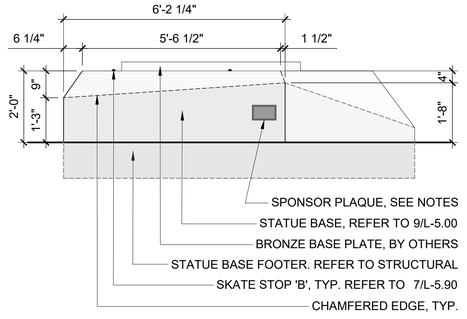
PLAN



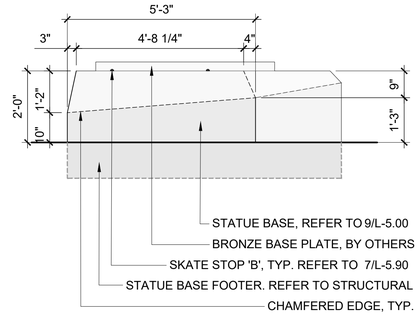
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



ELEVATION D - D'

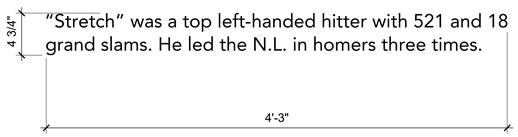
2 STATUE BASE 'F'

1/2" = 1'-0"

LETTERING NOTES:
1. LETTERING TO BE INSET PRECAST STONE, FLUSH, BRONZE COLOR.
2. FONT TO BE Avenir LT Std 55

NAME:

DESCRIPTION:



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LEGEND:
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
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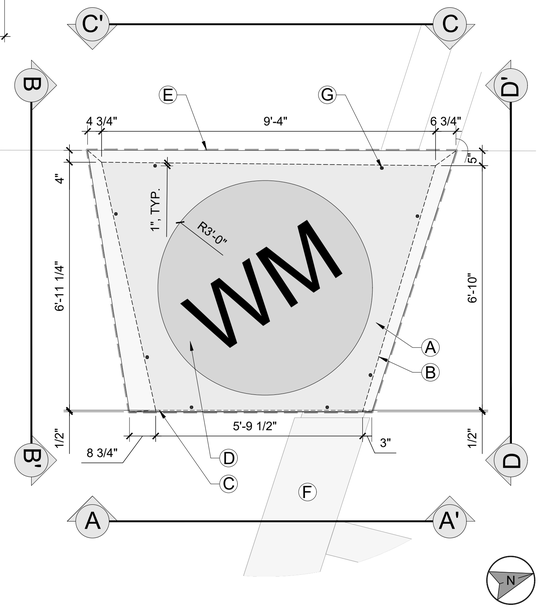
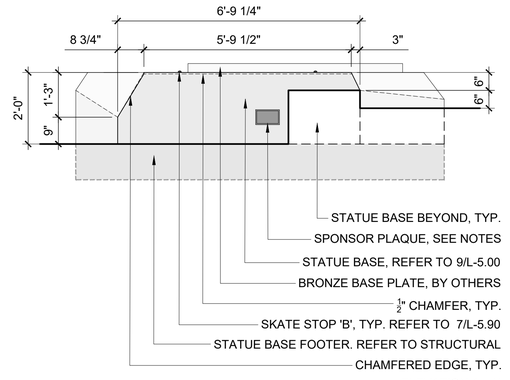
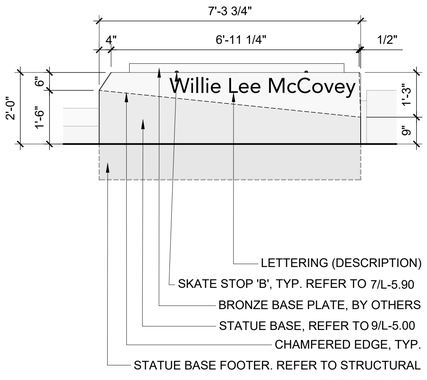
- (G) SKATE STOP 'B', TYP. REFER TO 7/L-5.90



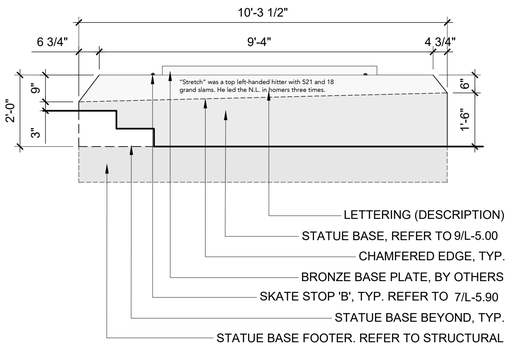
PLAN



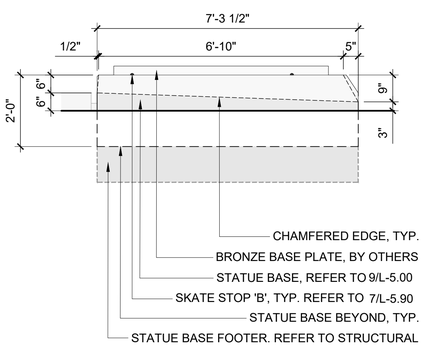
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



ELEVATION D - D'

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drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

CONSTRUCTION DETAILS - STATUE BASE DETAILS

sheet number

L-5.62

100% CONSTRUCTION PLANS

NOTES:

1. BASE PLATE DRAWINGS FOR DESIGN INTENT ONLY. ALL SIZING AND ATTACHMENTS ARE SHOWN FOR SCALE AND AESTHETIC REFERENCE. CONTRACTOR SHALL SUBMIT FULLY COORDINATED SHOP DRAWINGS FOR EACH COMPONENT OF STRUCTURE THAT ARE STAMPED BY A STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.
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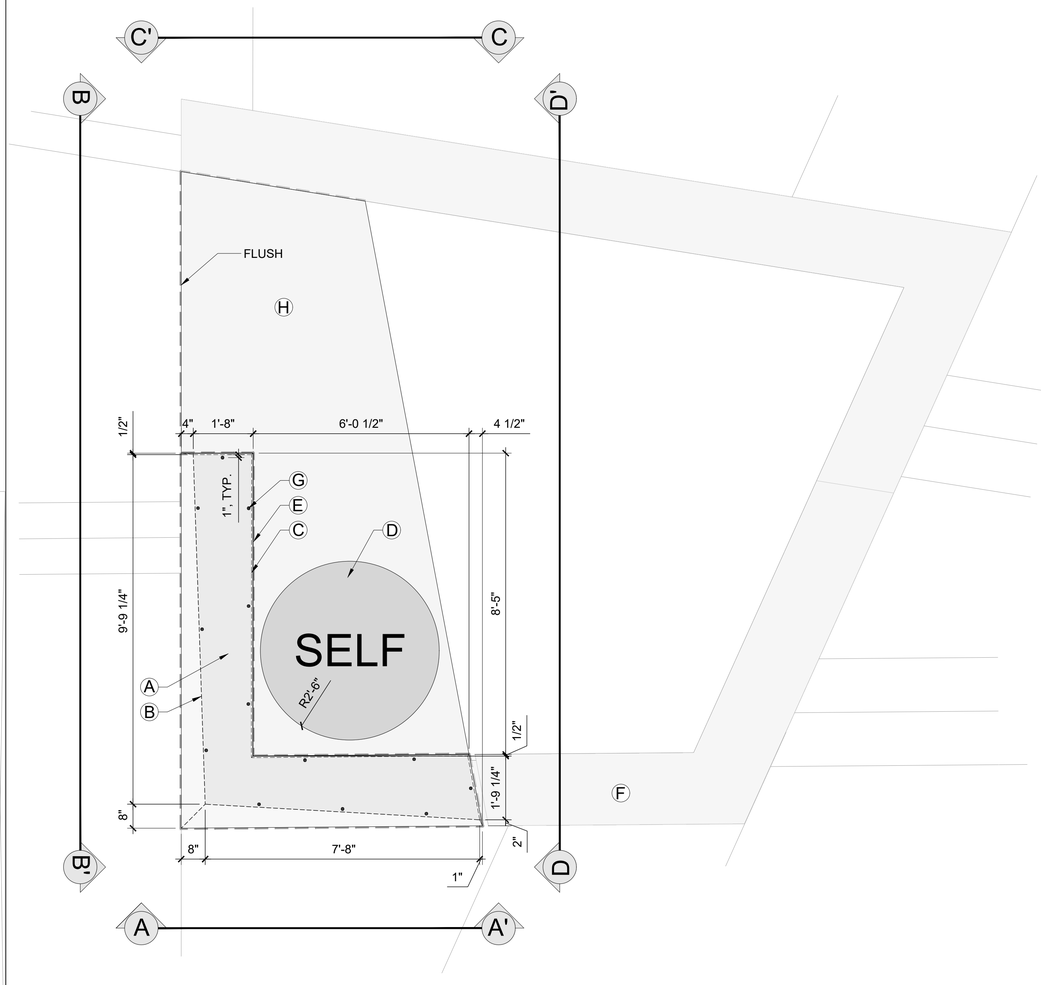
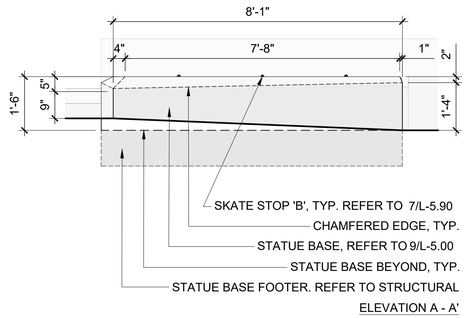
3. FOR ALL FINISHES, REFER TO HARDSCAPE SCHEDULE.
4. LETTERING TO BE PROVIDED BY OWNER. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT FOR FINAL STATUE BASE LETTERING.

LEGEND:

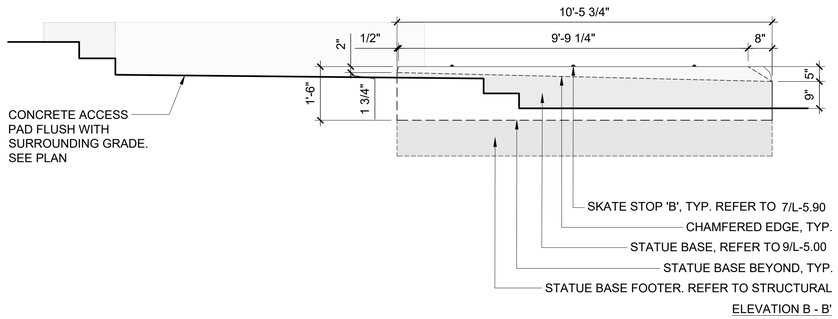
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
- (C) 1/2" CHAMFER, TYP.
- (D) BRONZE BASE PLATE, BY OTHERS
- (E) EXPANSION JOINTS AT ADJACENT PAVEMENT, WALLS, AND CURBS, TYP.
- (F) ADJACENT HARDSCAPE - SEE PLAN.
- (G) SKATE STOP 'B', TYP. REFER TO 7/L-5.90
- (H) CONCRETE ACCESS PAD. SEE PLAN.



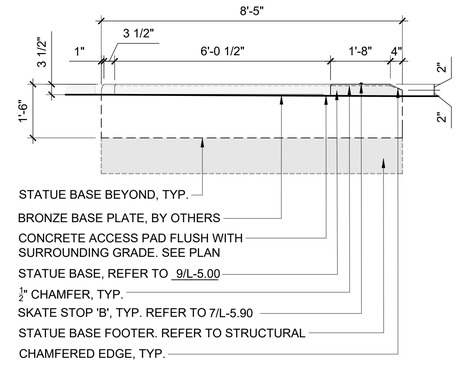
PLAN



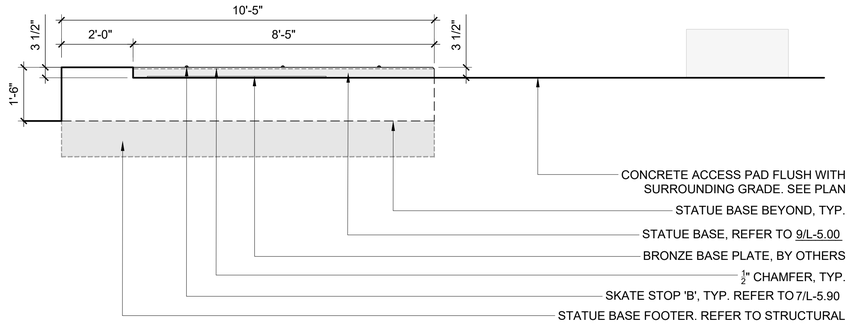
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



ELEVATION D - D'

1 STATUE BASE 'G' - SELFIE PLINTH

1/2" = 1'-0"

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404.873.6730
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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

CONSTRUCTION DETAILS - STATUE BASE DETAILS

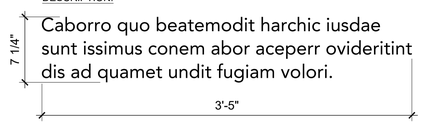
sheet number

L-5.63

LETTERING NOTES:
1. LETTERING TO BE INSET PRECAST STONE, FLUSH, BRONZE COLOR.
2. FONT TO BE Avenir LT Std 55

NAME:

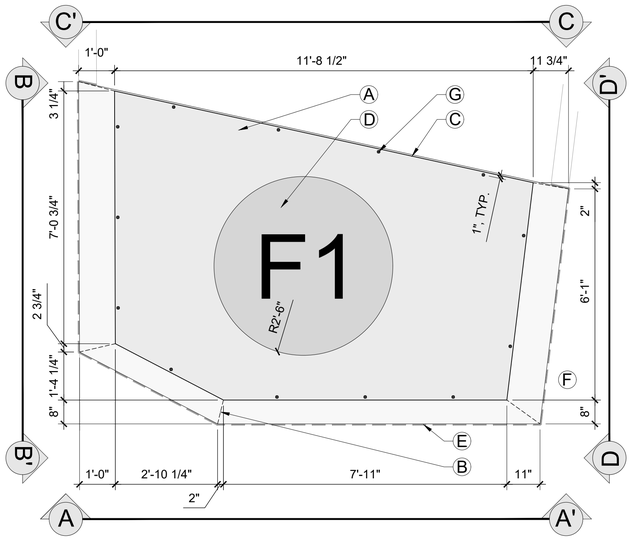
DESCRIPTION:



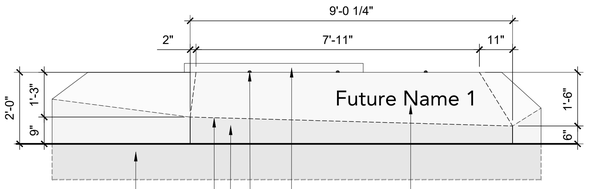
NOTES:
1. BASE PLATE DRAWINGS FOR DESIGN INTENT ONLY. ALL SIZING AND ATTACHMENTS ARE SHOWN FOR SCALE AND AESTHETIC REFERENCE. CONTRACTOR SHALL SUBMIT FULLY COORDINATED SHOP DRAWINGS FOR EACH COMPONENT OF STRUCTURE THAT ARE STAMPED BY A STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.
2. MAKE VISIBLE JOINTS BUTT TIGHT, FLUSH, AND HAIRLINE; USE METHODS THAT AVOID DISCOLORATION AND DAMAGE OF FINISH; GRIND SMOOTH, POLISH, AND RESTORE TO REQUIRED FINISH.
3. FOR ALL FINISHES, REFER TO HARDSCAPE SCHEDULE.
4. SPONSOR PLAQUE TO BE 5"X8", 316 STAINLESS STEEL, 1/4" THICK, DESIGN PROVIDED BY OWNER.

LEGEND:

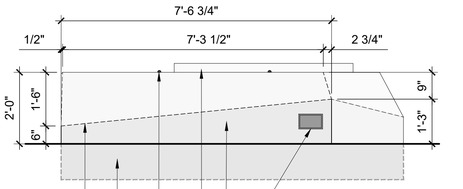
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
- (C) 1/2" CHAMFER, TYP.
- (D) BRONZE BASE PLATE, BY OTHERS
- (E) EXPANSION JOINTS AT ADJACENT PAVEMENT, WALLS, AND CURBS, TYP.
- (F) ADJACENT HARDSCAPE - SEE PLAN.
- (G) SKATE STOP 'B', TYP. REFER TO 7/L-5.90



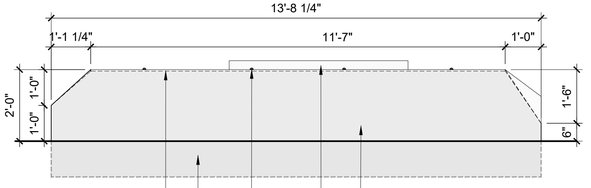
PLAN



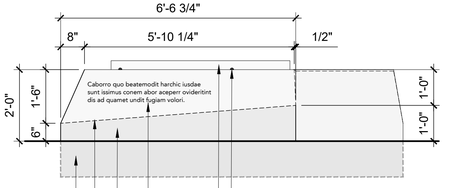
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



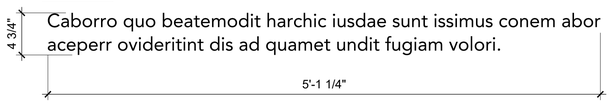
ELEVATION D - D'

1 FUTURE STATUE BASE 1 (NOT IN CONTRACT.)
1/2" = 1'-0"

LETTERING NOTES:
1. LETTERING TO BE INSET PRECAST STONE, FLUSH, BRONZE COLOR.
2. FONT TO BE Avenir LT Std 55

NAME:

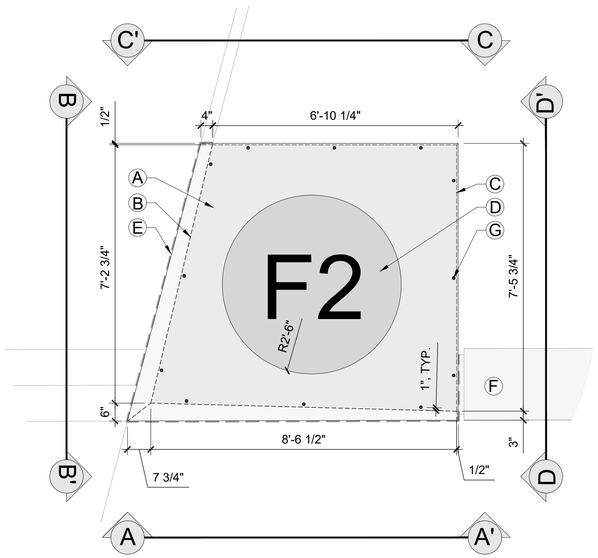
DESCRIPTION:



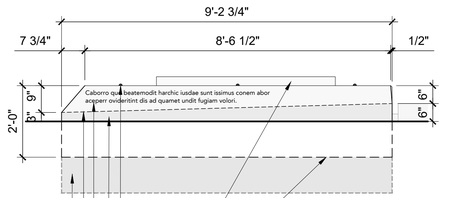
NOTES:
1. BASE PLATE DRAWINGS FOR DESIGN INTENT ONLY. ALL SIZING AND ATTACHMENTS ARE SHOWN FOR SCALE AND AESTHETIC REFERENCE. CONTRACTOR SHALL SUBMIT FULLY COORDINATED SHOP DRAWINGS FOR EACH COMPONENT OF STRUCTURE THAT ARE STAMPED BY A STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.
2. MAKE VISIBLE JOINTS BUTT TIGHT, FLUSH, AND HAIRLINE; USE METHODS THAT AVOID DISCOLORATION AND DAMAGE OF FINISH; GRIND SMOOTH, POLISH, AND RESTORE TO REQUIRED FINISH.
3. FOR ALL FINISHES, REFER TO HARDSCAPE SCHEDULE.
4. SPONSOR PLAQUE TO BE 5"X8", 316 STAINLESS STEEL, 1/4" THICK, DESIGN PROVIDED BY OWNER.

LEGEND:

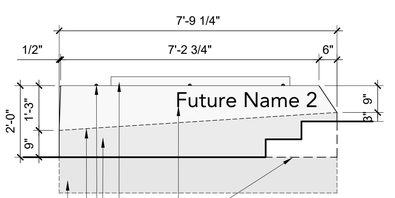
- (A) STATUE BASE, REFER TO 9/L-5.00
- (B) CHAMFERED EDGE, TYP.
- (C) 1/2" CHAMFER, TYP.
- (D) BRONZE BASE PLATE, BY OTHERS
- (E) EXPANSION JOINTS AT ADJACENT PAVEMENT, WALLS, AND CURBS, TYP.
- (F) ADJACENT HARDSCAPE - SEE PLAN.
- (G) SKATE STOP 'B', TYP. REFER TO 7/L-5.90



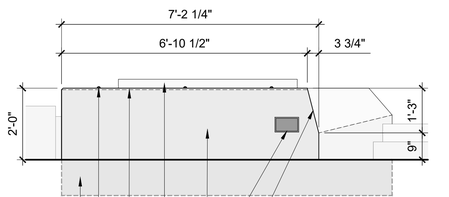
PLAN



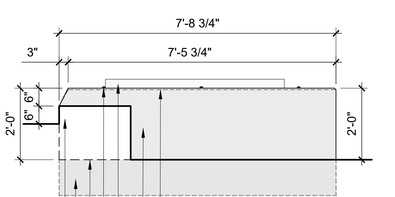
ELEVATION A - A'



ELEVATION B - B'



ELEVATION C - C'



ELEVATION D - D'

2 FUTURE STATUE BASE 2 (NOT IN CONTRACT.)
1/2" = 1'-0"

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P.O. BOX 1827
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drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

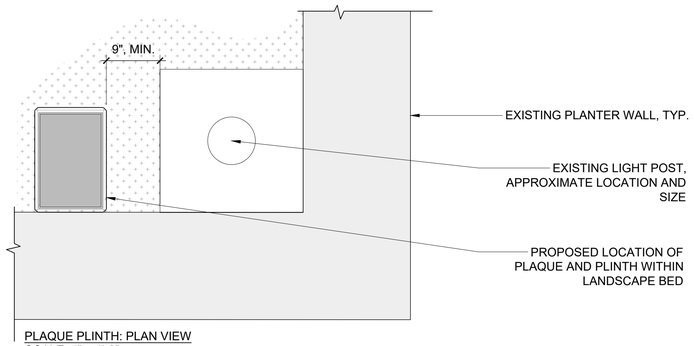
CONSTRUCTION DETAILS - STATUE BASE DETAILS

sheet number

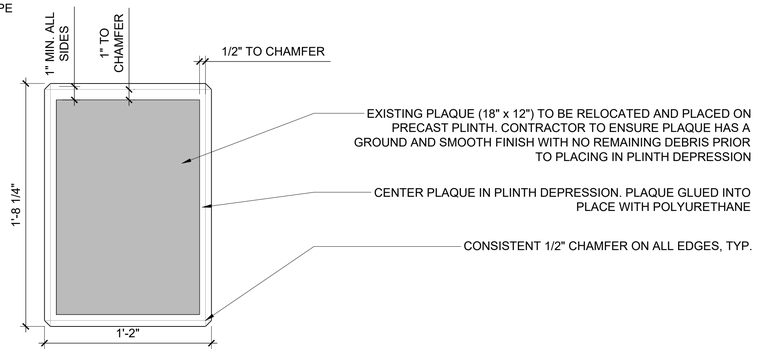
L-5.64

100% CONSTRUCTION PLANS

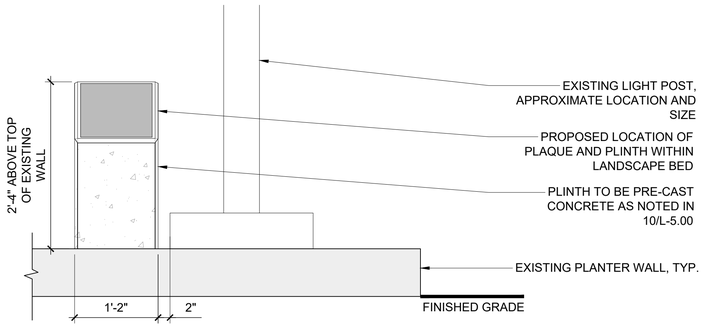
NOTES:
1. DRAWING TO SERVE AS BASIS OF DESIGN ONLY. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER AND LANDSCAPE ARCHITECT PRIOR TO APPROVAL OR FABRICATION.
2. CONTRACTOR TO SIZE PLINTH TO ACCOMMODATE ACTUAL SIZE OF SALVAGED PLAQUE WITHIN A RANGE OF 1/4".
3. LOCATION OF MARKER TO BE FIELD VERIFIED PER THE DIMENSIONS AS NOTED BELOW



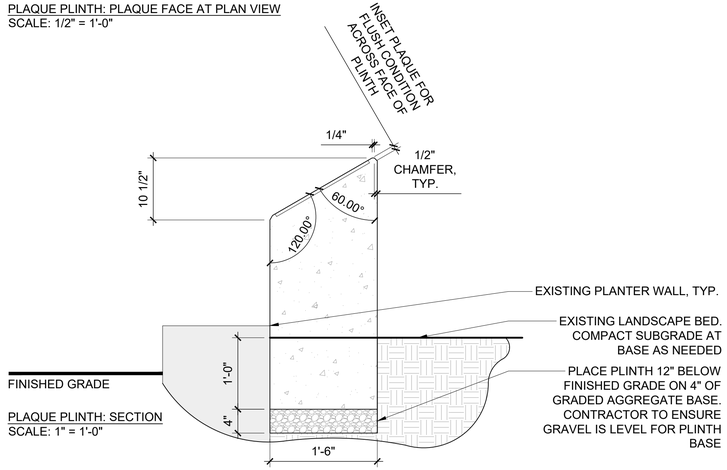
PLAQUE PLINTH: PLAN VIEW
SCALE: 1" = 1'-0"



PLAQUE PLINTH: PLAQUE FACE AT PLAN VIEW
SCALE: 1/2" = 1'-0"



PLAQUE PLINTH: ELEVATION VIEW
SCALE: 1" = 1'-0"



PLAQUE PLINTH: SECTION
SCALE: 1" = 1'-0"

1 PLAQUE MARKER
1" = 1'-0"

2 INTERPRETIVE LETTERS (NOT IN CONTRACT)
N.T.S.

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

sheet title

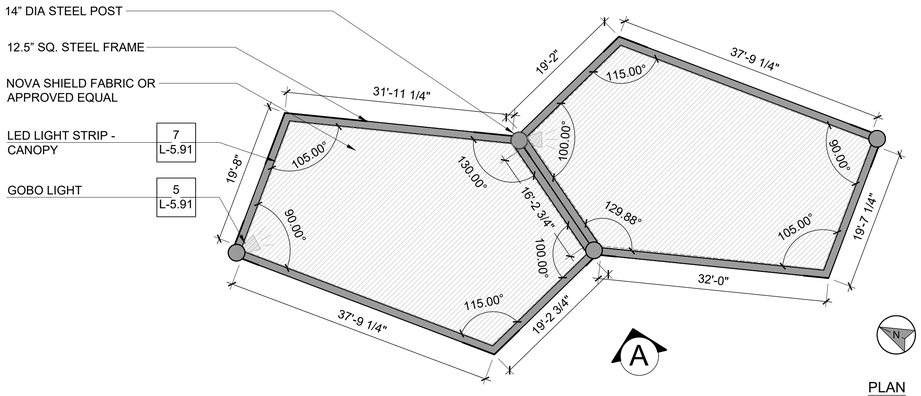
CONSTRUCTION DETAILS - DESIGN DETAILS

sheet number

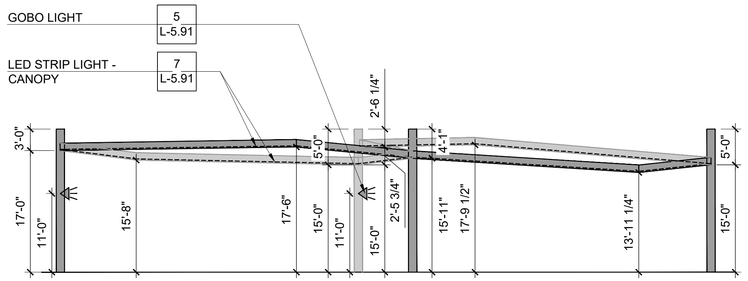
L-5.70

NOTES:

1. TENSILE MEMBRANE STRUCTURE DRAWINGS FOR DESIGN INTENT ONLY. TENSILE MEMBRANE STRUCTURE IS A DELEGATED DESIGN ITEM TO THE CONTRACTOR. CONTRACTOR TO COORDINATE WITH USA SHADE OR APPROVED EQUAL AND SUBMIT FULLY COORDINATED SHOP DRAWINGS FOR EACH COMPONENT OF THE STRUCTURE FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.
2. MAKE VISIBLE JOINTS BUTT TIGHT, FLUSH, AND HAIRLINE; USE METHODS THAT AVOID DISCOLORATION AND DAMAGE OF FINISH; GRIND SMOOTH, POLISH, AND RESTORE TO REQUIRED FINISH.
3. ALL METAL FINISHES, COATINGS, AND HARDWARE TO BE EXTERIOR RATED AND CORROSION RESISTANT IN A SALT SPRAY ENVIRONMENT. ALL STEEL TO BE HOT DIPPED GALVANIZED. ALL EXPOSED STEEL COMPONENTS TO BE PRIMED WITH SHERWIN-WILLIAMS MACROPOXY 646, PAINTED WITH SHERWIN-WILLIAMS ACROLON 218 HS, AND FINISHED WITH SHERWIN-WILLIAMS 2K WATERBASED ANTI-GRAFFITI COATING, OR EQUAL.
4. TENSILE MEMBRANE STRUCTURE TO CONTAIN INTEGRAL LED STRIP LIGHT AROUND PERIMETER OF CANOPY. DRIVERS FOR LED STRIP TO BE CONCEALED IN CANOPY POLES. EACH POLE SHALL INCLUDE A UTILITY ACCESS HAND HOLE AT THE BASE, SUFFICIENTLY SIZED TO ACCOMMODATE THE DRIVERS. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT AND SHADE CANOPY MANUFACTURER FOR DRIVER MOUNTING TO INSIDE OF POLE.
5. TENSILE MEMBRANE STRUCTURE TO INCLUDE TWO GOBO LIGHTS AS INDICATED. POLES SHALL INCLUDE UTILITY ACCESS HAND HOLES ON OPPOSITE SIDE FROM GOBO MOUNTING LOCATION. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT AND SHADE CANOPY MANUFACTURER FOR GOBO LIGHT FIXTURE MOUNTING.
6. TENSILE MEMBRANE STRUCTURE TO BE RATED FOR HIGH WINDS AND FLOODING.



PLAN



ELEVATION 'A'

DESIGN INTENT
NTS

1 TENSILE MEMBRANE STRUCTURE
1" = 10'

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drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

APRIL 14, 2023

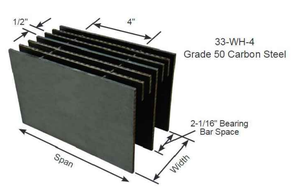
sheet title

CONSTRUCTION DETAILS - DESIGN DETAILS

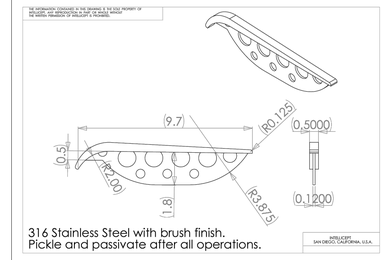
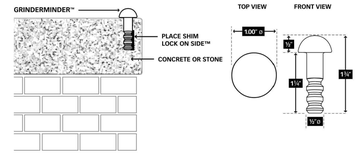
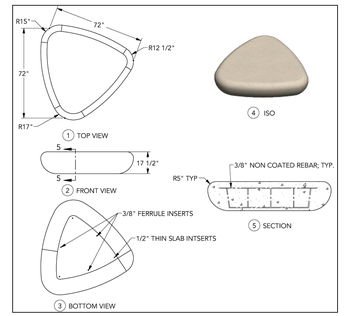
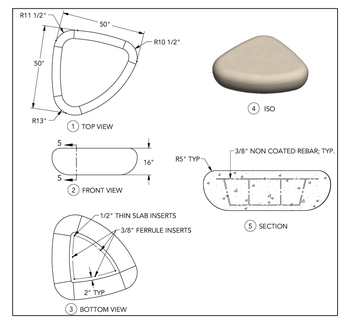
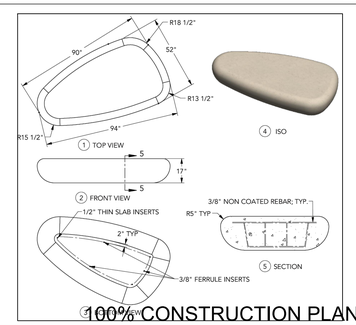
sheet number

L-5.80

SCHEDULE

DETAIL	SPECIFICATIONS	IMAGE
1 BIKE RACK	MANUFACTURER NAME: LANDSCAPE FORMS OR APPROVED EQUAL WEB: WWW.LANDSCAPEFORMS.COM PRODUCT NAME: Ride™ Bike Rack COLOR AND FINISH: COLOR AND FINISH TO BE SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL RANGE. SUBMITTAL REQUIRED. LOCATION: NORTH OF MAIN DROP-OFF AND AT ADA PARKING AREA QTY: 9 NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.	 Bike rack 4" x 28" x 26"
2 TRASH RECEPTACLE	MANUFACTURER NAME: TO MATCH CITY OF MOBILE STANDARDS PRODUCT NAME: TO MATCH CITY OF MOBILE STANDARDS QTY: 2 NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.	
3 TREE GRATE	MANUFACTURER NAME: BARRY PATTERN & FOUNDRY OR APPROVED EQUAL PHONE: 1.800.524.1809 WEB: WWW.BARRYCRAFT.COM EMAIL: DANNYB@BARRYCRAFT.COM ADDRESS: 3333 35TH AVENUE NORTH BIRMINGHAM, AL 35207 PRODUCT DESCRIPTION: CAST IRON TREE GRATE, MODEL #B-TG738-1, 72" X 72" X 1 ½" THICK, FURNISHED IN 4 SECTIONS (30" DIA. CLEAR OPENING) NOT ADA COMPLIANT & FURNISHED WITH CAST IRON SECTION FRAMES. QTY: 2 NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION. 2. TREE GRATES TO INCLUDE CUSTOM TEXT: "MOBILE CONVENTION CENTER 1993" 3. REFER TO 3/LP-2.00 FOR TREE INSTALLATION AT TREE GRATE.	
4 REFURBISHED TREE GRATE	PRODUCT QTY: 2 NOTES 1. CONTRACTOR TO CLEAN AND RE-INSTALL EXISTING REFURBISHED TREE GRATE PER MANUFACTURER'S SPECIFICATIONS. 2. REFER TO 3/LP-2.00 FOR TREE INSTALLATION AT TREE GRATE.	
5 HARDSCAPE DRAIN GRATE	MANUFACTURER NAME: Ohio Gratings OR APPROVED EQUAL WEB: https://www.ohiogratings.com/ PRODUCT NAME: 33WH4 Wheels n Heels® Metro® Grating MATERIAL: Galvanized Steel FINISH: OnGrip® Spray Traction Surface NOTES 1. Follow all manufacturer's specifications for installation. 2. Refer to Civil Plans for all locations and additional details. 3. Grating meets AASHTO H15/H20 loading with a 30% impact. 4. Grating has ½" gap between the bars which meets the ADA requirements. 5. Grating has a 67% open area. 6. Stainless Steel Lifters will be provided. 7. Anchor blocks will also be provided, four/panel. 8. Also included are 2 ½" x 2 ½" x ¼ Carbon steel angles on the span ends of the grating that will accommodate a barrier between the concrete and the grating. 9. The angles will be welded on the bottom of the panels and OGI will provide holes that align with the anchor blocks for installation.	

SCHEDULE

DETAIL	SPECIFICATIONS	IMAGE
6 SKATE STOP 'A'	MANUFACTURER NAME: SKATE STOPPERS OR APPROVED EQUAL PHONE: 619.447.6374 WEB: SKATESTOPPERS.COM PRODUCT TYPE: WELLSTREE-SS FOR 2" RADIUS MATERIAL: 316 STAINLESS STEEL FINISH: BRUSHED FINISH QTY: 83 NOTES 1. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 2. SEE 1/L-5.50 & 2/L-5.50 FOR LOCATIONS.	
7 SKATE STOP 'B'	MANUFACTURER NAME: GRIND TO A HALT, INC. PHONE: 630.365.2375 WEB: GRINDTOAHALT.COM PRODUCT TYPE: HEMI GRINDERMINDER FINISH: FINISH TO BE SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL LINE OF COLORS AND FINISHES. CONTRACTOR TO SUBMIT SAMPLES. QTY: NOTES 1. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 2. REFER TO STATUE BASE DETAILS FOR LOCATIONS. 3. SUBMITTAL REQUIRED.	 
8 PRECAST FREESTANDING BENCH A	MANUFACTURER NAME: WAUSAU (GALET VI BENCH), GEORGIA PRECAST SOLUTIONS, OR APPROVED EQUAL PRODUCT MATERIAL: PRECAST CONCRETE TYPE: TO BE SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL LINE OF COLORS AND FINISHES. CONTRACTOR TO SUBMIT SAMPLES. QTY: 3 NOTES 1. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 2. REFER TO LAYOUT PLAN FOR LOCATIONS. 3. SUBMITTAL REQUIRED	
9 PRECAST FREESTANDING BENCH B	MANUFACTURER NAME: WAUSAU (GALET I BENCH), GEORGIA PRECAST SOLUTIONS, OR APPROVED EQUAL PRODUCT MATERIAL: PRECAST CONCRETE TYPE: TO BE SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL LINE OF COLORS AND FINISHES. CONTRACTOR TO SUBMIT SAMPLES. QTY: 4 NOTES 1. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 2. REFER TO LAYOUT PLAN FOR LOCATIONS. 3. SUBMITTAL REQUIRED	
10 PRECAST FREESTANDING BENCH C	MANUFACTURER NAME: WAUSAU (GALET III BENCH), GEORGIA PRECAST SOLUTIONS, OR APPROVED EQUAL PRODUCT MATERIAL: PRECAST CONCRETE TYPE: TO BE SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL LINE OF COLORS AND FINISHES. CONTRACTOR TO SUBMIT SAMPLES. QTY: 2 NOTES 1. INSTALLATION PER MANUFACTURER'S SPECIFICATIONS. 2. REFER TO LAYOUT PLAN FOR LOCATIONS. 3. SUBMITTAL REQUIRED	

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LANDSCAPE ARCHITECTURE
Atlanta, GA | Tulsa, OK | Chattanooga, TN

1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

drawing date

APRIL 14, 2023

sheet title

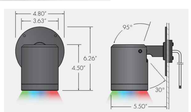
CONSTRUCTION DETAILS - FIXED FURNITURE SCHEDULE

sheet number

L-5.90

100% CONSTRUCTION PLANS

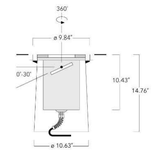
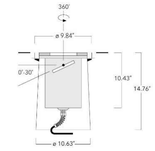
SCHEDULE

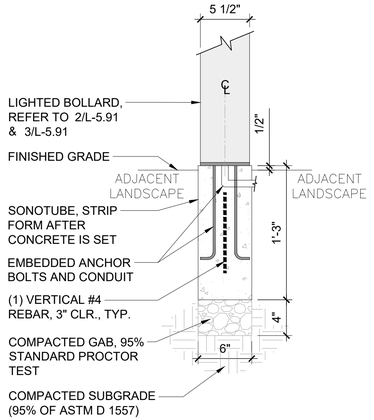
DETAIL	SPECIFICATIONS	IMAGE
1 LIGHT POLE	MANUFACTURER NAME: RAGNI LIGHTING OR APPROVED EQUAL WEB: WWW.RAGNI-LIGHTING.COM PRODUCT NAME: IRYS mega - KIMA 700 Pole with Decorative tip 800 GENERAL DIMENSIONS: approx. 6m HT. MATERIAL: STANDARD COLOR Sanded Gray 2900 FIXTURES: REFER TO UTILITY FIXTURE SHEETS (L-4.01 - L-4.03) SPEC: IRY-L-3-4-70-10-1-FINISH-SLV-WHT-CAN-CAM-LOU NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION. 2. CAMERAS, SPEAKERS, AND LIGHT FIXTURES PER PLANS.	
2 LIGHTED BOLLARD 'A'	MANUFACTURER NAME: FC LIGHTING OR APPROVED EQUAL PRODUCT NAME: FCB6C-36N02 GENERAL DIMENSIONS: 19"H x 6.3" DIA. MATERIAL: POLYESTER POWDER COATED FINISH FINISH: RAL MATCH IRON GRAY FROM WALL LIGHT HEIGHT: 19" DISTRIBUTION: 180 DEGREES SPEC: FCB6C-36N02-UNV-MOD19-3K-5L-FINISH-LD-MOD 180DEG DIST NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.	
3 LIGHTED BOLLARD 'B'	MANUFACTURER NAME: FC LIGHTING OR APPROVED EQUAL WEB: HTTPS://FCLIGHTING.COM/DOWNLOADS/INSTALLS/FCB6C-36N02II.PDF PRODUCT NAME: FCB6C-36N02 GENERAL DIMENSIONS: 39.55"H x 6.3" DIA. MATERIAL: POLYESTER POWDER COATED FINISH FINISH: RAL MATCH IRON GRAY FROM WALL LIGHT HEIGHT: 39.55" DISTRIBUTION: 360 DEGREES SPEC: FCB6C-36N02-UNV-39-3K-5L-FINISH-LD NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.	
4 TREE UPLIGHT	MANUFACTURER NAME: INSIGHT LIGHTING OR APPROVED EQUAL PHONE: 505.345.0888 WEB: WWW.INSIGHTLIGHTING.COM PRODUCT NAME: PROSPOT 3 | PERFORMANCE PROJECTOR FINISH: CUSTOM COLOR RAL MATCH IRON GRAY FROM WALL LIGHT SPEC: PS3-SO-CCT-40-STK-VOLT-DMXFX-CC-VS-CRF NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.	 
5 GOBO LIGHT	MANUFACTURER NAME: WE-EF OR APPROVED EQUAL PHONE: +1 724.742.0030 WEB: WWW.WE-EF.COM PRODUCT NAME: FLC210 LED Gobo Projector #139-2480_max_MOD_3 LENS NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION. 2. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECT FOR GOBO FIXTURE MOUNTING TO SHADE CANOPY POSTS 3. LENSES SOLD SEPARATELY. OWNER IS RESPONSIBLE FOR PROVIDING INTERCHANGEABLE LENSES FOR GRAPHIC PROJECTION.	 GOBO LIGHT - REFERENCE IMAGE

SCHEDULE

DETAIL	SPECIFICATIONS	IMAGE
6 WALL LIGHT	MANUFACTURER NAME: PERFORMANCE IN LIGHTING OR APPROVED EQUAL WEB: WWW.PERFORMANCEINLIGHTING.COM PRODUCT NAME: INSERT+ZERO CLIPS 6W GENERAL DIMENSIONS: 3 1/32" X 4 7/32" FINISH: GR-94 / ALUMINUM METALLIC / TEXTURED NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.	
7 LED LIGHT STRIP - CANOPY	MANUFACTURER NAME: KELVIX OR APPROVED EQUAL P: 800.789.3810 WEB: HTTPS://WWW.KELVIX.COM/ PRODUCT NAME: SIGNWAVE 3 (OUTDOOR) ITEM #: RGBW-2-WR-24V-CH219N-2-WH-CP-EC-HLV192 SPEC: CH219N-2-WH-CP-EC ACCESSORY: CH-219-N EXTRUDED ALUMINUM MOUNTING CHANNEL NOTES 1. INSTALLATION PER MANUFACTURER SPECIFICATIONS. 2. CHANNEL TO BE MITERED PER THE CANOPY DRAWINGS FOR THE APPEARANCE OF A CONTINUOUS RUN ALONG THE INSIDE EDGE OF THE CANOPY FRAME.	
8 LED LIGHT STRIP - FOUNTAIN	MANUFACTURER NAME: KELVIX OR APPROVED EQUAL P: 800.789.3810 WEB: HTTPS://WWW.KELVIX.COM/ PRODUCT NAME: SIGNWAVE 3 (OUTDOOR) ITEM #: RGBW-3-WR-24V-CH-016-2-FRR-CP-EC-HLV192-HLV-96 SPEC: CH016-2-FRR-CP-EC ACCESSORY: CH-016 EXTRUDED ALUMINUM MOUNTING CHANNEL NOTES 1. INSTALLATION PER MANUFACTURER SPECIFICATIONS.	
9 LED STRIP LIGHT DRIVER	MANUFACTURER NAME: KELVIX OR APPROVED EQUAL P: 800.789.3810 WEB: WWW.KELVIX.COM PRODUCT NAME: HLV192 DESCRIPTION: 192 WATT (2X96W) - 24 VOLT | CLASS 2 SUPPLY NOTES 1. INSTALLATION PER MANUFACTURER SPECIFICATIONS.	
10 DRIVER CABINET	MANUFACTURER NAME: ALTELIX OR APPROVED EQUAL P: 866.660.9434 WEB: WWW.ALTELIX.COM PRODUCT NAME: ALTELIX 20X16X8 VENTED FIBERGLASS WEATHERPROOF NEMA ENCLOSURE SKU:NFC201608V NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION. 2. CABINET TO HAVE NON-METALLIC MOUNTING PLATE. 3. CABINET TO HAVE KEYED LOCK SET WITH KEYS.	

SCHEDULE

DETAIL	SPECIFICATIONS	IMAGE
11 IN-GRADE UPLIGHT - TREE	MANUFACTURER NAME: WE-EF OR APPROVED EQUAL PHONE: +1 724.742.0030 WEB: WWW.WE-EF.COM PRODUCT NAME: ETC130-GB-CC LED COLOR CHANGER ITEM #: 185-3390 SPEC: ETC130-GB-CC [N] - #185-3390-MOD-NARROW (14.6 beam) NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.	  PRODUCT IMAGE REFERENCE
12 IN-GRADE UPLIGHT - ARCADE	MANUFACTURER NAME: WE-EF OR APPROVED EQUAL PHONE: +1 724.742.0030 WEB: WWW.WE-EF.COM PRODUCT NAME: ETC130-GB-CC LED COLOR CHANGER ITEM #: 185-3390 SPEC: ETC130-GB-CC [M] #185-3390 NOTES 1. FOLLOW ALL MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION.	  PRODUCT IMAGE REFERENCE



13 LIGHTED BOLLARD MOUNTING
1 1/2" = 1'-0"

NOTES:
1. SUBMITTALS REQUIRED FOR ALL LIGHT FIXTURES FOR APPROVAL BY LANDSCAPE ARCHITECT.
2. REFER TO UTILITY FIXTURE SCHEDULE ON L-4.01 - L-4.04 FOR LIGHT FIXTURE QUANTITIES.

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drawn by: CM
checked by: CM

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APRIL 14, 2023

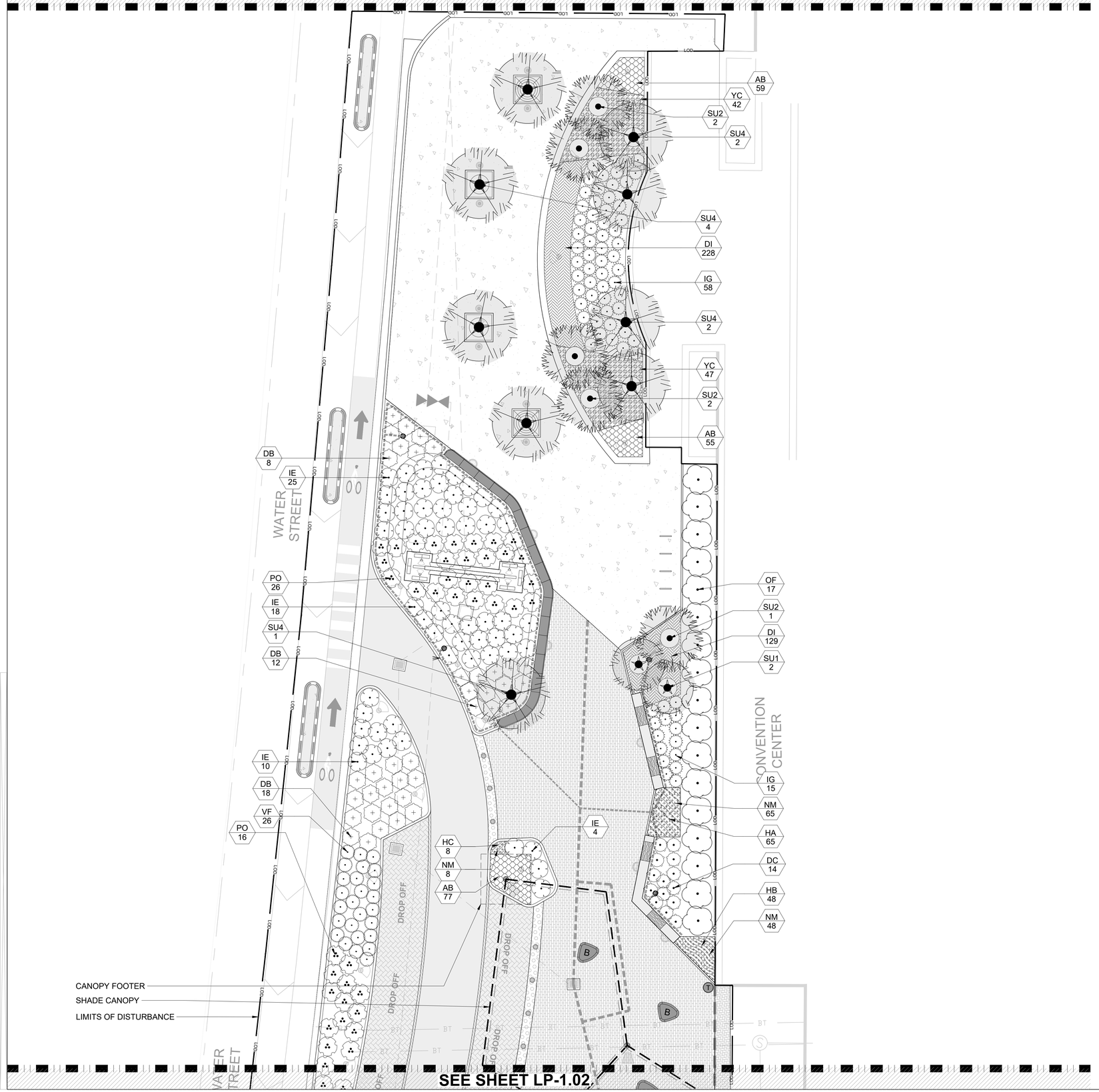
sheet title

CONSTRUCTION DETAILS - MEP SCHEDULE

sheet number

L-5.91

N.I.C



SEE SHEET LP-1.02

PLANT SCHEDULE
REFER TO LP-1.10 FOR FULL SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME
	OF	17	OSMANTHUS FRAGRANS
	SU1	2	SABAL PALMETTO
	SU2	5	SABAL PALMETTO
	SU4	9	SABAL PALMETTO

SHRUBS	CODE	QTY	BOTANICAL NAME
	DB	38	DISTYLIUM X 'BLDY01'
	DC	14	DISTYLIUM X `PIIDIST-V`
	IG	73	ILEX GLABRA `SMNIGAB17`
	IE	57	ILLICIUM PARVIFLORUM 'PIIIP-I'
	PO	40	PRUNUS LAUROCERASUS 'OTTO LUYKEN'
	VF	26	VIBURNUM OBOVATUM 'COMPACTA'

GROUND COVERS	CODE	QTY	BOTANICAL NAME
	AB	191	AGAPANTHUS AFRICANUS 'BLUE'
	DI	357	DIETES IRIDIOIDES
	HA	65	HEMEROCALLIS X 'APOLLODORUS'
	HB	48	HEMEROCALLIS X 'BALI WATERCOLOR'
	HC	8	HEMEROCALLIS X 'CORFU'
	NM	121	NARCISSUS X 'MOUNT HOOD'
	YC	89	YUCCA FILAMENTOSA 'COLOR GUARD'

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scale: 1" = 10'-0"

0 5 10 15 25

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PHASE 1

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1 S WATER ST.
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client information
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P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

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project number: 22089
contact: BRYAN BAYS
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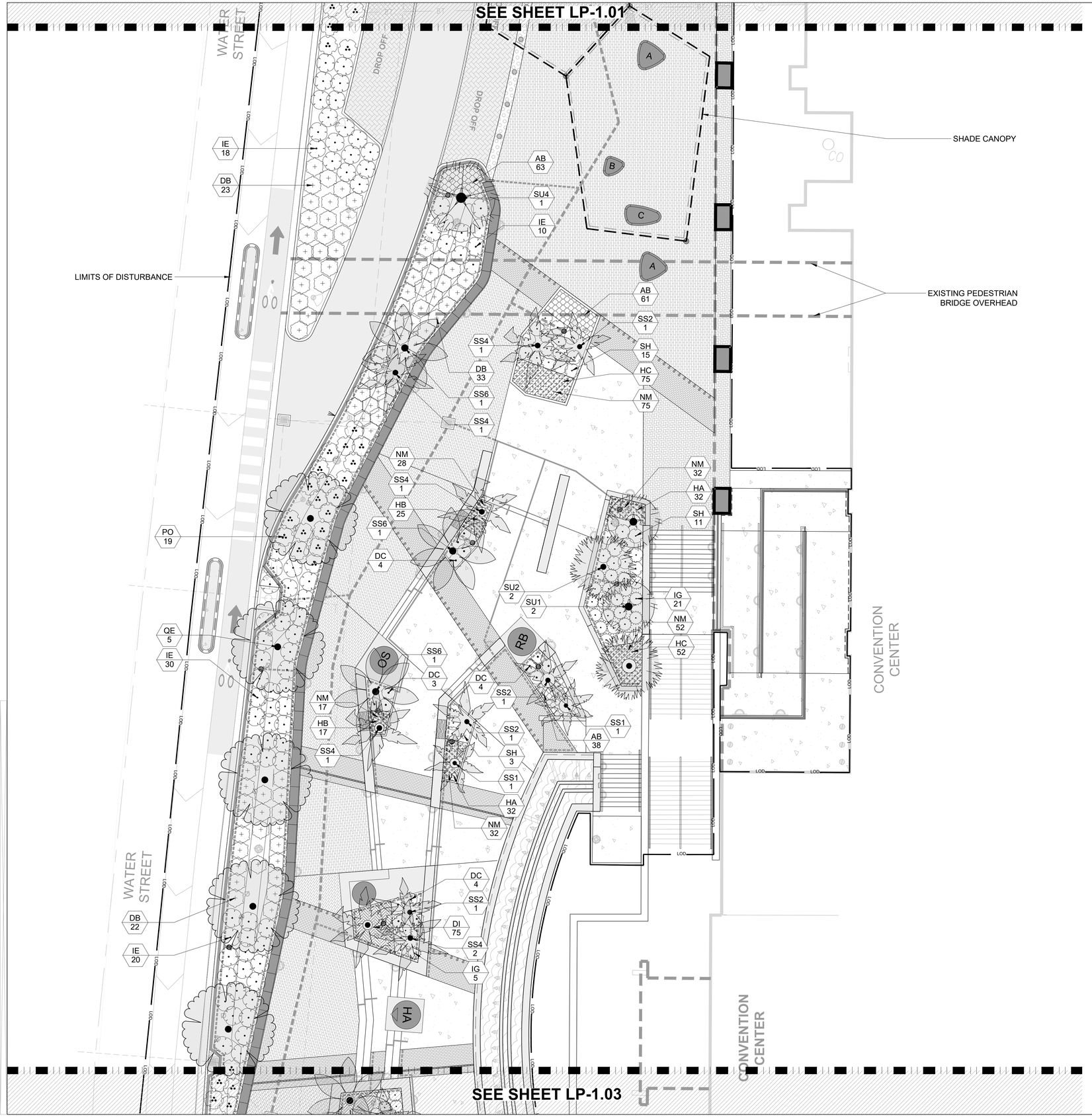
sheet title
LANDSCAPE PLAN - NORTH

sheet number
LP-1.01

100% CONSTRUCTION PLANS



PLANT SCHEDULE

REFER TO LP-1.10 FOR FULL SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME
	QE	5	QUERCUS PHELLOS `QPSTA`
	SS4	6	SABAL PALMETTO
	SS2	4	SABAL PALMETTO
	SS1	2	SABAL PALMETTO
	SS6	3	SABAL PALMETTO
	SU1	2	SABAL PALMETTO
	SU2	2	SABAL PALMETTO
	SU4	1	SABAL PALMETTO

SHRUBS	CODE	QTY	BOTANICAL NAME
	DB	80	DISTYLIUM X 'BLDY01'
	DC	15	DISTYLIUM X `PIIDIST-V`
	IG	26	ILEX GLABRA `SMNIGAB17`
	IE	78	ILLICIUM PARVIFLORUM 'PIIIP-I'
	PO	22	PRUNUS LAUROCERASUS 'OTTO LUYKEN'
	SH	29	SARCOCOCCA HOOKERIANA HUMILIS

GROUND COVERS	CODE	QTY	BOTANICAL NAME
	AB	162	AGAPANTHUS AFRICANUS 'BLUE'
	DI	75	DIETES IRIDIOIDES
	HA	64	HEMEROCALLIS X 'APOLLODORUS'
	HB	42	HEMEROCALLIS X 'BALI WATERCOLOR'
	HC	127	HEMEROCALLIS X 'CORFU'
	NM	236	NARCISSUS X 'MOUNT HOOD'

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Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

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scale: 1" = 10'-0"

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

APRIL 14, 2023

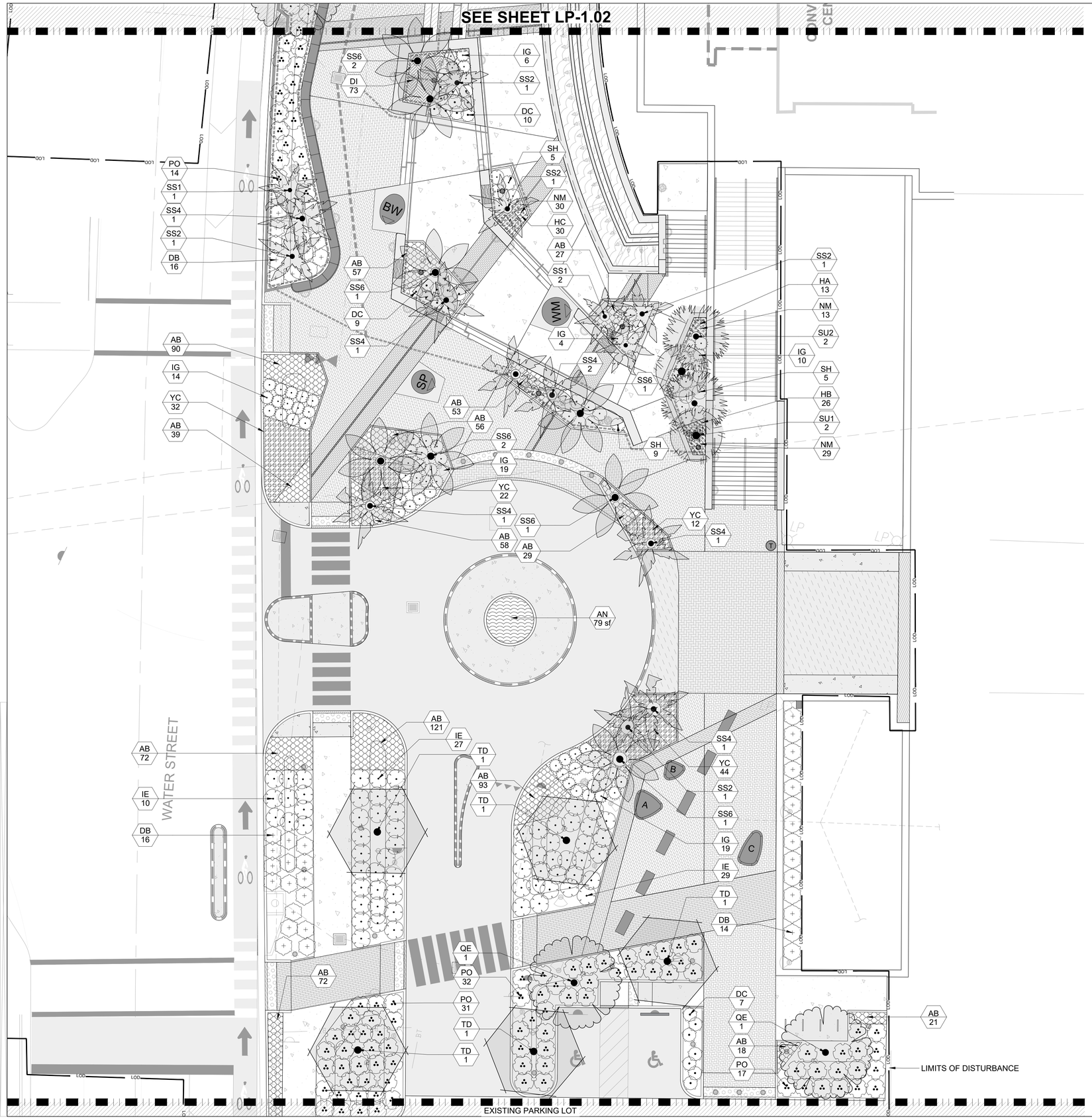
sheet title

LANDSCAPE PLAN - CENTRAL

sheet number

LP-1.02

SEE SHEET LP-1.02



PLANT SCHEDULE
REFER TO LP-1.10 FOR FULL SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME
	QE	5	QUERCUS PHELLOS `QPSTA`
	SS4	6	SABAL PALMETTO
	SS2	4	SABAL PALMETTO
	SS1	2	SABAL PALMETTO
	SS6	3	SABAL PALMETTO
	SU1	2	SABAL PALMETTO
	SU2	2	SABAL PALMETTO
	SU4	1	SABAL PALMETTO

SHRUBS	CODE	QTY	BOTANICAL NAME
	DB	80	DISTYLIUM X 'BLDY01'
	DC	15	DISTYLIUM X `PIIDIST-V`
	IG	26	ILEX GLABRA `SMNIGAB17`
	IE	78	ILLICIUM PARVIFLORUM 'PIIIP-I'
	PO	22	PRUNUS LAUROCERASUS 'OTTO LUYKEN'
	SH	29	SARCOCOCCA HOOKERIANA HUMILIS

GROUND COVERS	CODE	QTY	BOTANICAL NAME
	AB	162	AGAPANTHUS AFRICANUS 'BLUE'
	DI	75	DIETES IRIDIOIDES
	HA	64	HEMEROCALLIS X 'APOLLODORUS'
	HB	42	HEMEROCALLIS X 'BALI WATERCOLOR'
	HC	127	HEMEROCALLIS X 'CORFU'
	NM	236	NARCISSUS X 'MOUNT HOOD'

100% CONSTRUCTION PLANS

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Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

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STATE OF ALABAMA
REGISTERED LANDSCAPE ARCHITECT
BRYAN BAYS
NUMBER 796

consultant

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact: BRYAN BAYS
drawn by: CM
checked by: CM

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APRIL 14, 2023

sheet title

LANDSCAPE PLAN - SOUTH

sheet number

LP-1.03

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL
	OF	17	OSMANTHUS FRAGRANS	SWEET OLIVE	15 GAL	
	QE	7	QUERCUS PHELLOS `QPSTA` 6' CLEAR TRUNK	HIGHTOWER® WILLOW OAK	B & B	4"CAL
	SS4	13	SABAL PALMETTO 14' HT. MIN. CLEAR TRUNK. SLICKED, REGENERATED.	CABBAGE PALMETTO	B & B	
	SS2	9	SABAL PALMETTO 12' HT. MIN. CLEAR TRUNK. SLICKED, REGENERATED.	CABBAGE PALMETTO	B & B	
	SS1	5	SABAL PALMETTO 10' HT. MIN. CLEAR TRUNK. SLICKED, REGENERATED.	CABBAGE PALMETTO	B & B	
	SS6	11	SABAL PALMETTO 16' HT. MIN. CLEAR TRUNK. SLICKED, REGENERATED.	CABBAGE PALMETTO	B & B	
	SU1	6	SABAL PALMETTO 10' HT. MIN. CLEAR TRUNK. BOOTED, REGENERATED.	CABBAGE PALMETTO	B & B	
	SU2	9	SABAL PALMETTO 12' HT. MIN. CLEAR TRUNK. BOOTED, REGENERATED.	CABBAGE PALMETTO	B & B	
	SU4	10	SABAL PALMETTO 14' HT. MIN. CLEAR TRUNK. BOOTED, REGENERATED.	CABBAGE PALMETTO	B & B	
	TD	5	TAXODIUM DISTICHUM 14'-16' HT. MIN.	BALD CYPRESS	B & B	4" CAL

SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACING
	DB	164	DISTYLIUM X 'BLDY01'	JEWEL BOX™ DISTYLIUM	7 GAL	3`-4` HT. MIN.	48" o.c.
	DC	55	DISTYLIUM X `PIIDIST-V`	FIRST EDITIONS® CINNAMON GIRL® DISTYLIUM	7 GAL	2`-3` HT. MIN.	36" o.c.
	IG	171	ILEX GLABRA `SMNIGAB17` INCLUDE 1 MALE FOR EVERY 10 SHRUBS	GEM BOX® INKBERRY HOLLY	7 GAL	2`-3` HT. MIN.	36" o.c.
	IE	201	ILLICIUM PARVIFLORUM 'PIIIP-I'	BANANAPPEAL® SMALL ANISE TREE	7 GAL	4`-5` HT. MIN.	48" o.c.
	PO	158	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN ENGLISH LAUREL	7 GAL	4`-5` HT. MIN.	48" o.c.
	SH	48	SARCOCOCCA HOOKERIANA HUMILIS	TRAILING SWEETBOX	7 GAL	1`-2` HT. MIN.	36" o.c.
	VF	26	VIBURNUM OBOVATUM 'COMPACTA'	DWARF WALTER'S VIBURNUM	7 GAL	3`-4` HT. MIN.	36" o.c.

GROUND COVERS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	
	AB	1,159	AGAPANTHUS AFRICANUS 'BLUE'	BLUE AFRICAN LILY	1 GAL	12" o.c.
	AN	79 SF	ANNUALS		1 GAL	
	DI	505	DIETES IRIDIOIDES	FORTNIGHT LILY	1 GAL	12" o.c.
	HA	142	HEMEROCALLIS X 'APOLLODORUS' LATE SEASON RE-BLOOMER	APOLLODORUS DAYLILY	1 GAL	12" o.c.
	HB	116	HEMEROCALLIS X 'BALI WATERCOLOR' MID-SEASON RE-BLOOMER; YELLOW AND PURPLE	BALI WATERCOLOR DAYLILY	1 GAL	12" o.c.
	HC	165	HEMEROCALLIS X 'CORFU' EARLY SEASON RE-BLOOMER	CORFU DAYLILY	1 GAL	12" o.c.
	NM	429	NARCISSUS X 'MOUNT HOOD'	MOUNT HOOD DAFFODIL	BULB	12" o.c.
	YC	199	YUCCA FILAMENTOSA 'COLOR GUARD'	COLOR GUARD ADAM'S NEEDLE	1 GAL	24" o.c.

NOTE: CONTRACTOR TO PROVIDE IRRIGATION AS A DELEGATED DESIGN ITEM.

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LANDSCAPE SCHEDULE

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100% CONSTRUCTION PLANS

LANDSCAPE NOTES:

1. ALL PLANT MATERIALS ARE TO CONFORM TO THE LATEST EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMAN STANDARDS FOR NURSERY STOCK (AANSNS).

2. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT WHEN SITE CONDITIONS PROHIBIT THE INSTALLATION OF PLANT MATERIALS AS DESIGNED.

3. FINE GRADING: CONTRACTOR SHALL FINE GRADE LANDSCAPE BEDS TO DRAIN WATER AWAY FROM BUILDINGS AND PROVIDE POSITIVE DRAINAGE BEYOND THE LIMITS OF THE PLANTING BED. PUDDLING AND STANDING WATER WITHIN LANDSCAPE BEDS OTHER THAN BIORETENTION SHALL NOT BE ACCEPTED.

4. SOIL AMENDMENTS: UNLESS OTHERWISE SPECIFIED, A 3" DEPTH OF EQUAL-MIX MINERAL TOPSOIL, AGED FINES, AND COMPOSTED COW MANURE SHALL BE ROTO-TILLED TO A DEPTH OF 6" INTO NATIVE SOILS OF LANDSCAPE PLANTING BEDS. SOIL MIXES APPROVED AS EQUALS MAY BE APPROVED AT THE DISCRETION OF LANDSCAPE ARCHITECT.

5. MULCH: ALL PLANTING BEDS, EXCEPT SEED BEDS, ARE TO BE MULCHED TO A MINIMUM DEPTH OF 4". FREE-STANDING TREES ARE TO BE MULCHED IN A MIN. 5' DIAMETER UNLESS IMPEDED BY HARDSCAPE.

6. ALL TREE STAKING AND EARTHEN TREE RINGS SHALL REMOVED BY THE CONTRACTOR THE END OF THE WARRANTY PERIOD. REPLACE MULCH TREE RING AREAS AS ORIGINALLY SPECIFIED.

7. SUBSTITUTIONS OF PLANT CULTIVARS AND SPECIES SHALL BE PERMITTED ONLY IF MATERIALS ARE NOT AVAILABLE FROM MULTIPLE SOURCES WITHIN 500 MILES OF THE PROJECT. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED TO LANDSCAPE ARCHITECT IN WRITING WITH A LIST OF SOURCES CHECKED FOR THE ORIGINAL PLANT. ALL SUBSTITUTIONS SHALL BE APPROVED BY LANDSCAPE ARCHITECT BEFORE PLANTING.

8. CONTRACTOR SHALL PROVIDE IRRIGATION AS A DELEGATED DESIGN ITEM. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING LANDSCAPE AREAS INCLUDING WATERING, WEEDING, MULCHING, APPLICATION OF PESTICIDES, HERBICIDES, AND FERTILIZER UNTIL FINAL ACCEPTANCE BY OWNER. THE CONTRACTOR SHALL COORDINATE NEW WORK WITH THE EXISTING IRRIGATION SYSTEM (IF APPLICABLE) TO ENSURE THEY ARE COMPATIBLE AND PROVIDE FULL COVERAGE THROUGHOUT CONSTRUCTION AND THE WARRANTY PERIOD. INCIDENTAL WORK REQUIRED TO REPAIR OR REPLACE DAMAGED OR MISSING IRRIGATION WITHIN ANY AREA DISTURBED BY CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.

9. BURLAP SHALL BE PULLED BACK TO EXPOSE TOP OF ROOT BALL AND THE TOPS OF WIRE BASKETS ARE TO BE CUT OR BENT BACK INTO PLANTING HOLE.

10. TOPS OF ROOT BALLS FOR TREES SHALL BE PLANTED 1 INCH ABOVE SURROUNDING GRADE.

11. PLANTING HOLES FOR TREES AND SHRUBS NOT IN PLANTING BEDS SHOULD BE A MINIMUM OF TWO TIMES THE DIAMETER OF THE ROOT BALL.

12. WARRANTY: CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR 1-YEAR FROM FINAL ACCEPTANCE UNLESS OTHERWISE SPECIFIED. PLANTS THAT DON'T MEET THE STANDARDS FOR HEALTH AS SET FORTH IN THE AANSNS SHALL BE REPLACED BY CONTRACTOR AT THE EARLIEST TIME SEASONABLE AND PRACTICAL TO PLANT.

LANDSCAPE PLANTING MIXES

1. BACKFILL MIX AND PLANTING MIX: EQUAL MIX OF SUITABLE NATIVE SOIL, AGED FINES, AND COMPOSTED COW MANURE.

LANDSCAPE DRAINAGE NOTES:

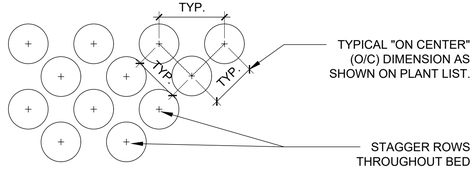
1. ALL LANDSCAPE SOIL TO BE A SPECIALTY MIX ENGINEERED FOR DRAINAGE.

2. ALL LANDSCAPE AREAS TO BE EQUIPPED WITH DRAINS. ALL RETAINING WALLS ABUTTING LANDSCAPE AREAS TO BE EQUIPPED WITH DRAINAGE STONE BACKFILL AND 6" PERFORATED PIPE

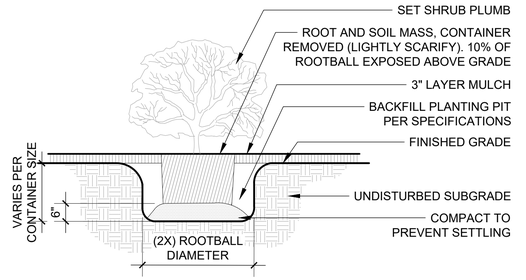
LANDSCAPE SOIL COMPONENTS AND MULCH

1. NATIVE SOIL: MINERAL SOIL EXISTING AT THE LOCATIONS OF PROPOSED PLANTING TO BE USED FOR SOIL MODIFICATION THAT IS FREE OF DELETERIOUS MATERIALS AND STONES GREATER THAN 1/2" DIAMETER.
2. SAND MIX: CONSISTING OF APPROXIMATELY 60% MEDIUM SIZED SAND WITH GRANULES MEASURING BETWEEN 0.25 - 0.50 MM, WITH 20% FINE SAND (GRANULES BETWEEN 0.1 - 0.25 MM) AND 20% COARSE SAND (0.5 - 1.0 MM GRANULES)
3. COMPOST: COMPOST SHALL BE US COMPOSTING COUNCIL-STA CERTIFIED OR MEET THE FOLLOWING REQUIREMENTS:
   A. ORGANIC CONTENT BETWEEN 35-65%, MATURITY TEST: SEEDLING GERMINATION AND VIGOR SHOULD BE >80% OF THE CONTROL.
   B. STABILITY TEST: STABLE OR VERY STABLE RATING BASED ON CO2 RESPIRATION.
   C. CARBON: NITROGEN RATIO SHOULD BE 14-20, ELECTRICAL CONDUCTIVITY TO BE <5.0 DS/M (OR MMHOS/CM)PATHOGENS AND METALS. MEETS OR EXCEEDS USEPA STANDARDS FOR CLASS A BIOSOLIDS, OR STATE STANDARDS.
   D. CONTAMINANTS: UNDER 0.5% METAL, GLASS, PLASTIC AND OTHER INERT MATERIALS. UNDER 0.1% PLASTIC FILM IN MULCH, OR 0.25% FOR AMENDING
4. MULCH: MULCH SHALL CONSIST OF 100% SHREDDED HARDWOOD FIBERS, AGED A MINIMUM OF 1 YEAR PRIOR TO INSTALLATION, AND FREE FROM PINE MULCH, WOOD CHIPS, BARK, SOIL, ROCKS, AND WEEDS. THE MAXIMUM LENGTH OF ANY INDIVIDUAL COMPONENT SHALL BE TWO INCHES (2") AND A MINIMUM OF SEVENTY-FIVE PERCENT (75%) OF THE MULCH SHALL PASS THROUGH A ONE INCH (1") SCREEN. MULCH SHALL BE FREE OF GERMINATION-INHIBITING INGREDIENTS. THE MULCH SHALL HAVE THE CHARACTERISTICS OF RETAINING MOISTURE, FORMING A MAT NOT SUSCEPTIBLE TO SPREADING BY WIND, RAIN, OR FLOATING IN PONDING WATER, AND PROVIDE A GOOD GROWTH MEDIUM FOR PLANTS. MULCH SHALL NOT FLOAT IN PONDING WATER.

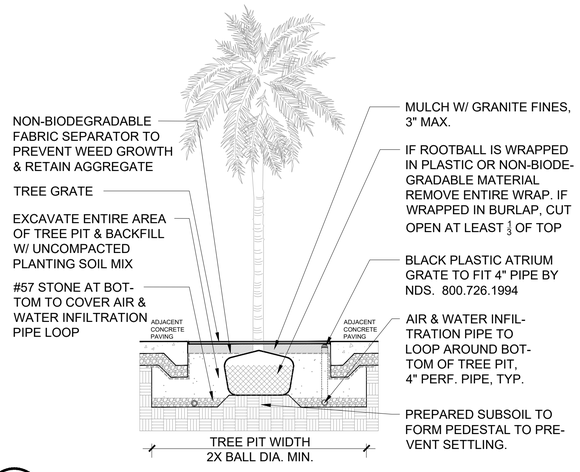
NOTES:
1. SEE PLANTING PLANS FOR SHRUB, GROUNDCOVER, AND ANNUAL BED AREA ROWS.
2. ROWS SHALL BE STRAIGHT AND PARALLEL.



1 GROUNDCOVER SPACING
1" = 1' - 0"



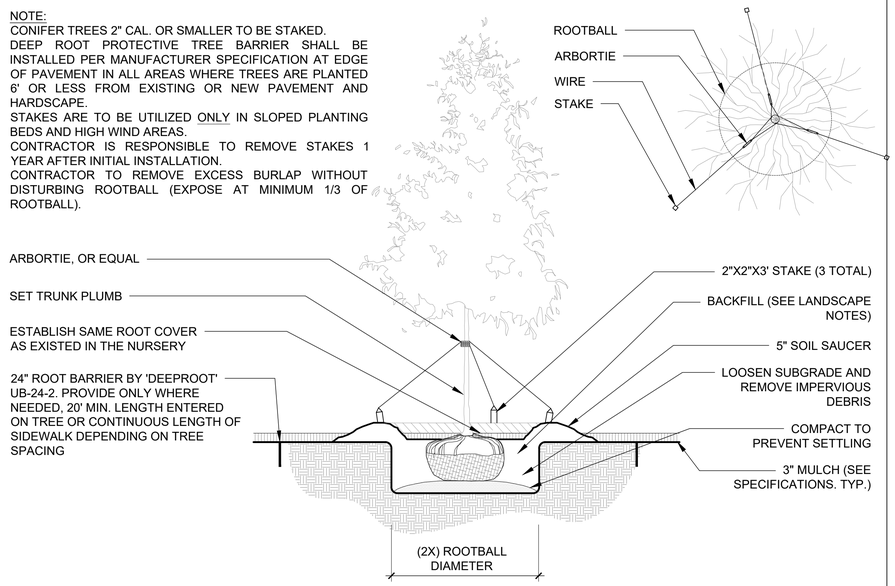
2 SHRUB INSTALLATION
1/2" = 1' - 0"



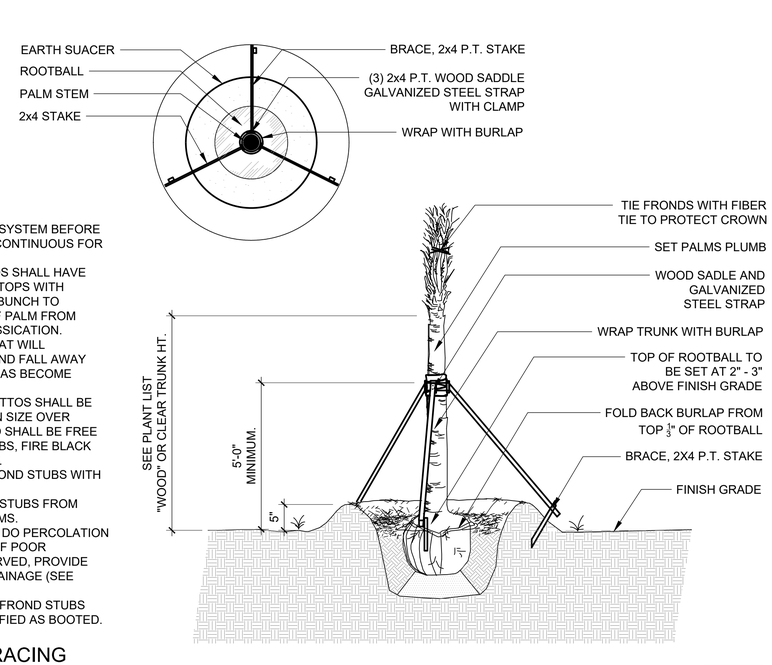
3 TREE INSTALLATION AT TREE GRATE
1/2" = 1' - 0"

IMPORTANT!
CONTRACTOR TO VERIFY PLANT QUANTITIES BEFORE PURCHASING AND INSTALLING.

NOTE:
1. CONIFER TREES 2" CAL. OR SMALLER TO BE STAKED.
2. DEEP ROOT PROTECTIVE TREE BARRIER SHALL BE INSTALLED PER MANUFACTURER SPECIFICATION AT EDGE OF PAVEMENT IN ALL AREAS WHERE TREES ARE PLANTED 6' OR LESS FROM EXISTING OR NEW PAVEMENT AND HARDSCAPE.
3. STAKES ARE TO BE UTILIZED ONLY IN SLOPED PLANTING BEDS AND HIGH WIND AREAS.
4. CONTRACTOR IS RESPONSIBLE TO REMOVE STAKES 1 YEAR AFTER INITIAL INSTALLATION.
5. CONTRACTOR TO REMOVE EXCESS BURLAP WITHOUT DISTURBING ROOTBALL (EXPOSE AT MINIMUM 1/3 OF ROOTBALL).



4 TREE INSTALLATION
1/2" = 1' - 0"



NOTES:
1. SATURATE ROOT SYSTEM BEFORE PLANTING. WATER CONTINUOUS FOR 10 DAYS.
2. SABAL PALMETTOS SHALL HAVE REASONABLY FULL TOPS WITH FRONDS TIED INTO BUNCH TO PROTECT HEART OF PALM FROM SUNSCALD AND DESSICATION.
3. USE FIBER TIE THAT WILL EVENTUALLY ROT AND FALL AWAY AFTER PALMETTO HAS BECOME ESTABLISHED.
4. TRUNK OF PALMETTOS SHALL BE NEARLY UNIFORM IN SIZE OVER ENTIRE HEIGHT AND SHALL BE FREE OF OLD FROND STUBS, FIRE BLACK OR OTHER DAMAGE.
5. TRIM BOTTOM FROND STUBS WITH HURRICANE EDGES.
6. DO NOT REMOVE STUBS FROM "LOW-BOOTED" PALMS.
7. CONTRACTOR TO DO PERCOLATION TEST ON TREE PIT. IF POOR DRAINAGE IS OBSERVED, PROVIDE SUPPLEMENTAL DRAINAGE (SEE SPECIFICATIONS)
8. DO NOT REMOVE FROND STUBS FROM PALMS SPECIFIED AS BOOTED.

5 PALM BRACING
1/2" = 1' - 0"

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Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	BRYAN BAYS
drawn by:	CM
checked by:	CM

drawing date

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LANDSCAPE DETAILS

sheet number

LP-2.00

100% CONSTRUCTION PLANS

SHEET NO.	DESCRIPTION
C-1.01	INDEX TO SHEETS
C-1.02-1.03	STANDARD AND SPECIAL DRAWINGS
C-1.04	PLANS LEGEND SHEET
C-1.05	PLANS LEGEND SHEET ABBREVIATIONS
C-2.00-2.01	TYPICAL SECTIONS
C-2.02-2.03	PROJECT DETAILS
C-2.04-2.05	OMITTED
C-2.06	PROJECT NOTE SHEET
C-2.07	GENERAL TRAFFIC CONTROL PLAN NOTES
C-2.08	TRAFFIC SIGNAL NOTES
C-4.00-4.04	DRAINAGE PLAN SHEET
C-5.00-5.02	DRAINAGE SECTIONS
C-5.03-5.06	SPECIAL PROJECT DETAILS
C-6.00-6.03	STRIPING AND SIGNING SHEET
C-6.04	INTERSECTION LAYOUT SHEET
C-6.05-6.09	OMITTED
C-6.10	PAVING LIMITS SHEET
C-7.00	TRAFFIC SIGNAL AND ITS LEGEND
C-7.01	TRAFFIC SIGNAL LAYOUT SHEET
C-8.00	TRAFFIC CONTROL PLAN - SEQUENCE OF CONSTRUCTION
C-8.01	TRAFFIC CONTROL PLAN - LEGEND & ESTIMATED QUANTITIES
C-8.02-8.06	TRAFFIC CONTROL PLAN - PHASE II
C-8.07	TRAFFIC CONTROL PLAN - PHASE II - INTERSECTION
C-8.08-8.11	TEMPORARY TRAFFIC CONTROL PLAN SHEET - SPECIAL PROJECT DETAIL
C-9.00	EROSION AND SEDIMENT CONTROL PLANS LEGEND
C-9.01-9.05	EROSION AND SEDIMENT CONTROL PLAN SHEET
C-10.00	LIGHTING NOTE SHEET
C-10.01-10.03	REQUIRED LIGHTING PLAN SHEET
C-10.04-10.05	REQUIRED LIGHTING DETAIL SHEET
C-10.06	REQUIRED LIGHTING CONTROL PANEL DETAILS
C-10.10-10.13	REQUIRED LIGHTING PLAN SHEET
C-11.00-11.02	EXISTING UTILITY SHEET
C-11.10-11.13	UTILITY RELOCATION SHEET
C-11.14	WATERLINE CONSTRUCTION DETAILS

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ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

N

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

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INDEX TO SHEETS

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C-1.01

THE FOLLOWING ARE SPECIAL OR STANDARD DRAWINGS CONTAINED IN THE ALABAMA DEPARTMENT OF TRANSPORTATION SPECIAL AND STANDARD HIGHWAY DRAWINGS BOOK (U.S. CUSTOMARY UNITS OF MEASUREMENTS) DATED 2023 WHICH APPLY TO THIS PROJECT.

INDEX NO	STD-DWG NO		DESCRIPTION
53004	RPC-530	(SHEET 1 OF 3)	BEDDING AND FILL HEIGHTS FOR ALL ROADWAY PIPE CULVERTS (RCP AND CMP)
53005	RPC-530	(SHEET 2 OF 3)	BEDDING AND FILL HEIGHTS FOR ALL ROADWAY PIPE CULVERTS (CMP AND RCP)
53006	RPC-530	(SHEET 3 OF 3)	BEDDING AND FILL HEIGHTS FOR ALL ROADWAY PIPE CULVERTS (H.D.P.E. PIPE)
61801	SW-618	(SHEET 1 OF 4)	CURB RAMP DETAIL CALLOUTS, GENERAL NOTES FOR CURB RAMPS & SIDEWALKS, AND DETAILS
61802	SW-618	(SHEET 2 OF 4)	CORNER CURB RAMPS
61803	SW-618	(SHEET 3 OF 4)	MIDBLOCK CURB RAMPS
61804	SW-618	(SHEET 4 OF 4)	SIDEWALKS & CURB RAMPS AT DRIVEWAYS, RAILROAD, MEDIAN, & ISLAND CROSSINGS
62133	I-621-S		REINFORCED CONCRETE STORM SEWER INLET TYPES S3 AND S4
62154	MIU-621		DETAILS OF CONNECTING INLETS AND STACK PIPE INTO CONCRETE CULVERTS
62160	JB-620-B		DETAILS OF JUNCTION BOX TYPE - 1 FOR 15" - 60" PIPE (0 - 10' FILL HEIGHT)
62163	JB-621-P (PC)	(SHEET 1 OF 2)	DETAILS OF PRECAST ROUND JUNCTION BOX TYPES - 1P & 2P
62164	JB-621-P (PC)	(SHEET 2 OF 2)	DETAILS OF PRECAST RECTANGULAR JUNCTION BOX TYPES - 1P & 2P
62301	623-N SPEC		DETAILS OF MEDIAN OPENING AND SAFETY GORES AT TRAFFIC CHANNEL ISLANDS
62307	623-XY		DETAILS OF CONCRETE CURBS AND CONCRETE CURB & GUTTER COMBINATIONS, SLOPING AND VERTICAL TYPES
65401	SS-654		SOD TERRACE OUTLETS AND SOD FLUMES
66501	ESC-100-1		BEST MANAGEMENT PRACTICE REFERENCE MATRIX
66502	ESC-100-2		BEST MANAGEMENT PRACTICE REFERENCE MATRIX
66508	ESC-200-4		DETAILS OF SILT FENCE INSTALLATION
66513	ESC-300-2		DETAILS OF HAY BALE DITCH CHECKS
66514	ESC-300-3		DETAILS OF SANDBAG DITCH CHECK
66515	ESC-300-4		DETAILS OF EROSION CONTROL WATTLE DITCH CHECKS
66522	ESC-400-1		INLET PROTECTION TYPICAL APPLICATIONS AND DETAILS
66524	ESC-400-3		INLET PROTECTION DETAILS OF WATTLES

THE FOLLOWING ARE SPECIAL OR STANDARD DRAWINGS CONTAINED IN THE ALABAMA DEPARTMENT OF TRANSPORTATION SPECIAL AND STANDARD HIGHWAY DRAWINGS BOOK (U.S. CUSTOMARY UNITS OF MEASUREMENTS) DATED 2023 WHICH APPLY TO THIS PROJECT.

INDEX NO	STD-DWG NO		DESCRIPTION
66526	ESC-400-5		INLET PROTECTION DETAILS OF SAND BAGS
66532	ESC-502		STABILIZED CONSTRUCTION ENTRANCE
70123	PS-701-3		DETAILS OF TRAFFIC STRIPING (FOUR LANES WITH FLUSH OR RAISED MEDIANS)
70133	PS-701-7		STRIPING DETAILS FOR DROP LANES AND TURN LANES
70136	CRT-701		DETAILS FOR URBAN AND RURAL RIGHT TURN CHANNELIZATION LANES
70183	PM-705-5		DETAILS OF THERMOPLASTIC RUMBLE STRIPS
70301	TCM-703	(SHEET 1 OF 2)	PAVEMENT LEGENDS AND MARKINGS
70302	TCM-703	(SHEET 2 OF 2)	PAVEMENT LEGENDS AND MARKINGS
70308	CW-703		TYPICAL CROSSWALK LAYOUTS AND DETAILS
70701	HMI-707		DETAILS OF CENTERMOUNT DELINEATORS AND OBJECT MARKERS
71001	IHS-710-1	(SHEET 1 OF 2)	WIND VELOCITY CHART FOR ROADSIDE SIGNS
71002	IHS-710-1	(SHEET 2 OF 2)	DESIGN CHARTS FOR BEAM SIGN SUPPORTS AND FOOTINGS
71017	IHS-710-12		DETAILS OF ROADWAY SIGN POST (SMALL CHANNEL AND TUBULAR SECTION)
71023	IHS-710-14		HIGHWAY SIGN MOUNTING FOR STANDARD SIGNS
71026	IHS-710-18		TYPICAL MOUNTING OF STANDARD ASSEMBLIES ON PIPE OR BEAM POST
71032	IHS-710-21		DETAILS FOR LOCATION AND MOUNTING OF STANDARD FLAT PANEL SIGNS ON U-CHANNEL AND TUBULAR POSTS
71035	IHS-710-23		LIGHTWEIGHT STRUCTURAL SIGN SUPPORT INSTALLATIONS
71038	IHS-710-24		MOUNTING FLAT SHEET SIGN PANELS WITH EXTRUDED ALUMINUM STIFFENERS
71050	SHS-0	(SHEET 1 OF 4)	STANDARD HIGHWAY SIGNS INDEX
71051	SHS-0	(SHEET 2 OF 4)	STANDARD HIGHWAY SIGNS INDEX
71052	SHS-0	(SHEET 3 OF 4)	STANDARD HIGHWAY SIGNS INDEX
71053	SHS-0	(SHEET 4 OF 4)	STANDARD HIGHWAY SIGNS INDEX
71061	SHS-2		STANDARD HIGHWAY SIGNS

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Atlanta, Georgia 30309
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www.tsw-design.com

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ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

N

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
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STANDARD AND SPECIAL DRAWINGS

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C-1.02

THE FOLLOWING ARE SPECIAL OR STANDARD DRAWINGS CONTAINED IN THE ALABAMA DEPARTMENT OF TRANSPORTATION SPECIAL AND STANDARD HIGHWAY DRAWINGS BOOK (U.S. CUSTOMARY UNITS OF MEASUREMENTS) DATED 2023 WHICH APPLY TO THIS PROJECT.

INDEX NO	STD-DWG NO		DESCRIPTION
73001	T.S.D.-730-1		POWER SOURCE DETAIL FOR TRAFFIC SIGNALS AND TRAFFIC SIGNAL POLES WITH LIGHTING
73004	T.S.D.-730-2	(SHEET 1 OF 3)	METAL TRAFFIC SIGNAL POLE AND LIGHTING INSTALLATION DETAILS
73005	T.S.D.-730-2A	(SHEET 2 OF 3)	METAL TRAFFIC SIGNAL POLE AND LIGHTING INSTALLATION DETAILS
73006	T.S.D.-730-2B	(SHEET 3 OF 3)	METAL TRAFFIC SIGNAL POLE AND LIGHTING INSTALLATION DETAILS
73009	T.S.D.-730-4		TRAFFIC SIGNAL POLE FOUNDATION
73021	T.S.D.-730-9		PEDESTRIAN SIGNAL INSTALLATION
73024	T.S.D.-730-9A		PEDESTAL POLE FOUNDATION AND BASES
73030	T.S.D.-730-11		LOOP WIRE INSTALLATION
73033	T.S.D.-730-12		VIDEO DETECTION SYSTEM INSTALLATION
74004	LCS-107		DETAILS SHOWING REQUIREMENTS FOR LIGHTING CONSTRUCTION SIGNS
74007	TCD-100		DETAILS OF TRAFFIC CHANNELIZATION DEVICES

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ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

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sheet title

STANDARD AND SPECIAL DRAWINGS

sheet number

C-1.03

ROADWAY

55+00

CENTER LINE .....
STATE BOUNDARY LINE .....
COUNTY BOUNDARY LINE .....
CITY OR TOWN LIMITS .....
SECTION LINES ..... SEC 22 / SEC 23
QUARTER-SECTION LINES .....
RANGE-TOWNSHIP LINES ..... R-17-E / R-18-E
PROPERTY LINES ..... PL
PRESENT ROW .....
ACQUIRED ROW .....
DENIED ACCESS .....
REQUIRED FENCE .....
CONSTRUCTION LIMITS ..... CONST LIM
CLEARING LIMITS .....
RAILROAD .....
WOOD FENCE .....
BARBED WIRE FENCE .....
CHAIN LINK FENCE .....
ELECTRIC FENCE .....
HOG WIRE FENCE .....
TREES .....
WOODS LINE .....
MARSH .....
IN-PLACE DITCH.....
REQUIRED DITCH.....
GRAVEL ROAD .....
EXISTING GUARDRAIL .....
REQUIRED GUARDRAIL .....
SATELLITE DISH .....
TRAFFIC LIGHT .....
BENCH MARK .....
SURVEY POINT .....
ENVIRONMENTAL CLEARED LIMITS ..... ENV
REQUIRED SIDE DITCH RIGHT ..... SDR
REQUIRED SIDE DITCH LEFT ..... SDL

EXISTING PIPE .....
REQUIRED PIPE (WITH PET).....
REQUIRED PET.....
EXISTING BOX CULVERT .....
REQUIRED BOX CULVERT .....
EXTENDED CULVERT .....
DROP INLET OR JUNCTION BOX
(SEE PLANS DESCRIPTION).....
BRIDGE .....
PIPE CULVERT (ELEVATION VIEW) .... FL=410.25
BOX CULVERT (ELEVATION VIEW) ..... FL=420.55

DRAINAGE STRUCTURE INDEX NUMBERS

DRAINAGE STRUCTURE WRITE-UPS ARE LOCATED ON THE DRAINAGE CROSS-SECTION SHEETS. STRUCTURES WITH WRITE-UPS ARE INDEXED AT EACH END, WITH NUMBERS ASSIGNED BY DIRECTION OF FLOW. THE NUMBER IN THE UPPER HALF OF THE CIRCLE (EXAMPLE 8 OR 9) IS THE DRAINAGE STRUCTURE INDEX NUMBER. THE NUMBER IN THE LOWER HALF (EXAMPLE 88) IS THE SHEET REFERENCE NUMBER.

ROADWAY PIPE EXAMPLE

ALL INFORMATION CONCERNING THE DISPOSITION OF SIDE DRAIN PIPE IS SHOWN ON THE SUMMARY OF QUANTITIES BOX SHEET. THE TOP LETTERS (SD) ARE FOR SIDE DRAIN INDEX # AND THE BOTTOM NUMBER IS THE DRAINAGE STRUCTURE SIZE.

SIDE DRAIN PIPE EXAMPLE

DIRECTION OF FLOW .....

UTILITIES

	EXISTING	PROPOSED
POWER POLE		
LIGHT POLE		
TELEPHONE POLE		
ANCHOR		
STUB (POWER)		
STUB (TELEPHONE)		
ELECTRIC DUCT	EL 4MTD	EL 4MTD
BURIED ELECTRIC CABLE	BE	BE
OVERHEAD ELECTRIC CABLE	OE	OE
ELECTRIC MANHOLE	E	E
TOWER		
TELEPHONE PEDESTAL	T	T
TELEPHONE DUCT	TP 4MTD	TP 4MTD
BURIED TELEPHONE CABLE	BTC	BTC
OVERHEAD TELEPHONE CABLE	OTC	OTC
TELEPHONE MANHOLE	TMH	TMH
SANITARY SEWER	S	SS
WATER LINE	W	WL
WATER MAIN	WM	WM
WATER VALVE		
FIRE HYDRANT		
WATER METER	W	W
WATER SPIGOT		
GAS LINE	G	G
GAS MAIN	GM	GM
GAS VALVE	G	G
GAS REGULATOR		
BURIED CABLE TELEVISION.....	BTV	BTV
OVERHEAD CABLE TELEVISION.....	OTV	OTV
FIBER OPTIC PEDESTAL.....	FO	FO
COMMUNICATIONS.....	C	C

LIGHTING

WALL LIGHT .....
LIGHTED BOLLARD .....
WALL LIGHT (LARE) .....
LIGHT POLE .....
LED LIGHT STRIP .....
FOUNTAIN UPLIGHT.....
TREE UPLIGHT.....
PROJECTOR LIGHT.....
SPOTLIGHT BEAM.....

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Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

ALABAMA LICENSED No. 38421-E PROFESSIONAL ENGINEER JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
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PLANS LEGEND

sheet number
C-1.04

ABANDON(ED)	ABAN
ABUTMENT	ABUT
ACCELERATION	ACCL
ACQUIRED	ACQD
ACRE	AC
AHEAD	AH
ALABAMA	AL
ALABAMA DEPARTMENT OF TRANSPORTATION	ALDOT
ALTERNATE	ALT
APPROXIMATE(LY)	APP
AREA	A
ASPHALT	ASP
AVERAGE ANNUAL DAILY TRAFFIC	AADT
BACK	BK
BACK OF GUARDRAIL	BK-GR
BACKSIGHT	BS
BARBED WIRE	B/W
BARREL	BBL
BARRIER	BAR
BASE LINE	BL or ℄
BEARING	BRNG
BEGIN	BEG
BEGINNING OF PROJECT	BOP
BETWEEN	BTW
BILLBOARD	BBD
BENCH MARK	BM
BITUMINOUS	BIT
BITUMINOUS COATED CORRUGATED METAL PIPE	BCCMP
BOUNDARY	BDY
BRIDGE	BRG
BRIDGE END SLAB	BES
CAPACITY	CAPY
CAST IRON	CI
CAST IN PLACE	CIP
CATCH BASIN	CB
CENTER LINE	℄
CHAIN LINK	C/L
CLASS	CLS
CONCRETE	CONC
CONNECTION	CONN
CONSTRUCTION LIMITS	CONST LIM
CORNER	COR
CORRECTION	CORR
CORRUGATED IRON	CORI
CORRUGATED METAL	CM
CORRUGATED METAL PIPE	CMP
CORRUGATED PLASTIC PIPE	CPP
COUNTY	CO
COUNTY ROAD	CO-RD
CREEK	CK
CROSS SECTION	X-SECT
CROWN REMOVED	CR
CUBIC FEET	FT3 or CU FT
CUBIC FEET PER SECOND	CFS
CUBIC YARD	YD3 or CU YD
CUBIC METERS	M3
CULVERT	CULV
CULTIVATED	CULT
CURB FACE	CF
CURB AND GUTTER	C&G
CUT	C
CURVE TO SPIRAL	CS
DECELERATION	DECEL
DECLINATION	DECL
DEGREE OF CURVE	D
DENIED ACCESS	D/A
DEPARTURE	DEP
DIAMETER	DIA
DIRECTION	DIR
DISTANCE	DIST
DOUBLE	DBL
DOUBLE BARREL CULVERT	CD
DRAINAGE AREA	DA
DRIVE	DR
DROP INLET	DI
EACH	EA
EASEMENT	ESMT
EAST	E
EAST BOUND ROADWAY	EBR
EDGE OF PAVEMENT	EP
ELEVATION	EL or ELEV
END OF RETURN	ER
END ANCHOR	E/A
END OF PROJECT	EOP
EQUATION	EQ
EROSION CONTROL PRODUCTS	ECP
EXCAVATION	EXCAV
EXISTING	EX
EXPANSION	EXP
EXTENSION	EXT
EXTERNAL	E
EXTRA STRENGTH	EXT STR
FEET	FT
FILL	F
FILTER BLANKET	FLT BLNK
FINISHED GRADE	FG
FINISHED SURFACE	FS
FISCAL YEAR	FY
FIXED	FIX
FLAT BOTTOM	FB
FLOW LINE	FL or ℄
FORESIGHT OR FRONTSIGHT	FST
FRACTIONAL	FRAC
FULL SUPERELEVATION	FS
GALLON	GAL
GASOLINE PUMPS	GPP
GARAGE	GAR
GAUGE	GA
GIRDER	GDR
GOVERNMENT	GOV
GRASS	GRS
GRADE CHANGE	GC
GRADE POINT	GP
GRADE ROD	GRD
GRAVEL	GRV
GUARDRAIL	GR
HEADWALL	HDWL
HECTARE	HA
HIGH WATER MARK	HWM
HEIGHT	HT
HEIGHT OF INSTRUMENT	HI
HIGH WATER	HW
HIGHWAY	HWY
HOGWIRE	H/W
HORIZONTAL	HOR
HUB & TACK	H&T
HYDRANT	HYD
IMPACT ATTENUATOR	IA
IN ACCORDANCE WITH	I/A/W
IN PLACE	IN-PL
INCHES	IN
INCLUDING	INCL
INCORPORATED	INC
INSTRUMENT	INST
ISLAND	ISL
JOINT	JT
JUNCTION	JCT
JUNCTION BOX	JB
KILOMETER	KM
KILOMETER POST	KMP
KILOMETERS PER HOUR	KPH
LANE	LN
LATITUDE	LAT
LEFT	LT
LEFT AHEAD	LA
LEFT BACK	LB
LENGTH OF CURVE	L
LINK	LK
LIMIT	LIM
LINEAR	LIN
LINEAR FEET	LIN FT
LONGITUDE	LONG
MANHOLE	MH
MARKER	MRK
MAXIMUM	MAX
MEAN HIGH WATER	MHW
MEAN LOW WATER	MLW
MEASUREMENT	MEAS
MEDIAN	MED
METER	M
MERIDIAN	MER
MILE POST	MP
MILES	MI
MILES PER HOUR	MPH
MILLIMETER	MM
MINIMUM	MIN
MONUMENT	MON
MULTIPLE	MULT
NORMAL	NORM
NORMAL CROWN	NC
NORMAL CROWN SLOPE	NCS
NORTH	N
NORTH BOUND ROADWAY	NBR
NORTHING-EASTING	NE
NOT IN CONTRACT	NIC
NOT TO SCALE	NTS
NUMBER	NO
OBSERVATION	OBS
ON CENTER	OC
ORIGINAL	ORIG
OVERHEAD	OHD
OVERHAUL	OH
OUT TO OUT	OO
PAINT	PNT
PAVED	PVD
PAVED SHOULDER	PVD SH
PAVEMENT	PVMT
PIPE END TREATMENT	PET
PIPE ENTERING CULVERT	PEC
PLATE GIRDER	PL GDR
POINT OF BEGINNING	POB
POINT OF COMPOUND CURVE	PCC
POINT OF CURVATURE	PC
POINT OF REVERSE CURVATURE	PRC
POINT OF ENDING	POE
POINT OF INTERSECTION	PI
POINT OF TANGENCY	PT
POINT ON CURVE	POC
POUND	LB
PRESENT	PRES
PROFILE GRADE	PG
PROJECT	PROJ
PROJECT CONTROL	PJC
PROPERTY LINE	ℙ
PROPOSED	PROP
QUADRUPLE	QUAD
QUADRUPLE BARREL CULVERT	CQ
QUANTITY	QUANT
RADIUS	R
RAILROAD	RR
RANGE	RGE
RECORD	REC
REDUCTION	RED
REFERENCE	REF
REFERENCE POINT	RP
REFERENCE POINT FOR POINT ON TANGENT	RPPOT
REINFORCED	REINF
REINFORCED CONCRETE	RC
REINFORCED CONCRETE DECK GIRDER	RCDG
REINFORCED CONCRETE PIPE	RCP
REINFORCING STEEL	REINF STL
RELOCATE	RELC
REMOVE	REM
REQUIRED	REQD
RETAIN(ING)	RET
REVERSE CROWN	RC
REVISION	REV
RIGHT	RT
RIGHT AHEAD	RA
RIGHT BACK	RB
RIGHT OF WAY	ROW
RIGHT OF WAY MARKER	ROWM
RIVER	RIV
ROAD	RD
ROADWAY	RDWY
SECTION	SEC
SERVICE ROAD	SER RD
SHEET	SHT
SHEET PILING	SHT PILE
SHOULDER	SHLD
SIDE DRAIN	SD
SIDEWALK	SW
SIGHT DISTANCE	S DIST
SINGLE BARREL CULVERT	CS
SKEW	SK
SLOPE STAKE	SST
SOLID SODDING	SOL SOD
SOUTH	S
SOUTH BOUND ROADWAY	SBR
SPECIAL	SP
SPECIAL DITCH	SP-DT
SPECIAL DITCH LEFT	SDL
SPECIAL DITCH MEDIAN	SDM
SPECIAL DITCH RIGHT	SDR
SPECIAL DRAWING	SP-DWG
SPECIFICATIONS	SPEC
SPRING LINE	SL
SPIRAL TO CURVE	SC
SPIRAL POINT OF INTERSECTION	SPI
SPIRAL TO TANGENT	ST
SQUARE	SQ
SQUARE FEET	FT2 or SQ FT
SQUARE METERS	M2
SQUARE YARD	YD2 or SQ YD
STAKE	STK
STANDARD	STD
STANDARD DRAWING	STD-DWG
STANDARD STRENGTH	STD STR
STATION	STA
STATION & ELEVATION	S/E
STATION & OFFSET	SO
STOPPING SIGHT DISTANCE	SSD
STREET	ST
STRUCTURE	STR
SUB-GRADE	SG
SUPERELEVATION	SE, se or e
SURVEY	SRV
SYMMETRICAL	SYM
TANGENT	TAN
TANGENT LENGTH (CURVE DATA)	T
TANGENT TO SPIRAL	TS
TEMPORARY	TEMP
TEMPORARY BENCH MARK	TBM
THROAT	TH
TOWNSHIP	TSHP
TRIPLE	TR
TRIPLE BARREL CULVERT	CT
TURN OUT	TO
TURNING POINT	TP
TYPE	TY
UNIT	U
UNKNOWN	UNK
UNPAVED	UNPVD
VALLEY GUTTER	VG
VARIABLE	VAR
VERTICAL	VERT
VERTICAL CURVE	VC
VERTICAL POINT OF CURVATURE	PVC
VERTICAL POINT OF INTERSECTION	PVI
VERTICAL POINT OF TANGENCY	PVT
VITRIFIED	VIT
VOLUME	VOL
WEST	W
WEST BOUND ROADWAY	WBR
WING WALL	WW
WITNESS CORNER	WC
WOOD	WD
WORKING POINT	WP
WOVEN WIRE	W/W
YARD	YD

STRUCTURES

NUMBER OF STORIES	1, 2, 3, 4
FRAME	FR
BUILDING	BLDG
BLOCK	BLK
BRICK	BR
STUCCO	STU
METAL	MET
RESIDENCE	RES
BUSINESS	BUS
WAREHOUSE	WHSE
CHICKEN HOUSE	CH HSE
CHURCH	CH
SCHOOL	SCH
DOUBLE WIDE MOBILE HOME	DW MH
MOBILE HOME	MH

UTILITIES

ANCHOR WIRE	AW
BURIED ELECTRIC	BE
BURIED FIBER OPTIC	BFO
BURIED TELEPHONE CABLE	BTC
BURIED CABLE TELEVISION	BTV
CAST IRON	CI
CIRCUIT	CKT
DUCTILE IRON	DUC IRON
EASEMENT	ESMT
FIBER OPTIC	FO
FIRE HYDRANT	FH
FORCED MAIN (SANITARY SEWER)	FM
GAS MAIN	GM
GAS METER	GMET
GAS VALVE	GV
GUY WIRE	GUY
HIGH PRESSURE	HP
KILOVOLT AMPS	KVA
MANHOLE	MH
MERCURY VAPOR LIGHT	MVL
OVERHEAD FIBER OPTIC	OFO
OVERHEAD TELEPHONE CABLE	OTC
OVERHEAD ELECTRIC CABLE	OE
OVERHEAD CABLE TELEVISION	OTV
PAIR	PR
PEDESTAL	PED
POLY-VINYL CHLORIDE PIPE	PVC
POWER POLE	PP
SANITARY SEWER	SS
SERVICE	SERV
STEEL	STL
STORM DRAIN	STM
STORM SEWER	STMS
SWITCH	SW
TELEPHONE	TEL
TELEPHONE MANHOLE	TMH
TRANSFORMER	TRAN
TRANSMISSION LINE	TR LN
TRIAXIAL CABLE (SERVICE)	TRIX
VITRIFIED CLAY PIPE	VCP
WATER MAIN	WM
WATER METER	WMET
WATER VALVE	WV

PROPERTY

DEED BOOK	DB
REAL PROPERTY BOOK	RP
PLAT BOOK	PB
MAP BOOK	MB
PAGE	PG
OFFICIAL RECORD	OR
CAPPED (TYPICAL PLASTIC SURVEYORS CAP)	CAP
ALUMINUM CAP	ALUM CAP
BRASS CAP	BR CAP
IRON PIPE	IP
CRIMPED	CR
REINFORCING STEEL	REBAR
CONCRETE MONUMENT	CM
DAMAGED	DAM
CHISELED X	CH* X*
HUB AND TACK	H&T
NAIL AND BOTTLE TOP	N&BT
PARKER-KALON (MASONARY NAILS)	PK NAIL
FENCE POST	F-POST
RAILROAD IRON	RR IRON
COTTON SPINDLE	COT SP
ANGLE IRON	ANGLE IRON

$$COLORTABLE$$
18-APR-2023 09:01

Plot Scales
Working Units
1.000000i:1.000000

User Id: jordan.stringfellow
Project$$(45602 - Heroes Plaza)Project Design$$Plans Assembly$$C-1.04_602.pln.lgnd.dgn

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Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

ALABAMA Jordan Hastie Stringfellow No. 38421-E PROFESSIONAL ENGINEER

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

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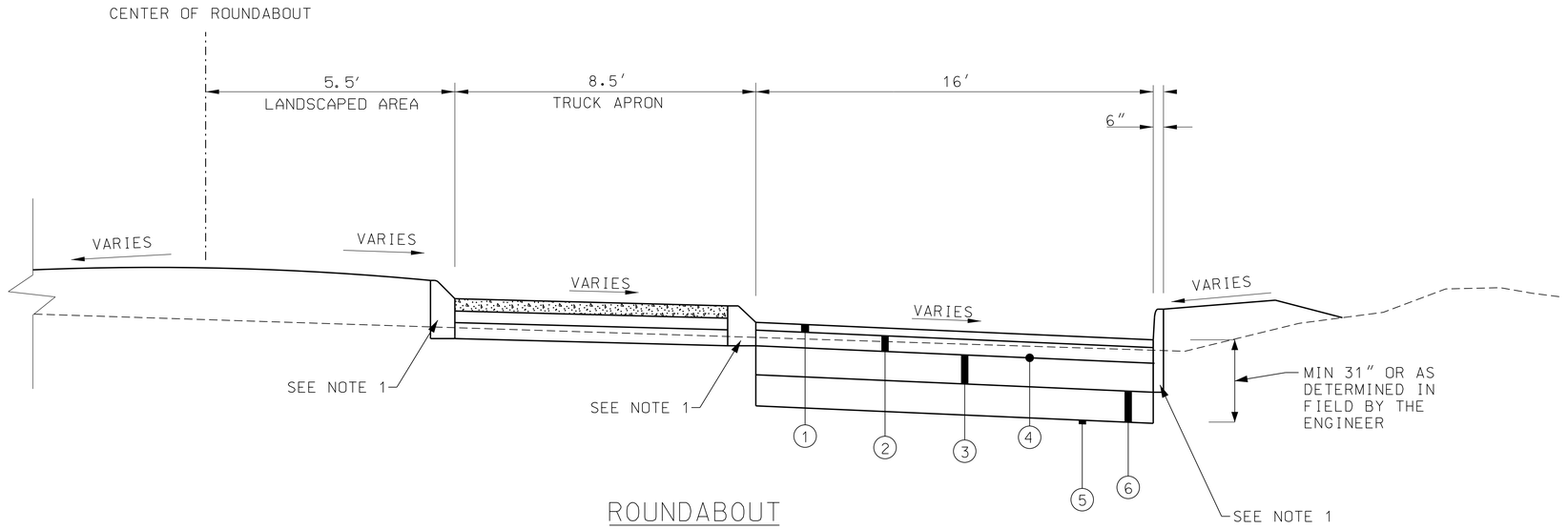
sheet title

PLANS LEGEND SHEET
ABBREVIATIONS

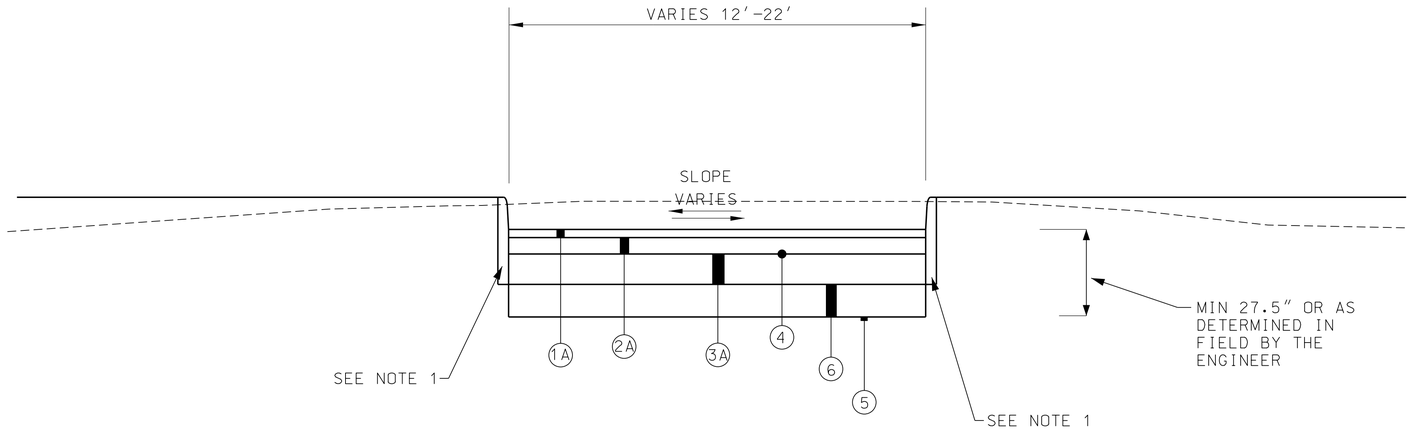
sheet number

C-1.05



ROUNDABOUT

NTS



ACCESS DRIVES

NTS

✳ NOTE 1:
SEE LANDSCAPE PLANS FOR CURB DETAILS

REQUIRED MATERIALS LEGEND

LEGEND NO.	ITEM NO.	DESCRIPTION
(1)	424A-360	SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER, 1/2" MAXIMUM AGGREGATE SIZE, ESAL RANGE C/D (APPROX. 220 LBS/SY)
(1A)	424A-360	SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER, 1/2" MAXIMUM AGGREGATE SIZE, ESAL RANGE C/D (APPROX. 165 LBS/SY)
(2)	424B-650	SUPERPAVE BITUMINOUS CONCRETE UPPER BINDER LAYER, 3/4" MAXIMUM AGGREGATE SIZE MIX, ESAL RANGE C/D (APPROX. 330 LBS/SY)
(2A)	424B-650	SUPERPAVE BITUMINOUS CONCRETE UPPER BINDER LAYER, 3/4" MAXIMUM AGGREGATE SIZE MIX, ESAL RANGE C/D (APPROX. 220 LBS/SY)
(3)	301A-020	CRUSHED AGGREGATE BASE COURSE, TYPE B, PLANT MIXED, 8" COMPACTED THICKNESS
(3A)	301A-012	CRUSHED AGGREGATE BASE COURSE, TYPE B, PLANT MIXED, 6" COMPACTED THICKNESS
(5)	230A000	ROADBED PROCESSING
(6)	210D023	BORROW EXCAVATION (LOOSE TRUCKBED MEASUREMENT)(A-4(0) OR BETTER)

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seal

ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

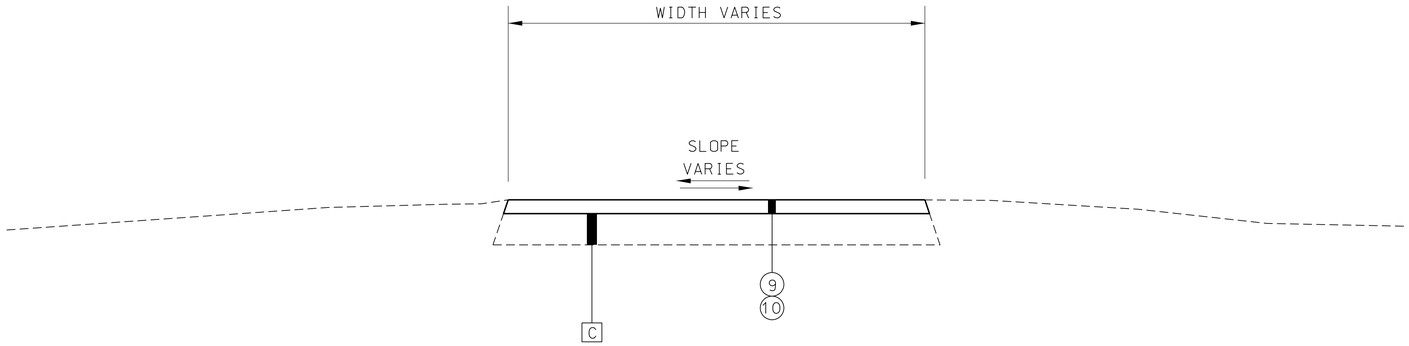
APRIL 14, 2023

sheet title

TYPICAL SECTIONS

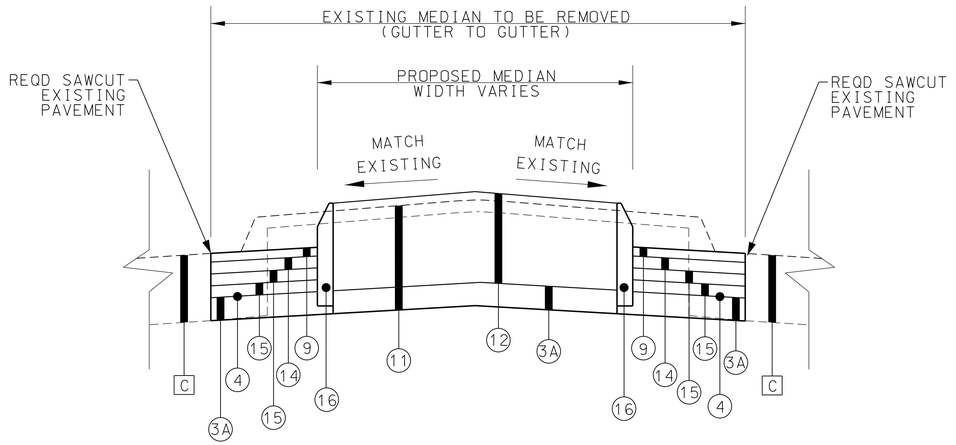
sheet number

C-2.00



WATER ST AND GOVERNMENT ST
INTERSECTION

NTS



REQUIRED SAFETY NOSE
NTS

REQUIRED MATERIALS LEGEND

LEGEND NO.	ITEM NO.	DESCRIPTION
C		IN-PLACE ASPHALT PAVEMENT (RETAIN)
3A	301A-012	CRUSHED AGGREGATE BASE COURSE, TYPE B, PLANT MIXED, 6" COMPACTED THICKNESS
4	401A-000	BITUMINOUS TREATMENT A
9	424A-280	SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER, 1/2" MAXIMUM AGGREGATE SIZE, ESAL RANGE E (APPROX. 165 LBS/SY)
10	408A-052	PLANING EXISTING PAVEMENT (APPROXIMATELY 1.10" THRU 2.0" THICK)
11	210A-000	UNCLASSIFIED EXCAVATION
12	620A-000	MINOR STRUCTURE CONCRETE
14	424B-653	SUPERPAVE BITUMINOUS CONCRETE UPPER BINDER LAYER, PATCHING, 1/2" MAXIMUM AGGREGATE SIZE, ESAL RANGE C/D (APPROX. 250 LBS/SY)
15	424B-683	SUPERPAVE BITUMINOUS CONCRETE LOWER BINDER LAYER, PATCHING, 1/2" MAXIMUM AGGREGATE SIZE, ESAL RANGE C/D (APPROX. 250 LBS/SY)
16	623B-001	CONCRETE CURB, TYPE N SPECIAL

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seal

ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

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project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

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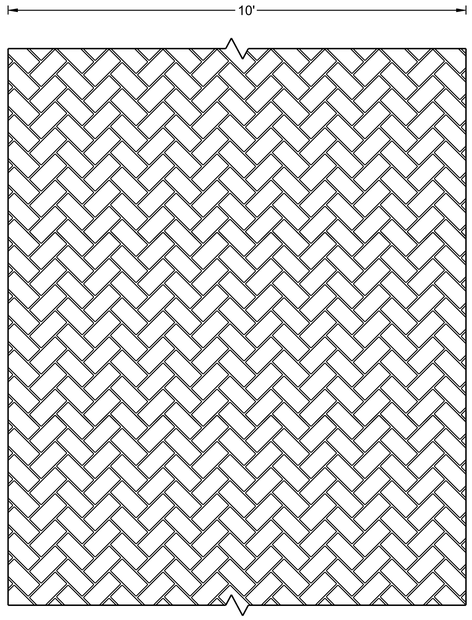
APRIL 14, 2023

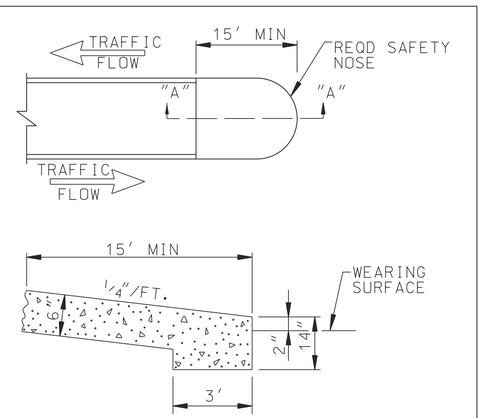
sheet title
TYPICAL SECTIONS

sheet number
C-2.01



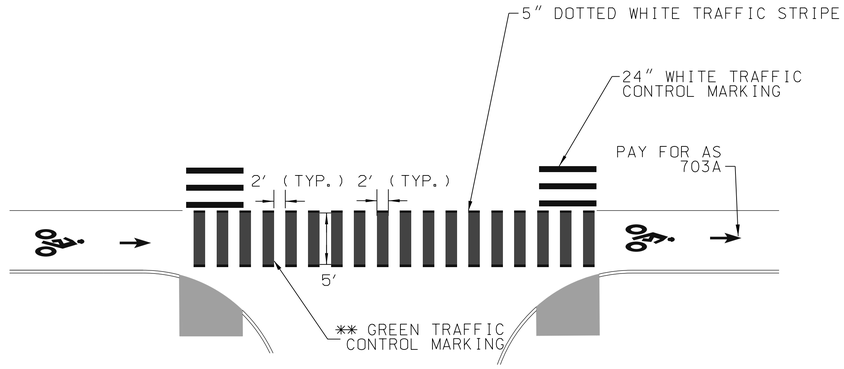
STONE-THERMO-SET CROSSWALK TREATMENT
NTS

PATTERNED PAVEMENT CROSSWALK MATERIAL SHALL BE DIAGONAL HERRINGBONE PATTERN AND BRICK RED COLOR

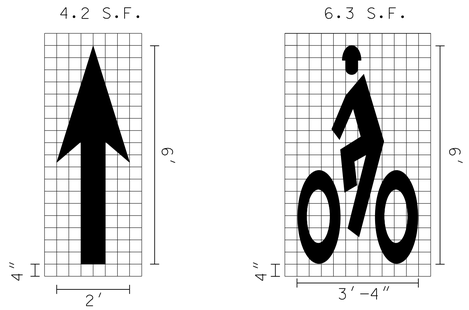


SECTION "A"-"A"

DETAIL OF MEDIAN SAFETY NOSE
NTS



DETAIL OF BIKE LANE STRIPING AT BIKE CROSSINGS
NTS

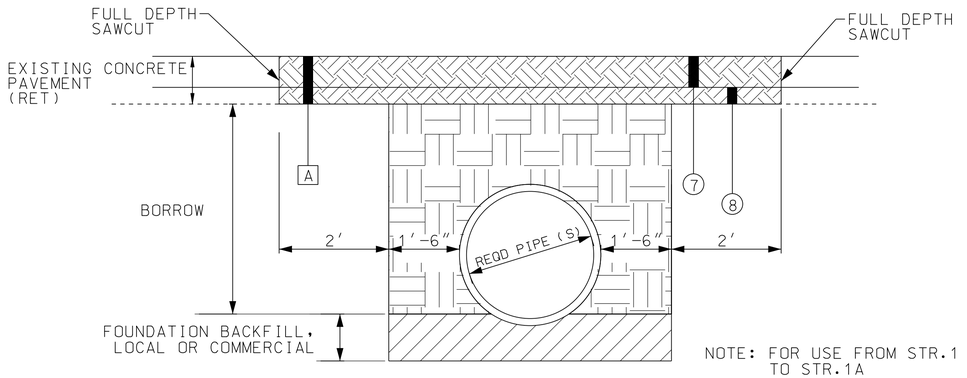


BIKE LANE ARROW SYMBOL

HELMETED BICYCLIST SYMBOL

NOTES:
1. ALL BICYCLE MARKINGS AND PAVEMENT MESSAGES SHALL BE WHITE.

BICYCLE MARKINGS
N.T.S.



NOTE: FOR USE FROM STR.1 TO STR.1A

OPEN-CUT FOR REQD STORM SEWER/ROADWAY PIPE/SANITARY SEWER/WATERLINE AND REMOVAL OF EXST STORM/ROADWAY/ SANITARY/WATERLINE PIPE
NTS

REQUIRED MATERIALS LEGEND

LEGEND NO.	ITEM NO.	DESCRIPTION
A		IN-PLACE CONCRETE PAVEMENT (APPROX. 8") (REMOVE)
7	450A-014	PLAIN CEMENT CONCRETE PAVEMENT, 7 INCHES THICK
8	301A-004	CRUSHED AGGREGATE BASE COURSE, TYPE B, PLANT MIXED, 4" COMPACTED THICKNESS

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ALABAMA Justin C. Stringfellow No. 38421-E PROFESSIONAL ENGINEER JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

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project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

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contact:
drawn by:
checked by: JHS

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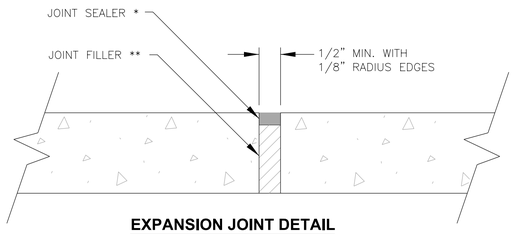
sheet title

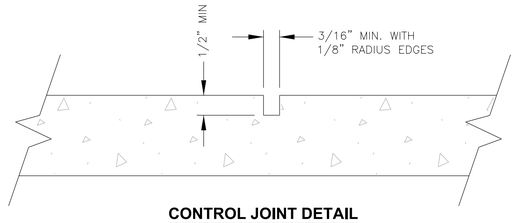
PROJECT DETAILS

sheet number

C-2.02



EXPANSION JOINT DETAIL
NTS



CONTROL JOINT DETAIL
NTS

* EXPANSION JOINT MATERIALS TO MEET ALDOT SPECIFICATIONS 832.01 & 832.02

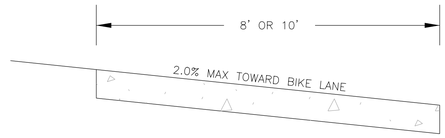
** JOINT FILLER TO BE CUT FLUSH WITH SIDEWALK SURFACE WHEN NO JOINT SEALER IS USED

NOTES:

SIDEWALK PANELS TO BE 4" MINIMUM THICKNESS.

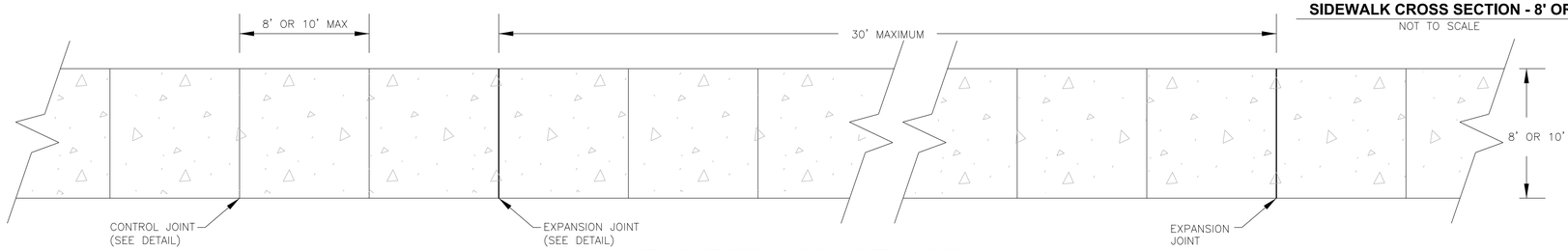
SIDEWALK PANELS THAT ABUT A DRIVEWAY OR WILL OTHERWISE BE SUBJECTED TO VEHICULAR TRAFFIC TO BE 6" MINIMUM THICKNESS.

ALL CONCRETE TO BE 3000 P.S.I. MIX WITH NATURAL COLOR AND BROOM FINISH.

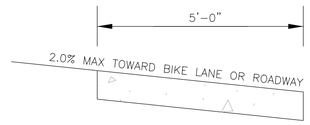


SIDEWALK CROSS SECTION - 8' OR 10'
NOT TO SCALE

IF SITE CONDITIONS PROHIBIT THE USE OF THESE STANDARDS, AN ALTERNATIVE MAY BE SUBMITTED FOR APPROVAL TO THE ENGINEERING DEPT.

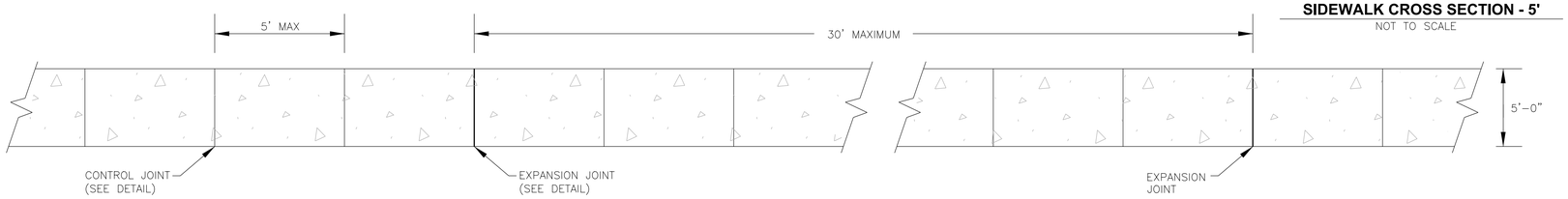


STANDARD SIDEWALK PLAN DETAIL - 8' OR 10'
NTS



SIDEWALK CROSS SECTION - 5'
NOT TO SCALE

IF SITE CONDITIONS PROHIBIT THE USE OF THESE STANDARDS, AN ALTERNATIVE MAY BE SUBMITTED FOR APPROVAL TO THE ENGINEERING DEPT.



STANDARD SIDEWALK PLAN DETAIL - 5'

NOTE: SEE SHEET C-4.03 FOR RELEVANT LOCATIONS.

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checked by: JHS

drawing date
APRIL 14, 2023

sheet title
PROJECT DETAILS

sheet number
C-2.03

GENERAL NOTES

1. THE PROJECT CONTRACTOR SHALL ALWAYS HAVE A COPY OF THE FOLLOWING: STATE OF ALABAMA HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2018 EDITION.

2. SPECIAL CARE IS TO BE TAKEN SO TREES OUTSIDE THE LIMITS OF CONSTRUCTION REMAIN UNHARMED DURING CONSTRUCTION.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY, EFFICIENCY, AND ADEQUACY OF HIS OPERATION AND SHALL INITIATE HIS OWN SAFETY PROGRAM. THE CONTRACTOR SHALL COMPLY WITH ALL DEPARTMENT OF LABOR, SAFETY AND HEALTH REGULATIONS AS SPECIFIED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED, AND THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT.

4. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE IF THE REQUIRED CONSTRUCTION CAN BE PERFORMED WITHIN THE AREA PROVIDED AND COMPLY WITH THE REQUIREMENTS OF THE SAFETY AND HEALTH REGULATION (OSHA) FOR CONSTRUCTION PROJECTS OF THIS TYPE. ANY SAFETY MEASURES OR METHODS OF CONSTRUCTION THAT ARE NECESSARY IN THE CONSTRUCTION OF THIS PROJECT TO COMPLY WITH THESE REGULATIONS IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE PROVIDED WITH ALL COSTS TO BE INCLUDED IN THE VARIOUS PAY ITEMS OF THE CONTRACT (NO DIRECT PAYMENT).

5. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER (JENNIFER WHITE, 251-208-2960) AT LEAST THREE (3) DAYS IN ADVANCE OF ANY PROPOSED CONSTRUCTION THAT WILL AFFECT TRAFFIC ON ANY STREET. ALL WARNING SIGNS, BARRICADES, AND OTHER REQUIRED TRAFFIC CONTROL CALMING DEVICES WILL BE REVIEWED PRIOR TO LETTING. THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY (IN THE OPINION OF THE ENGINEER). THE CONTRACTOR SHALL PROVIDE THE NECESSARY "EXPERIENCED FLAGMAN" TO DIRECT TRAFFIC.

6. SHOULD THE CONTRACTOR ELECT TO OBTAIN AREAS FOR THE PURPOSE OF STORING MATERIALS AND EQUIPMENT OR FOR CONDUCTING HIS WORK OPERATIONS, HE SHALL FURNISH THE OWNER AND ENGINEER A COPY OF THE AGREEMENT BETWEEN HIM AND THE OWNER OF THE PROPERTY PRIOR TO USING THE AREA (NO DIRECT PAYMENT). ANY CURB AND GUTTER, SIDEWALK, DRIVEWAY, ETC., DAMAGED BY THE CONTRACTOR WHEN HAULING MATERIALS OR MOVING EQUIPMENT IN OR OUT FROM THIS STORAGE AREA SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE. CONTRACTOR WILL BE RESPONSIBLE FOR ALL PERMITS.

7. ANY EXISTING CULVERT OR PIPE WITHIN THE CONSTRUCTION LIMITS TO REMAIN SHALL BE CLEARED OF ANY FILL OR DEBRIS, TO THE EXISTING FLOW LINE. THE COST FOR THIS WORK SHALL BE INCLUDED IN ITEMS 534E.

8. PRIOR TO FINAL ACCEPTANCE OF THIS PROJECT, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER A COMPLETE SET OF "AS-BUILT" PLANS SHOWING ACTUAL QUANTITIES, LOCATION AND VALVE REFERENCES. THE ENGINEER WILL FURNISH THE CONTRACTOR AN "ISSUED FOR CONSTRUCTION" SET OF DRAWINGS TO BE USED FOR THIS PURPOSE.

9. LA ABRASION INFORMATION IS NOT AVAILABLE.

10. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER OF ANY PERCEIVED CONFLICTS, AMBIGUOUS ITEMS OR DEFICIENCIES IN THE PLANS, SPECIFICATIONS, GENERAL NOTES OR RELATED CONTRACT DOCUMENTS.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND ABIDING BY THE SPECIFICATIONS FOR THIS PROJECT.

12. FOR SIDEWALK RAMP AT NORTHWEST CORNER OF WATER ST, THE REQUIRED PRE-FABRICATED TRUNCATED DOME MAT APPLICATION SHALL BE CONSTRUCTED BY WET SETTING TACTILE PAVER PANELS (SURE DOME OR APPROVED EQUAL) IN FRESH CONCRETE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. TRUNCATED DOME SHALL BE FEDERAL RED IN COLOR. THE COST OF THIS WORK SHALL BE A SUBSIDIARY OBLIGATION OF ITEM 618A. THE DIRECTIONAL BAR TILE SHALL ALSO BE CONSTRUCTED BY WET SETTING AND BE FEDERAL BRICK RED IN COLOR IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

13. SIDEWALK TO BE FIELD ADJUSTED AS NECESSARY BY THE ENGINEERS REPRESENTATIVE IN FIELD. SEE PROJECT DETAILS FOR SIDEWALK ADJUSTMENT DETAILS. SIDEWALK TO NOT EXCEED 2% MAX EITHER DIRECTION.THE CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT OF THE PROPOSED IMPROVEMENTS AND SHALL ENSURE ALL WORK PERFORMED IS ADA COMPLIANT.

14. ALL EXISTING SIGNS REMOVED OR REPLACED ARE THE PROPERTY OF THE CITY OF MOBILE AND SHALL BE DELIVERED FOR RECYCLING TO THE TRAFFIC ENGINEERING DEPARTMENT, 852 GAYLE ST. AT NO ADDITIONAL COST. COORDINATE DELIVERY WITH MOBILE TRAFFIC ENGINEER, JENNIFER WHITE, 251-208-2960. CONTRACTOR SHALL DISPOSE OF OVERHEAD SIGN BRIDGES. REMOVE FOUNDATION 1' BELOW SUBGRADE. THE COST OF DISPOSAL SHALL BE SUBSIDIARY TO THE REMOVAL PAY ITEM.

15. POSITIVE DRAINAGE SHALL BE MAINTAINED DURING CONSTRUCTION. ALL TEMPORARY PIPE PLUGS, TEMPORARY COLLARS, AND OTHER MATERIALS REQUIRED TO FACILITATE CONSTRUCTION OF THE DRAINAGE SYSTEM SHALL BE A SUBSIDIARY OBLIGATION OF ROADWAY PIPE, ITEMS 530-A. CORING OF EXISTING IS PERMISSABLE.

16. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY OWNERS AND DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES ON THIS PROJECT WHETHER SHOWN ON THE PLANS OR NOT. THE LOCATION OF ANY REQUIRED GUARDRAIL, SIGNS, FOOTINGS OF ANY NATURE AND/OR ELECTRICAL/COMMUNICATIONS CONDUITS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO PREVENT ANY CONFLICTS WITH THESE UTILITIES. THERE WILL BE NO ADDITIONAL COMPENSATION FOR EXPLORATORY POT-HOLING OR UTILITY INVESTIGATION.

17. ALL EXISTING VALVES, MANHOLES, JUNCTION BOXES, ETC. WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND RESET AS NEEDED. COST FOR THESE EFFORTS SHALL BE SUBSIDIARY TO THE PROJECT.

18. BORROW PLACED IN VOIDS CREATED BY CURB AND GUTTER REMOVAL SHALL BE COMPACTED TO THE SATISFACTION OF THE ENGINEER.

19. ITEMS TO BE REMOVED THAT ARE NOT PROVIDED FOR BY PAY ITEM OR SPECIFICALLY MENTIONED BY NOTE TO BE INCLUDED IN OTHER ITEMS OF WORK SHALL BE REMOVED IN ACCORDANCE WITH THE REQUIREMENTS FOR EXTRA WORK GIVEN IN ARTICLE 104.13 OF THE STANDARD SPECIFICATIONS.

20. SAW CUTTING OF ASPHALT PAVEMENT IS SUBSIDIARY OF 424A.

21. ROADBED PROCESSING SHALL EXTEND 2' BEYOND THE OVERLYING CRUSHED AGGREGATE BASE LAYER.

22. ROADBED PROCESSING IS WAIVED IN AREAS WHERE THE REQUIRED PROCESSING WIDTH IS LESS TAHN SIX (6) FT. IN THESE AREAS THE SUBGRADE SHALL BE COMPACTED TO 100% OF AASHTO T-99. THE COST OF THIS WORK SHALL BE A SUBSIDIARY OBLIGATION OF THE OVERLYING LAYER.

23. THE CONTRACTOR SHALL TRANSITION ALL REQUIRED CURB, CURB AND GUTTER, AND GUTTERS TO MATCH EXISTING CURBS, CURB AND GUTTERS. THE TRANSITION SHALL OCCUR WITHIN THE LAST 10 FEET OF THE REQUIRED ITEM OR AS DIRECTED BY THE ENGINEER. THE COST OF THIS TRANSITION SHALL BE A SUBSIDIARY OBLIGATION OF THE ITEM BEING PLACED.

24. JOINTS ON ALL STORM DRAIN PIPES SHALL BE PIPE WRAPPED FULL CIRCUMFERENCE WITH TWO (2) LAYERS OF FILTER BLANKET AND SECURED WITH STRAPS OR AN APPROVED ADHESIVE. COST SHALL BE SUBSIDIARY OBLIGATION OF PIPE.

25. ALL DRAINAGE PIPES ARE TO BE FREE OF LIFTING HOLES DURING THEIR INSTALLATION.

ENVIRONMENTAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF BEST MANAGEMENT PRACTICE'S (BMP'S) PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AS DETAILED ON THE CONSTRUCTION PLANS, BMP'S SHALL MEET OR EXCEED ALL RULES AND REGULATIONS SET FORTH BY ADEM BEST MANAGEMENT PRACTICES (BMP) MANUAL FOR ALABAMA CONSTRUCTION.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTIONS OF ALL EROSION CONTROL AREAS, ANY REPAIRS AND SEDIMENT REMOVAL NECESSARY FOR PROPER OPERATION.

3. ALL WORK PERFORMED SHALL BE DONE IN ACCORDANCE WITH ISSUED PERMITS.

4. ADDITIONAL BMP'S MAY BE REQUIRED IN ALL AREAS SUBJECT TO EROSION.

5. ALL BLOWOUTS, UNDERMINING AND DAMAGED BMP'S SHALL BE REPAIRED IMMEDIATELY AND REPORTED TO THE CITY ENGINEER.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF ALL FINES AND PROPER CLEAN UP FOR AREAS IN VIOLATION.

7. NO SEDIMENT SHALL BE ALLOWED TO EXIT THE PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ADEQUATE MEASURES FOR CONTROLLING EROSION.

8. THE CONTRACTOR SHALL, AT HIS EXPENSE, MAINTAIN PLANTED AREAS IN A SATISFACTORY CONDITION UNTIL ONE YEAR FROM FINAL ACCEPTANCE. THE ENGINEER, AT ANY TIME, MAY REQUIRE REPLANTING IF IT DOES NOT APPEAR TO BE DEVELOPING SATISFACTORILY.

9. A NOTICE OF INTENT FOR NPDES PERMIT COVERAGE HAS BEEN FILED WITH ADEM FOR THIS PROJECT. A COPY OF THE CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (CBMPP) IS AVAILABLE THROUGH THE OFFICE ENGINEER PRIOR TO BIDDING AND SHOULD BE KEPT ON-HAND AT ALL TIMES AT THE CONSTRUCTION SITE

10. CONTRACTOR SHALL SUBMIT FOR ALL REGULATORY & ENVIRONMENTAL PERMITS, EXCLUDING THE ADEM NPDES PERMIT. THE CONTRACTOR SHALL COMPLY WITH ALL SPECIFIC AND GENERAL CONDITIONS STATED IN EACH PERMIT, INCLUDING ADEM NPDES PERMIT.

11. ALL PRACTICAL AND NECESSARY EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL AND PREVENT EROSION AND THE TRANSPORT OF SEDIMENT TO DOWNSTREAM AREAS. SUCH EFFORTS SHALL BE IN ACCORDANCE WITH THE ADEM BEST MANAGEMENT PRACTICES (BMP) MANUAL FOR ALABAMA CONSTRUCTION (SILT FENCE, WATTLES, & CHECK DAMS). ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN A MANOR TO ELIMINATE ILLICIT DISCHARGES TO THE MS4 SYSTEM.

TSW
PLANNING • ARCHITECTURE
LANDSCAPE ARCHITECTURE
Atlanta, GA | Tulsa, OK | Chattanooga, TN

1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

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PROJECT NOTE SHEET

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C-2.06

( ) DENOTES NOTES THAT APPLY TO THIS PROJECT

(700) THE TRAFFIC CONTROL PLAN IS DEVELOPED IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PART 6, 2009 EDITION. THE TRAFFIC CONTROL DEVICES INDICATED REPRESENT CONDITIONS KNOWN DURING PLAN DEVELOPMENT. IN THE EVENT ACTUAL PHYSICAL CONDITIONS WARRANT ADDITIONAL TRAFFIC CONTROL DEVICES, THEY SHALL BE INSTALLED IN CONFORMANCE WITH THE M.U.T.C.D. PART 6 AS DIRECTED BY THE ENGINEER. COST SHALL BE PAID FOR UNDER THE APPROPRIATE PAY ITEM.

(701) ALL BLACK ON ORANGE CONSTRUCTION SIGNS SHALL BE FABRICATED USING TYPE XI FLUORESCENT ORANGE REFLECTIVE SHEETING MATERIAL FOR THE SIGN BACKGROUND.

(702) DURING NON-WORKING HOURS NO EQUIPMENT OR MATERIAL SHALL BE PARKED OR STORED CLOSER THAN 30 FEET TO THE EDGE OF ANY ROADWAY CARRYING TRAFFIC. WHEN THIS IS NOT PRACTICAL, IT SHALL BE PLACED IN AN AREA APPROVED BY THE ENGINEER AND DELINEATED BY REFLECTORIZED DRUMS. THIS INCLUDES STORAGE OF TRAFFIC CONTROL DEVICES SUCH AS TRAILER MOUNTED OR OTHER TEMPORARY SIGNS, BARRICADES, DRUMS, ETC., WHICH ARE NOT IN USE DURING NON-WORKING HOURS. TO BE FURNISHED BY THE CONTRACTOR WITHOUT COST TO THE ALDOT. (SEE SKETCH ON SHEET 50)

(703) WHERE THE LOCATION OF A REQUIRED SIGN FALLS IN A DRIVEWAY, SIDEWALK, BRIDGE, ETC., OR WHERE THE VISIBILITY OF A SIGN IS LIMITED TO THE TRAVELING PUBLIC, THE LOCATION SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER.

(704) THE CONTRACTOR IS TO REMOVE, RELOCATE OR COVER DURING CONSTRUCTION AND THEN RESET OR UNCOVER UPON COMPLETION OF A PARTICULAR SECTION ANY CONFLICTING IN-PLACE ROADWAY SIGNS AND DELINEATORS, AS DIRECTED BY THE ENGINEER. SIGNS REQUIRING REMOVAL SHALL BE STOCKPILED AS DIRECTED BY THE ENGINEER AND SHALL BECOME PROPERTY OF THE ALDOT. COST SHALL BE A SUBSIDIARY OBLIGATION OF ITEM 740B.

(705) DURING ALL PHASES OF WORK, NON-APPLICABLE PAVEMENT STRIPING OR MARKINGS SHALL BE REMOVED AND APPROPRIATE PAVEMENT STRIPING OR MARKINGS SHALL BE PLACED AS EXPEDITIOUSLY AS PRACTICAL, BUT IN ALL CASES, SHALL BE IN PLACE BY NIGHTFALL ON ANY ROADWAY CARRYING TRAFFIC, EXCEPT ON SHORT TERM OPERATIONS WHERE IT IS DETERMINED BY THE ENGINEER, THAT SUCH REMOVAL AND REPLACEMENT IS MORE HAZARDOUS THAN LEAVING EXISTING MARKINGS IN PLACE. COST OF ANY REMOVAL SHALL BE PAID FOR UNDER ITEM 701D OR AS A SUBSIDIARY OBLIGATION OF ITEM 701C.

706 OMITTED

(707) THE CONTRACTOR SHALL PLACE ALL ADVANCE WARNING SIGNS BEFORE PROCEEDING WITH HIS WORK. SIGNS SHALL BE PLACED IN ORDER, IN THE DIRECTION OF TRAFFIC AND REMOVED IN REVERSE ORDER.

(708) ALL VEHICLES, EQUIPMENT, PERSONNEL (EXCEPT FLAGGERS), AND THEIR ACTIVITIES, ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

(709) THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE ACCESS TO BUSINESSES AND RESIDENCES DURING ALL PHASES OF CONSTRUCTION.

(710) CONSTRUCTION SIGNS MOUNTED ON TEMPORARY SUPPORTS SHALL BE MOUNTED AT A MINIMUM HEIGHT OF 5 FEET.

(711) FLAGGERS SHALL BE PROPERLY ATTIRED, EQUIPPED WITH STAFF MOUNTED STOP/SLOW PADDLES IN SIGHT OF EACH OTHER, OR HAVE DIRECT COMMUNICATION AT ALL TIMES. FLAGGER STATION LOCATION MAY BE VARIED FROM THOSE SHOWN BASED ON ROADWAY ALIGNMENT AND CONDITIONS AT THE TIME OF THE LANE CLOSURE.

(712) FLAGGERS ARE TO BE USED WHEN DIRECTED BY THE ENGINEER. SIGNS SHALL BE PLACED AT THE APPROPRIATE TIME, AND SHALL BE COVERED OR REMOVED WHEN FLAGGERS ARE NOT ON DUTY AND DURING NON-WORKING HOURS.

713 FOR MOVING OPERATIONS, THE TRAFFIC CONES MAY BE DELETED IF THE FLAGGERS ARE IN SIGHT OF EACH OTHER, OR IF A PILOT CAR IS USED ON A TWO LANE ROADWAY.

714 OMITTED

(715) ALL CONTRACTOR'S EMPLOYEES' PERSONAL VEHICLES, AND CONTRACTOR'S EQUIPMENT NOT IN OPERATION, SHALL BE PARKED A MINIMUM OF THIRTY (30) FEET FROM THE TRAVELED WAY DURING WORKING HOURS, AS NOT TO CREATE A HAZARD.

(716) THE TRAFFIC CONTROL PLAN IS NOT ALL INCLUSIVE. THE TCP PROVIDES SEVERAL DETAILED DRAWINGS INDICATING THE TRAFFIC CONTROL NECESSARY FOR THE DIFFERENT CONSTRUCTION ACTIVITIES ANTICIPATED FOR THIS PROJECT. THE CONTRACTOR SHALL SELECT THE DETAILED DRAWING THAT BEST FITS THE ACTIVITY TO BE PERFORMED.

717 OMITTED

718 REQUIRED TEMPORARY ROUTE MARKER ASSEMBLIES THAT ARE TO BE LOCATED IN THE VICINITY OF EXISTING ROUTE MARKERS SHOULD BE PLACED ALONG SIDE OF THOSE ALREADY IN PLACE. SOME EXISTING ROUTE MARKERS MAY HAVE TO BE COVERED OR REMOVED, AS DIRECTED BY THE ENGINEER. COST SHALL BE A SUBSIDIARY OBLIGATION OF ITEM 740B.

719 RA-1 (REBUILD ALABAMA) SIGNS SHALL BE REQUIRED FOR EVERY PROJECT. RA-1 SIGNS SHALL BE PLACED AT THE BEGINNING OF THE WORK LIMITS OF THE SUBJECT PROJECT ROUTE. RA-1 SIGNS SHALL BE POSTED ON THE RIGHT-HAND SIDE OF THE ROADWAY ON THEIR OWN SUPPORT SYSTEM. THE RA-1 SIGNS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.

(720) ALL TRAFFIC CONTROL DEVICES THAT ARE NOT APPLICABLE AT ANY SPECIFIC TIME SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

721 OMITTED

722 OMITTED

(723) THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE SAFETY OF PEDESTRIAN TRAFFIC CROSSING THE WORK ZONES DURING CONSTRUCTION.

724 OMITTED

(725) ALL SIGNS SHALL BE POST-MOUNTED IF THE WORK PERIOD EXCEEDS FOUR DAYS, EXCEPT FOR THOSE SIGNS WHICH ARE MOUNTED ON BARRICADES. FOR REPEATED DAY OPERATIONS, SIGNS MAY BE MOUNTED ON TEMPORARY SUPPORTS AND REMOVED AT THE COMPLETION OF THE DAY'S OPERATION.

726 W8 SIGNS INTENDED TO WARN MOTORISTS OF SURFACE CONDITIONS EXTENDING FOR GREATER THAN 1 MILE SHALL BE PLACED PRIOR TO THE BEGINNING OF SURFACE CONDITION AND AT 1 MILE INCREMENTS THEREAFTER, WITH THE EXCEPTION SPECIFIED IN NOTE 727.

727 DURING THE WIDENING OR RESURFACING OF ANY ROADWAY CARRYING TRAFFIC, THE CONTRACTOR SHALL ADVISE THE MOTORISTS OF ANY EDGE OF PAVEMENT DROP-OFFS 3 INCHES OR GREATER BY PLACING SHOULDER DROP-OFF SIGNS EVERY ➡ MILE BEGINNING PRIOR TO THE WIDENING OR RESURFACING. REQUIRED SHOULDER WORK TO ELIMINATE THE DROP-OFFS SHALL BE PURSUED IN AN EXPEDITIOUS MANNER FOLLOWING THE WIDENING AND/OR RESURFACING.

728 A DIFFERENCE IN ELEVATION OF APPROXIMATELY 2 INCHES OR LESS AT THE CENTERLINE MAY BE ALLOWED DURING NON-WORKING HOURS WITHOUT ADDITIONAL TRAFFIC CONTROL. SPECIAL CONDITIONS MAY EXIST WHERE PROTECTION SHOULD BE PROVIDED WHERE THE DIFFERENCE IS 2 INCHES OR LESS.

(729) SIGNS ON TEMPORARY SUPPORTS ARE TO BE REMOVED OR COVERED WHEN NO WORK IS BEING PERFORMED OR AT THE COMPLETION OF THE DAY'S OPERATION.

730 OMITTED

731 OMITTED

(732) CHANNELIZING DRUMS SHOULD BE PLACED ON 10 FOOT INTERVALS IN RADII.

(733) CHANNELIZING DRUMS PLACED TO PROTECT COMPLETED WORK NOT OPEN TO TRAFFIC, SHOULD BE SPACED AT 50 FOOT INTERVALS.

734 CHANNELIZING DRUMS PLACED IN THE EXCAVATED AREA AHEAD OF PAVING OPERATIONS, SHOULD BE SPACED AT 50 FOOT INTERVALS.

(735) CHANNELIZING DRUMS PLACED ON PAVEMENT DURING WORKING HOURS SHALL BE SHIFTED TO THE EDGE OF SHOULDER DURING NON-WORKING HOURS AND DURING PEAK PERIODS.

(736) CHANNELIZING DRUMS SHOULD BE PLACED ON 25 FOOT INTERVALS THROUGHOUT ALL TAPERS.

(737) CHANNELIZING DEVICES SHALL EXTEND TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.

738 OMITTED

739 OMITTED

740 OMITTED

(741) FOR DIVIDED ROADWAYS, THE REQUIRED ADVANCE WARNING SIGNS SHALL BE POSTED ON BOTH THE RIGHT AND LEFT SIDE OF THE ROADWAY.

(742) THE CONTRACTOR SHALL CLOSE THE LANE ADJACENT TO THE WORK AREA ANYTIME WORK OUTSIDE THE EXISTING TRAVEL LANES ENCROACHES WITHIN 2 FEET OF THE EXISTING EDGE OF PAVEMENT.

743 OMITTED

744 THE TRANSITION TAPER LENGTH (L) IS SHOWN IN TABLE 6C-4, AND THE BUFFER LENGTH IS SHOWN IN TABLE 6C-2 OF THE MUTCD, PART 6, 2009 EDITION.

745 OMITTED

746 UNEVEN LANES SIGNS SHALL BE COVERED OR REMOVED WHEN NO UNEVEN PAVEMENT CONDITIONS EXIST.

747 MOVING OPERATIONS SHALL BE CONFINED TO ONE LANE IN THE DIRECTION OF TRAFFIC.

748 R16-3 (WHEN WORKERS ARE PRESENT BEGIN HIGHER FINES) AND R16-3A (END HIGHER FINES) SIGNS SHALL BE REQUIRED FOR EVERY PROJECT ON STATE ROUTES AND INTERSTATE HIGHWAYS. THESE SIGNS SHALL BE POSTED AT THE BEGINNING AND END OF THE PROJECT WITH AN R2-1 (REGULATORY SPEED SIGN) ALWAYS FOLLOWING THE R16-3 SIGN. R16-3B (HIGHER FINES ZONE) AND R2-1 SIGNS SHALL BE POSTED AT MAXIMUM INTERVALS OF THREE MILES THROUGHOUT THE PROJECT LIMITS.

749 WHEN A CONSTRUCTION WORK ZONE SPEED LIMIT REDUCTION IS NOT REQUIRED AT THE END OF THE WORK DAY, THE CONTRACTOR SHALL COVER OR REMOVE THE REDUCED R2-1 (REGULATORY SPEED SIGNS) AND THE W3-5B (REDUCED SPEED AHEAD) SIGNS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

750 DURING REPLACEMENT OF GUARDRAIL AND/OR GUARDRAIL END ANCHORS, A REFLECTORIZED DRUM SHALL BE PLACED BEFORE THE END OF ANY EXPOSED GUARDRAIL AT NIGHT WHERE THE GUARDRAIL END ANCHOR CANNOT BE REPLACED IN ONE DAY'S TIME.

751 CONSTRUCTION SIGNS MOUNTED ON A SINGULAR OR DUAL SQUARE TUBULAR OR U-CHANNEL POST SHALL BE INSTALLED AS SHOWN ON SPECIAL DRAWING NOS. IHS-710-21 AND IHS-710-23.

(752) THE CONTRACTOR AND THE CONSTRUCTION ENGINEER SHALL DISCUSS AND PLAN FOR THE HANDLING OF TRAFFIC FOR ALL HOLIDAYS BEFORE ANY WORK BEGINS. UNLESS OTHERWISE PRE-APPROVED BY THE REGION ENGINEER, THE FOLLOWING SHALL HOLD:

THE CONTRACTOR SHALL NOT HAVE A LANE CLOSURE DURING THE FOLLOWING PERIODS UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR ALDOT:

FOR CHRISTMAS AND NEW YEARS DAY:
FROM 11:59 PM DECEMBER 23 THROUGH 6:00 AM JANUARY 2.

FOR NATIONAL MEMORIAL DAY AND LABOR DAY:
FROM 12:00 NOON THE FRIDAY BEFORE THE HOLIDAY THROUGH 11:59 PM THE DAY OF THE HOLIDAY.

FOR INDEPENDENCE DAY (THE 4TH OF JULY):
FROM 12:00 NOON THE DAY BEFORE THE HOLIDAY THROUGH 11:59 PM THE DAY OF THE HOLIDAY.

FOR THANKSGIVING DAY:
FROM 12:00 NOON THE WEDNESDAY BEFORE THANKSGIVING DAY THROUGH 11:59 PM THE SUNDAY FOLLOWING THANKSGIVING DAY.

ANY OTHER STATE HOLIDAYS WILL BE HANDLED AS APPROVED BY THE PROJECT ENGINEER.

THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER AND LOCAL GOVERNMENT ON TRAFFIC AND/OR WORK RESTRICTIONS FOR LOCAL HOLIDAYS OR EVENTS NOT LISTED ON ALDOT'S LIST OF OFFICIAL STATE HOLIDAYS.

REVISIONS

DRAWN BY:
DATE DRAWN: 12/8/21

ALABAMA DEPARTMENT OF TRANSPORTATION
1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36130-3050

DESIGN BUREAU SPECIAL DRAWING

GENERAL TRAFFIC CONTROL PLAN NOTES

SPECIAL DRAWING NO. SPECIAL PROJECT DETAIL

INDEX NO. 2000

TSW
PLANNING • ARCHITECTURE
LANDSCAPE ARCHITECTURE
Atlanta, GA | Tulsa, OK | Chattanooga, TN

1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

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User Id: jordan.stringfellow
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TRAFFIC SIGNAL PLAN NOTES

IN THE EVENT CONFLICTS OCCUR BETWEEN THE PROJECT TRAFFIC SIGNAL NOTES AND THE MUTCD, THE MUTCD WILL GOVERN.

( ) DENOTES NOTES THAT APPLY TO THIS PROJECT.

(500.) WHEN THE CONTROLLER IS IN THE FLASHING MODE, THE VEHICULAR SIGNAL HEADS ON THE MAINLINE SHALL FLASH YELLOW WHILE THE VEHICULAR SIGNAL HEADS ON THE SIDE ROAD SHALL FLASH RED.

501. ALL EXISTING TRAFFIC CONTROL EQUIPMENT WHICH IS THE PROPERTY OF THE STATE INCLUDING SIGNAL HEADS, CONTROLLERS, POLES, AND MISCELLANEOUS HARDWARE SHALL BE REMOVED UPON COMPLETION OF THE NEW TRAFFIC CONTROL UNIT (TEMPORARY OR PERMANENT) AND STORED TO COMPLY WITH SECTION 730.03 OF THE STANDARD SPECIFICATIONS. THE SAME SHALL BE DELIVERED TO THE ALABAMA DEPARTMENT OF TRANSPORTATION AS DIRECTED BY THE ENGINEER.

502. ALL EXISTING TRAFFIC CONTROL EQUIPMENT WHICH IS THE PROPERTY OF THE CITY OF MOBILE INCLUDING SIGNAL HEADS, CONTROLLERS, POLES, AND MISCELLANEOUS HARDWARE SHALL BE REMOVED UPON COMPLETION OF THE NEW TRAFFIC CONTROL UNIT (TEMPORARY OR PERMANENT) AND STORED TO COMPLY WITH SECTION 730.03 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE WITH THE CITY TRAFFIC ENGINEER (JENNIFER WHITE, 251-208-2960) TO HAVE EQUIPMENT DELIVERED TO THE TRAFFIC ENGINEERING DEPARTMENT, 852 GAYLE ST, AT NO ADDITIONAL COST.

(503.) THE LOCATION OF THE POWER SOURCE AS SHOWN IN THE PLANS IS APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF THE POWER SOURCE AND THE SHORTEST ROUTE TO SERVE THE TRAFFIC SIGNAL CONTROLLER CABINET AND LUMINAIRES.

(504.) FROM THE DATE TIME CHARGE BEGINS THE CONTRACTOR SHALL ASSUME TOTAL RESPONSIBILITY FOR ALL EXISTING, TEMPORARY, AND NEW TRAFFIC CONTROL UNIT(S) ON THE PROJECT. THE CONTRACTOR SHALL CONTINUE THE OPERATION AND MAINTENANCE OF THE EXISTING TRAFFIC CONTROL UNIT(S) UNTIL THE ENTIRE NEW PERMANENT TRAFFIC CONTROL UNIT(S) IS(ARE) OPERATIONAL AND ACCEPTED BY THE CITY OF MOBILE.

(505.) THE CONTRACTOR, WITHOUT EXTRA COMPENSATION, SHALL BE RESPONSIBLE TO ENSURE THE CONTINUAL OPERATION AND MAINTENANCE OF THE EXISTING AND TEMPORARY TRAFFIC CONTROL UNIT(S) DURING THE PERIOD OF CONSTRUCTION. MAINTAINING CONTINUAL OPERATION SHALL INCLUDE THE RELOCATION OF VEHICULAR SIGNAL HEADS DURING CONSTRUCTION AND THE MATERIALS AND LABOR NECESSARY TO ENSURE THE CONTINUAL OPERATION OF THE TRAFFIC CONTROL UNIT(S) EQUIPMENT AT ALL TIMES.

(506.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES TO LOCATE ALL OVERHEAD AND UNDERGROUND UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE UTILITY COMPANY AND THE ENGINEER. THE CONTRACTOR SHALL BEAR ALL COST TO REPAIR ANY AND ALL DAMAGES TO THE UTILITIES CAUSED BY THE CONTRACTOR.

(507.) THE CITY OF MOBILE RESERVES THE RIGHT TO RESPOND TO TRAFFIC CONTROL UNIT(S) MALFUNCTIONS IN AN EMERGENCY OR NATURAL DISASTER. IN DOING SO THE CONTRACTOR'S LIABILITY AND RESPONSIBILITY RELATED TO MAINTAINING THE TRAFFIC UNIT(S) OR SYSTEM REMAINS IN EFFECT.

(508.) THE CONTRACTOR SHALL HAVE THE APPROVAL OF THE ENGINEER PRIOR TO THE REMOVAL OF ANY EXISTING TRAFFIC CONTROL UNIT. THE CONTRACTOR SHALL NOT REMOVE AN EXISTING TRAFFIC CONTROL UNIT UNTIL THE REQUIRED TRAFFIC CONTROL UNIT IS INSTALLED AND COMPLETELY OPERATIONAL.

(509.) EACH REQUIRED TRAFFIC SIGNAL STRAIN POLE AND MAST ARM POLE MAY VARY IN LENGTH AND SIZE. THE CONTRACTOR SHALL ASCERTAIN THAT THE POLE HEIGHTS ARE SUFFICIENT TO PROVIDE THE REQUIRED VEHICULAR TRAFFIC SIGNAL CLEARANCE. EXTENSIONS FOR MOUNTING SIGNALS SHALL BE PROVIDED WHEN NECESSARY.

(510.) EACH MAST ARM MAY VARY IN LENGTH. THE CONTRACTOR SHALL ASCERTAIN THAT ALL ARM LENGTHS ARE SUFFICIENT SO THAT EACH VEHICULAR SIGNAL HEAD POSITION CONFORMS TO THE MUTCD.

(511.) THE TRAFFIC SIGNAL POLE LOCATION(S) AS SHOWN IN THE PLANS IS(ARE) APPROXIMATE. THE CONTRACTOR SHALL COORDINATE THE POLE LOCATION(S) WITH THE ENGINEER. THE CONTRACTOR SHALL ASCERTAIN THAT THE FINAL POLE LOCATION(S) PROVIDE FOR THE VEHICULAR TRAFFIC SIGNAL HEADS TO MEET THE DISTANCE REQUIREMENTS TO THE STOP LINE AS REQUIRED BY THE MUTCD. WHEN PEDESTRIAN SIGNAL HEADS AND/OR PEDESTRIAN CROSSWALKS ARE INVOLVED THE SAME SAID POLE LOCATION(S) SHALL ALSO CONFORM TO THE RELATIVE SECTIONS OF THE MUTCD.

(512.) THE CONTRACTOR SHALL LOCATE EACH REQUIRED AND RELOCATED VEHICULAR TRAFFIC SIGNAL HEAD ON THE SPAN WIRE OR MAST ARM SO THAT EACH HEAD IS LOCATED IN THE APPROACH LANE FOR WHICH IT APPLIES. LOCATION OF SIGNAL HEADS SHALL CONFORM TO THE MUTCD.

513. THE TRAFFIC SIGNAL STRAIN POLE LOCATION(S) AS SHOWN IN THE PLANS IS(ARE) APPROXIMATE. THE ENGINEER SHALL APPROVE ALL FOUNDATION LOCATIONS PRIOR TO THE CONTRACTOR EXCAVATING FOR EACH FOUNDATION.

(514.) BALANCE ADJUSTERS SHALL BE INSTALLED ON TRAFFIC SIGNAL HEADS FOR PROPER AIM. THE CONTRACTOR SHALL ALIGN THE SIGNAL HEADS IN ACCORDANCE WITH THE MUTCD AND TO THE SATISFACTION OF THE ENGINEER.

(515.) A 12 INCH DRIP COIL WITH 3 LOOPS SHALL BE PROVIDED TO THE RIGHTS OF EACH VEHICULAR TRAFFIC SIGNAL HEAD. A DRIP LOOP SHALL BE FORMED SO THAT WATER CANNOT ENTER THE ENTRANCE CLAMP. THE WIRE SHALL ENTER THE CLAMP FROM THE BOTTOM OF THE DRIP LOOP.

516. WHEN PVC CONDUIT IS USED FROM THE CONTROLLER TO THE STEEL STRAIN POLE OR MAST ARM POLE, THE CONTRACTOR SHALL BOND THE CONTROLLER TO THE POLE WITH A #6-1C BONDING CABLE.

517. MARKING TAPE SHALL BE BURIED OVER CONDUIT. THE TAPE SHALL BE 4 INCH POLYETHYLENE, RED IN COLOR WITH BLACK LETTERING.

(518.) WHEN EXISTING LOOP WIRE AND VEHICLE LOOP DETECTORS ARE TO BE RETAINED AND REUSED, OR RELOCATED IN A NEW CONTROLLER CABINET, THE CONTRACTOR SHALL ASCERTAIN THE MANUFACTURER AND MODEL NUMBER OF EACH EXISTING DETECTOR AMPLIFIER AND PROVIDE A NEW WIRING HARNESS COMPLETELY WIRED IN THE CONTROLLER CABINET FOR EACH EXISTING DETECTOR AMPLIFIER.

(519.) WHEN SYSTEM TIMINGS ARE NOT INCLUDED IN THE PLANS FOR TIME BASE OR CLOSED LOOP SYSTEMS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HIRE A LICENSED PROFESSIONAL ENGINEER TO CALCULATE SYSTEM TIMINGS. THE COST OF CALCULATING SYSTEM TIMINGS SHALL BE A SUBSIDIARY OBLIGATION OF 730C.

(520.) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HIRE A LICENSED PROFESSIONAL ENGINEER TO INPUT THE TIMINGS AND FINE TUNE THE TIMINGS. THE COST OF INPUTTING AND FINE TUNING TIMINGS SHALL BE A SUBSIDIARY OBLIGATION OF 730C.

521. THE { AREA TRAFFIC ENGINEER / CITY TRAFFIC ENGINEER / COUNTY TRAFFIC ENGINEER } SHALL BE RESPONSIBLE FOR INPUTTING AND FINE TUNING THE TIMINGS.

(522.) WHEN EXISTING SPAN WIRE THAT IS TO BE RETAINED HAS SAGGED, THE CONTRACTOR SHALL ADJUST THE SPAN WIRE SO THAT SIGNAL HEADS COMPLY WITH THE CLEARANCE SHOWN ON THE STANDARD DETAIL DRAWING.

(523.) A NOTICE OF INTENT FOR NPDES PERMIT COVERAGE HAS BEEN FILED WITH ADEM FOR THIS PROJECT. A COPY OF THE CONSTRUCTION BEST MANAGEMENT PRACTICES PLAN (CBMPP) IS AVAILABLE THROUGH THE CITY OF MOBILE PRIOR TO BIDDING.

(524.) THE CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT PLANS TO THE CITY OF MOBILE TRAFFIC ENGINEER.

525. THE CONTRACTOR SHALL INSTALL BACKPLATES WITH A 1 INCH TO 3 INCH FLUORESCENT YELLOW REFLECTIVE BORDER ON ALL SIGNAL HEADS (EXISTING AND REQUIRED).

(526.) ALL POLES (PEDESTAL AND SIGNAL) SHALL BE BLACK POWDER COATED IN COLOR. ALL SIGNAL HEADS AND PUSH BUTTONS HOUSING SHALL BE BLACK POWDER COATED IN COLOR.

(527.) ALL PEDESTRIAN PUSH BUTTONS SHALL HAVE THE FOLLOWING FEATURES:
- A PUSH BUTTON LOCATOR TONE,
- A TACTILE ARROW,
- A SPEECH WALK MESSAGE TO COMMUNICATE THE "WALK" INDICATION AND TO WHICH CROSSING IT APPLIES,
- A SPEECH PUSHBUTTON INFORMATION MESSAGE,

(528.) CONTRACTOR SHALL RETRIEVE OWNER PROVIDED SIGNAL AND PEDESTAL POLES FROM THE CITY OF MOBILE'S MAINTENANCE FACILITY LOCATED AT 854 GAYLE STREET, MOBILE, ALABAMA 36604. THE CONTRACTOR WILL BE RESPONSIBLE FOR INSPECTING POLES PRIOR TO HANDLING AND SHALL BE RESPONSIBLE FOR LOADING, TRANSPORTING, UNLOADING, AND INSTALLING. ANY DAMAGE INCURRED AS A RESULT OF LOADING, TRANSPORTING, UNLOADING, AND/OR INSTALLING SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER. REPAIR OR REPLACEMENT SHALL BE DETERMINED BY THE OWNER. THE CONTRACTOR SHOULD COORDINATE PICKUP AND DELIVERY TO THE PROJECT SITE WITH MOBILE TRAFFIC ENGINEER, JENNIFER WHITE, 251-208-2960.

(529.) TRAFFIC SIGNAL CONTROLLERS SHALL BE ECONOLITE COBALT OR APPROVED EQUAL. APPROVAL WILL BE GIVEN BY THE CITY OF MOBILE TRAFFIC ENGINEER.

(530.) TRAFFIC SIGNAL CABINETS SHALL BE NEMA TS-2 TYPE 2 AND HAVE A SECONDARY ACCESS DOOR THAT ALLOWS ACCESS TO THE BACK OF THE TERMINAL FACILITY. A PULL OUT DRAWER WITH A LID SHALL BE INSTALLED AND CENTERED UNDER THE BOTTOM SHELF. THE DRAWER SHALL BE MADE OF ALUMINUM AND COME OUT ON FULL EXTENSION DRAWER SLIDES WITH BALL BEARINGS. THE LID ON THE PULL OUT DRAWER SHALL HAVE A NON-SLIP SURFACE, PROVIDE AN APPROXIMATELY 16 INCH x 14 INCH WORKING AREA, AND HAVE THE ABILITY TO BEAR A CONSTANT 25 POUND BURDEN. THE DRAWER SHALL INCLUDE A REAR HINGE WITH SUFFICIENT STORAGE TO HOLD AT LEAST TWO COPIES OF THE CABINET DRAWINGS AND OTHER RELATED CABINET DOCUMENTATION.THE CABINET SHALL BE SUPPLIED WITH TWO MOUNTING SHELVES. ONE SHELF SHALL BE USED FOR STORAGE OF THE CONTROLLER AND ITS ASSOCIATED HARDWARE, AND THE OTHER SHELF FOR STORAGE OF DETECTORS.

(530.) THE CITY OF MOBILE SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF THE EXISTING AND TEMPORARY TRAFFIC CONTROL UNIT(S) DURING CONSTRUCTION. MAINTAINING CONTINUAL OPERATION SHALL INCLUDE THE RELOCATION OF VEHICULAR SIGNAL HEADS DURING CONSTRUCTION AND THE MATERIALS AND LABOR NECESSARY TO ENSURE THE CONTINUAL OPERATION OF THE TRAFFIC CONTROL UNIT(S) EQUIPMENT AT ALL TIMES. COORDINATION WITH THE CONTRACTOR WILL BE NECESSARY WHEN THE TEMPORARY EQUIPMENT IS LOCATED WITHIN THE ACTIVE WORK AREA TO ENSURE CONTINUAL OPERATION.

(531.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE NEW PERMANENT TRAFFIC CONTROL UNIT(S) UNTIL ACCEPTED BY THE CITY OF MOBILE.

(532.) COST ADJUSTMENT TABLE MADE TO BID PRICE FOR CHANGE IN FOUNDATION SIZE FOR TRAFFIC SIGNAL POLES SHALL CONTINUE IN PROPORTION TO THE SCALE PROVIDED IN ALDOT SPEC 730.05.

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www.tsw-design.com

seal

ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
TRAFFIC SIGNAL PLAN NOTES

sheet number
C-2.08

$$COLORTABLE$$
18-APR-2023 00:00

Plot Scales
$$PLOTSCALE$$
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User Is: jordan.stringfellow
Project$$144602 - Heroes Plaza$Project Design$Plans Assembly$C-4.00_602_drn.dgn

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404.873.6730
www.tsw-design.com

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scale: 1" = 10'-0"

0 5 10 15 25

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contact:
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APRIL 14, 2023

sheet title

DRAINAGE PLAN SHEET

sheet number

C-4.00

MATCHLINE SHEET C-4.00

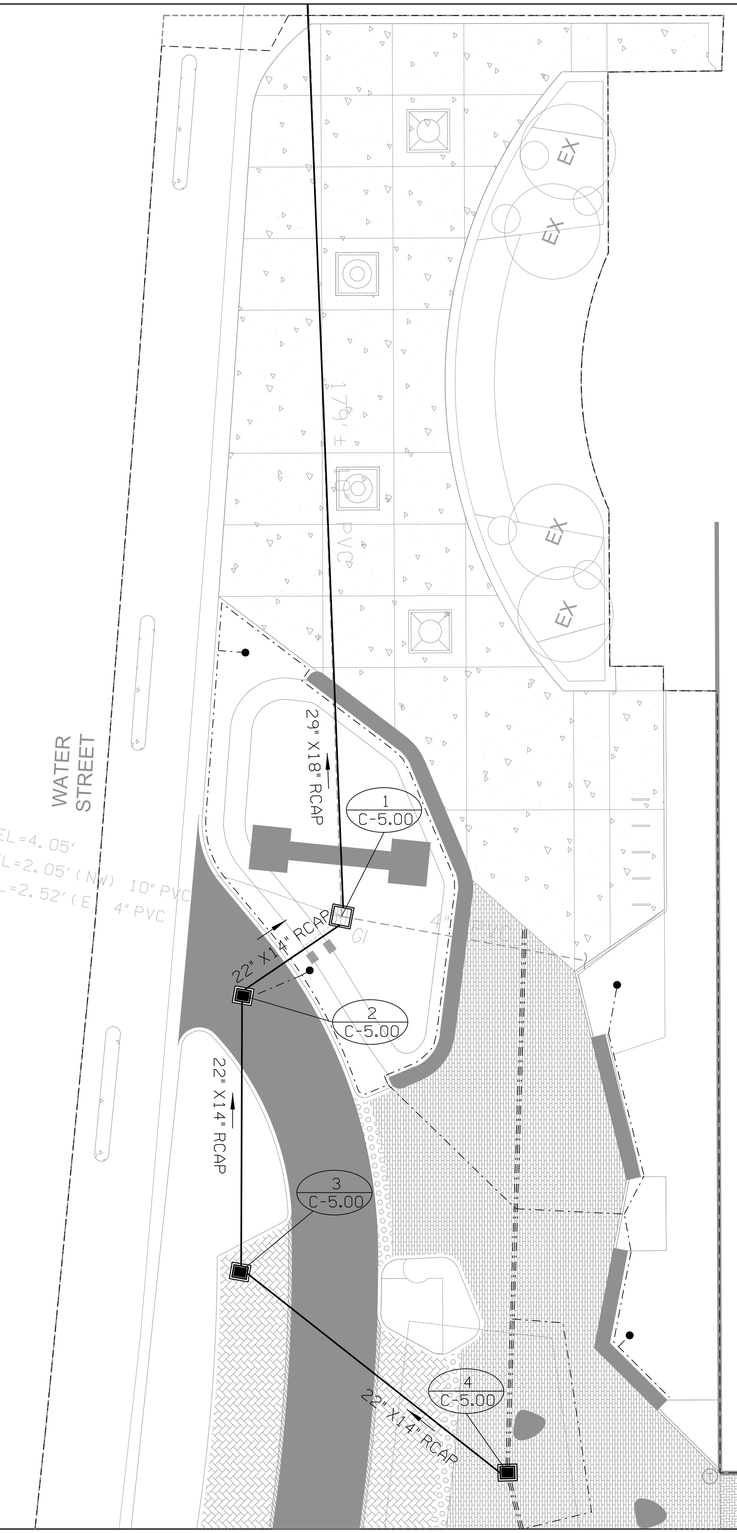
UNDERDRAIN LEGEND

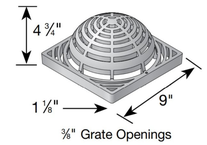
REQD 6" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(PERFORATED)

REQD 4" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(PERFORATED)

REQD 4" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(NON-PERFORATED)

REQD LANDSCAPE DRAIN
(SEE PRODUCT SPECIFICATIONS FOR DETAILS)





⅜" Grate Openings

LANDSCAPE DRAIN NOTES:

PRODUCT: NDS DRAINAGE SOLUTIONS
9" X9" ATRIUM GRATE
OR ENGINEER APPROVED EQUAL

SELECTED GRATE PRODUCTS SHALL
BE COMPATIBLE WITH SCHEDULE 40
UNDERDRAIN PIPE

MATCHLINE SHEET C-4.02

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revisions

north arrow + scale

scale: 1" = 10'-0"

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PHASE 1

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MOBILE, AL 36609

client information

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P.O. BOX 1827
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251.342.1070 (EXT. 1292)

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sheet title

DRAINAGE PLAN SHEET

sheet number

C-4.01

MATCHLINE SHEET C-4.01

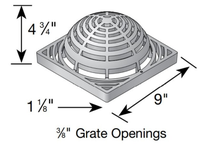
UNDERDRAIN LEGEND

REQD 6" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(PERFORATED)

REQD 4" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(PERFORATED)

REQD 4" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(NON-PERFORATED)

REQD LANDSCAPE DRAIN
(SEE PRODUCT SPECIFICATIONS FOR DETAILS)



LANDSCAPE DRAIN NOTES:

PRODUCT: NDS DRAINAGE SOLUTIONS
9" X9" ATRIUM GRATE
OR ENGINEER APPROVED EQUAL

SELECTED GRATE PRODUCTS SHALL
BE COMPATIBLE WITH SCHEDULE 40
UNDERDRAIN PIPE

NOTE:
FOUNTAIN DRAINAGE TO BE FIELD
VERIFIED AND TIED TO PROPOSED
SYSTEM ACCORDINGLY.

MATCHLINE SHEET C-4.03

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www.tsw-design.com

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ALABAMA
Justin C. Stringfellow
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

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checked by: JHS

drawing date

APRIL 14, 2023

sheet title

DRAINAGE PLAN SHEET

sheet number

C-4.02

MATCHLINE SHEET C-4.02

UNDERDRAIN LEGEND

REQD 6" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(PERFORATED)

REQD 4" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(PERFORATED)

REQD 4" UNDERDRAIN PIPE,
TYPE 8 (SCHEDULE 40)(NON-PERFORATED)

REQD LANDSCAPE DRAIN
(SEE PRODUCT SPECIFICATIONS FOR DETAILS)

LANDSCAPE DRAIN NOTES:

PRODUCT: NDS DRAINAGE SOLUTIONS
9" X 9" ATRIUM GRATE
OR ENGINEER APPROVED EQUAL

SELECTED GRATE PRODUCTS SHALL
BE COMPATIBLE WITH SCHEDULE 40
UNDERDRAIN PIPE

MATCHLINE SHEET C-4.04

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P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

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drawing date

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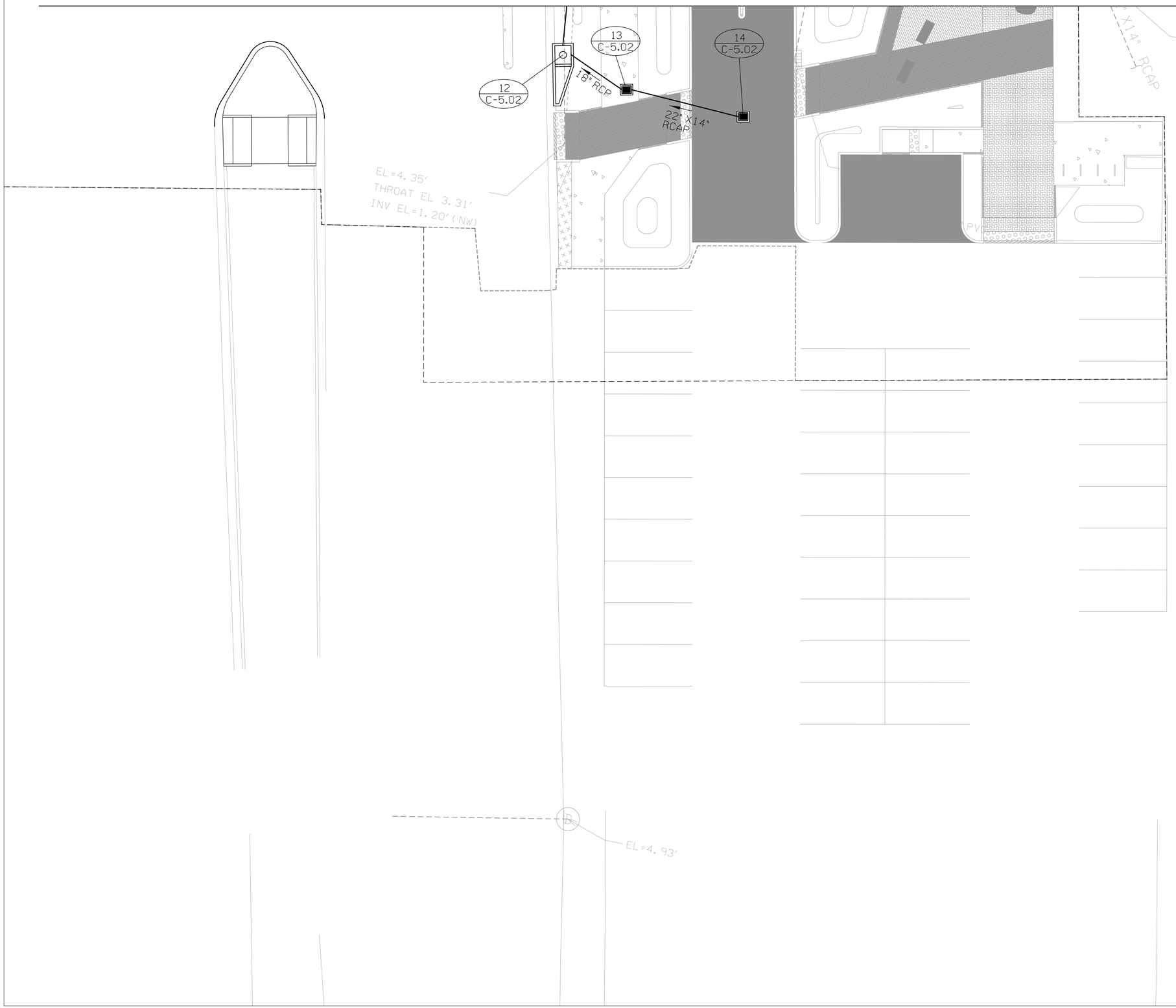
sheet title

DRAINAGE PLAN SHEET

sheet number

C-4.03

MATCHLINE SHEET C-4.03



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No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

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PHASE 1

project address

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MOBILE, AL 36609

client information

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P.O. BOX 1827
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251.342.1070 (EXT. 1292)

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DRAINAGE PLAN SHEET

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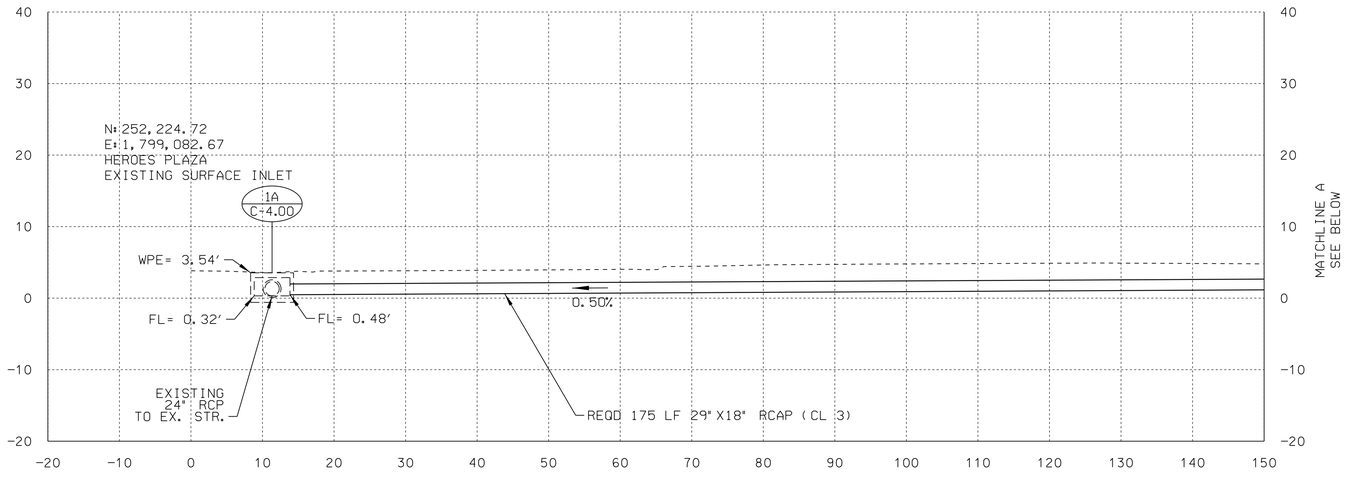

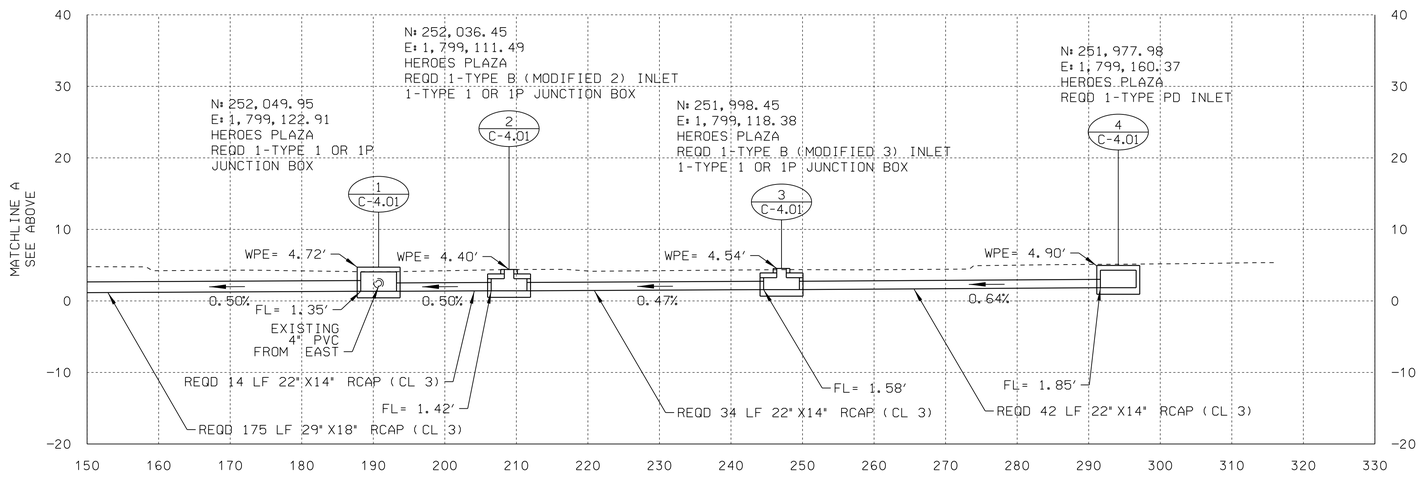

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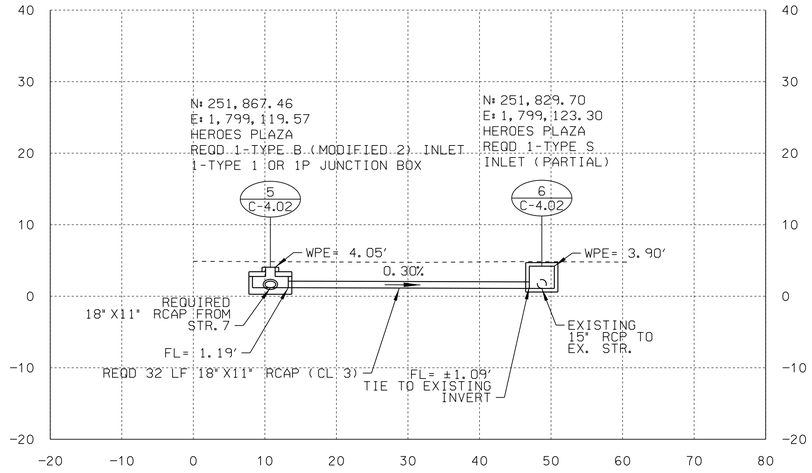
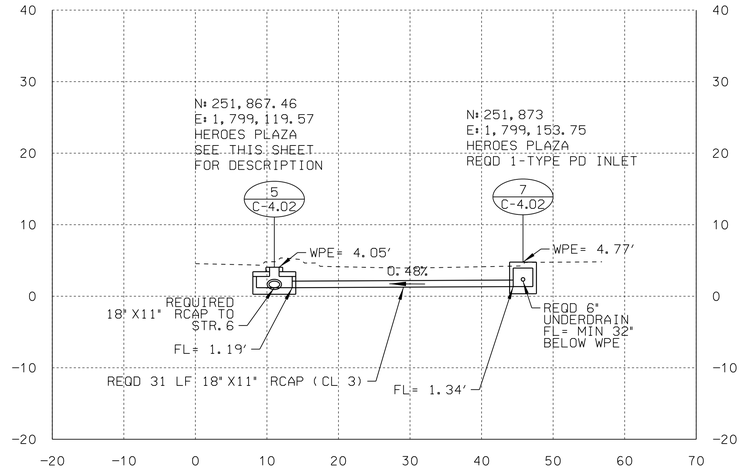
sheet title

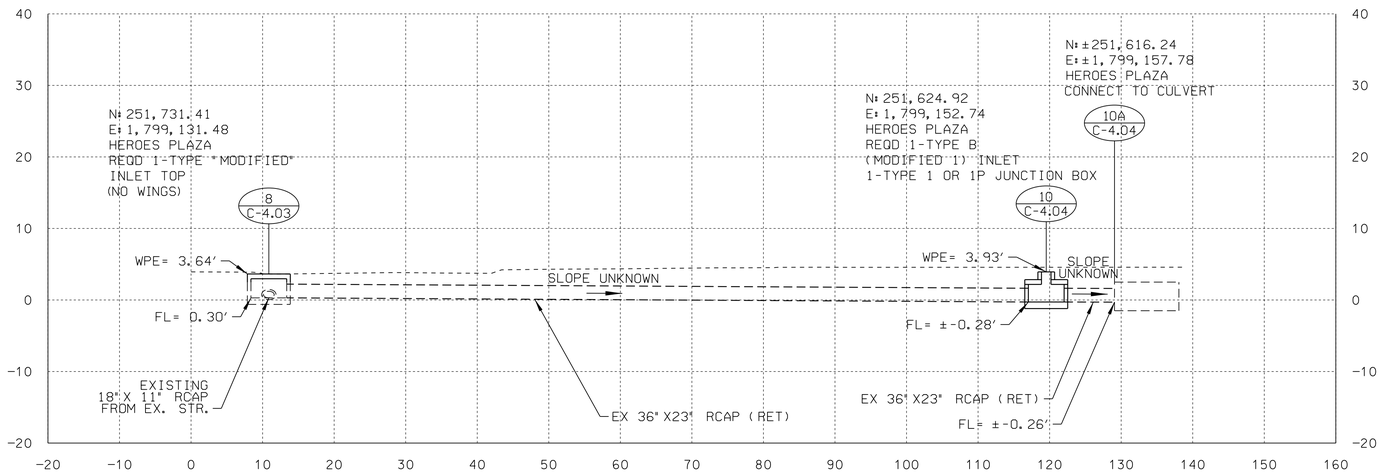
DRAINAGE SECTIONS

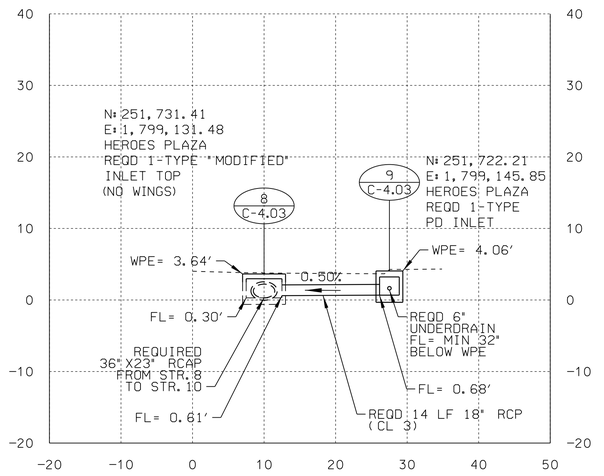
sheet number

C-5.00









NOTES:
1) STR. 6 INVERT IS ESTIMATED AND TO BE FIELD VERIFIED
2) CULVERT LOCATION AND INVERT IS ESTIMATED AND TO BE FIELD VERIFIED

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ALABAMA
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PROFESSIONAL
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consultant 04-14-2023

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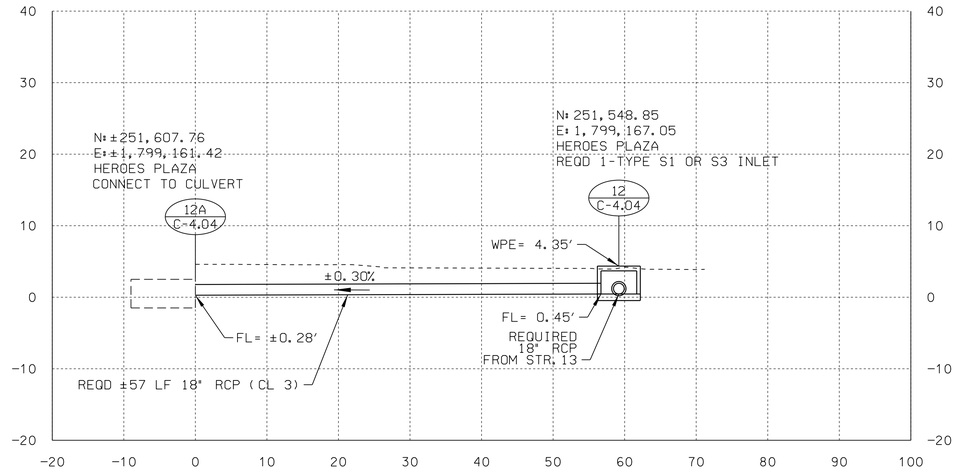

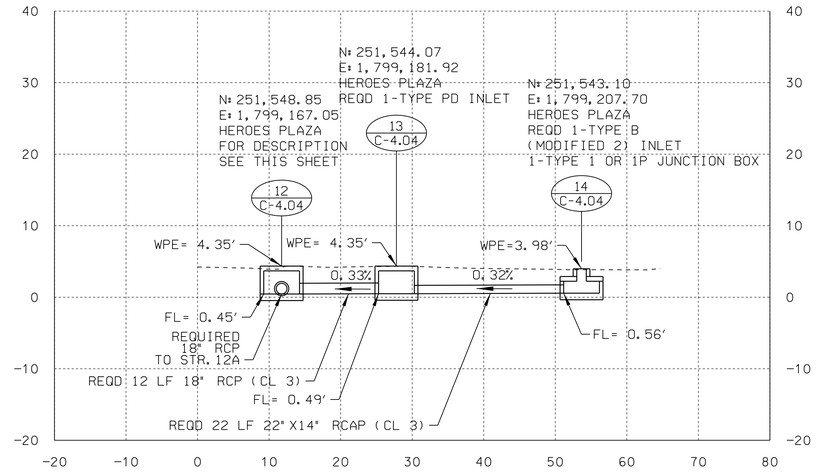

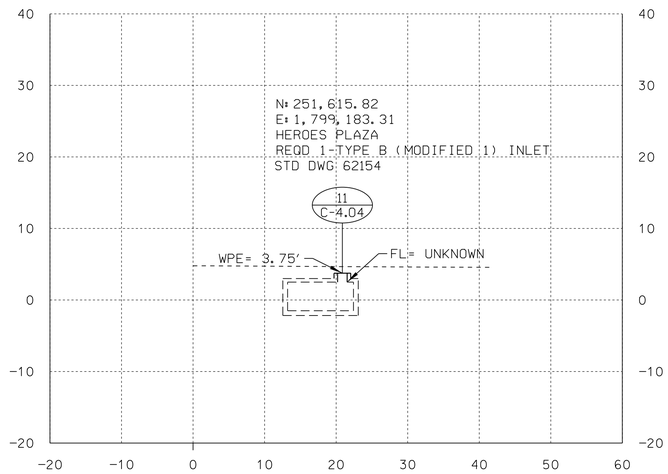

NOTES:
1) CULVERT LOCATION AND INVERT IS ESTIMATED AND TO BE FIELD VERIFIED

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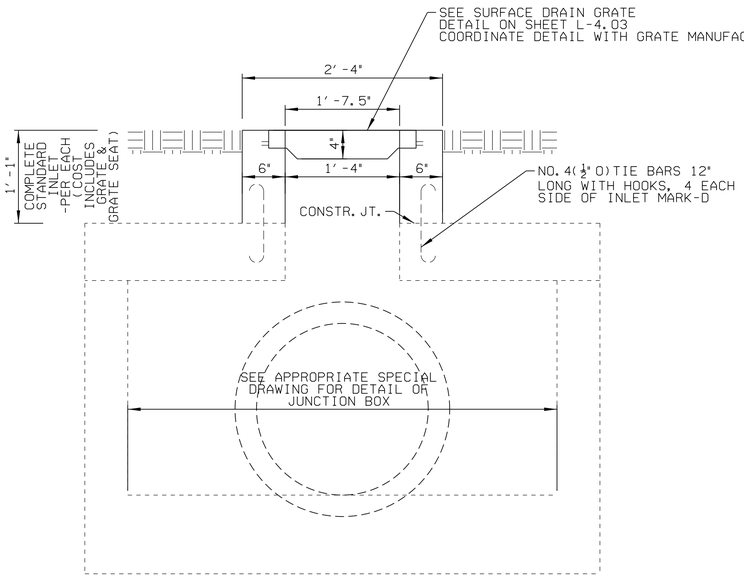
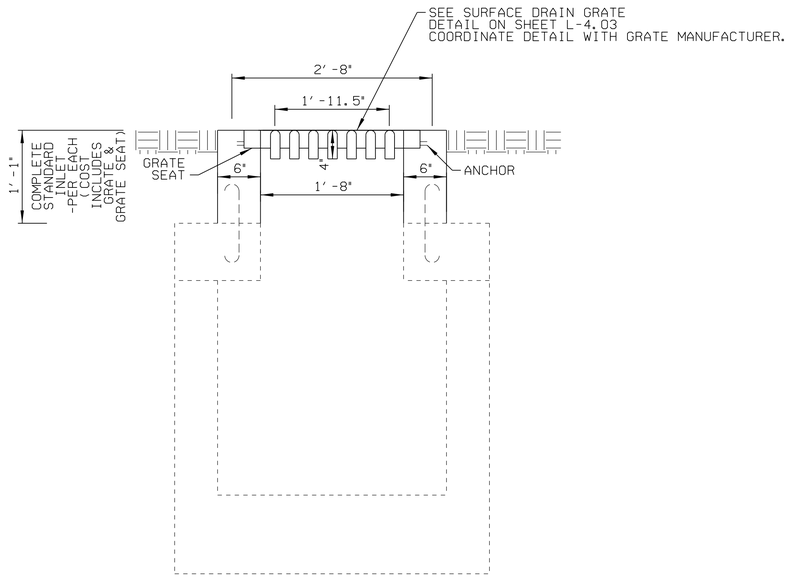
sheet number

C-5.02



STRUCTURE NOS.
10
11

SECTION "AA"

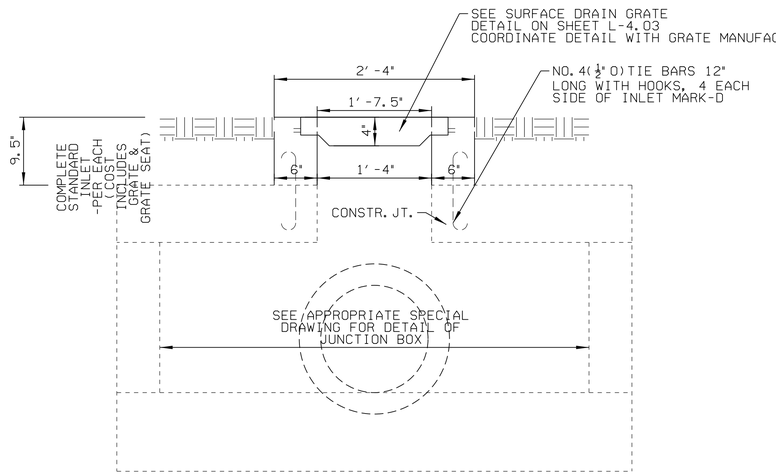


SECTION "BB"

DETAIL OF TYPE B (MODIFIED 1) INLET

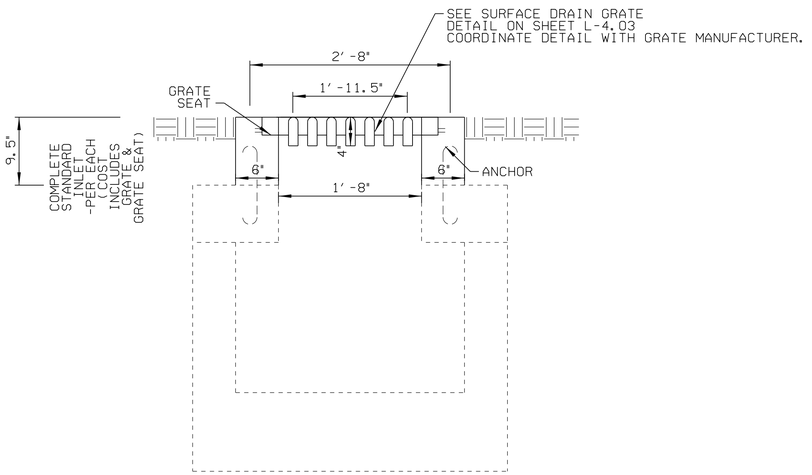
N.T.S.

NOTE:
CONTROL POINTS FOR INLETS ARE SURFACE OF ROAD AND FLOW LINE OF PIPE



STRUCTURE NOS.
12
13
14

SECTION "AA"



SECTION "BB"

DETAIL OF TYPE B (MODIFIED 2) INLET

N.T.S.

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seal

ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

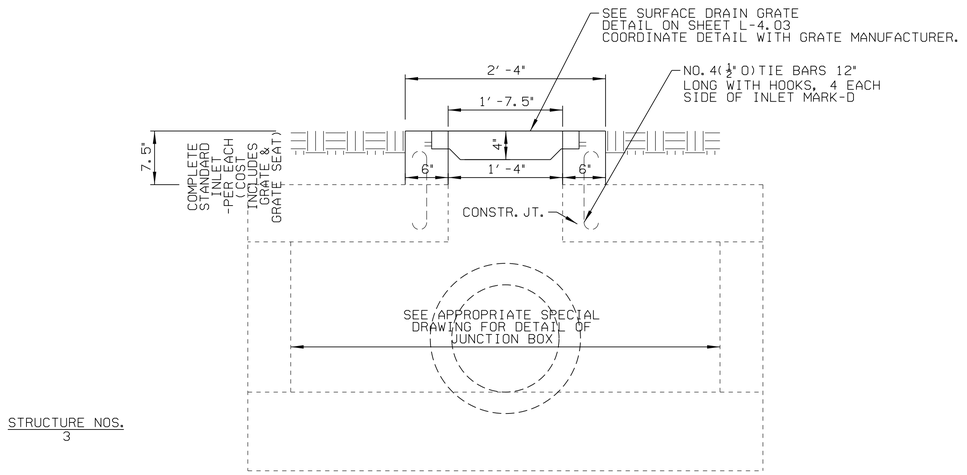
client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

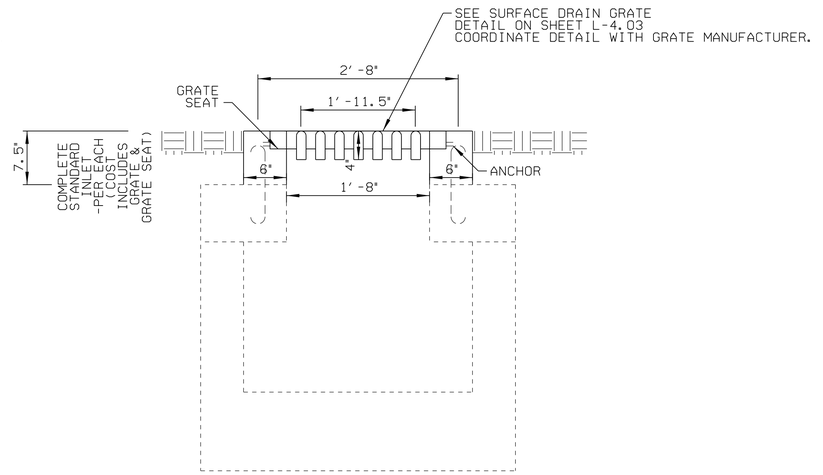
sheet title
SPECIAL PROJECT DETAILS

sheet number
C-5.03



STRUCTURE NOS.
3

SECTION "AA"



SECTION "BB"

DETAIL OF TYPE B (MODIFIED 3) INLET

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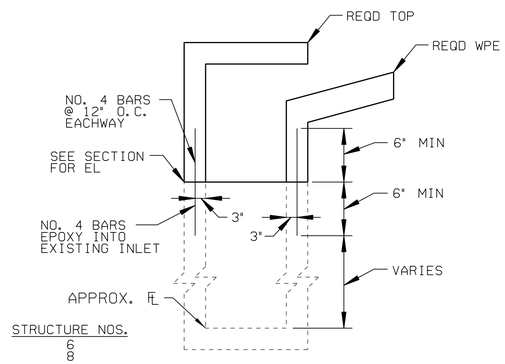

STRUCTURE NOS.
6
8

S-INLET (PARTIAL) DETAIL

N.T.S.
SEE THIS SHEET FOR LOCATIONS
FOR FURTHER DETAILS
SEE STD DWG I-621-S

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No. 38421-E
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JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

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revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

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client information

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251.342.1070 (EXT. 1292)

drawing information

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contact:
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checked by: JHS

drawing date

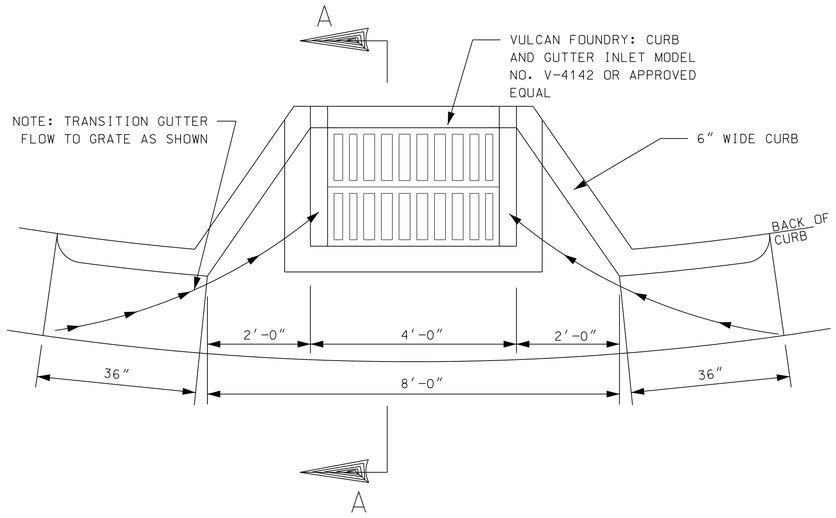
APRIL 14, 2023

sheet title

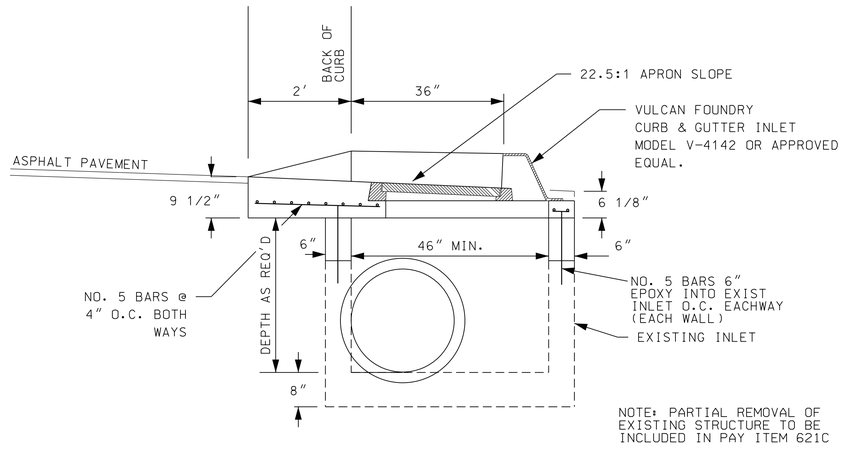
SPECIAL PROJECT DETAILS

sheet number

C-5.04



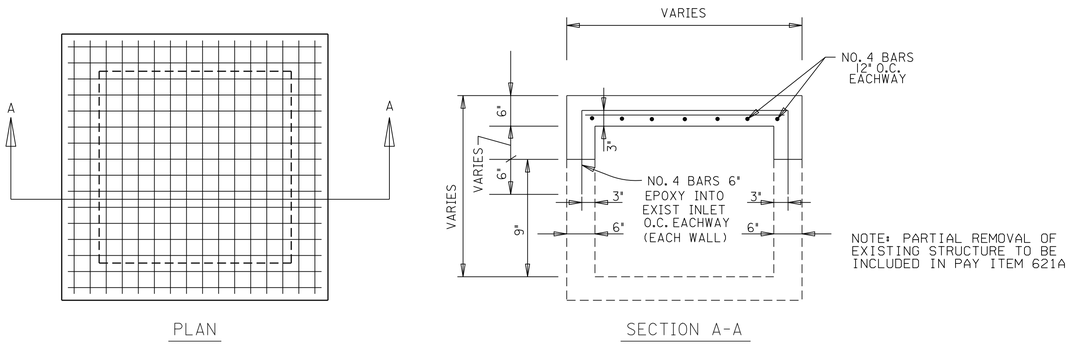
PLAN
N.T.S.



SECTION A-A TYPE "MODIFIED" INLET
N.T.S.

STRUCTURE NOS.
8

TYPE "MODIFIED" INLET DETAILS
N.T.S.



PLAN

SECTION A-A

DETAIL OF TYPE I (MODIFIED) JUNCTION BOX
N.T.S.

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consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

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MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
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251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
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drawing date

APRIL 14, 2023

sheet title

SPECIAL PROJECT DETAILS

sheet number

C-5.05

$$COLORTABLE$$
18-APR-2023 00:01

Plot Scales
$$PENSCALE$$
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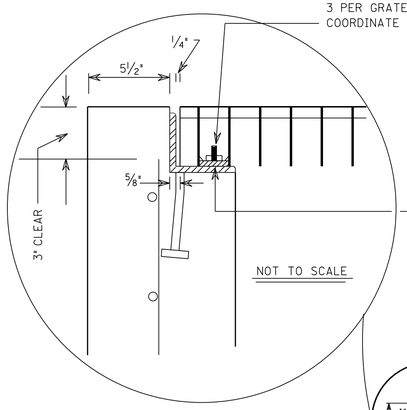
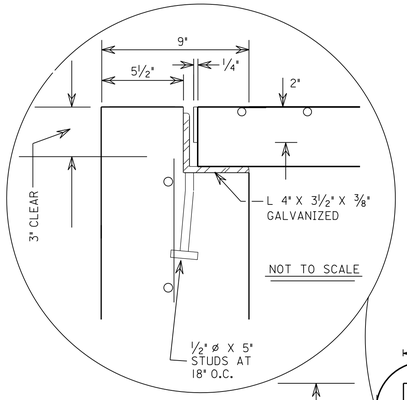
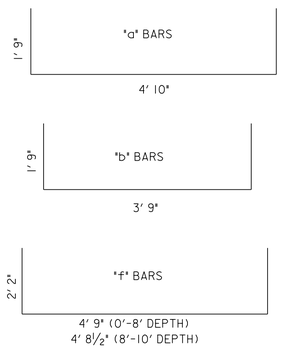
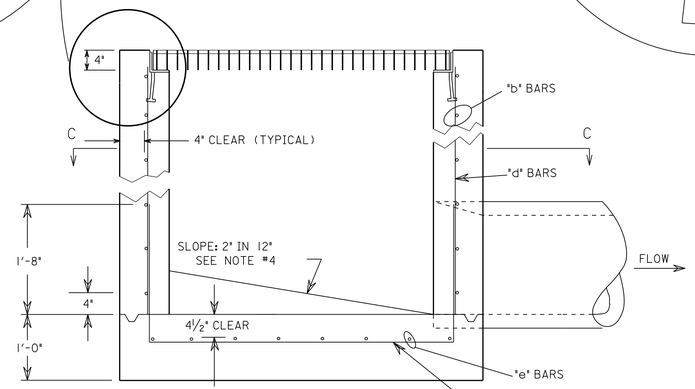
User list: jordan.stringfellow
Projects#144602 - Heroes Plaza#Project Design#Plans Assembly#C-5.00_602_dxs.dgn



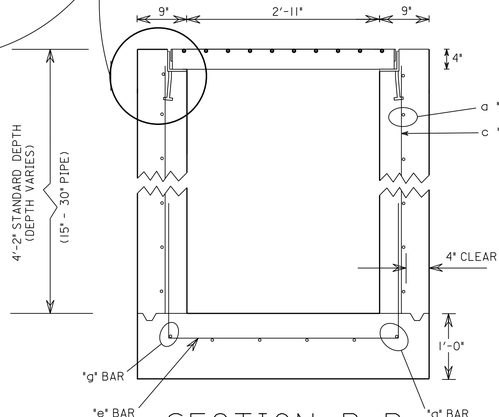


DEPTH "D"	a BARS + b BARS size spacing	c BARS STRAIGHT # size spacing	d BARS STRAIGHT # size spacing	e BARS # size spacing	f BARS # size spacing	g BARS STRAIGHT # size
0' - 8'	#4 @ 8"	16 #4 @ 8"	8 #4 @ 8.5"	8 #5 @ 8"	4 #5 @ 8.5"	2 #5
8' - 10'	#6 @ 8"	16 #6 @ 8"	8 #6 @ 8.5"	8 #5 @ 8"	4 #5 @ 8.5"	2 #5

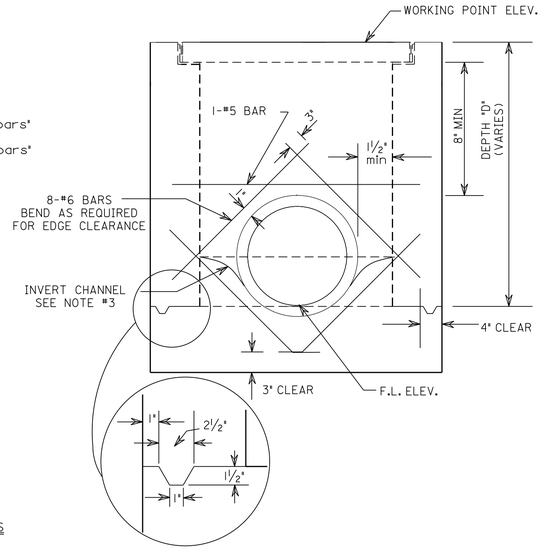


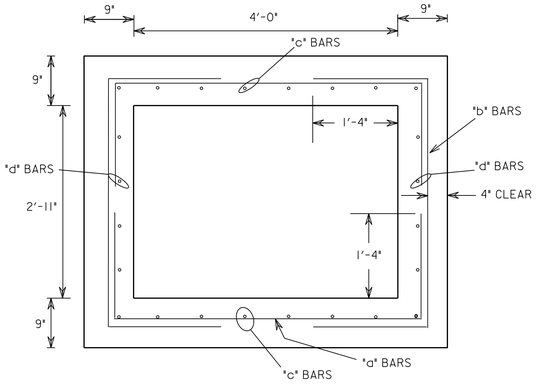


SECTION A-A

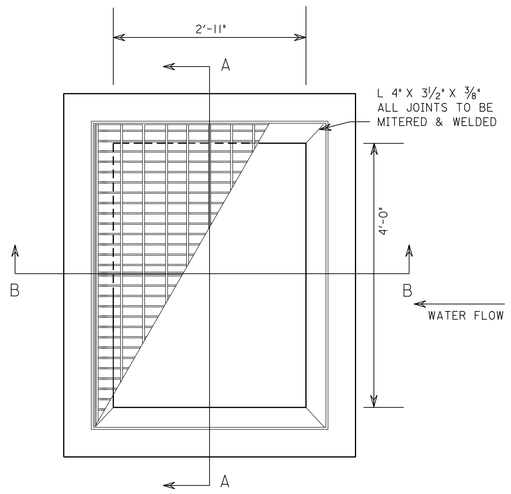


SECTION B-B





SECTION C-C



PLAN

GENERAL NOTES

1. GRATE SPECIFICATION
   SEE SURFACE DRAIN GRATE DETAIL ON SHEET L-4.03
2. ALL SPLICES 36 BAR DIAMETER.
3. INVERT CHANNELS ARE REQUIRED IN BASE WHERE PIPE FLOW PASSES THROUGH THE BOX. CHANNELS MAY BE FORMED IN CONCRETE OR CONSTRUCTED LATER USING A CEMENT CONCRETE MORTAR. CHANGES IN DIRECTION OF FLOW SHALL HAVE A TRUE CURVE OF AS LARGE A RADIUS AS SIZE WILL PERMIT AND BE FINISHED UP TO CENTER OF PIPE.
4. WHERE PIPE BEGINS AT BOX, SLOPE 2" PER 12" TOWARDS PIPE MAY BE FORMED IN CONCRETE OR CONSTRUCTED LATER USING A CEMENT CONCRETE MORTAR.
5. THIS INLET IS NOT FOR USE ON PAVEMENT OR WHERE IT CAN BE SUBJECT TO TRAFFIC LOADS.

NOTE: THIS DRAWING IS NOT TO SCALE

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seal

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

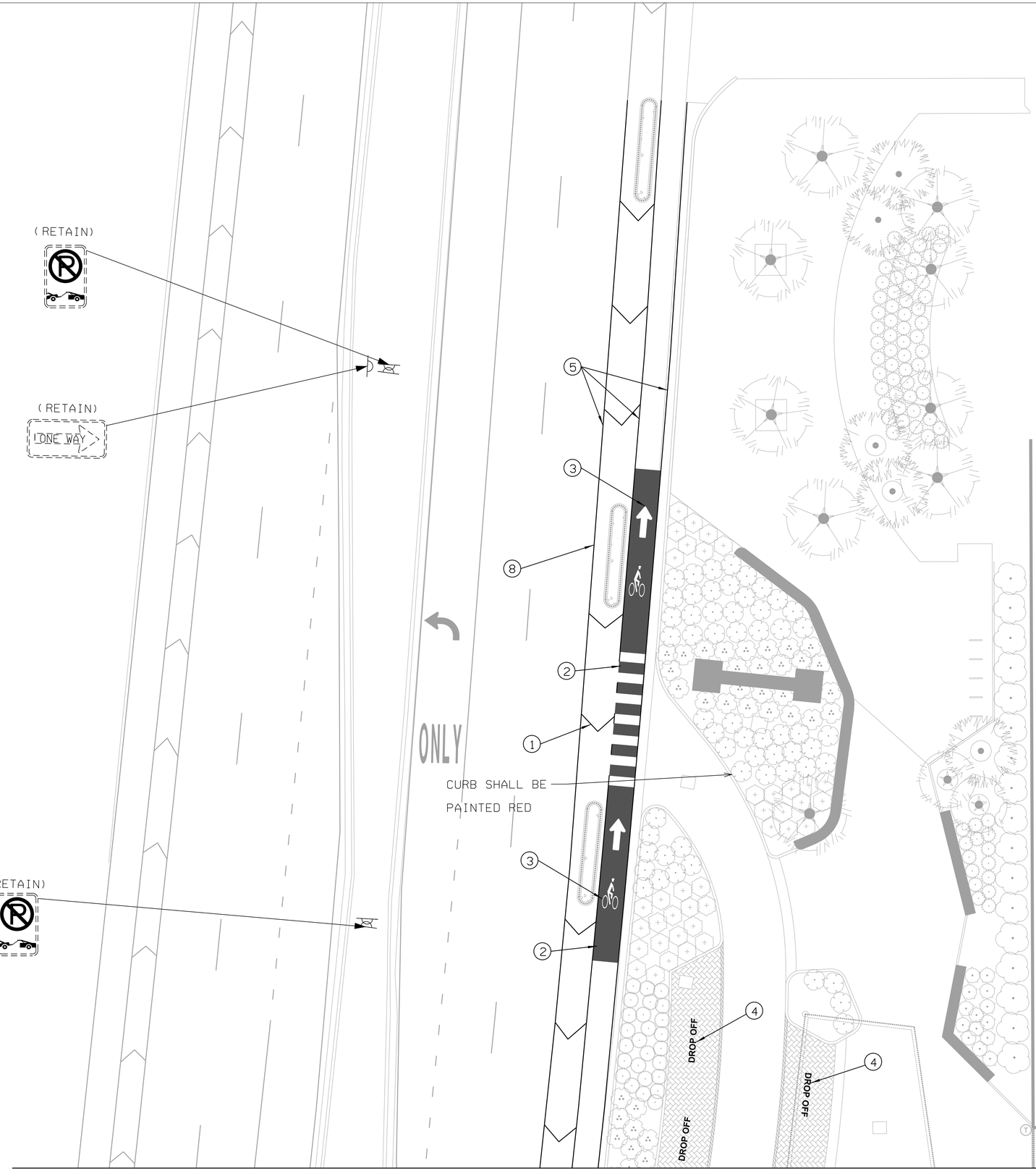
client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
SPECIAL PROJECT DETAILS

sheet number
C-5.06



REQUIRED STRIPING LEGEND

1. 24" WHITE TRAFFIC CONTROL MARKING
2. GREEN BIKE MARKINGS (SEE PROJECT DETAILS)
3. WHITE TRAFFIC CONTROL MARKING
4. WHITE TRAFFIC CONTROL LEGEND
5. 5" SOLID WHITE TRAFFIC STRIPE
6. 5" DOTTED YELLOW TRAFFIC STRIPE
7. 5" DOTTED WHITE TRAFFIC STRIPE
8. CL A-H TYPE 2C RPM @ 40
9. 12" WHITE TRAFFIC CONTROL MARKING
10. STONE THERMO-SET MARKINGS (SEE PROJECT DETAIL SHEETS)
11. BLUE TRAFFIC CONTROL MARKING
12. 5" SOLID BLUE TRAFFIC STRIPE

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revisions

north arrow + scale

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0 5 10 15 25

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HERO PLAZA
PHASE 1

project address

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MOBILE, AL 36609

client information

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251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

STRIPING AND SIGNING SHEET

sheet number

C-6.00

$$COLORTABLE$$
27-APR-2023 13:55

Plot Scales
$$PLOTSCALE$$
10.000000:1.000000

User Ist: lindsey.turner
Projects#144602 - Heroes Plaza#Project Design#Plans Assembly#C-6.00_602_str-sgn.dgn

MATCHLINE SHEET C-6.00

MATCHLINE SHEET C-6.02

REQUIRED STRIPING LEGEND

1. 24" WHITE TRAFFIC CONTROL MARKING
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LABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW
04-14-2023

consultant

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

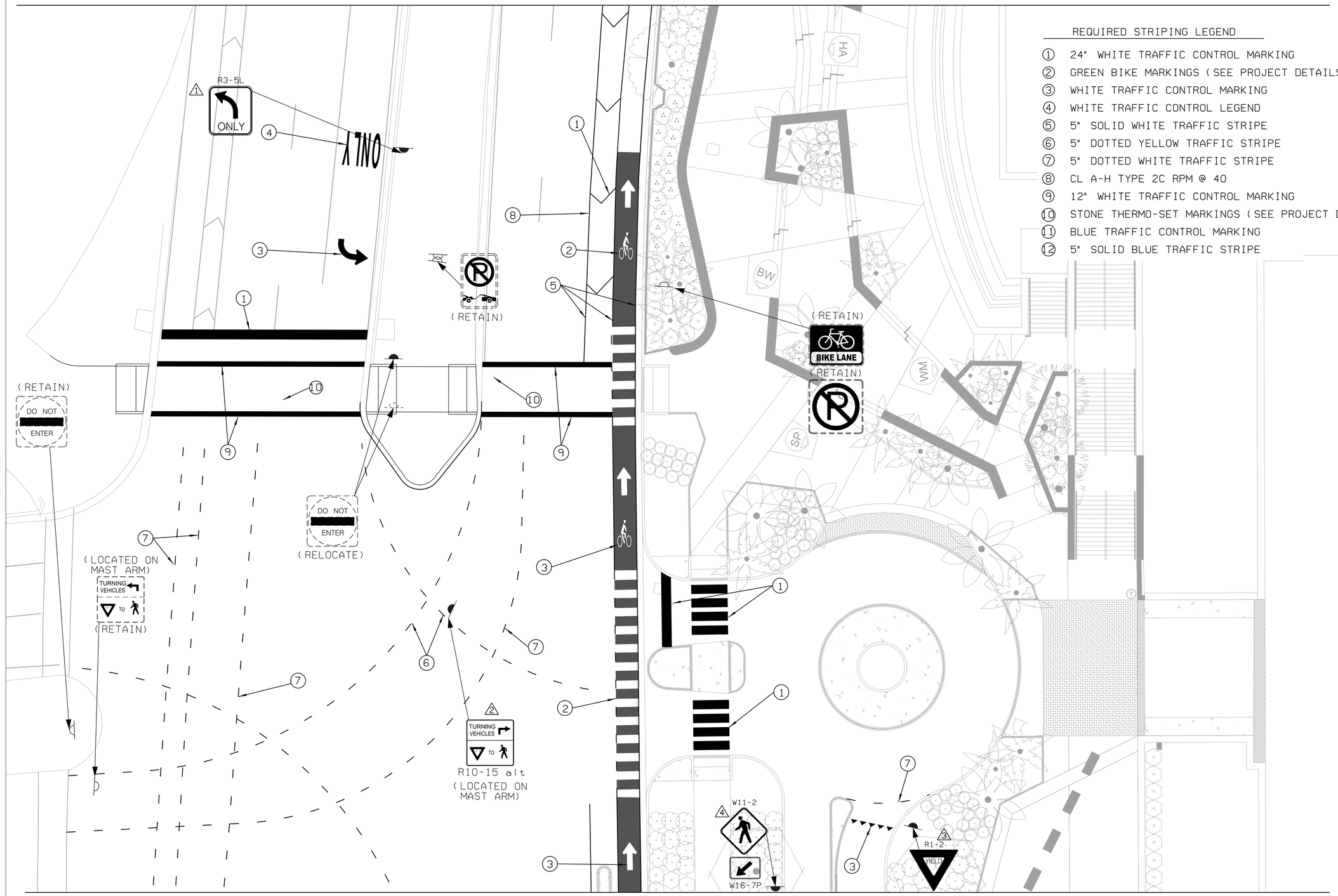
drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
STRIPING AND SIGNING SHEET

sheet number
C-6.01

MATCHLINE SHEET C-6.01



REQUIRED STRIPING LEGEND

1. 24" WHITE TRAFFIC CONTROL MARKING
2. GREEN BIKE MARKINGS (SEE PROJECT DETAILS)
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MATCHLINE SHEET C-6.03

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ALABAMA
Jordan C. Stringfellow
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

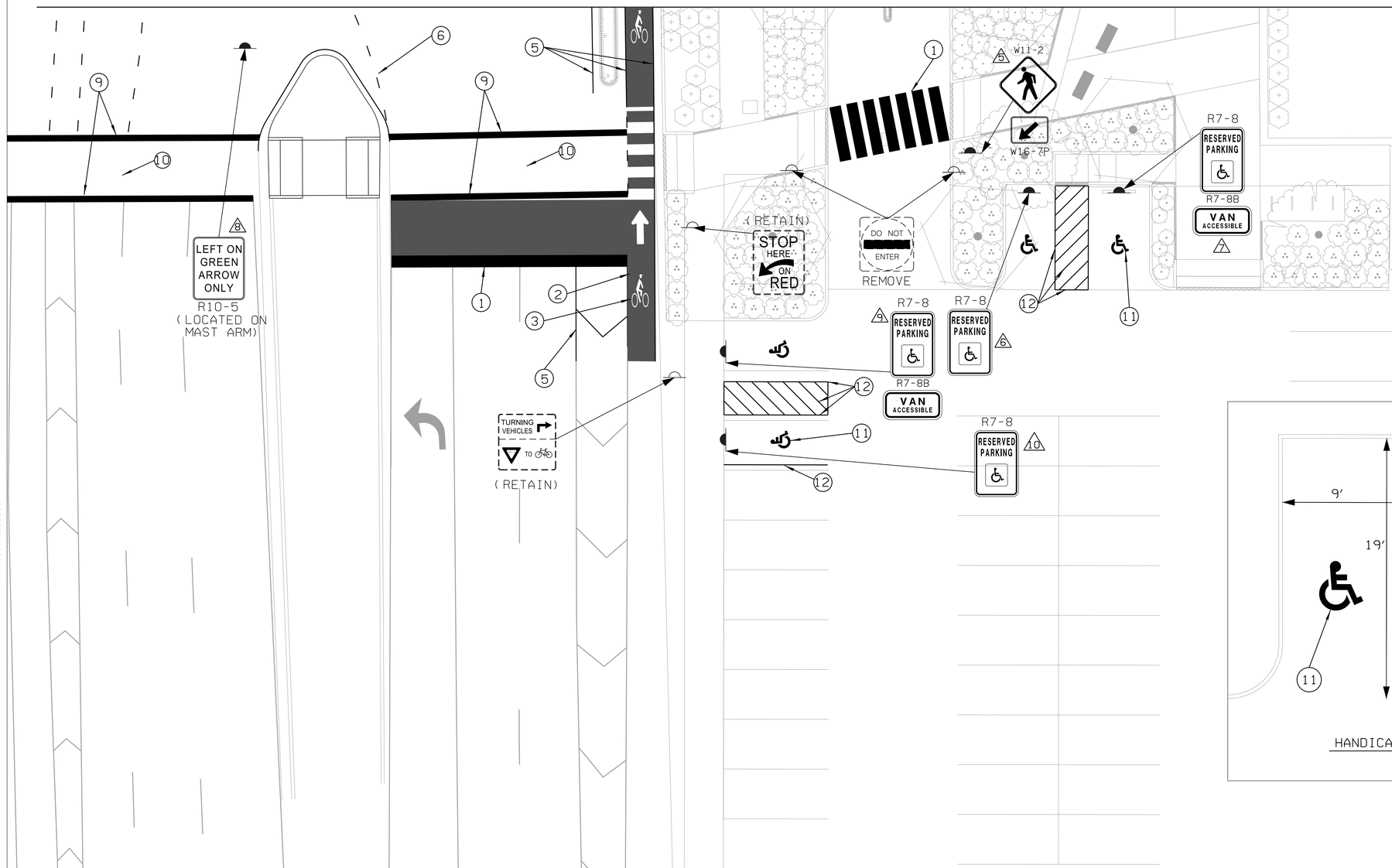
drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

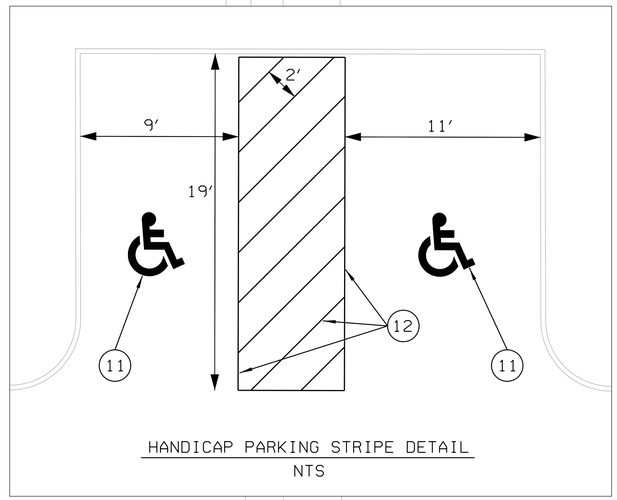
drawing date
APRIL 14, 2023

sheet title
STRIPING AND SIGNING SHEET

sheet number
C-6.02

MATCHLINE SHEET C-6.02





HANDICAP PARKING STRIPE DETAIL
NTS

REQUIRED STRIPING LEGEND

1. 24" WHITE TRAFFIC CONTROL MARKING
2. GREEN BIKE MARKINGS (SEE PROJECT DETAILS)
3. WHITE TRAFFIC CONTROL MARKING
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NOTE:
REMOVE SOLID YELLOW TRAFFIC STRIPE IN PARKING LOT ACCORDINGLY.

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north arrow + scale

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PHASE 1

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sheet title
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SEE NOTE 1
SEE NOTE 2
(RETAIN)
DO NOT ENTER
(RELOCATE)
R=10'
SEE NOTE 3
REQD SAFETY NOSE
REQD TYPE N CURB (SPECIAL)
(LOCATED ON MAST ARM)
TURNING VEHICLES TO
(RETAIN)
R10-15 alt
(LOCATED ON MAST ARM)
REQD TYPE N CURB
R=5'
REQD SAFETY NOSE
(RETAIN)
(LOCATED ON MAST ARM)
LEFT ON GREEN ARROW ONLY
R10-5
(LOCATED ON MAST ARM)
SEE NOTE 2
SEE NOTE 3
SEE NOTE 2
TURNING VEHICLES TO
(RETAIN)
(RETAIN)
BIKE LANE
BW
WM
SP
(RETAIN)
BIKE LANE
(RETAIN)
SEE NOTE 2
SEE NOTE 2
W11-2
W16-7P
R1-2
YIELD
W11-2
W16-7P
SEE NOTE 2
(RETAIN)
STOP HERE ON RED
DO NOT ENTER
REMOVE
R7-8
RESERVED PARKING
R7-8
RESERVED PARKING
R7-8B
VAN ACCESSIBLE
R7-8
RESERVED PARKING

NOTES:

1. REQUIRED ADA RAMP TO BE BUILT IN ACCORDANCE TO ALDOT STD DWG SW-618.
2. REFER TO ADA RAMP DETAILS IN TSW PLANS.
3. REQUIRED 10' SIDEWALK, SEE SHEET C-2.02 FOR DETAIL.

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ALABAMA Justin Hastie Stringfellow No. 38421-E PROFESSIONAL ENGINEER
04-14-2023

consultant

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
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client information

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P.O. BOX 1827
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251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

INTERSECTION LAYOUT SHEET

sheet number

C-6.04

LEGEND

EXISTING PAVEMENT (MILL AND OVERLAY).....

EXISTING CONCRETE (REMOVE).....

BEGIN PAVING LIMITS AT EXISTING CROSSWALK.
CONTRACTOR SHALL NOT DAMAGE EXISTING CROSSWALK OR MEDIAN.

WATER STREET

BW

WM

SP

$$COLORTABLE$$
18-APR-2023 00:00

Plot Scales
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User: jst jordan.stringfellow
Project: $$FILENAME$$ Design$$Plans Assembly$$C-6.10_602_paving limits_intersection.dgn

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No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

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north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

PAVING LIMITS SHEET

sheet number

C-6.10

TRAFFIC SIGNAL AND ITS LEGEND

ELECTRICAL BOXES

	EXISTING	REQUIRED
METALLIC PULL BOX	PB	PB
FIBER OPTIC COMMBOX TYPE F1	F1	F1
FIBER OPTIC COMMBOX TYPE F2	F2	F2
TRAFFIC SIGNAL JUNCTION BOX		

CABLE IN CONDUIT

	EXISTING	REQUIRED
FIBER OPTIC CABLE IN CONDUIT (UNDERGROUND)	fO	FO
FIBER OPTIC CABLE IN CONDUIT (UNDERGROUND WITH CONCRETE)	fowc	FOWC
FIBER OPTIC CABLE IN CONDUIT (BRIDGE ATTACHED)	fo	FO
FIBER OPTIC CABLE (AERIAL INSTALLATION)	OfO	OFO
INTERCONNECT CABLE IN CONDUIT (UNDERGROUND)	UI	UI
INTERCONNECT CABLE (AERIAL INSTALLATION)	OI	OI
CONDUIT	C	C
ENCASEMENT		
OVERHEAD ELECTRIC	OE	OE
BURIED ELECTRIC	BE	BE

VEHICULAR DETECTORS

	EXISTING	REQUIRED
PRESENCE LOOP DETECTOR		
QUADRUPOLE LOOP DETECTOR		
6'x 6' LOOP DETECTOR		
VEHICLE DETECTION CAMERA	VDC	VDC
VIDEO DETECTION ZONE		
RADAR DETECTION UNIT	R	R

CABINETS

	EXISTING	REQUIRED
CABINET		

CAMERAS

	EXISTING	REQUIRED
CCTV CAMERA, FIXED	FIX	FIX
CCTV CAMERA, PTZ	PTZ	PTZ

MISCELLANEOUS EQUIPMENT

	EXISTING	REQUIRED
TRAFFIC SIGNAL HEAD		#
TRAFFIC SIGNAL HEAD WITH BACKPLATE		#
PEDESTRIAN SIGNAL HEAD		
BICYCLE SIGNAL HEAD		
8 FOOT PEDESTAL POLE AND PEDESTRIAN SIGNAL HEAD		
PEDESTAL MOUNTED FLASHING WARNING SIGNAL WITH SIGN		
PEDESTAL MOUNTED ILLUMINATED SCHOOL ZONE SIGN	SCH	SCH
PUSH BUTTON ASSEMBLY	PB	PB
SPAN/MASTARM MOUNTED SIGN		
OMNI DIRECTIONAL ANTENNA		
DIRECTIONAL ANTENNA		
EMERGENCY VEHICLE PREEMPTION SENSOR	EVP	EVP
BLANKOUT MESSAGE SIGN	B	B
TRAFFIC CONTROL CENTER		
HIGHWAY ADVISORY RADIO		
HUB BUILDING	H	H
DYNAMIC MESSAGE SIGN (OVERHEAD)		
DYNAMIC MESSAGE SIGN (ROADSIDE)		
DYNAMIC MESSAGE SIGN (CANTILEVER)		

(NOTE: # INDICATES SIGNAL HEAD NUMBER)

POLES

	EXISTING	REQUIRED
METAL POLE		
CONCRETE POLE		
METAL MASTARM POLE		
CLASS 3 WOOD SERVICE POLE WITH DISCONNECT	D	D
WOOD POLE		
DOWN GUY		
LUMINAIRE		

ABBREVIATIONS

AMERICAN WIRE GUAGE	AWG
CLOSED CIRCUIT TELEVISION	CCTV
CONDUIT	C
CURB AND GUTTER	C&G
DYNAMIC MESSAGE SIGN	DMS
EASTBOUND ROADWAY	EBR
EMERGENCY VEHICLE PREEMPTION	EVP
END ANCHOR	E/A
FLASHING BEACON	FB
GALVANIZED RIGID CONDUIT	GRC
GUARDRAIL	GR
HIGH DENSITY POLYETHYLENE	HDPE
HIGHWAY ADVISORY RADIO	HAR
INDIVIDUAL LOWERING DEVICE	ILD
INTELLIGENT TRANSPORTATION SYSTEM(S)	ITS
JUNCTION BOX	JB
LEFT	LT
LIGHT EMITTING DIODE	LED
LIGHT POLE	LP
LUMINAIRE	LUM
MILEPOST	MP
NORTHBOUND ROADWAY	NBR
NON-METALLIC CONDUIT	NMC
PAN TILT ZOOM	PTZ
PRIMARY FIBER DISTRIBUTION UNIT	PFDU
PROPERTY LINE	PL
PUBLIC ACCESS CAMERA	PAC
PULL BOX	PB
RADIUS	R
RAILROAD	RR
RIGHT	RT
RIGHT OF WAY	ROW
ROADWAY	RDWY
SECONDARY FIBER DISTRIBUTION UNIT	SFDU
SCHOOL	SCH
SOUTHBOUND ROADWAY	SBR
STANDARD DRAWING	STD-DWG
STATION	STA
TRAFFIC CONTROL CENTER	TCC
TRAFFIC SIGNAL OPERATING PLAN	TSOP
TRANSPORTATION MANAGEMENT CENTER	TMC
TURNOUT	TO
VEHICLE DETECTION CAMERA	VDC
WESTBOUND ROADWAY	WBR

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TRAFFIC SIGNAL AND ITS LEGEND

sheet number
C-7.00

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Plot Scales
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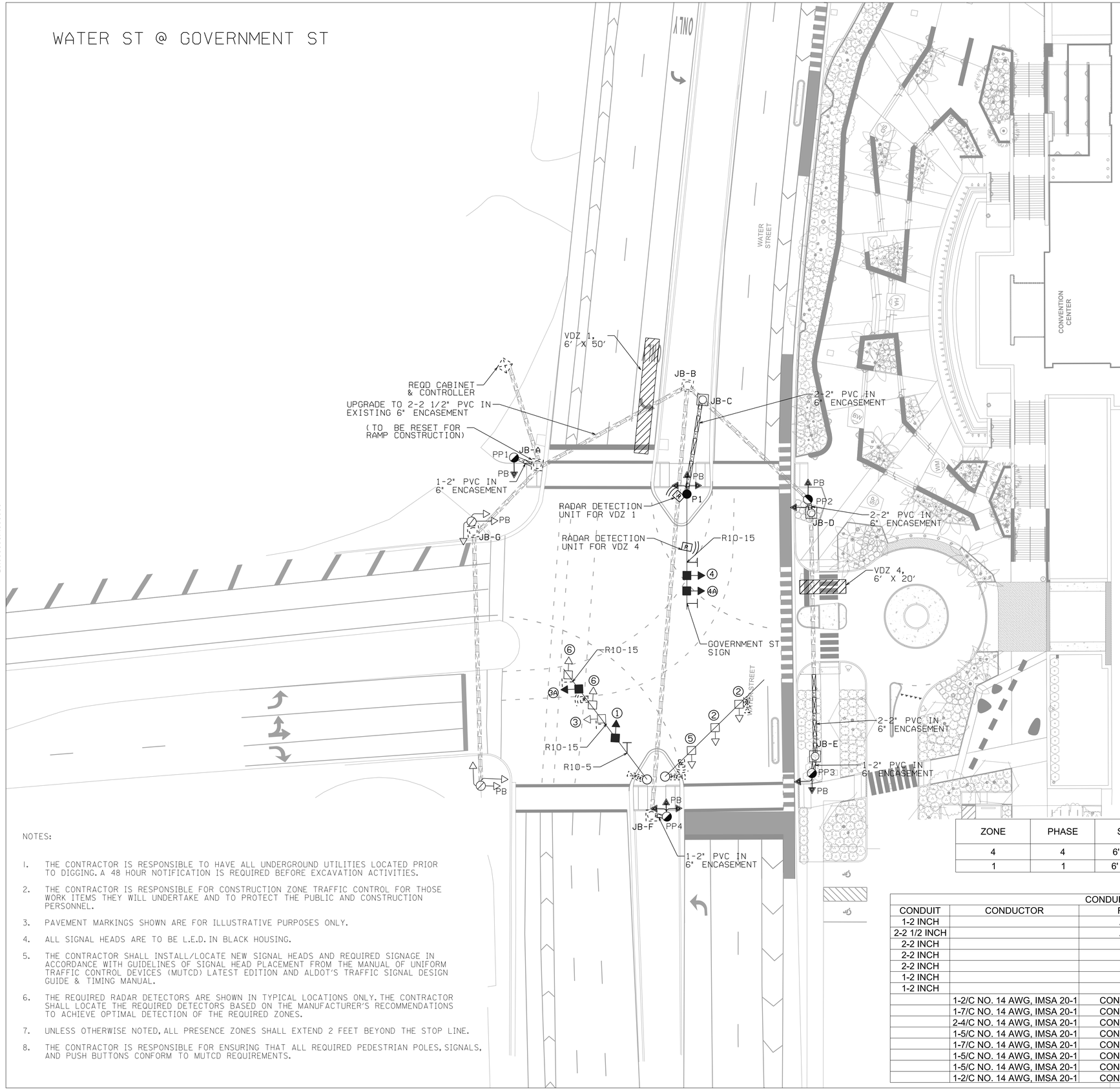
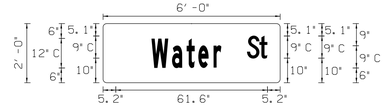
User list: jordan.stringfellow
Projects#144602 - Heroes Plaza#Project Design#Plans Assembly#C-7.00_602_tsl-legend.dgn

WATER ST @ GOVERNMENT ST



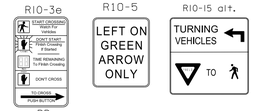
ESTIMATED EQUIPMENT AND MATERIAL SCHEDULE
#14 AWG SIGNAL CABLE, IMSA 20-1
PUSH BUTTONS (APS) - REQ + EXISTING
R10-15 ALT, R10-5 SIGN, AND STREET SIGNS W/ MOUNTING HARDWARE
MISCELLANEOUS HARDWARE
PUSH BUTTON ASSEMBLIES
POWER SOURCE (240 VOLTS)

SUPPORTING STRUCTURES (PROVIDED BY CITY)		
POLE NO.	POLE HEIGHT	MAST ARM LENGTH
P1	28	50

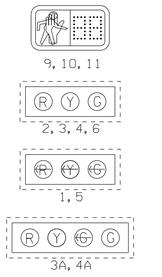


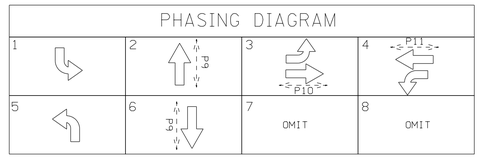
BACKGROUND: GREEN
LETTERS: WHITE

REQUIRED SIGNS



REQUIRED SIGNAL HEADS





ZONE	PHASE	SIZE	TYPE	DELAY	RADAR NO.	SETBACK DISTANCE
4	4	6' X 20'	MATRIX		R4	
1	1	6' X 50'	MATRIX		R1	

CONDUIT AND CONDUCTOR SCHEDULE			
CONDUIT	CONDUCTOR	FROM	TO
1-2 INCH		JB-A	PP1
2-2 1/2 INCH		JB-A	JB-B
2-2 INCH		JB-C	P1
2-2 INCH		PP2	JB-D
2-2 INCH		JB-D	JB-E
1-2 INCH		JB-E	PP3
1-2 INCH		JB-F	PP4
	1-2/C NO. 14 AWG, IMSA 20-1	CONTROLLER	JB-A TO PP1 (PUSH BUTTON)
	1-7/C NO. 14 AWG, IMSA 20-1	CONTROLLER	SIGNAL HEADS 3A AND 3
	2-4/C NO. 14 AWG, IMSA 20-1	CONTROLLER	SIGNAL HEADS 1 AND 6
	1-5/C NO. 14 AWG, IMSA 20-1	CONTROLLER	JB-C TO P1 (SIGNAL POLE)
	1-7/C NO. 14 AWG, IMSA 20-1	CONTROLLER	SIGNAL HEADS 4A AND 4
	1-5/C NO. 14 AWG, IMSA 20-1	CONTROLLER	JB-C TO PP2 (PEDESTRIAN HEADS AND PUSH BUTTONS)
	1-5/C NO. 14 AWG, IMSA 20-1	CONTROLLER	JB-E TO PP3 (PEDESTRIAN HEADS AND PUSH BUTTONS)
	1-2/C NO. 14 AWG, IMSA 20-1	CONTROLLER	JB-F TO PP4 (PEDESTRIAN HEADS AND PUSH BUTTONS)

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE TO HAVE ALL UNDERGROUND UTILITIES LOCATED PRIOR TO DIGGING. A 48 HOUR NOTIFICATION IS REQUIRED BEFORE EXCAVATION ACTIVITIES.
2. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION ZONE TRAFFIC CONTROL FOR THOSE WORK ITEMS THEY WILL UNDERTAKE AND TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL.
3. PAVEMENT MARKINGS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY.
4. ALL SIGNAL HEADS ARE TO BE L.E.D. IN BLACK HOUSING.
5. THE CONTRACTOR SHALL INSTALL/LOCATE NEW SIGNAL HEADS AND REQUIRED SIGNAGE IN ACCORDANCE WITH GUIDELINES OF SIGNAL HEAD PLACEMENT FROM THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION AND ALDOT'S TRAFFIC SIGNAL DESIGN GUIDE & TIMING MANUAL.
6. THE REQUIRED RADAR DETECTORS ARE SHOWN IN TYPICAL LOCATIONS ONLY. THE CONTRACTOR SHALL LOCATE THE REQUIRED DETECTORS BASED ON THE MANUFACTURER'S RECOMMENDATIONS TO ACHIEVE OPTIMAL DETECTION OF THE REQUIRED ZONES.
7. UNLESS OTHERWISE NOTED, ALL PRESENCE ZONES SHALL EXTEND 2 FEET BEYOND THE STOP LINE.
8. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL REQUIRED PEDESTRIAN POLES, SIGNALS, AND PUSH BUTTONS CONFORM TO MUTCD REQUIREMENTS.

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scale: 1" = 20'-0"

0 10 20 30 50

project information

HERO PLAZA
PHASE 1

ALABAMA LICENSED PROFESSIONAL ENGINEER No. 34058 04/14/2023 JAMES EDWARD THOMAS

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

TRAFFIC SIGNAL LAYOUT SHEET

sheet number

C-7.01

NOTE:
ANY ITEM OF WORK CAN BE PERFORMED CONCURRENTLY, WITH THE APPROVAL OF THE ENGINEER, AS LONG AS IT DOES NOT CONFLICT WITH ANOTHER SEQUENCE ITEM.

CONSTRUCTION	TRAFFIC
PHASE I	**PHASE I**
• INSTALL ALL APPLICABLE TRAFFIC CONTROL DEVICES	TRAFFIC NOT AFFECTED
• ALL EROSION AND SEDIMENTATION CONTROLS AND TREE PROTECTION MEASURES SHALL BE INSTALLED	TRAFFIC NOT AFFECTED
PHASE II	**PHASE II**
• INSTALL DRAINAGE STRUCTURES THROUGHOUT HEROES PLAZA	SHIFT TRAFFIC TO CENTER LANE
• CONSTRUCT PLAZA AREA AND TRAFFIC CIRCLE	SHIFT TRAFFIC TO CENTER LANE
• CONSTRUCT ALL WORK AT THE INTERSECTION OF WATER ST AND GOVERNMENT ST WHICH INCLUDES STRIPING, MEDIAN WORK, HANDICAP RAMP, SIDEWALK AND TRAFFIC SIGNAL EQUIPMENT	SHIFT TRAFFIC TO CENTER LANE
PHASE III	**PHASE III**
• COMPLETE ANY REMAINING ITEMS OF WORK AND REMOVE CONSTRUCTION TRAFFIC CONTROL DEVICES.	CONSTRUCT UNDER TRAFFIC

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APRIL 14, 2023

sheet title

TRAFFIC CONTROL PLAN - SEQUENCE OF CONSTRUCTION

sheet number

C-8.00

ESTIMATED QUANTITIES

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY	STD OR SPECIAL DWG NO
740B-000	CONSTRUCTION SIGNS	SQ FT	279	
740D-000	CHANNELIZING DRUMS	EACH	65	TCD-100

REQUIRED CONSTRUCTION SIGNS (740B-000)

SIGN	DESCRIPTION	MOUNT	CLASS	STD. DWG.	SIZE	QUANTITY (EACH)	TOTAL (SQ FT)
W20-1 (AHEAD)	ROAD WORK AHEAD	TEMPORARY	FRWY	SHS-29	48"X48"	1	16
W20-1 (1/2 MILE)	ROAD WORK 1/2 MILE	POST	FRWY	SHS-29	48"X48"	2	32
R16-3	WHEN WORKERS ARE PRESENT - BEGIN HIGHER FINES	POST	STD	SHS-10	48"X60"	2	40
W20-1 (1500)	ROAD WORK 1500 FT	POST	FRWY	SHS-29	48"X48"	2	32
W20-1 (1000)	ROAD WORK 1000 FT	POST	FRWY	SHS-29	48"X48"	1	16
W20-1 (500)	ROAD WORK 500 FT	POST	FRWY	SHS-29	48"X48"	2	32
R2-1 (35)	SPEED LIMIT 35 MPH	POST	OVERSIZE	SHS-1	30"X36"	2	15
G20-1	ROAD WORK NEXT 1 MILE	POST	FRWY	SHS-30	48"X24"	2	16
G20-2	END ROAD WORK	POST	FRWY	SHS-30	48"X24"	2	16
R16-3a	END HIGHER FINES	POST	STD	SHS-10	48"X48"	2	32
W20-7	FLAGGERS AHEAD	TEMPORARY	FRWY	SHS-29	48"X48"	1	16
W20-4 (AHEAD)	ONE LANE ROAD AHEAD	TEMPORARY	FRWY	SHS-29	48"X48"	1	16
TOTAL							279

LEGEND

- TRAFFIC CONTROL SIGN
- CHANNELIZATION DRUM
- CONE (36" HIGH)
- FLAGMAN
- TYPE "B" WARNING LIGHT
- TYPE III BARRICADE
- TRAFFIC DIRECTION
- WORK AREA
- TEMPORARY ASPHALT
- SEQUENTIAL ARROW PANEL
- TEMPORARY TRAFFIC SIGNAL
- VERTICAL PANEL

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No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW
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project information

HERO PLAZA
PHASE 1

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251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

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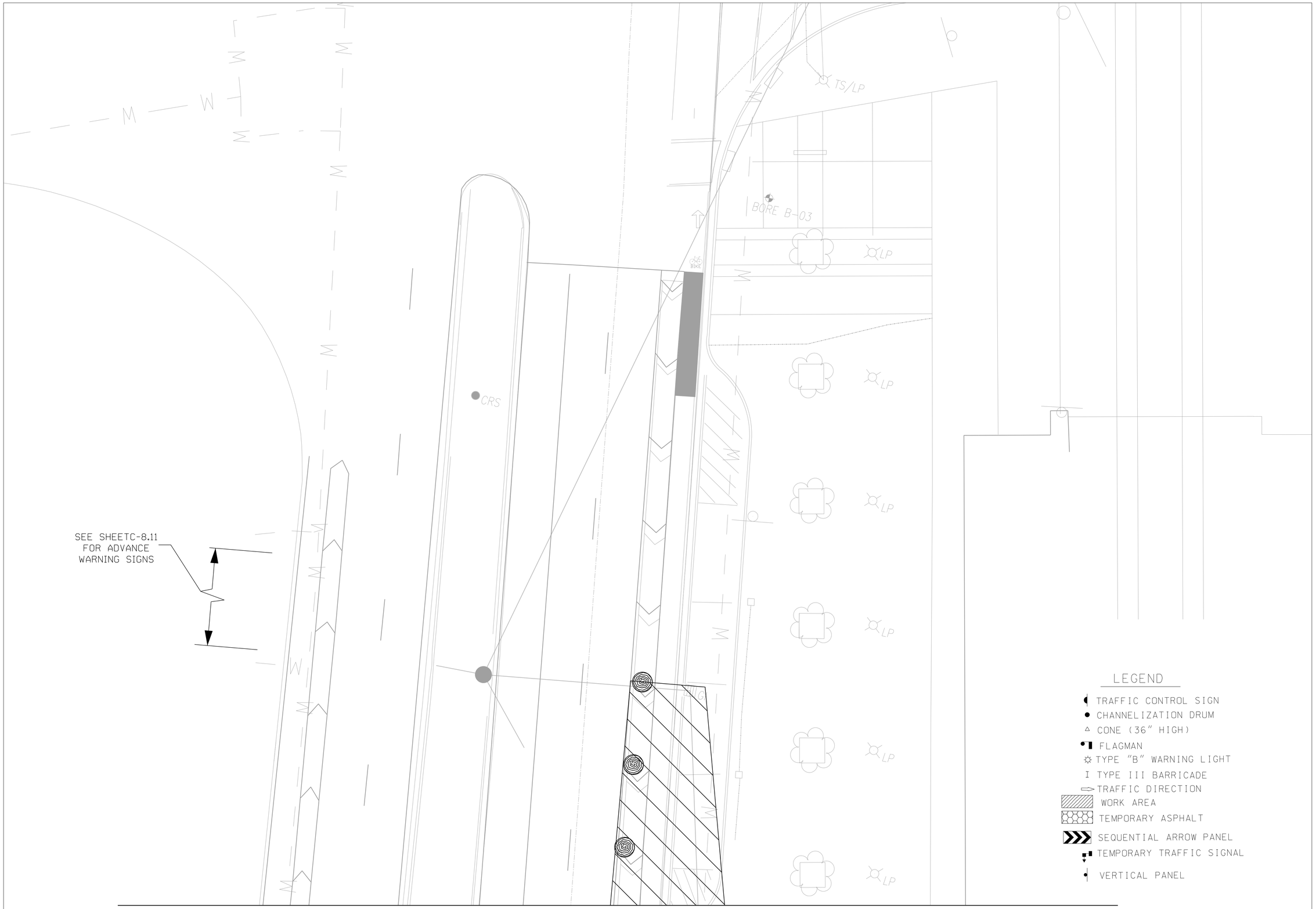
APRIL 14, 2023

sheet title

TRAFFIC CONTROL PLAN - LEGEND & ESTIMATED QUANTITIES

sheet number

C-8.01



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APRIL 14, 2023

sheet title

TRAFFIC CONTROL PLAN - PHASE II

sheet number

C-8.02

LEGEND

- TRAFFIC CONTROL SIGN
- CHANNELIZATION DRUM
- CONE (36" HIGH)
- FLAGMAN
- TYPE "B" WARNING LIGHT
- TYPE III BARRICADE
- TRAFFIC DIRECTION
- WORK AREA
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consultant 04-14-2023

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scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

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TRAFFIC CONTROL PLAN - PHASE II

sheet number

C-8.03

MATCHLINE SHEET C-8.03

MATCHLINE SHEET C-8.05

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TRAFFIC CONTROL PLAN - PHASE II

sheet number

C-8.04

MATCHLINE SHEET C-8.04

REQD CHANNELIZING
DRUMS @ 25' OC

REQD CHANNELIZING
DRUMS @ 10' OC

REQD CHANNELIZING
DRUMS @ 50' OC

LEGEND

- TRAFFIC CONTROL SIGN
- CHANNELIZATION DRUM
- CONE (36" HIGH)
- FLAGMAN
- TYPE "B" WARNING LIGHT
- TYPE III BARRICADE
- TRAFFIC DIRECTION
- WORK AREA
- TEMPORARY ASPHALT
- SEQUENTIAL ARROW PANEL
- TEMPORARY TRAFFIC SIGNAL
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MATCHLINE SHEET C-8.06

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TRAFFIC CONTROL PLAN - PHASE II

sheet number

C-8.05

MATCHLINE SHEET C-8.05

REQD CHANNELIZING
DRUMS @ 10' OC

REQD CHANNELIZING
DRUMS @ 25' OC

SEE SHEET C-8.11
FOR ADVANCE
WARNING SIGNS

TBM #2

LEGEND

- TRAFFIC CONTROL SIGN
- CHANNELIZATION DRUM
- CONE (36" HIGH)
- FLAGMAN
- TYPE "B" WARNING LIGHT
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Plot Scales
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TRAFFIC CONTROL PLAN - PHASE II

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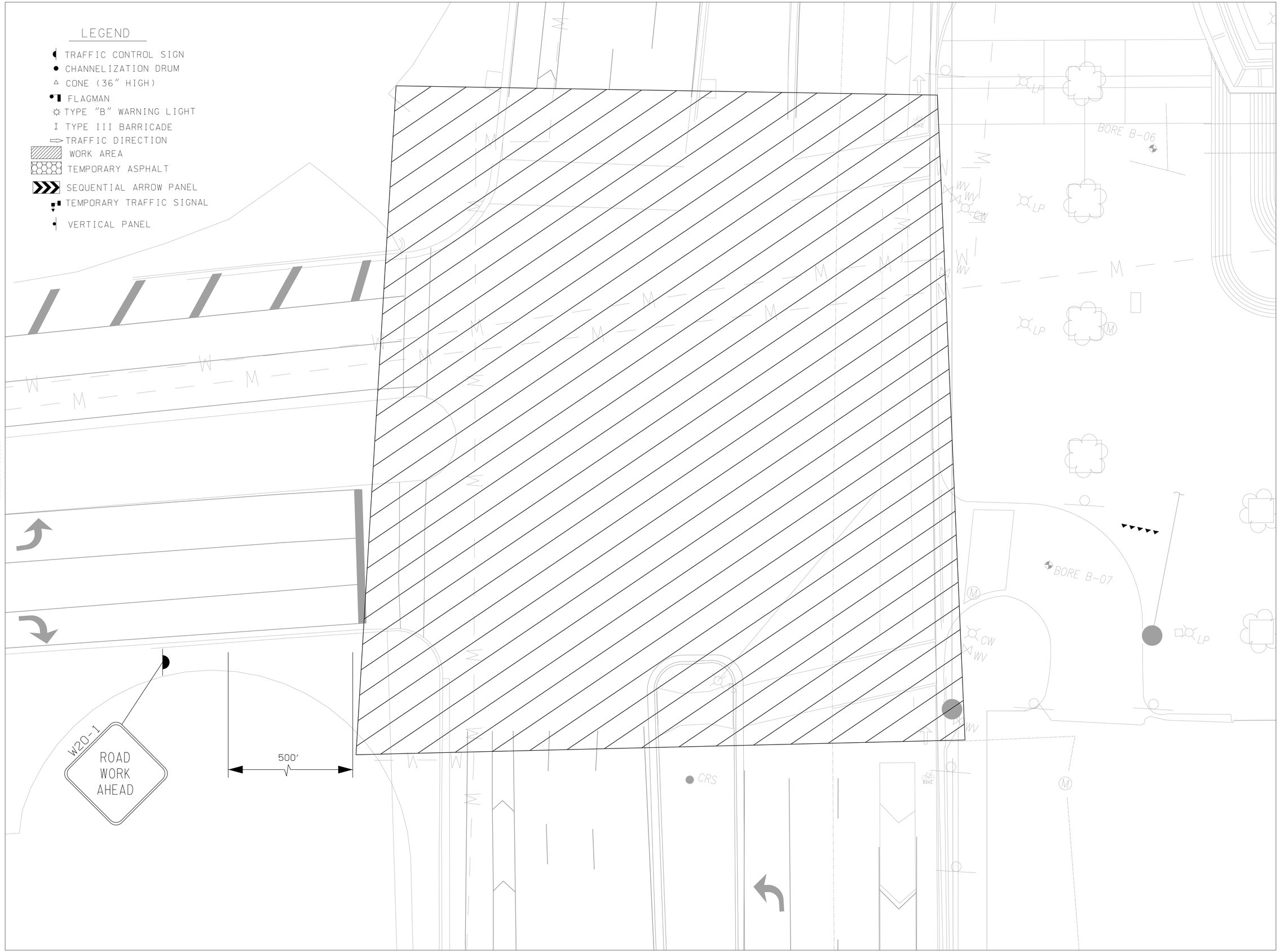
C-8.06



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User Is: jordan.stringfellow
Project#:144602 - Heroes Plaza#Project Design#Plans Assembly#C-8.07_602_tcp-ph2_intersection.dgn

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No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

N

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

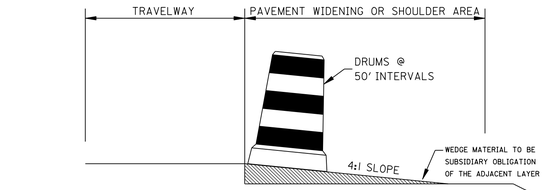
APRIL 14, 2023

sheet title

TRAFFIC CONTROL PLAN - PHASE II - INTERSECTION

sheet number

C-8.07

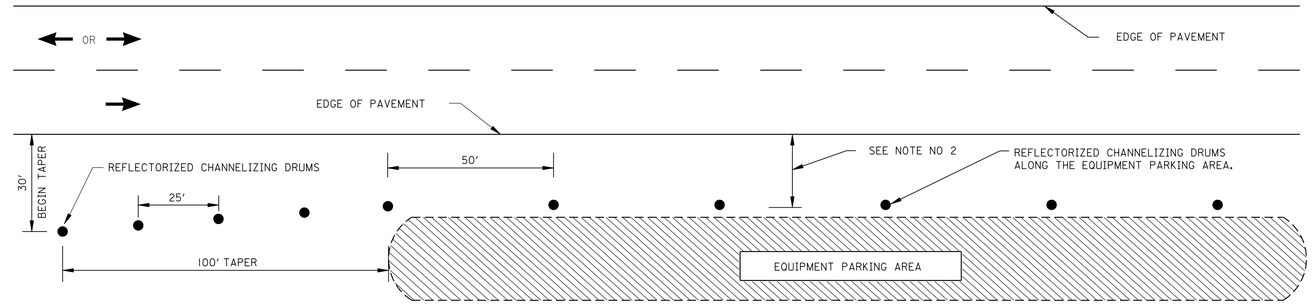


(FOR USE WHERE EXCAVATION HAS BEEN DONE,
BUT WIDENING IS NOT COMPLETED BY NIGHTFALL OR WHERE PAVEMENT
DROP OFF OF RESURFACING PROJECTS IS 3" OR MORE AT NIGHTFALL)

TYPICAL FOR DROP-OFF AT EDGE OF PAVEMENT

NOTE: THE CONTRACTOR IS TO CONSTRUCT A WEDGE OF UNCLASSIFIED EXCAVATION OR CRUSHED AGGREGATE BASE . THE COST OF PLACING AND REMOVAL SHALL BE A SUBSIDIARY OBLIGATION OF THE ADJACENT LAYER.

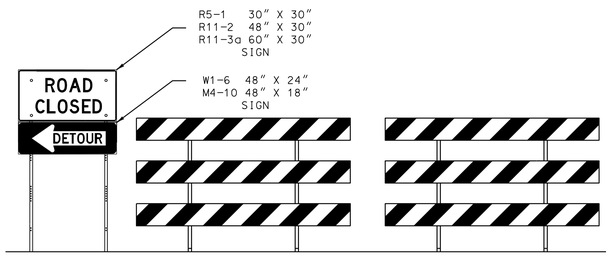
CHANNELIZING DRUMS SHALL BE PLACED AT 50 FT INTERVALS.



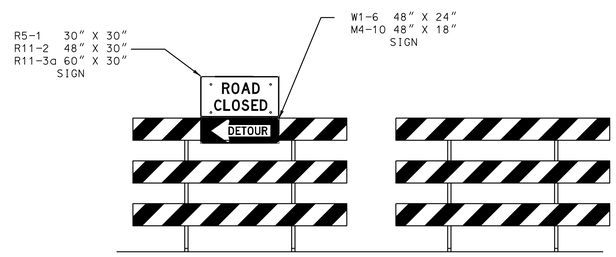
NOTES:

1. SEE ALDOT'S GENERAL TRAFFIC CONTROL PLAN NOTE NO. 702.
2. DRUMS TO BE AS FAR AS PRACTICAL FROM EDGE OF PAVEMENT, MINIMUM DESIRABLE DISTANCE IS 15 FEET FOR FREEWAY TYPE FACILITIES AND 10 FEET FOR OTHER FACILITIES. FOR UNUSUAL CONDITIONS, SUCH AS SPECIAL EQUIPMENT OR LIMITED AVAILABLE SPACE, DIMENSIONS LESS THAN DESIRABLE SHALL BE AS DIRECTED BY THE ENGINEER.
3. ALL DEVICES TO BE FURNISHED BY THE CONTRACTOR WITHOUT COST TO THE ALDOT.

DELINEATING DETAIL FOR EQUIPMENT PARKING OR STORING AREA



DETAILS FOR TYPICAL PLACEMENT OF TYPE III BARRICADES INSIDE OF CLEAR ZONE



DETAILS FOR TYPICAL PLACEMENT OF TYPE III BARRICADES OUTSIDE OF CLEAR ZONE

NOTES

1. SLOPE OF STRIPES ON BARRICADES SHALL BE IN ACCORDANCE WITH SECTION 6F.68 OF THE MUTCD AND DRAWING B-107-2.
2. IF SIGNS ARE REQUIRED TO BE USED IN CONJUNCTION WITH TYPE III BARRICADES TO BE PLACED INSIDE THE CLEAR ZONE, THEY SHALL BE POST MOUNTED TO THE SIDE OF THE BARRICADES AS SHOWN.
3. IF ROAD CLOSED OR DETOUR SIGNS ARE REQUIRED TO BE USED WITH TYPE III BARRICADES TO BE PLACED OUTSIDE THE CLEAR ZONE, THEY SHALL BE PLACED ON THE TOP OF THE BARRICADES NEAREST THE DETOUR.

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DESIGN BUREAU SPECIAL DRAWING
STANDARD DETAILS FOR
TRAFFIC CONTROL PLANS

DRAWN BY:
DATE DRAWN: 07/23/2019

SPECIAL PROJECT DETAIL

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project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

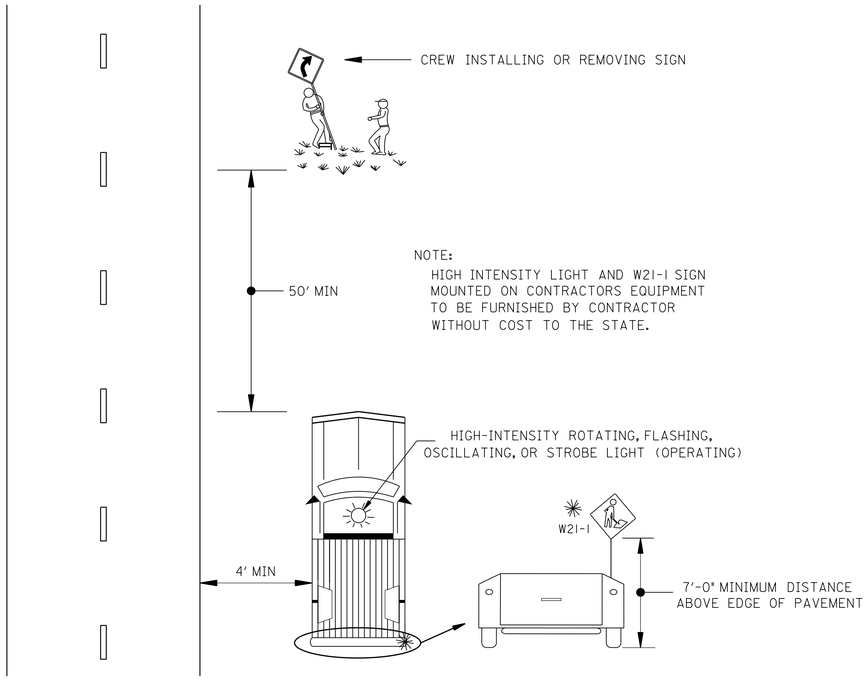
drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

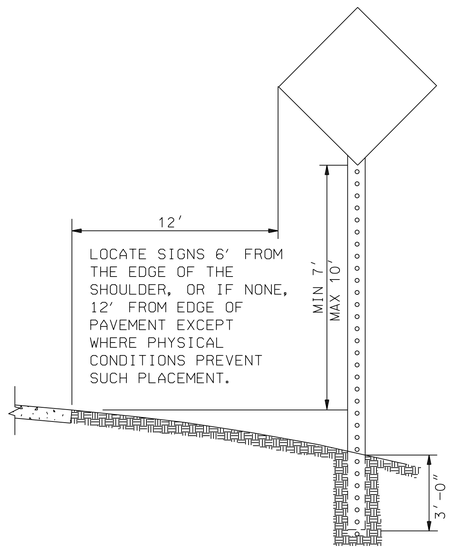
sheet title
TEMPORARY TRAFFIC CONTROL PLAN SHEET

sheet number
C-8.08

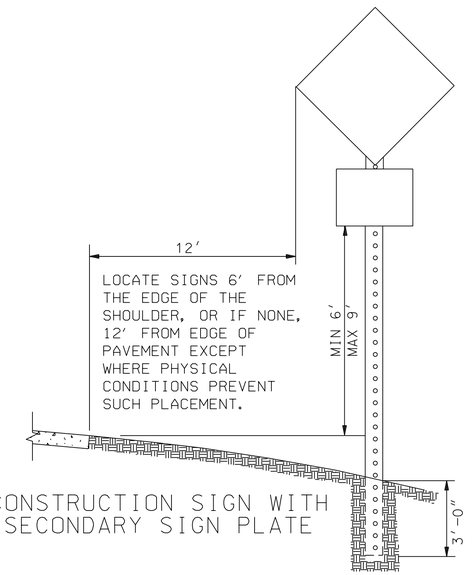
TEMPORARY TRAFFIC CONTROL PLAN SHEET



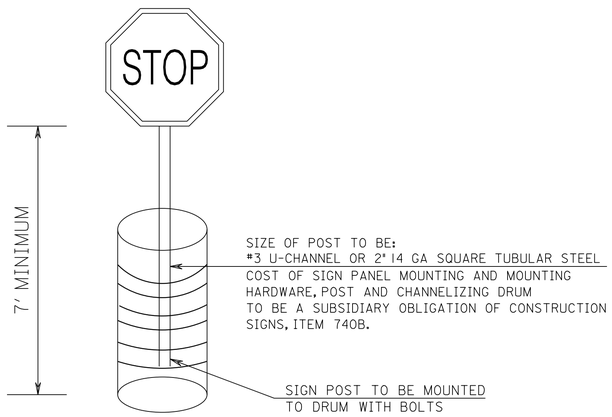
TYPICAL METHOD FOR INSTALLING OR REMOVING CONSTRUCTION SIGNS



HEIGHT AND LATERAL LOCATION OF POST MOUNTED CONSTRUCTION SIGNS



NOTE : IF THE CONTRACTOR CHOOSES TO SPLICE THE POSTS FOR THE REQUIRED POST MOUNTED CONSTRUCTION SIGNS, THEY SHALL BE SPLICED AS SHOWN ON DRAWING IHS-710-23.



DETAIL FOR DRUM MOUNTED CONSTRUCTION SIGNS

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MONTGOMERY, AL 36130-3050

DESIGN BUREAU SPECIAL DRAWING

STANDARD DETAILS
FOR TRAFFIC CONTROL PLANS

DRAWN BY: _____
DATE DRAWN: 06/12/19

SPECIAL PROJECT DETAIL

INDEX NO. 2001A

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PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

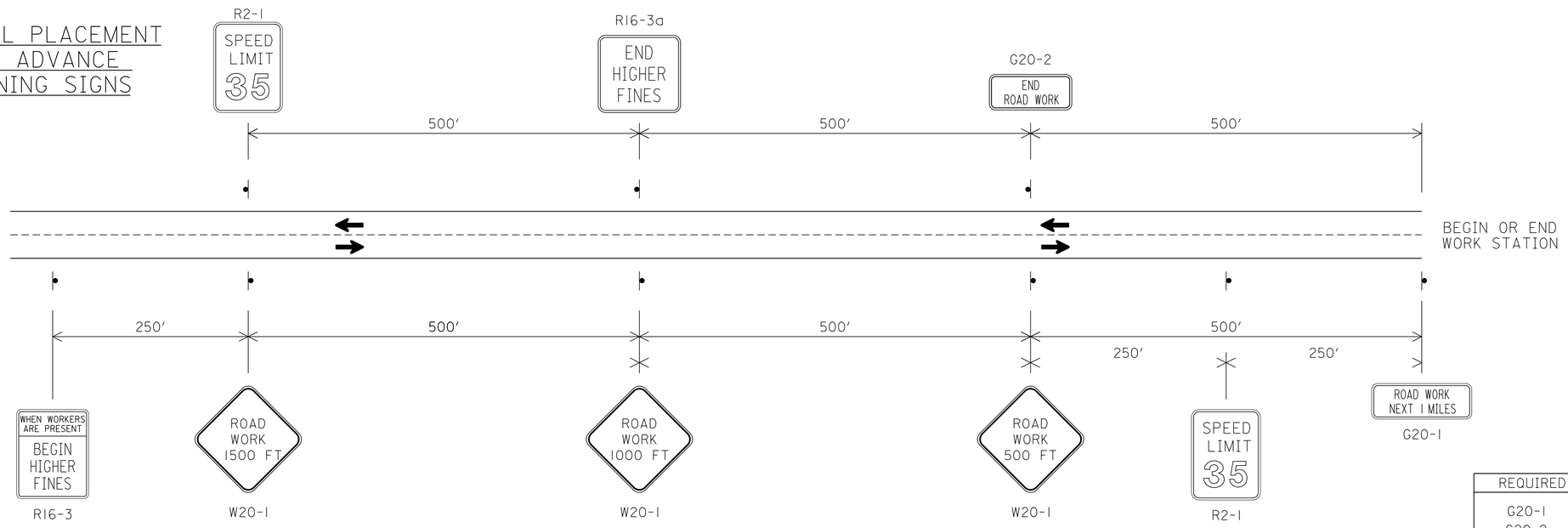
TEMPORARY TRAFFIC CONTROL PLAN SHEET

sheet number

C-8.09

TEMPORARY TRAFFIC CONTROL PLAN SHEET

TYPICAL PLACEMENT FOR ADVANCE WARNING SIGNS



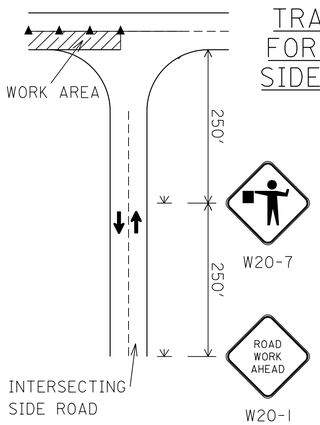
REQUIRED SIGN SIZES	
G20-1	48" X 24"
G20-2	48" X 24"
R2-1	24" x 30"
R16-3	48" X 60"
R16-3a	48" X 48"
W20-1	48" X 48"
W20-4	48" X 48"
W20-7	48" X 48"

THE SIGN SIZES SHOWN ON THIS SHEET SHALL SUPERCEDE THOSE SHOWN ON THE STANDARD HIGHWAY SIGNS DRAWINGS UNLESS OTHERWISE APPROVED BY THE ENGINEER.

GENERAL NOTES

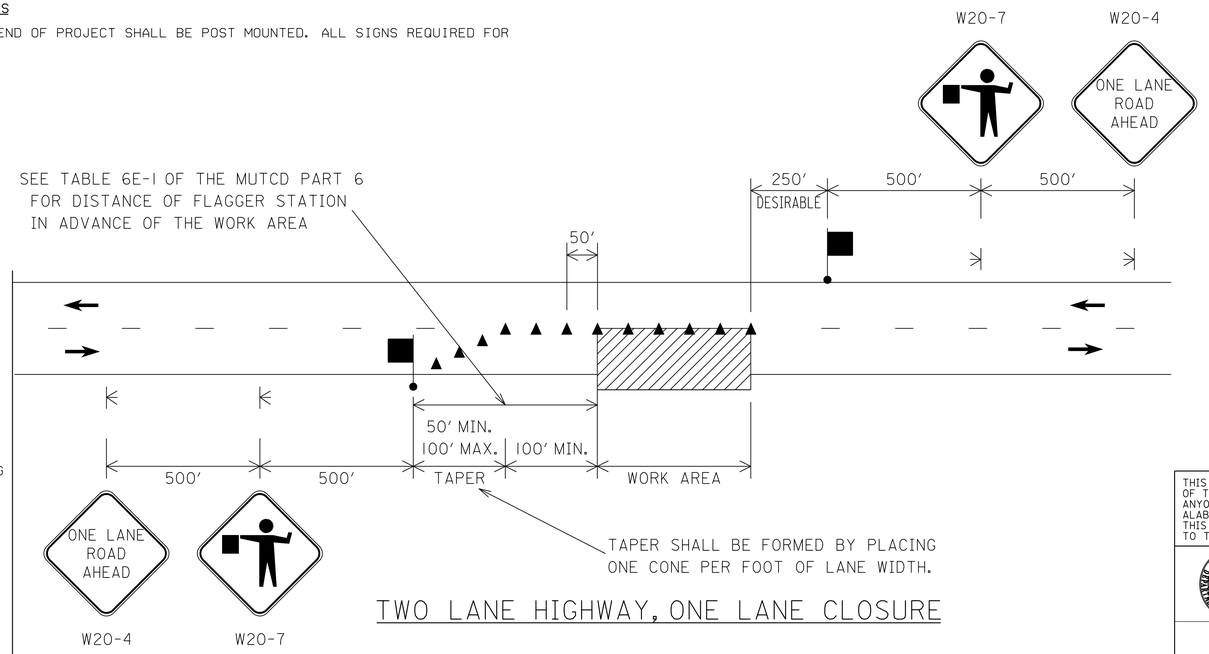
1. ALL ADVANCE WARNING SIGNS REQUIRED AT THE BEGINNING AND END OF PROJECT SHALL BE POST MOUNTED. ALL SIGNS REQUIRED FOR THE LANE CLOSURE SHALL BE TEMPORARY MOUNTED.

TRAFFIC CONTROL FOR INTERSECTING SIDE ROADS WITHIN WORK AREA



NOTE: THE W20-1 SIGN TO BE USED ON INTERSECTING ROADS SHALL BE 36" X36" IN SIZE. THE TEMPORARY MOUNTED W20-1 SIGN SHOWN ON THE SIDE ROAD, WILL NOT BE REQUIRED IF ONE IS ALREADY POST MOUNTED ON THE SIDE STREET.

TWO LANE HIGHWAY, ONE LANE CLOSURE



LEGEND

- TEMPORARY MOUNTED SIGN
- POST MOUNTED SIGN
- CONES
- FLAGGER
- WORK AREA

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DESIGN BUREAU SPECIAL DRAWING

DETAILS FOR TRAFFIC CONTROL FOR TWO LANE HIGHWAYS

DRAWN BY:		INDEX NO.
DATE DRAWN: 3/24/2021	SPECIAL PROJECT DETAIL	2002

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PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

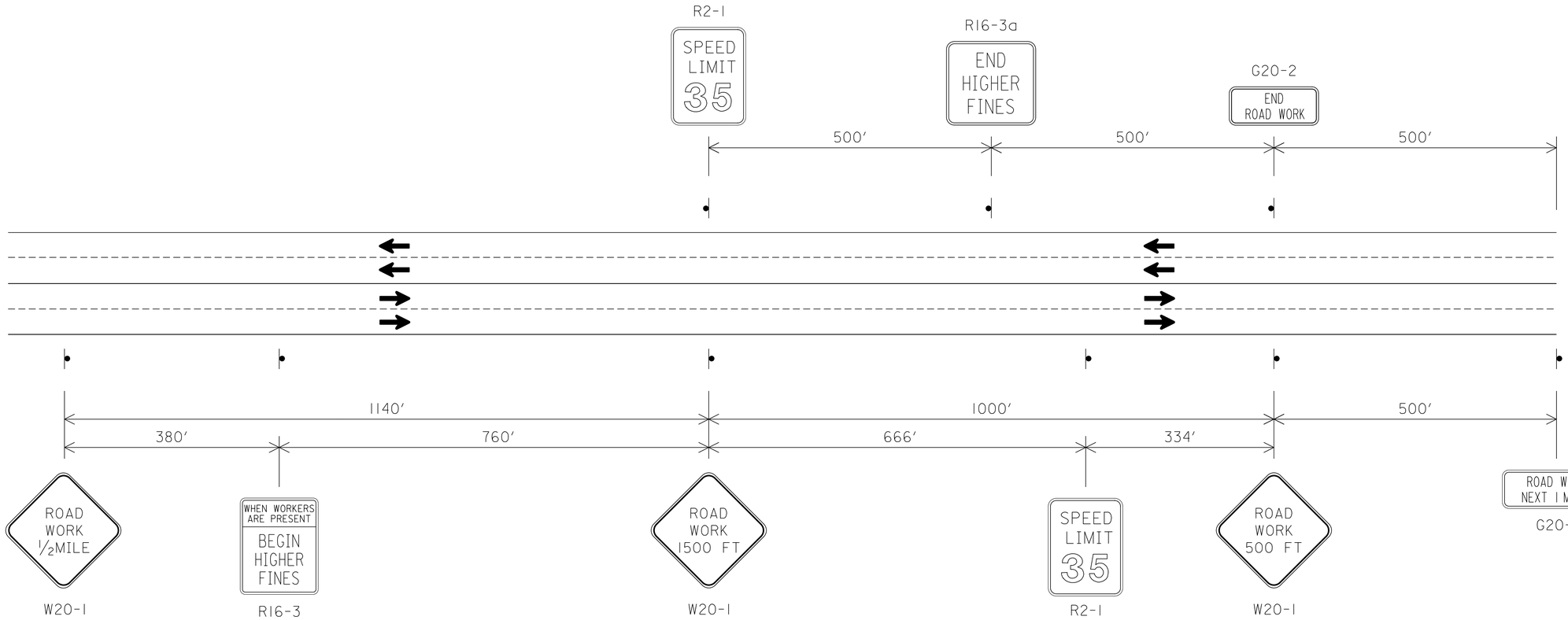
drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
TEMPORARY TRAFFIC CONTROL PLAN SHEET

sheet number
C-8.10

TEMPORARY TRAFFIC CONTROL PLAN SHEET



LEGEND

• POST MOUNTED SIGN

REQUIRED SIGN SIZES	
G20-1	48" X 24"
G20-2	48" X 24"
R2-1	30" x 36"
R16-3	48" X 60"
R16-3a	48" X 48"
W20-1	48" X 48"

THE SIGN SIZES SHOWN ON THIS SHEET SHALL SUPERCEDE THOSE SHOWN ON THE STANDARD HIGHWAY SIGNS DRAWINGS UNLESS OTHERWISE APPROVED BY THE ENGINEER.

GENERAL NOTES

1. ALL SIGNS SHALL BE POST MOUNTED AS SHOWN.

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DESIGN BUREAU SPECIAL DRAWING

TYPICAL PLACEMENT OF ADVANCE WARNING SIGNS FOR MULTILANE UNDIVIDED HIGHWAYS

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DATE DRAWN: 3/24/2021

SPECIAL PROJECT DETAIL

INDEX NO. 2005

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CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

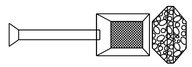
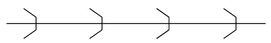
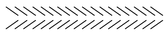
drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
TEMPORARY TRAFFIC CONTROL PLAN SHEET

sheet number
C-8.11

BEST MANAGEMENT PRACTICES (BMP's)

TEMPORARY SLOPE DRAIN PIPE WITH ROCK DITCH CHECK AND SUMP EXCAVATION	
TEMPORARY EARTH BERM	
BRUSH BARRIER	
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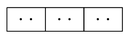
FLOATING BASIN BOOM	
HAY BALE DITCH CHECK	
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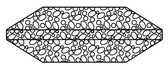
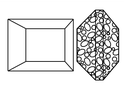
WATTLE DITCH CHECK	
SILT DIKE DITCH CHECK	
ROCK DITCH CHECK	
ROCK DITCH CHECK WITH SUMP EXCAVATION	
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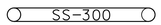
INLET PROTECTION - SS-300 SILT SAVER	

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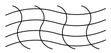
STABILIZED CONSTRUCTION ENTRANCE	
EROSION CONTROL PRODUCTS	
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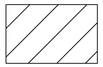
TEMPORARY EARTH BERM WITH POLYETHLENE	
DREDGE, FILL	
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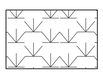
SECONDARY STORMWATER DISCHARGE POINT	
BACKGROUND POINT	
SEDIMENT RETENTION BARRIER	
SOLID SODDING	
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TEMPORARY SEDIMENTATION BASIN	
PERMANENT DETENTION BASIN	

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PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

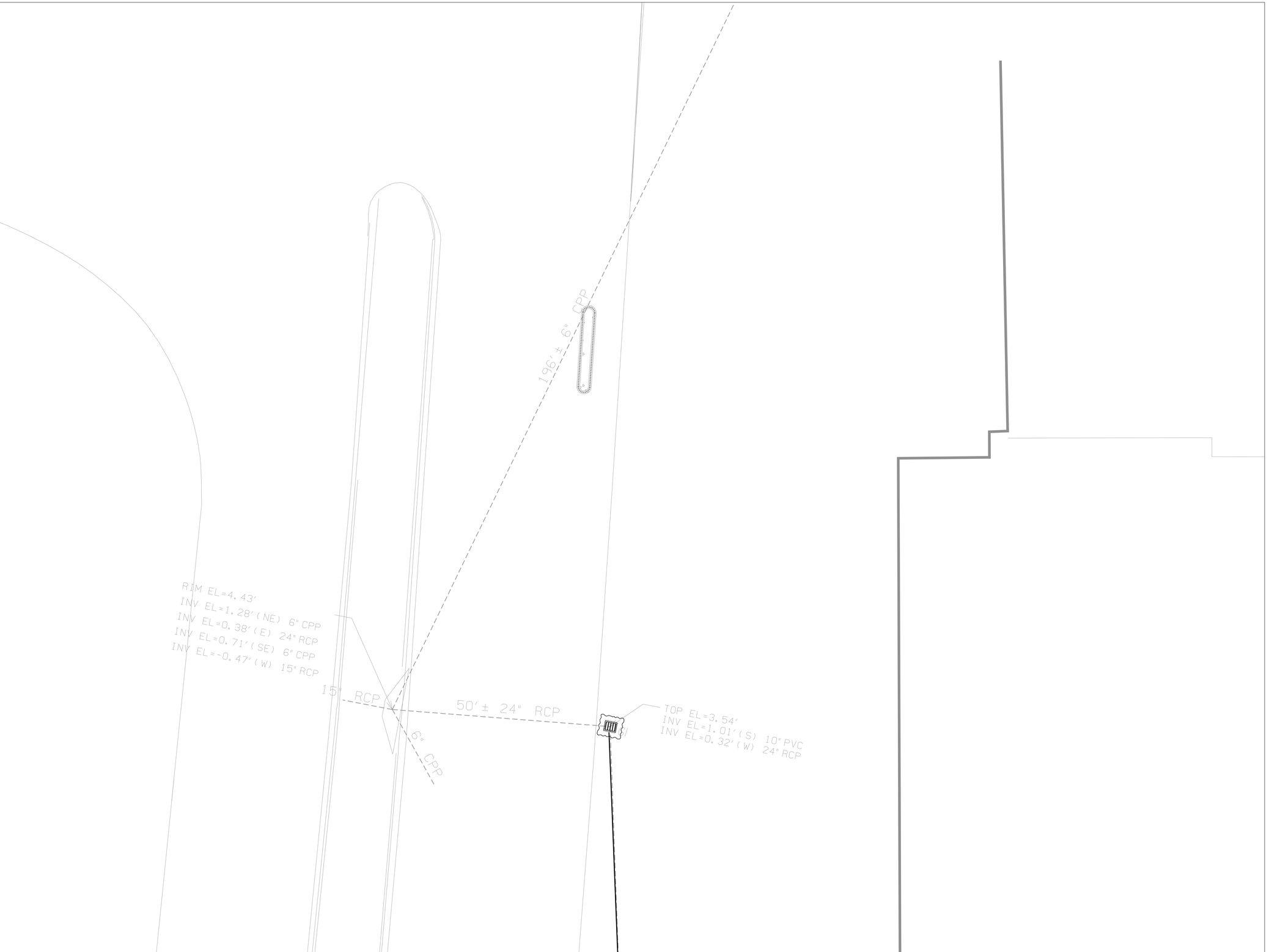
APRIL 14, 2023

sheet title

EROSION AND SEDIMENT CONTROL PLANS LEGEND

sheet number

C-9.00



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18-APR-2023 00:00

Plot Scales
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User Is: jordan.stringfellow
Project$$11446O2 - Heroes Plaza$$Project Design$$Plans Assembly$$C-9.01_602.ecp.dgn

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PROFESSIONAL ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

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scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

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client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
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drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

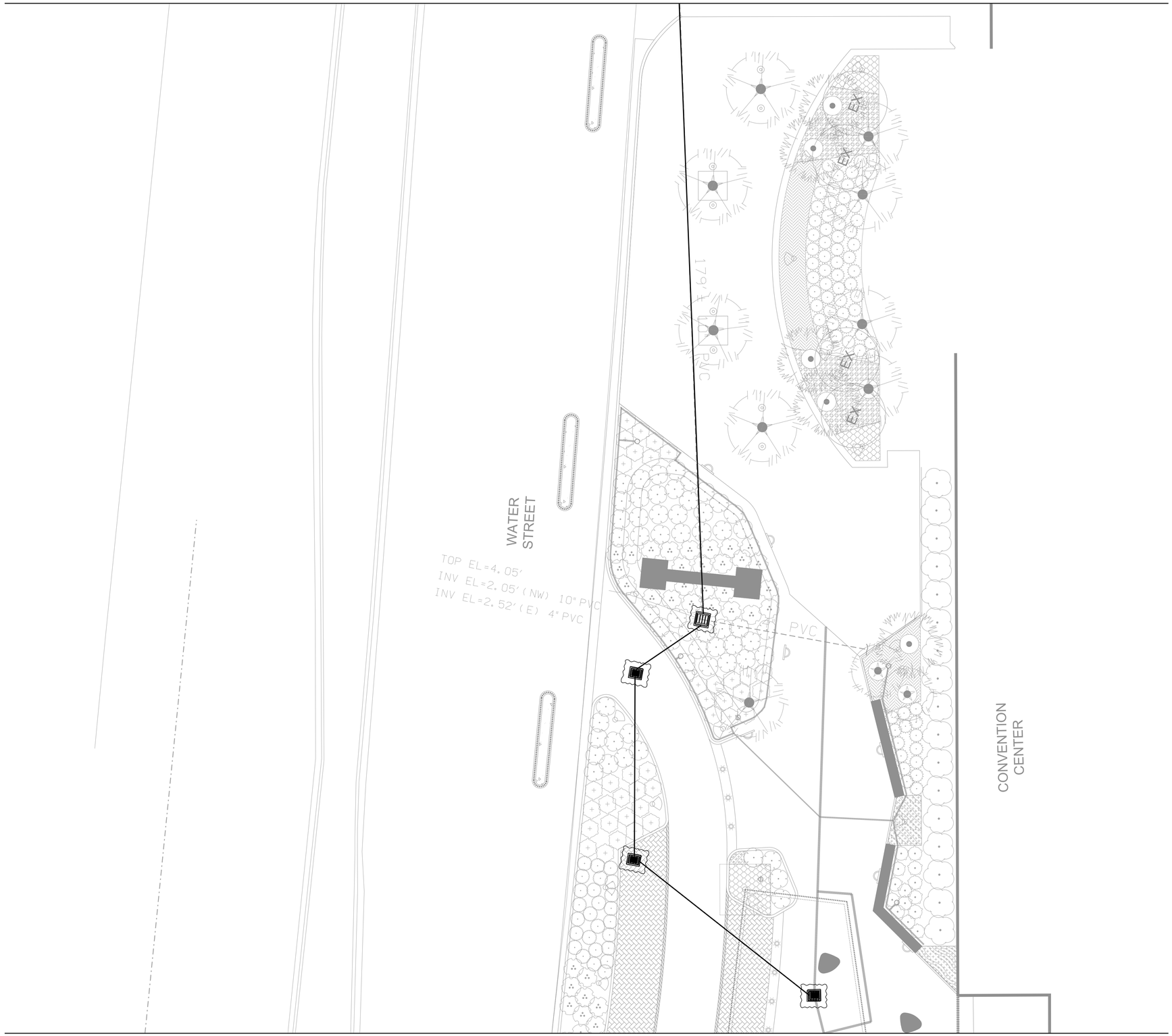
sheet title

EROSION AND SEDIMENT CONTROL PLAN

sheet number

C-9.01

MATCHLINE SHEET C-9.01



MATCHLINE SHEET C-9.03

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No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

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revisions

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scale: 1" = 10'-0"

0 5 10 15 25

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MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
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drawn by:
checked by: JHS

drawing date

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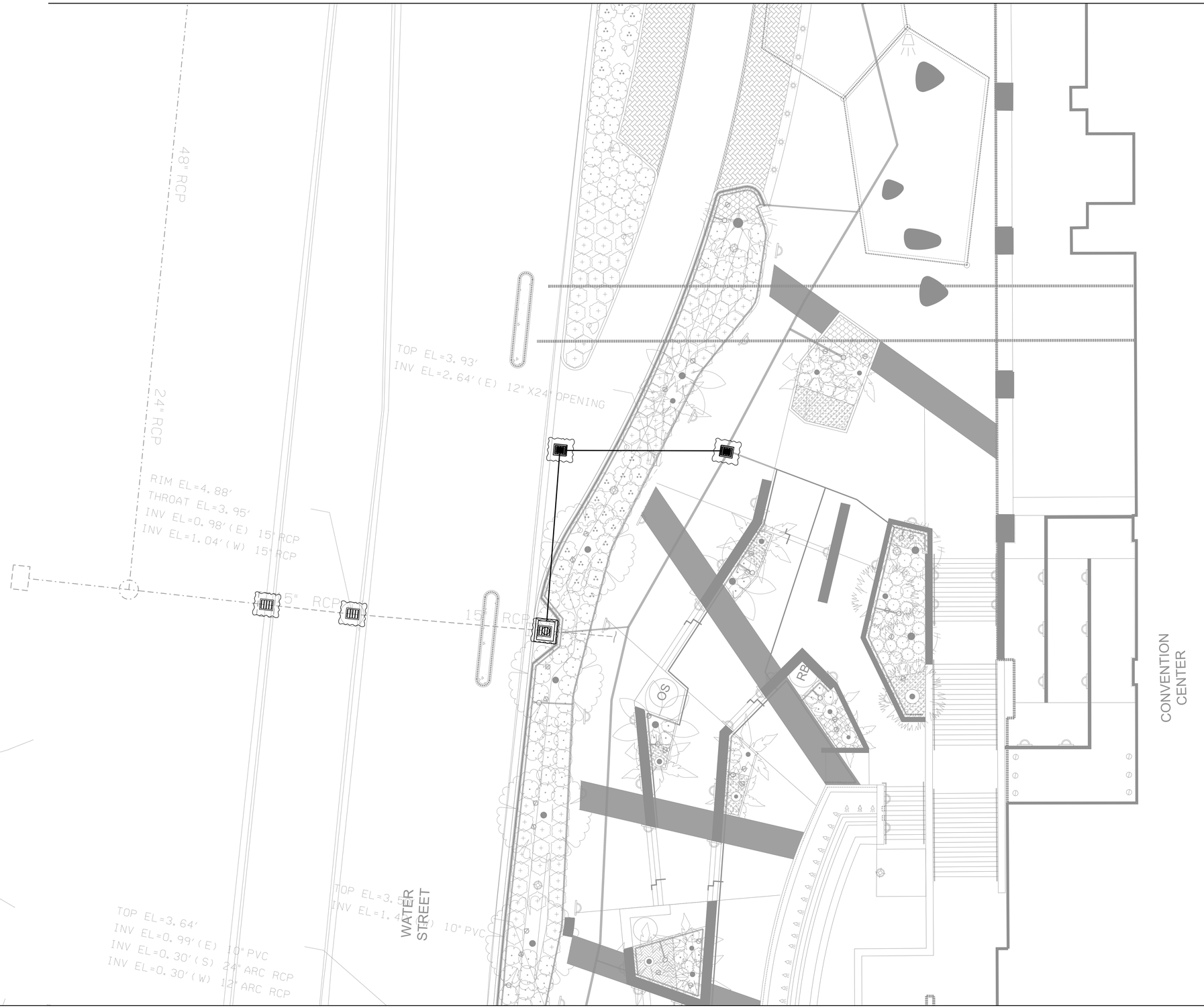
sheet title

EROSION AND SEDIMENT CONTROL PLAN

sheet number

C-9.02

MATCHLINE SHEET C-9.02



MATCHLINE SHEET C-9.04

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No. 38421-E
PROFESSIONAL
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JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

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scale: 1" = 10'-0"

0 5 10 15 25

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CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
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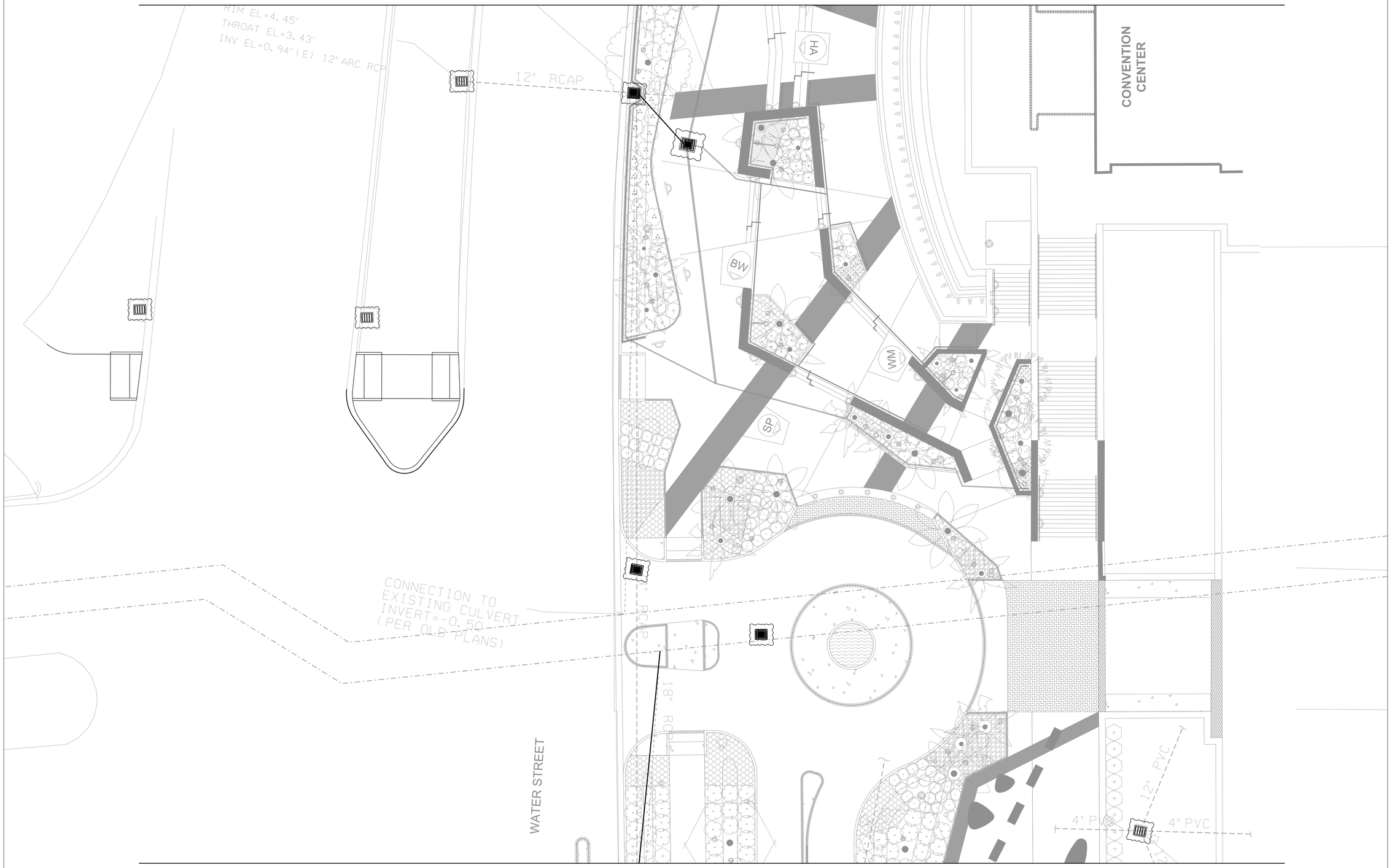
sheet title

EROSION AND SEDIMENT CONTROL PLAN

sheet number

C-9.03

MATCHLINE SHEET C-9.03



MATCHLINE SHEET C-9.05

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18-APR-2023 00:00

Plot Scales
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User: jst jordan.stringfellow
Projects: I:\4602 - Heroes Plaza\Project Design\Plans Assembly\C-9.04_602_ecp.dgn

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ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

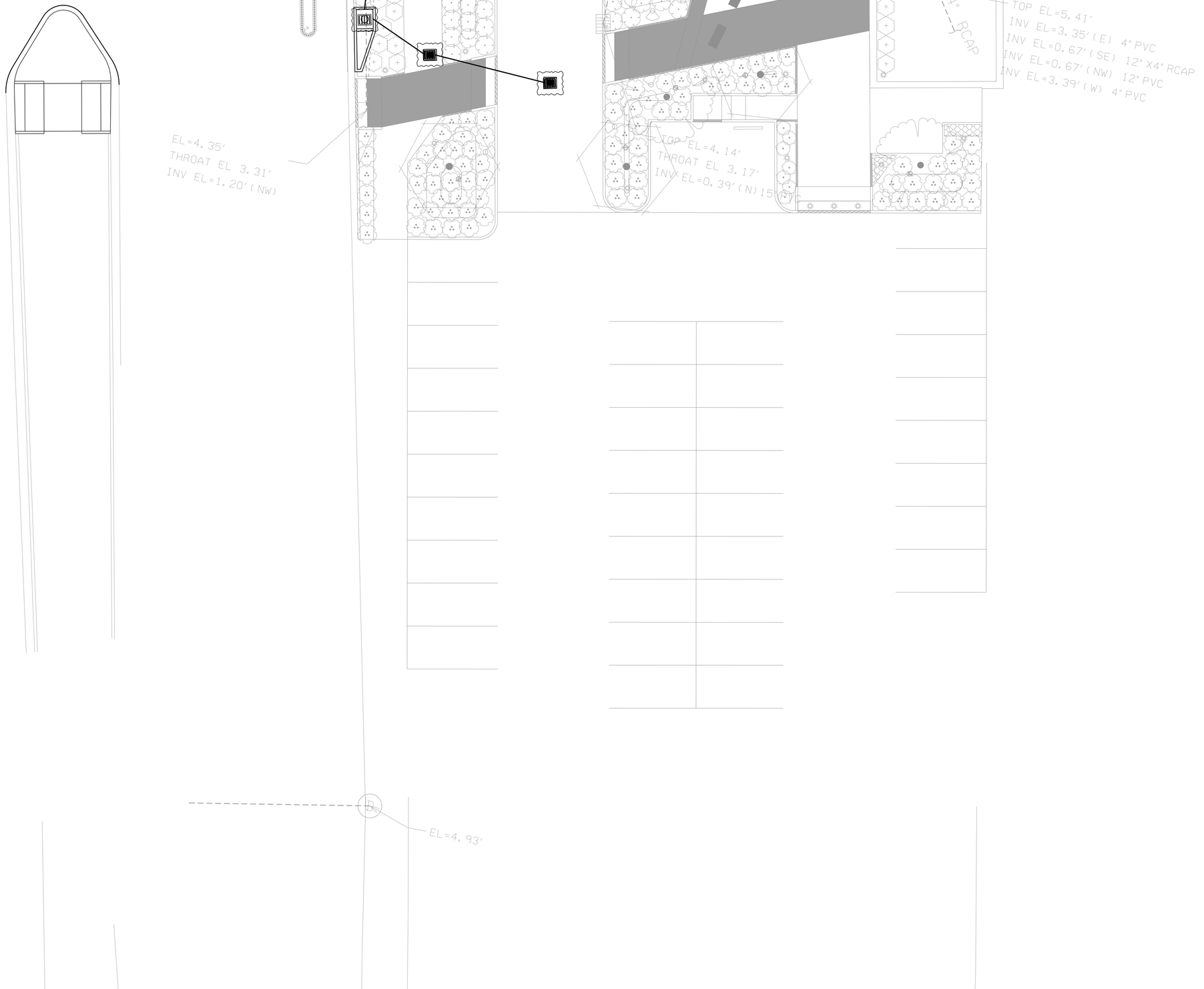
sheet title

EROSION AND SEDIMENT CONTROL PLAN

sheet number

C-9.04

MATCHLINE SHEET C-9.04



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0 5 10 15 25

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C-9.05

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18-APR-2023 00:00

Plot Scales
$$PLOTSCALE$$
10,0000001:1,000000

User list: jordan.stringfellow
Projects#144602 - Heroes Plaza#Project Design#Plans Assembly#C-9.05_602_ecp.dgn

GENERAL ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA-70, LATEST EDITION AND ALL LOCAL RULES, REGULATIONS, AND ORDINANCES.

2. CONDUIT SHALL BE:
   (A) IMC WHERE INSTALLED WITHIN EXISTING BUILDING
   (B) ASPHALTUM COATED GRC FOR UNDERGROUND POWER CIRCUITS
   (C) PVC SCHEDULE 40 FOR DMX, CCTV, AND SPEAKER CIRCUITS.

3. INDIVIDUAL RUNS OF LIGHTING POWER CIRCUITS, DMX, CCTV, AND SPEAKER CABLES ARE TO BE INSTALLED IN 3/4" CONDUITS; HOWEVER, THE CONTRACTOR WILL BE ALLOWED TO COMBINE SIMILAR CIRCUITS INTO LARGER SIZE CONDUITS FOR HOME RUNS.

4. PULL BOXES INSTALLED WITHIN THE BUILDING SHALL BE GALVANIZED STEEL, SIZE AS REQUIRED AND ATTACHED TO BUILDING CEILING OR WALL WITH EPOXY ANCHORS.

5. CONDUIT AND PULL BOXES INSTALLED IN AREAS ACCESSIBLE TO PUBLIC SHALL BE PAINTED TO MATCH THE COLOR OF THE WALL OR CEILING WHERE INSTALLED.

6. CONDUCTORS FOR THE 480 VOLT POWER CIRCUIT ARE SHOWN ON THE PLAN SHEETS. NO SPLICES WILL BE ALLOWED IN THIS CIRCUIT. CONDUCTORS INSTALLED WITHIN THE BUILDING SHALL BE XHHW, STRANDED COPPER.

7. ALL CABLES USED FOR LIGHTING POWER CIRCUITS IN THE PLAZA AREA SHALL BE TYPE SO, COPPER CONDUCTORS, SIZE AS SHOWN OR AS REQUIRED.

8. ALL CABLES UTILIZED FOR LIGHTING CONTROL CIRCUITS SHALL BE SUBMERSIBLE DMX DATA CABLE AS MANUFACTURED BY TMB PROPLEX PC224WL OR APPROVED EQUAL.

9. ALL CABLES SHALL BE INSTALLED WITHOUT SPLICES FROM CONTROL PANEL TO FIRST LIGHT FIXTURE, SPEAKER UNIT OR CAMERA.

10. CONTRACTOR SHALL ALLOW SPARE LENGTH OF CABLE IN ALL PULL BOXES AND AT EACH LIGHT FIXTURE TO ALLOW FOR FUTURE MAINTENANCE AS REQUIRED.

11. ALL CABLE TO LIGHT FIXTURE CONNECTIONS SHALL BE MADE WATERPROOF WITH THE USE OF HEAT SHRINK TUBING AT EACH CONNECTION.

12. IN GROUND PULL BOXES SHALL BE QUAZITE, TYPE PC, OPEN BOTTOM WITH MOUSE HOLES ON THE SIDE FOR THE ENTRANCE OF CONDUITS. CONTRACTOR SHALL PROPERLY SIZE PULL BOXES AT THE LOCATIONS SHOWN ON THE PLANS. CONTRACTOR SHALL SUBCUT AREA FOR PULL BOXES AND PLACE 6 INCHES OF CRUSHED STONE UNDER THE PULL BOX WITH FOUR(4) INCHES OF CONCRETE AROUND EACH BOX.

13. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EACH PULL BOX WITH THE ARCHITECT TO ALLOW ROOM FOR SHRUBS AND TO PREVENT CONFLICT WITH UNDERGROUND UTILITIES.

14. INSTALLATION OF AND CONNECTIONS TO EACH LIGHT FIXTURE SHALL BE AS RECOMMENDED BY THE CABLE MANUFACTURER.

15. CONTRACTOR SHALL PROVIDE SUFFICIENT TRAINING TO CITY EMPLOYEES ON THE OPERATION AND MAINTENANCE OF EACH REQUIRED SYSTEM (LIGHTING, SPEAKER, FOUNTAIN, AND CAMERA) PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

LIGHTING SYSTEM NOTES:

1. THE LIGHTING SYSTEM DESIGN IS BASED ON A SYSTEM DEVELOPED BY SESCO LIGHTING. THE CONTRACTOR MAY CHOOSE TO INSTALL THE SELECTED SYSTEM AS SHOWN ON THESE PLANS OR SUBMIT AN ALTERNATIVE SYSTEM FOR REVIEW AND APPROVAL. ANY QUESTIONS RELATED TO THE LIGHTING SYSTEM MAY BE DIRECTED TO THE SESCO LIGHTING REPRESENTATIVES, THOMAS NICHOLS - (678) 449-9539 (TNICHOLS@SESCOLIGHTING.COM) OR ADAM RIXEY - (770) 449-7045 (ARIXEY@SESCOLIGHTING.COM).

2. REFER TO SHEET C-10.06 FOR LIGHTING CONTROL PANEL DETAILS AND NOTES.

CAMERA SYSTEM NOTES:

1. CONTRACTOR SHALL COORDINATE ALL WORK ASSOCIATED WITH INSTALLING CAMERAS AND NETWORK EQUIPMENT WITH THE CITY OF MOBILE IT DEPARTMENT. THE CONTACT FOR THE IT DEPARTMENT IS PAUL CLARKE (251-586-3303).

2. CAMERAS SHALL BE INSTALLED AS SHOWN ON SHEETS L-4.01 THRU L-4.04. THE CAMERAS SHALL BE INSTALLED ON REQUIRED LIGHT POLES AS SHOW ON SHEET L-5.91.

3. CAMERA CABLES SHALL BE OUTDOOR RATED CAT 5, TYPE POE.

4. CAMERAS SHALL BE WIRED TO A NEW OWNER PROVIDED NETWORK SWITCH TO BE LOCATED IN CONTROL ROOM. REFER TO SHEET C-10.05 FOR PROPOSED CONTROL ROOM LAYOUT.

5. REFER TO SHEETS C-10.02 & C-10.03 FOR FIBER RUN LAYOUT BETWEEN PROPOSED NETWORK SWITCH AND EXISTING NETWORK SWITCH. CONTRACTOR SHALL INSTALL REQUIRED FIBER AS SHOWN, BUT SHALL NOT MAKE ANY TERMINATIONS PRIOR TO COORDINATING WITH CITY OF MOBILE IT DEPARTMENT.

6. CONTRACTOR SHALL INSTALL THE FOLLOWING CAMERAS AND NETWORK EQUIPMENT OR APPROVED EQUALS:

A. CAMERAS:	AXIS P3245-VE NETWORK CAMERA
B. NETWORK SWITCH:	PROVIDED BY OWNER
C. PATCH PANEL:	ALLEN TEL PRODUCTS, INC. - CAT 5E PATCH PANEL, 1 RU, 24-PORT (MFR #: AT55B-PNL-24)
D. FIBER:	CORNING OPTICAL - 12 STRAND SINGLEMODE FIBER OPTIC CABLE LOOSE TUBE (S-OP-12-LA-A-3U-BK-SIC-B-CUT REEL)
E. WCH:	CORNING OPTICAL - WALL-MOUNTABLE CONNECTOR HOUSING (WCH) HOLDS 2 CCH CONNECTOR PANELS (WCH-02P)
F. CCH PANEL:	CORNING OPTICAL - CLOSET CONNECTOR HOUSING (CCH) PANEL, SC ADAPTERS DUPLEX, UPC, 6 F, SINGLE MODE (OS2) (CCH-CPO6-59)

7. CONTRACTOR SHALL VERIFY ALL REQUIRED CAMERA AND NETWORK EQUIPMENT WILL INTEGRATE WITH THE EXISTING SECURITY AND NETWORK SYSTEMS UTILIZED AT THE CONVENTION CENTER.

SPEAKER SYSTEM NOTES:

1. THE SPEAKER SYSTEM DESIGN IS BASED ON A SYSTEM DEVELOPED BY VISION INTEGRATION. THE CONTRACTOR MAY CHOOSE TO INSTALL THE SELECTED SYSTEM AS DESCRIBED ON THESE PLANS OR SUBMIT AN ALTERNATIVE SYSTEM FOR REVIEW AND APPROVAL. ANY QUESTIONS RELATED TO THE SPEAKER SYSTEM MAY BE DIRECTED TO THE VISION INTEGRATION REPRESENTATIVE, GARY BARIA - (251) 279-0981 (GARY@INVISIONAV.COM).

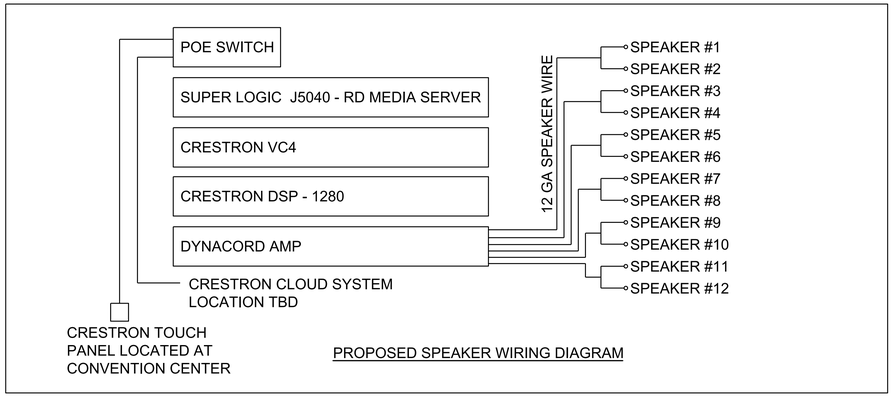
2. CONTRACTOR SHALL INSTALL THE FOLLOWING EQUIPMENT OR APPROVED EQUALS FOR THE REQUIRED SPEAKER SYSTEM:

A. CONTROL SYSTEM:	1 - RMC4 4-SERIES CONTROL SYSTEM
B. POE SWITCH:	1 - CEN-SW-POE-5 5-PORT POE SWITCH
C. TOUCH SCREEN:	1 - TS-1070-B-S 10.1 INCH TABLETOP TOUCH SCREEN, BLACK SMOOTH
D. SIGNAL PROCESSOR:	1 - DSP-860 CRESTRON AVIA 8x6 DIGITAL SIGNAL PROCESSOR
E. AMPS:	2 - DYNACORD L2800 POWER AMPS
F. SPEAKER:	12 - VISATON FR 8 WP SPEAKERS

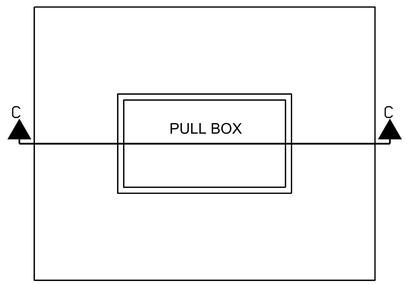
3. CONTROL SYSTEM SHALL HAVE REMOTE OPERATIONAL CAPABILITY THROUGH A CLOUD NETWORK. THE LOCATION OF THE REQUIRED SPEAKER CONTROL SYSTEM WILL HAVE ACCESS TO THE CONVENTION CENTER NETWORK.

4. SPEAKER CABLE SHALL BE 12 GAUGE 2 CONDUCTOR WIRE, WEATHERPROOF, DOUBLE INSULATED CABLE IN ACCORDANCE WITH SPEAKER MANUFACTURER'S RECOMMENDATIONS.

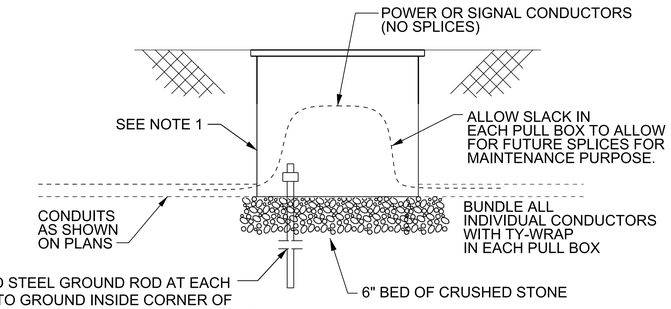
5. EACH SPEAKER SHALL HAVE AN INDIVIDUAL HOMERUN.



PROPOSED SPEAKER WIRING DIAGRAM



PLAN VIEW



SECTION C-C

PULL BOX DETAILS

N.T.S.

DETAIL NOTES:

1. PULL BOX SHALL BE OPEN BOTTOM WITH HEAVY DUTY COVER (15,000 # RATING) COVER SHALL HAVE CAST "ELECTRIC" OR "COMMUNICATIONS" LOGO AS APPROPRIATE.

2. 5/8" x 8' COPPER CLAD GROUND ROD SHALL BE INSTALLED AT EACH PULL BOX, CONNECT TO RIGID CONDUIT.

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04-14-2023

consultant

VOLKERT

revisions

north arrow + scale

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

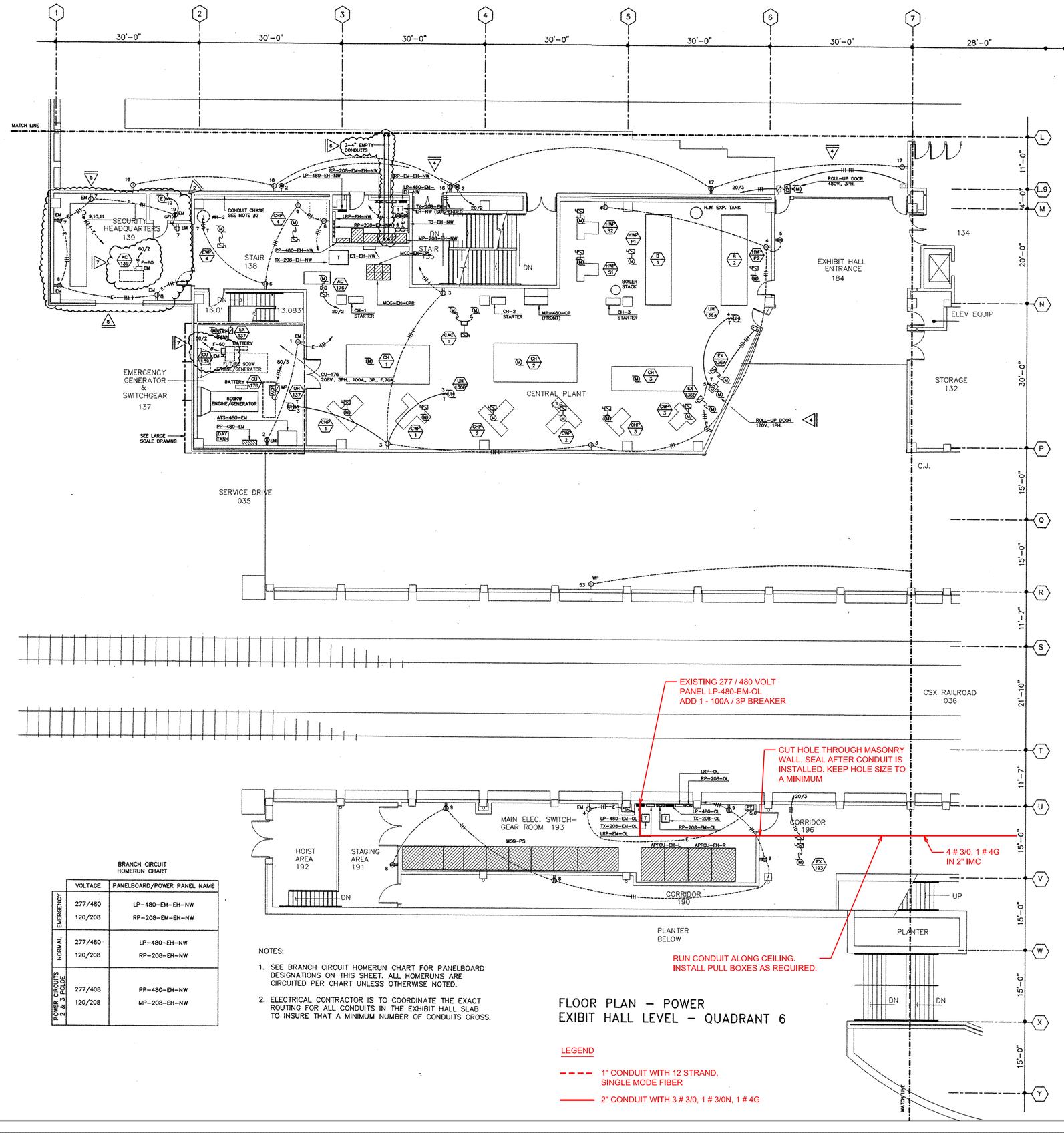
APRIL 14, 2023

sheet title

LIGHTING NOTES SHEET

sheet number

C-10.00



BRANCH CIRCUIT HOMERUN CHART

	VOLTAGE	PANELBOARD/POWER PANEL NAME
EMERGENCY	277/480	LP-480-EM-EH-NW
	120/208	RP-208-EM-EH-NW
NORMAL	277/480	LP-480-EH-NW
	120/208	RP-208-EH-NW
POWER CIRCUITS 2 & 3 POLOE	277/408	PP-480-EH-NW
	120/208	MP-208-EH-NW

NOTES:

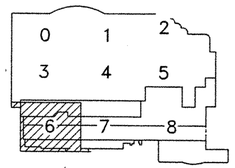
1. SEE BRANCH CIRCUIT HOMERUN CHART FOR PANELBOARD DESIGNATIONS ON THIS SHEET. ALL HOMERUNS ARE CIRCUITED PER CHART UNLESS OTHERWISE NOTED.
2. ELECTRICAL CONTRACTOR IS TO COORDINATE THE EXACT ROUTING FOR ALL CONDUITS IN THE EXHIBIT HALL SLAB TO INSURE THAT A MINIMUM NUMBER OF CONDUITS CROSS.

FLOOR PLAN – POWER
EXIBIT HALL LEVEL – QUADRANT 6

LEGEND

- 1" CONDUIT WITH 12 STRAND, SINGLE MODE FIBER
- 2" CONDUIT WITH 3 # 3/0, 1 # 3/0N, 1 # 4G

NOTE:
ALL WORK INCLUDED IN THIS PROJECT IS SHOWN IN RED ON SHEETS C-10.01, C-10.02 AND C-10.03.



KEY PLAN NORTH

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revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address
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MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
REQUIRED LIGHTING PLAN

sheet number
C-10.01

MOBILE CONVENTION CENTER

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Plot Scales
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User Ist: jordan.stringfellow
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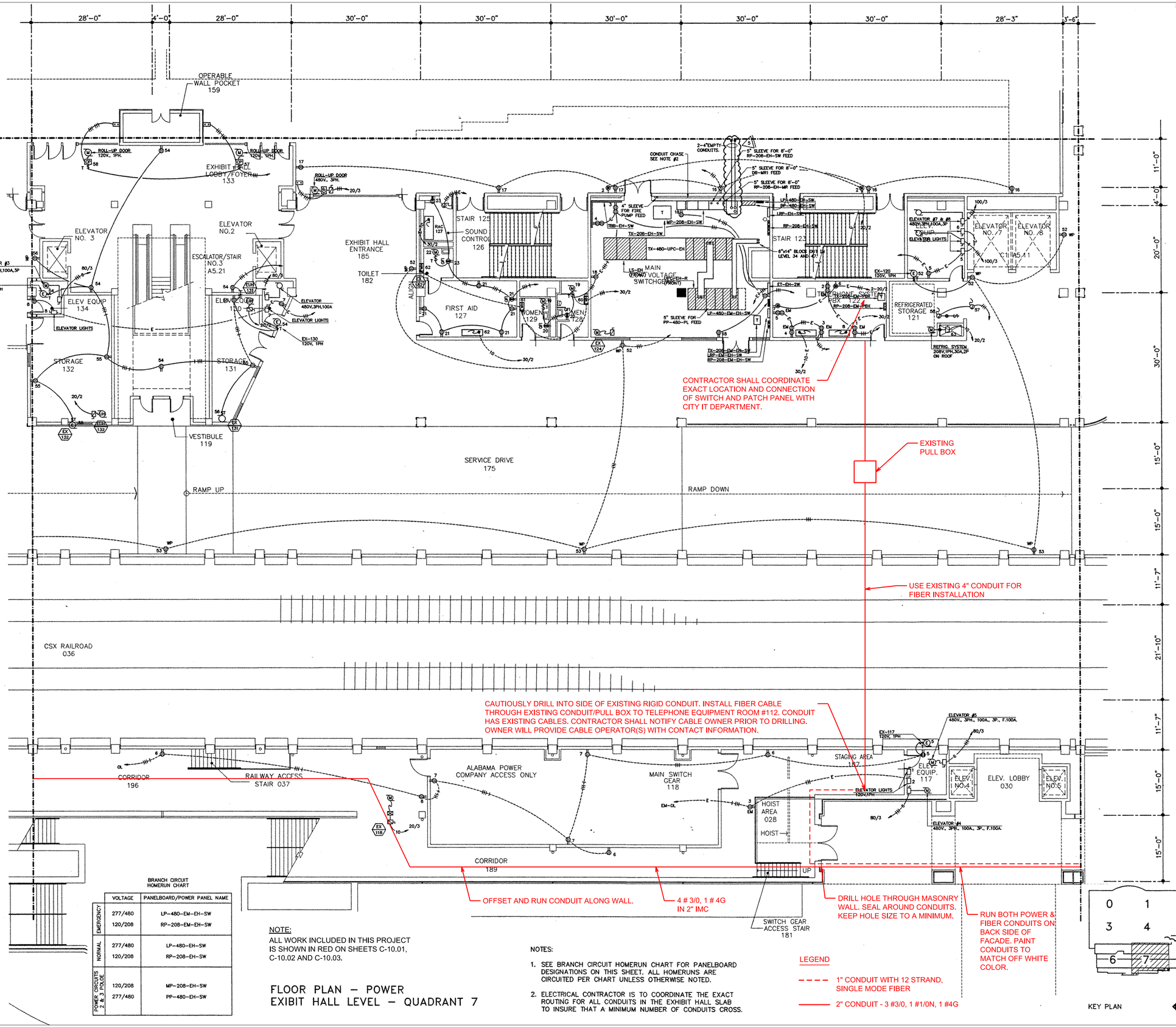


BRANCH CIRCUIT HOMERUN CHART

	VOLTAGE	PANELBOARD/POWER PANEL NAME
EMERGENCY	277/480	LP-480-EM-EH-SW
	120/208	RP-208-EM-EH-SW
NORMAL	277/480	LP-480-EH-SW
	120/208	RP-208-EH-SW
POWER CIRCUITS 2 & 3 POLOE	120/208	MP-208-EH-SW
	277/480	PP-480-EH-SW

NOTE:
ALL WORK INCLUDED IN THIS PROJECT IS SHOWN IN RED ON SHEETS C-10.01, C-10.02 AND C-10.03.

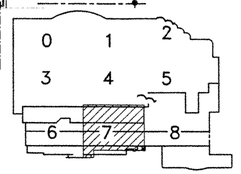
NOTES:

1. SEE BRANCH CIRCUIT HOMERUN CHART FOR PANELBOARD DESIGNATIONS ON THIS SHEET. ALL HOMERUNS ARE CIRCUITED PER CHART UNLESS OTHERWISE NOTED.
2. ELECTRICAL CONTRACTOR IS TO COORDINATE THE EXACT ROUTING FOR ALL CONDUITS IN THE EXHIBIT HALL SLAB TO INSURE THAT A MINIMUM NUMBER OF CONDUITS CROSS.

LEGEND

- 1" CONDUIT WITH 12 STRAND, SINGLE MODE FIBER
- 2" CONDUIT - 3 #3/0, 1 #1/0N, 1 #4G

KEY PLAN



NORTH

FLOOR PLAN – POWER
EXIBIT HALL LEVEL – QUADRANT 7

NOTE:
ALL WORK INCLUDED IN THIS PROJECT IS SHOWN IN RED ON SHEETS C-10.01, C-10.02 AND C-10.03.

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04-14-2023

consultant

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revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

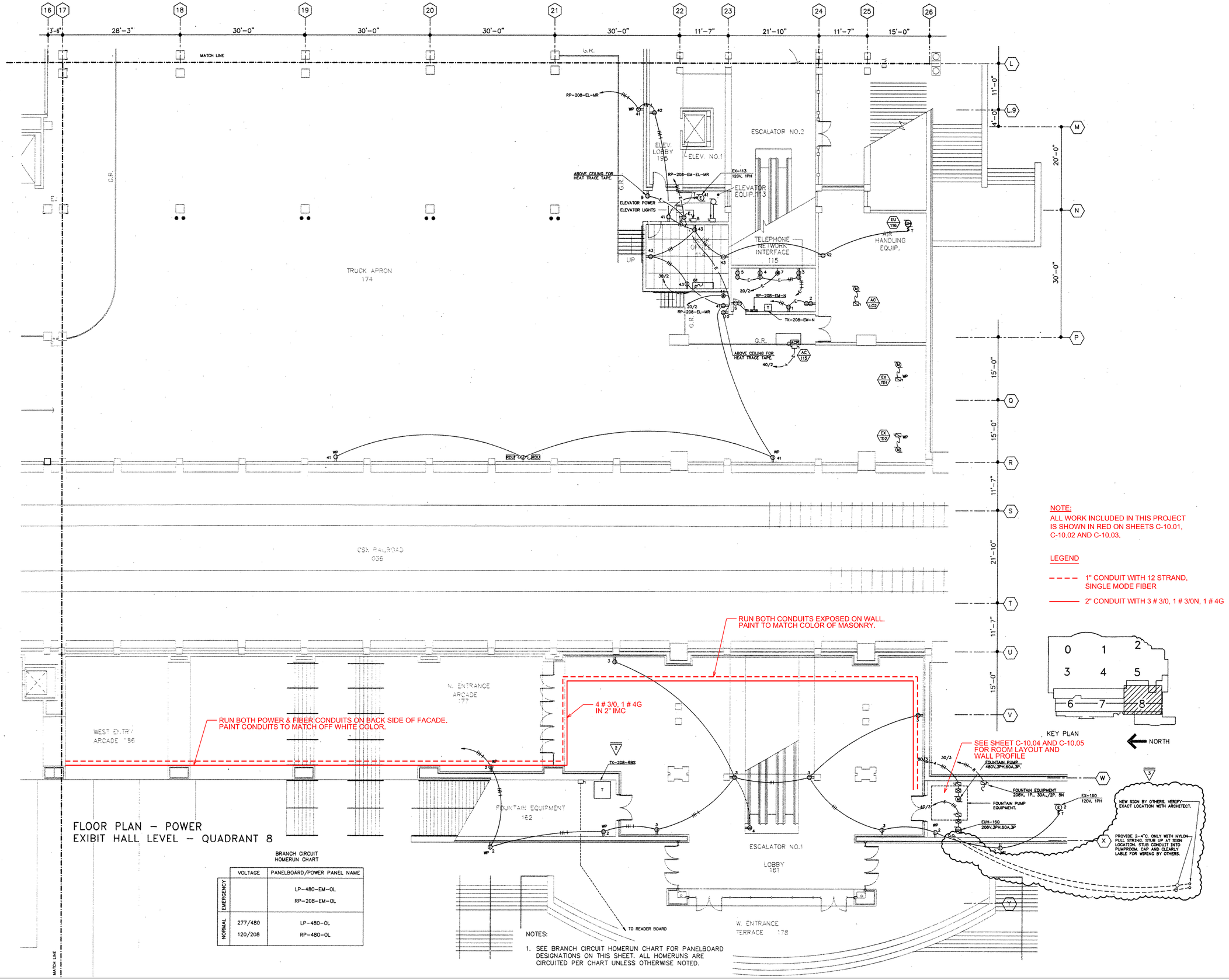
APRIL 14, 2023

sheet title

REQUIRED LIGHTING PLAN

sheet number

C-10.02



FLOOR PLAN – POWER
EXIBIT HALL LEVEL – QUADRANT 8

BRANCH CIRCUIT HOMERUN CHART

	VOLTAGE	PANELBOARD/POWER PANEL NAME
EMERGENCY		LP-480-EM-OL
		RP-208-EM-OL
NORMAL	277/480	LP-480-OL
	120/208	RP-480-OL

NOTES:

1. SEE BRANCH CIRCUIT HOMERUN CHART FOR PANELBOARD DESIGNATIONS ON THIS SHEET. ALL HOMERUNS ARE CIRCUITED PER CHART UNLESS OTHERWISE NOTED.

NOTE:
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LEGEND

- 1" CONDUIT WITH 12 STRAND, SINGLE MODE FIBER
- 2" CONDUIT WITH 3 # 3/0, 1 # 3/0N, 1 # 4G

KEY PLAN

NORTH

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0 5 10 15 25

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HERO PLAZA
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APRIL 14, 2023

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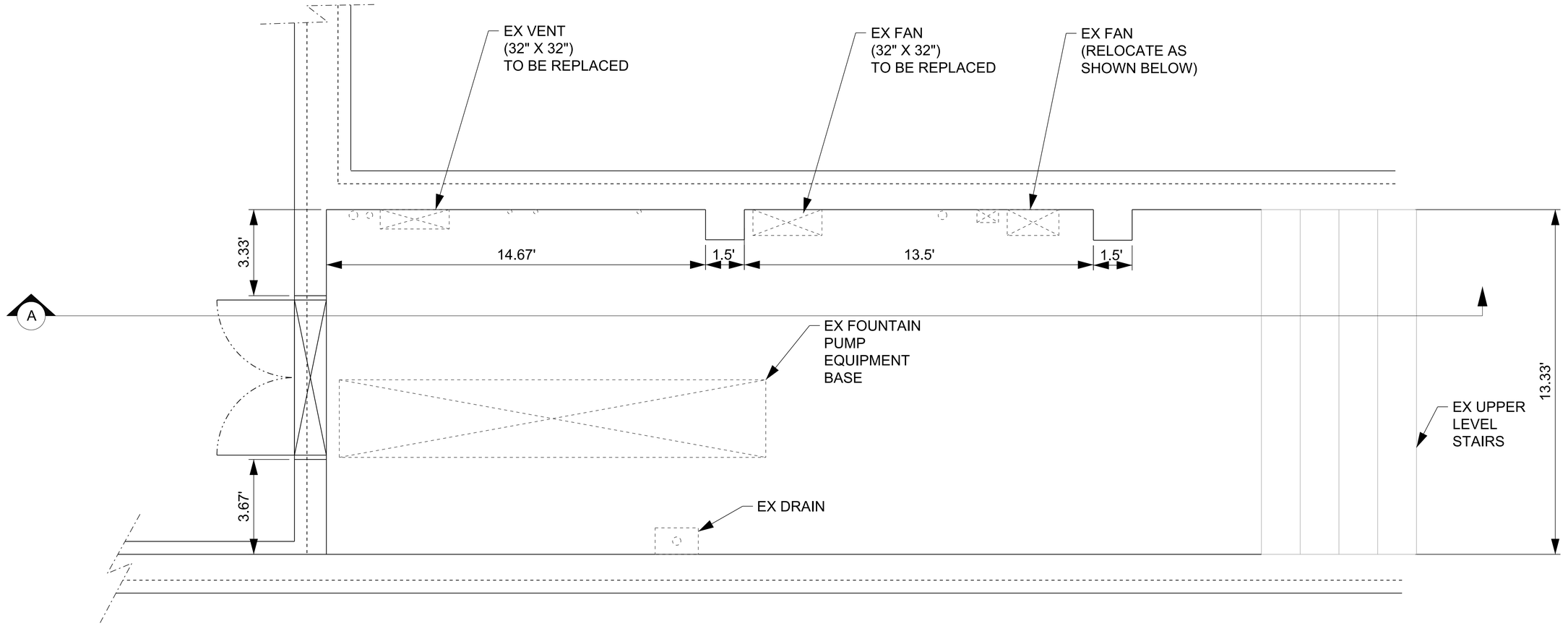
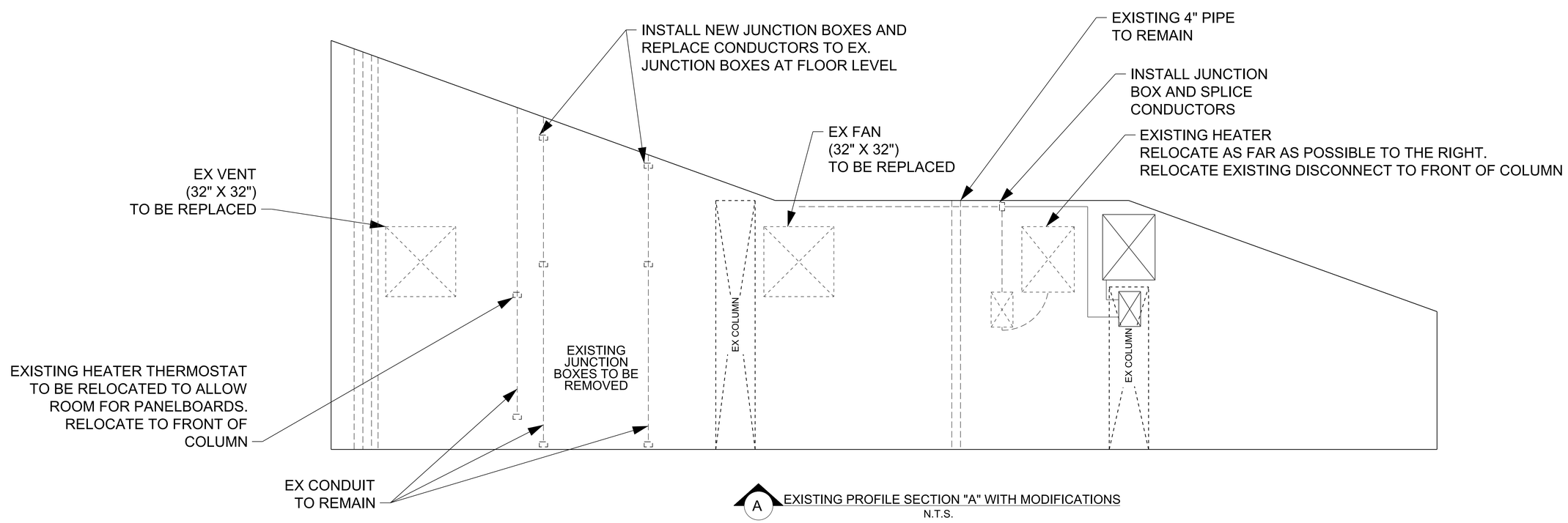
REQUIRED LIGHTING PLAN

sheet number

C-10.03





A EXISTING PROFILE SECTION "A" WITH MODIFICATIONS
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0 1 2 3 5

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project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

REQUIRED LIGHTING DETAIL

sheet number

C-10.04

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18-APR-2023 00:00

Plot Scales
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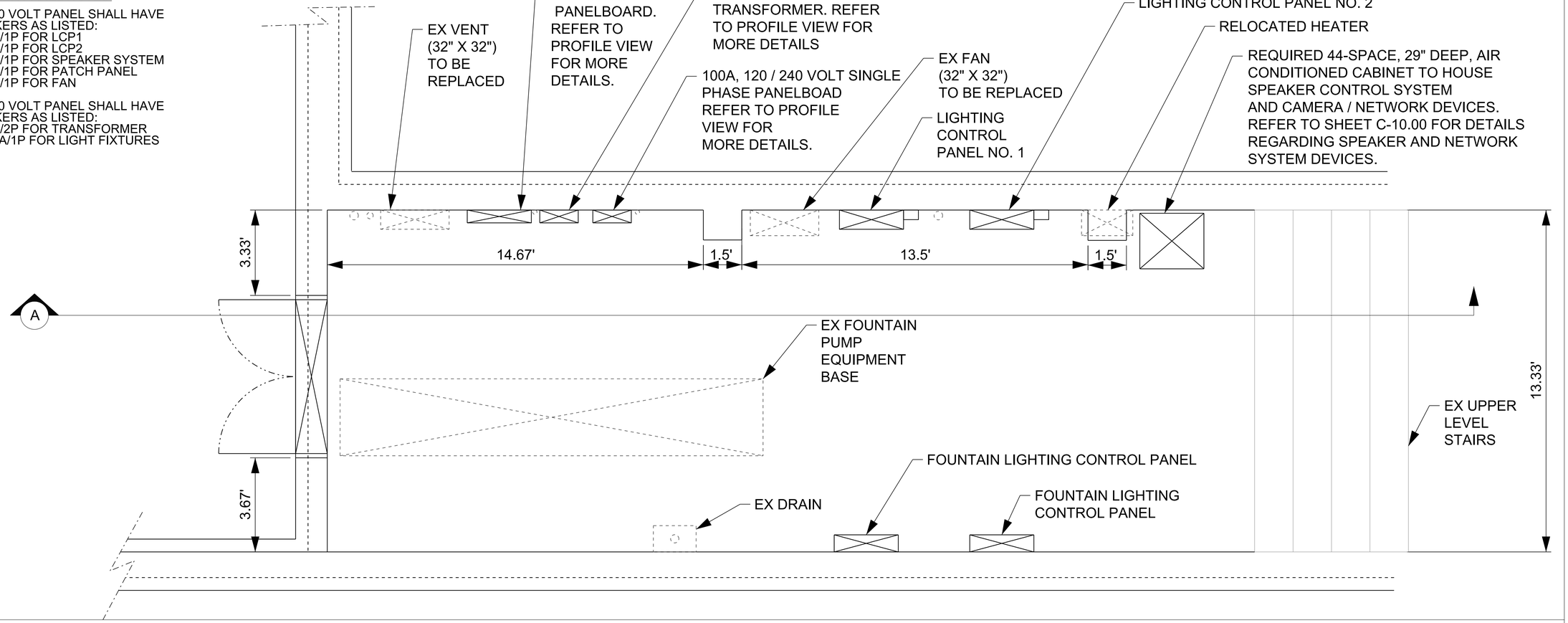
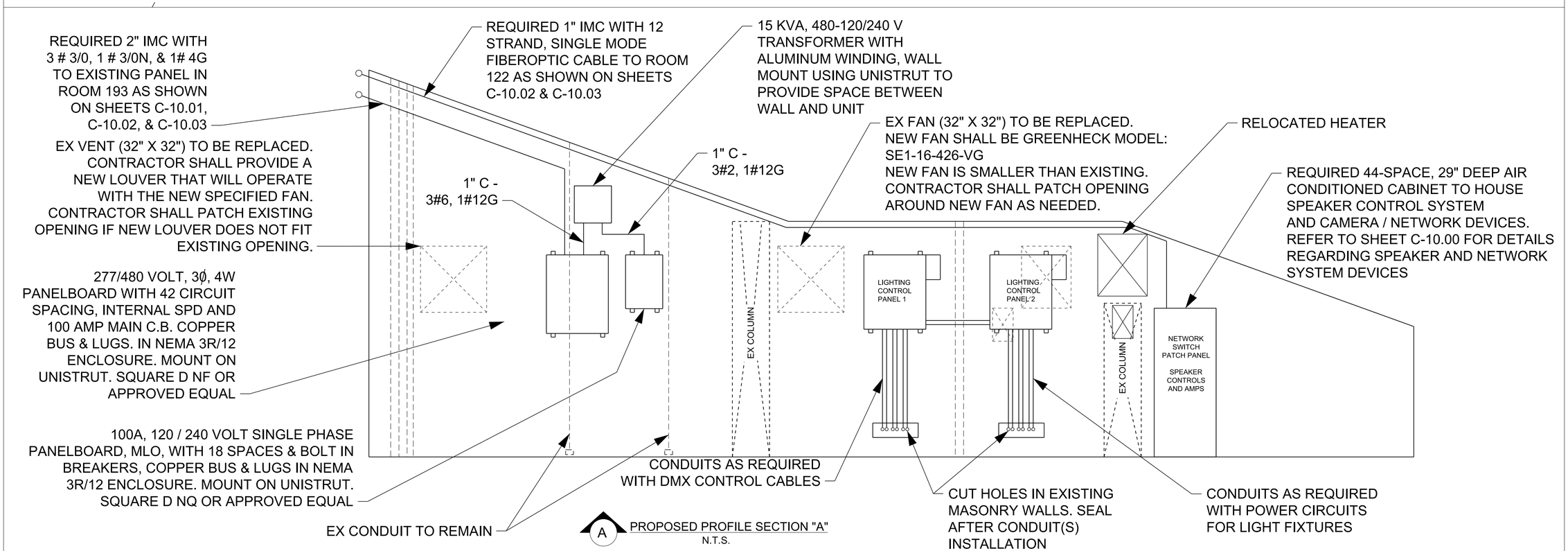
User Id: jordan.stringfellow
Projects#144602 - Heroes Plaza#Project Design#Plans Assembly#C-10.04_602_lighting details.dgn

BREAKER PANEL NOTES:

120/240 VOLT PANEL SHALL HAVE BREAKERS AS LISTED:
1 - 20A/1P FOR LCP1
1 - 20A/1P FOR LCP2
1 - 20A/1P FOR SPEAKER SYSTEM
1 - 20A/1P FOR PATCH PANEL
1 - 15A/1P FOR FAN

277/480 VOLT PANEL SHALL HAVE BREAKERS AS LISTED:
1 - 40A/2P FOR TRANSFORMER
24 - 20A/1P FOR LIGHT FIXTURES





A PROPOSED PROFILE SECTION "A"
N.T.S.

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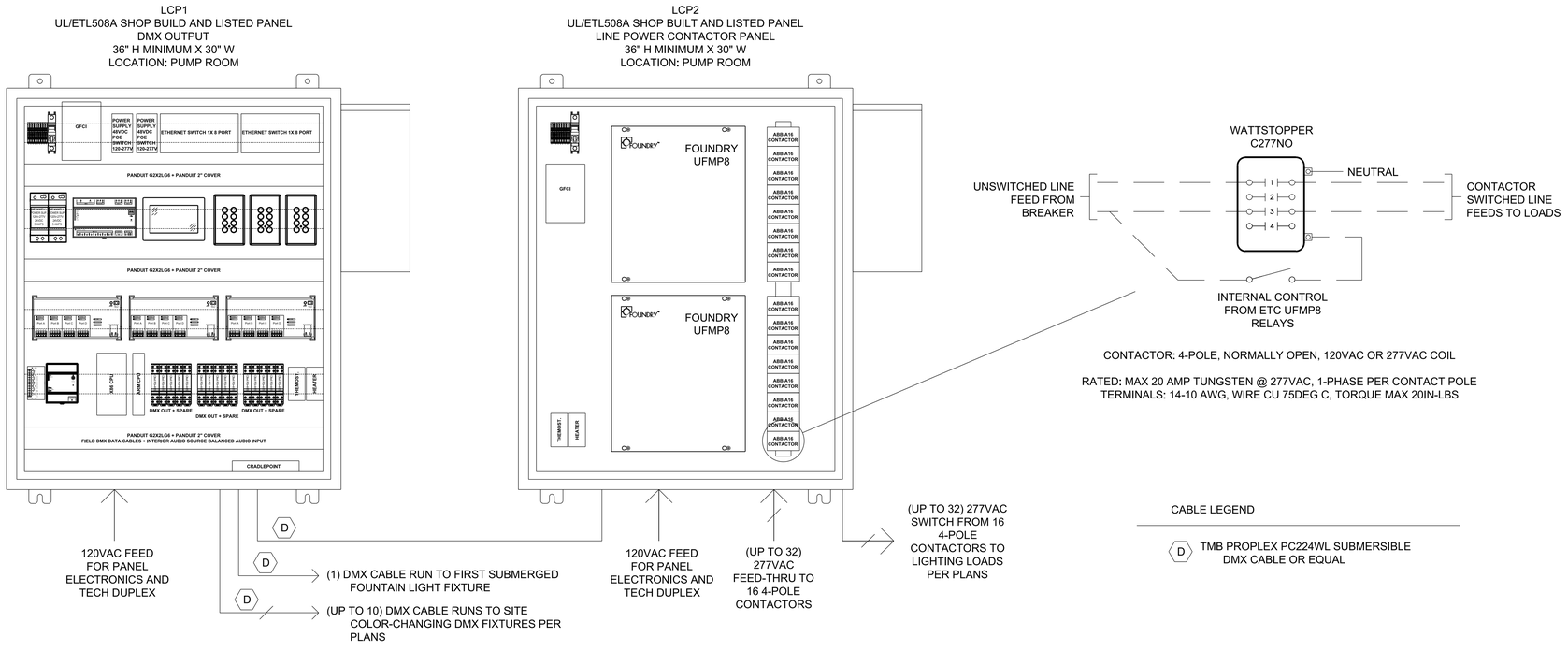
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
REQUIRED LIGHTING DETAIL

sheet number
C-10.05



FOR LIGHTING, LIGHTING CONTROLS, AND LIGHTING ENCLOSURE LCP1 AND LCP2 QUESTIONS, CONTACT THOMAS NICHOLS, 678-449-9539, TNICHOLS@SESCOLIGHTING.COM.

USE TMB PC224WL SUBMERSIBLE DMX CABLE FOR ALL DMX FIELD RUNS. DO NOT INCLUDE LINE-VOLTAGE POWER OR AMPLIFIED AUDIO IN SAME DEDICATED LOW-VOLTAGE CONDUITS. SEAL ALL GROUND CONDUITS WITH WATERPROOF CAULK.

LCP1 AND LCP2 PANELS SHALL BE NEMA4X AND ETL/UL508A LISTED. PANEL COMPONENTS SHALL PROVIDE A FUNCTIONAL SYSTEM INCLUDING:

* (1) ETC MOSAIC MSC4 DMX CONTROLLER
* (1) ETC MOSAIC M-TS5-4 TOUCHSCREEN
* (3) ETC MOSAIC M108 SWITCHES
* (1) ETC MOSAIC MRIO-A AUDIO INPUT DEVICE
* (2) ETC FOUNDRY UFMP8
* (3) ETC RESPONSE OR PATHWAY 4-PORT DIN-MOUNT GATEWAY
* (2) RADIO DESIGN LABS STICK-ON ST-DA3 D/A
* (2) 30"W x 36"H MINIMUM x 10"D MINIMUM NEMA4X ENCLOSURES PROVIDED BY ETL/UL508 SHOP
* (2) PFANNENBERG DTS-3031 OR EQUAL AC UNIT
* (2) CONDENSATION DRAIN HOSE FROM AC UNIT TO IN-ROOM PUMP FLOOR DRAIN
* (2) THEMOSTAT
* (2) 100W HEATER
* (2) GFI DUPLEX EDISON LEVITON 7599W
* (2) 8-PORT IP UNMANAGED SWITCHES WITH 4 POE PORTS EACH
* (1) CRADLE MODEM WITH 1-YEAR DATA ACCESS FOR LIGHTING INTEGRATOR SCENE AND (20) REMOTE LIGHTING INTEGRATOR CONFIGURATION HOURS SCHEDULED 1-WEEK IN ADVANCE EACH REQUEST AND UP TO THE 1ST YEAR AFTER STARTUP HAS COMPLETED
* (1) DIN RAIL MOUNT INTEL X86 CPU
* (1) DIN RAIL MOUNT ARM CPU
* (24) RS485 DIN RAIL SURGE SUPPRESSION INCLUDES MOUNTED AND UNMOUNTED SPARES
* 2" PANDUIT WIRE GUIDE AS SHOWN
* APPROPRIATE POWER SUPPLIES
* (2) GFCI DUPLEX
* (2) MAIN POWER TERMINAL BLOCKS
* (2) MAIN BREAKER, EATON QC1020
* (16) ABB A16 DIN RAIL 4-POLE CONTACTOR

LCP1 AND LCP2 DMX CONTROL PANELS AND DMX POWER RELAYS+CONTACTORS CONTROL:

* LANDSCAPE DMX LIGHTING
* FOUNTAIN DMX LIGHTING
* SIGN DMX LIGHTING (PREVIOUS 2023 INSTALLATION, GROUND-LEVEL, (9) RGBW FIXTURES, REMOVE EXISTING DMX CONTROLLER AND TIE INTO LCP1 AND LCP2)
* RECEIVE AUDIO STEREO LINE SIGNAL TO INTERACT WITH ABOVE DMX FIXTURES

LCP1 AND LCP2 PANELS DO NOT INTEGRATE WITH

* ROOF-TOP COLOR-CHANGING LIGHTING
* INTERIOR BUILDING LIGHTING
* AUDIO SPEAKERS DIRECTLY
* SECURITY CAMERA IP NETWORK

INCLUDED IN ELECTRICAL CONTRACTOR BID SCOPE COST FOR PRE-APPROVED LOW-VOLTAGE ETC LIGHTING INTEGRATOR TO FURNISH LCP1 AND LCP2 WITH DMX CONTROLS COMPONENTS, TMB PC224WL DMX CABLE, FIXTURE ADDRESSING SERVICES, AND STARTUP SERVICES FOR ETC DMX MOSAIC MSC4 SYSTEM. PROVIDE FUNCTIONING SYSTEM INCLUDING LISTED COMPONENTS SHOWN IN (2) NEMA4X LIGHTING ENCLOSURES AS NOTED. APPROVED LIGHTING DMX INTEGRATORS:

* MAINSTAGE, PENSACOLA, FL
* BARBIZON ATLANTA, ATLANTA, GA
* MAGNUM / 4WALL, ATLANTA, GA

LIGHTING INTEGRATOR SHALL FURNISH AND TERMINATE LIGHTING LOW-VOLTAGE CABLES. ELECTRICAL CONTRACTOR SHALL PULL LIGHTING LOW-VOLTAGE CABLES.

EXCLUDED FROM ELECTRICAL CONTRACTOR BID COST, SUBMERGED LIGHT FIXTURES TO BE FURNISHED AND INSTALLED BY FOUNTAIN INTEGRATOR. DMX SIGNAL CABLE BETWEEN EACH SUBMERGED COLOR-CHANGING FOUNTAIN LIGHTS INSTALLED BY FOUNTAIN INTEGRATOR. SINGLE DMX SOURCE CABLE TO BE PULLED BY ELECTRICAL CONTRACTOR AND TERMINATED BY LIGHTING INTEGRATOR.

*THE DETAILS AND NOTES PROVIDED ON THIS SHEET HAVE BEEN PROVIDED BY SESCO LIGHTING.

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ALABAMA LICENSED No. 10327 PROFESSIONAL ENGINEER NELSON RUSSELL
04-14-2023

consultant

VOLKERT

revisions

north arrow + scale

scale: NOT TO SCALE

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

REQUIRED LIGHTING CONTROL PANEL DETAILS

sheet number

C-10.06

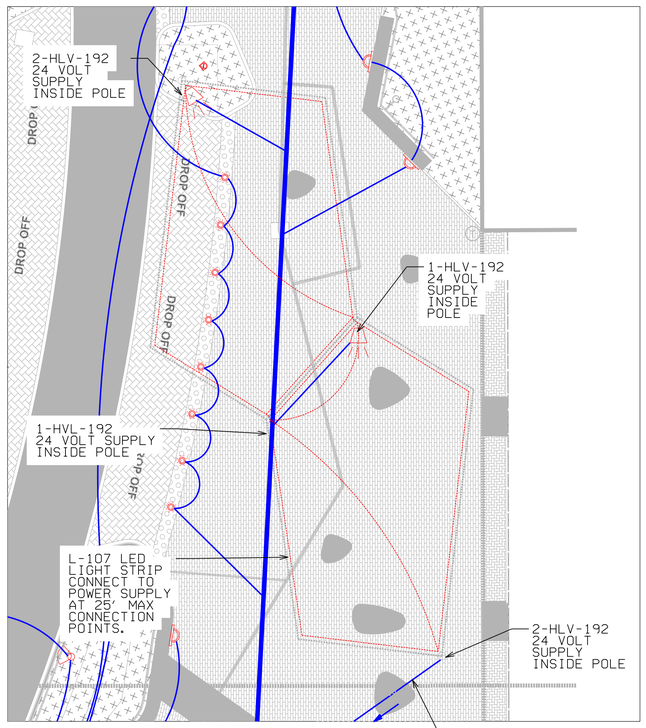
$$COLORTABLE$$
28-APR-2023 14:49

Plot Scales
$$PLOTSCALE$$
10.0000001:1.000000

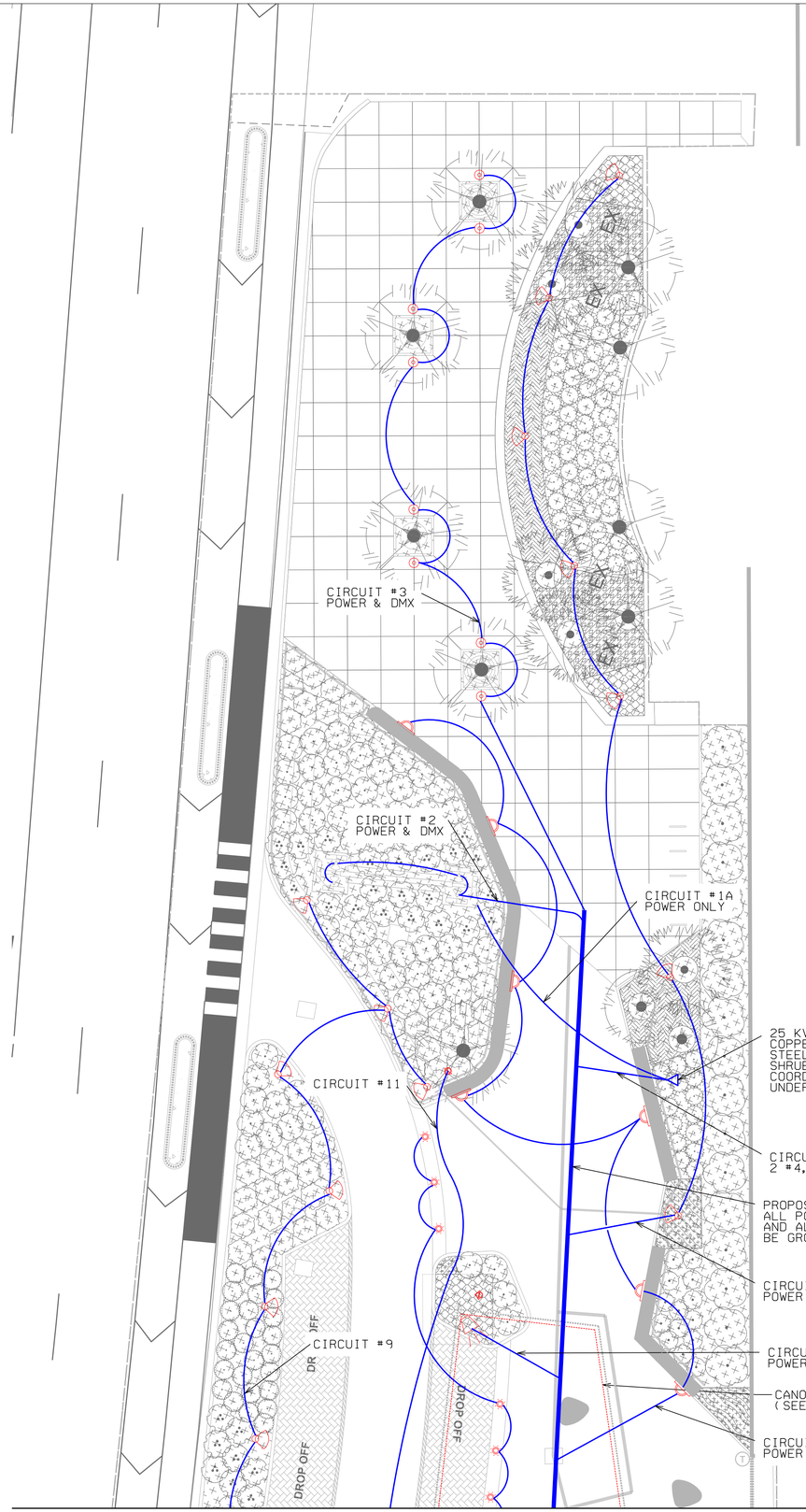
User: lst_jordan.stringfellow
Project: $$PROJECT$$ - Heroes Plaza\Project Design\Plans Assembly\C-10.10.602_lighting.dgn

LIGHTING CIRCUIT SCHEDULE

CIRCUIT #	SERVES	POWER CABLE (AWG)	CONTROL CABLE
1	MARQUEE TRANSFORMER	#2	---------
1A	MARQUEE POWER	#4	---------
2	MARQUEE UPLIGHTS	#12	DMX
3	NORTH TREE UPLIGHTS	#12	DMX
4	NORTH BOLLARDS	#12	---------
5	NORTH WALL LIGHTS	#12	---------
6	GOBO	#12	DMX
7	CANOPY STRIP LIGHT	#12	DMX
8	BOLLARDS	#12	---------
9	BOLLARDS	#12	---------
10	CENTER TREE UPLIGHTS	#12	DMX
11A	WALL LIGHTS	#12	---------
11B	ARCADE UPLIGHTS	#12	DMX
12	WALL LIGHTS	#12	---------
13	SPOTLIGHTS	#10	CAMERA, SPEAKER
14	SPOTLIGHTS	#10	CAMERA, SPEAKER
15	SPOTLIGHTS	#10	CAMERA, SPEAKER
15A	SPOTLIGHTS	#10	CAMERA, SPEAKER
16	SOUTH WALL LIGHTS	#12	---------
17	SOUTH TREE UPLIGHTS	#12	DMX
18	WEST TREE UPLIGHTS	#12	DMX
19	SOUTH BOLLARDS	#12	---------
20	WALL LIGHTS	#12	---------
21	SOUTH TREE UPLIGHTS	#12	DMX
22	FOUNTAIN LIGHTS - NORTH	#12	DMX
23	FOUNTAIN LIGHTS - SOUTH	#12	DMX
24	2 EMPTY CONDUITS	---------	---------



CANOPY STRIP LIGHT BLOWUP
N.T.S.



MATCHLINE SHEET C-10.11

REQUIRED LIGHTING LEGEND

	U-101	WALL LIGHT
	U-102	LIGHTED BOLLARD 'A', 19" HT., 180 DEGREES
	U-103	LIGHTED BOLLARD 'B', 39.5" HT., 360 DEGREES
	U-104	INGRADE LIGHT - TREES
	U-105	INGRADE LIGHT - ARCADE
	U-106	LIGHT POLE
	U-107	LED LIGHT STRIP-CANOPY
	U-108	LED LIGHT STRIP-FOUNTAIN
	U-109	FOUNTAIN UPLIGHT
	U-110	TREE UPLIGHT
	U-111	GOBO LIGHT
	U-112	LANDSCAPE DRAIN

NOTE:

EXTEND DTA CONDUIT FROM EXISTING MARQUEE LOCATION TO NEW LOCATION. INSTALL SO AS TO ALLOW FUTURE INSTALLATION OF DATA CABLE WITHOUT REWORK OF NEW FOUNDATION.
(APPROX. 100' CONDUIT)

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www.tsw-design.com

seal

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

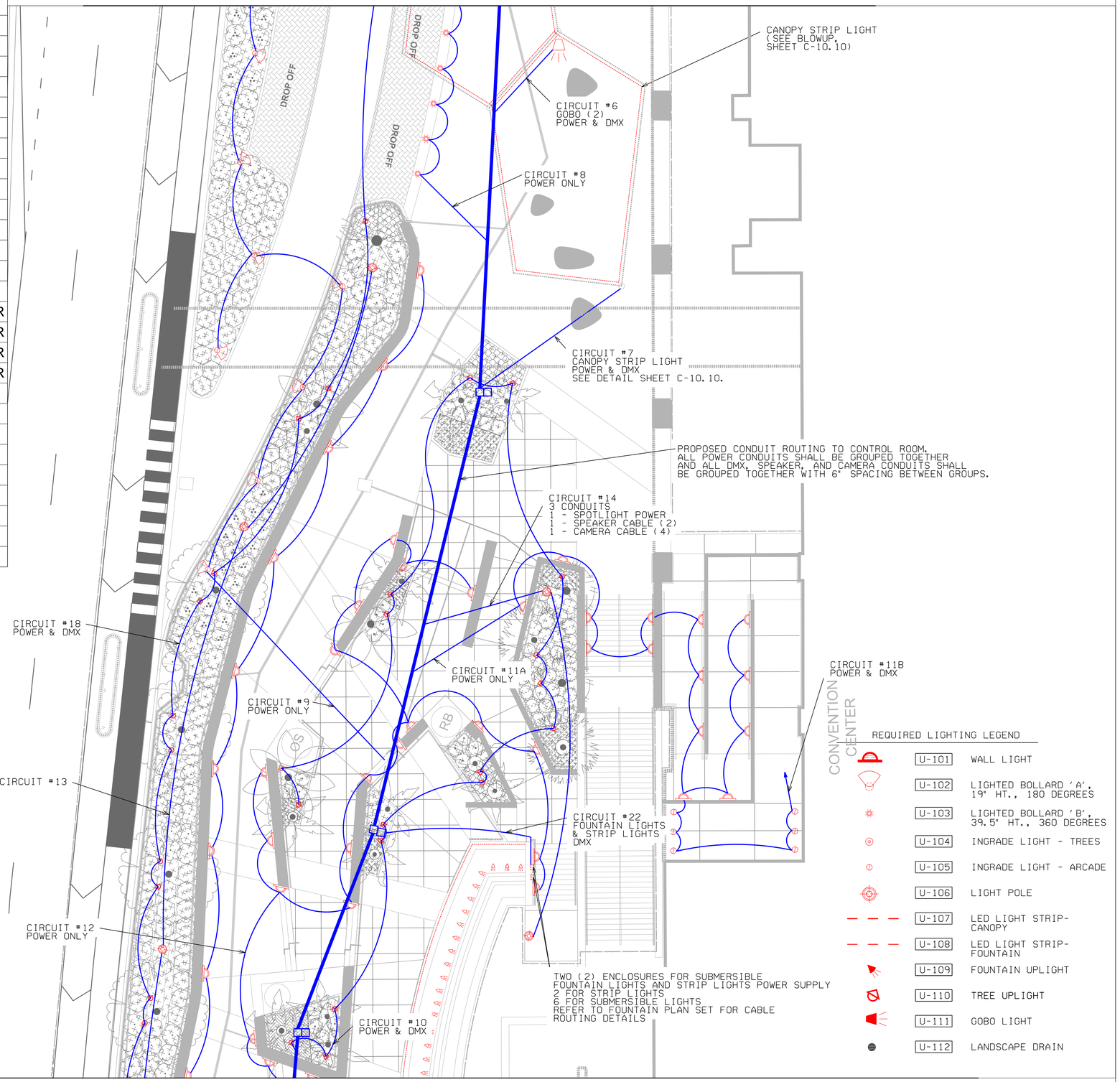
drawing date
APRIL 14, 2023

sheet title
REQUIRED LIGHTING PLAN

sheet number
C-10.10

LIGHTING CIRCUIT SCHEDULE

CIRCUIT #	SERVES	POWER CABLE (AWG)	CONTROL CABLE
1	MARQUEE TRANSFORMER	#2	---------
1A	MARQUEE POWER	#4	---------
2	MARQUEE UPLIGHTS	#12	DMX
3	NORTH TREE UPLIGHTS	#12	DMX
4	NORTH BOLLARDS	#12	---------
5	NORTH WALL LIGHTS	#12	---------
6	GOBO	#12	DMX
7	CANOPY STRIP LIGHT	#12	DMX
8	BOLLARDS	#12	---------
9	BOLLARDS	#12	---------
10	CENTER TREE UPLIGHTS	#12	DMX
11A	WALL LIGHTS	#12	---------
11B	ARCADE UPLIGHTS	#12	DMX
12	WALL LIGHTS	#12	---------
13	SPOTLIGHTS	#10	CAMERA, SPEAKER
14	SPOTLIGHTS	#10	CAMERA, SPEAKER
15	SPOTLIGHTS	#10	CAMERA, SPEAKER
15A	SPOTLIGHTS	#10	CAMERA, SPEAKER
16	SOUTH WALL LIGHTS	#12	---------
17	SOUTH TREE UPLIGHTS	#12	DMX
18	WEST TREE UPLIGHTS	#12	DMX
19	SOUTH BOLLARDS	#12	---------
20	WALL LIGHTS	#12	---------
21	SOUTH TREE UPLIGHTS	#12	DMX
22	FOUNTAIN LIGHTS - NORTH	#12	DMX
23	FOUNTAIN LIGHTS - SOUTH	#12	DMX
24	2 EMPTY CONDUITS	---------	---------



REQUIRED LIGHTING LEGEND

U-101	WALL LIGHT
U-102	LIGHTED BOLLARD 'A', 19" HT., 180 DEGREES
U-103	LIGHTED BOLLARD 'B', 39.5" HT., 360 DEGREES
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U-105	INGRADE LIGHT - ARCADE
U-106	LIGHT POLE
U-107	LED LIGHT STRIP-CANOPY
U-108	LED LIGHT STRIP-FOUNTAIN
U-109	FOUNTAIN UPLIGHT
U-110	TREE UPLIGHT
U-111	GOBO LIGHT
U-112	LANDSCAPE DRAIN

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04-14-2023

consultant

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

REQUIRED LIGHTING PLAN

sheet number

C-10.11

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User: jordan.stringfellow
Project: $$14602 - Hero's Plaza$Project Design$Plans Assembly$C-10.11_602_lighting.dgn

LIGHTING CIRCUIT SCHEDULE

CIRCUIT #	SERVES	POWER CABLE (AWG)	CONTROL CABLE
1	MARQUEE TRANSFORMER	#2	---------
1A	MARQUEE POWER	#4	---------
2	MARQUEE UPLIGHTS	#12	DMX
3	NORTH TREE UPLIGHTS	#12	DMX
4	NORTH BOLLARDS	#12	---------
5	NORTH WALL LIGHTS	#12	---------
6	GOBO	#12	DMX
7	CANOPY STRIP LIGHT	#12	DMX
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10	CENTER TREE UPLIGHTS	#12	DMX
11A	WALL LIGHTS	#12	---------
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13	SPOTLIGHTS	#10	CAMERA, SPEAKER
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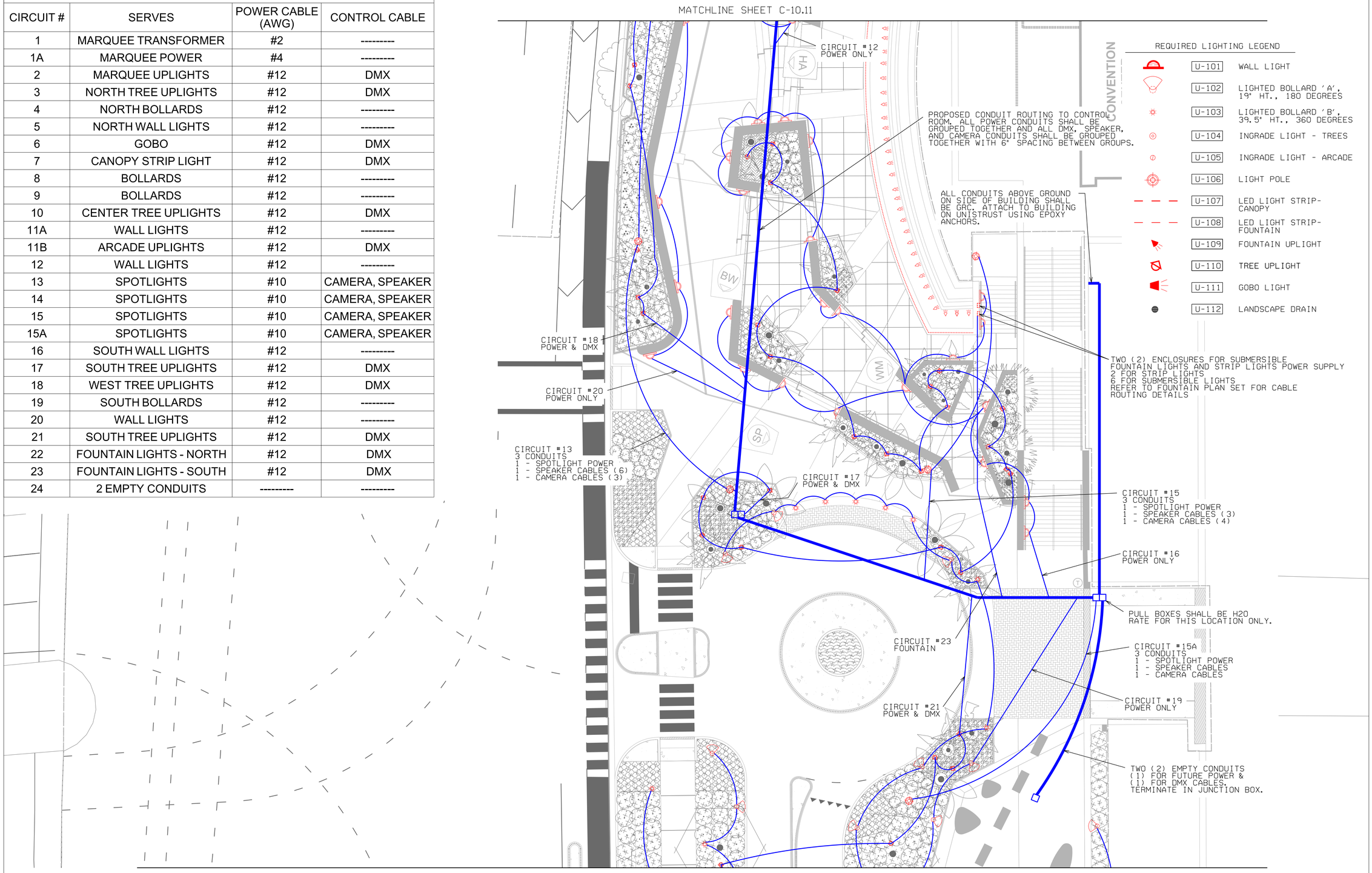
15	SPOTLIGHTS	#10	CAMERA, SPEAKER
15A	SPOTLIGHTS	#10	CAMERA, SPEAKER
16	SOUTH WALL LIGHTS	#12	---------
17	SOUTH TREE UPLIGHTS	#12	DMX
18	WEST TREE UPLIGHTS	#12	DMX
19	SOUTH BOLLARDS	#12	---------
20	WALL LIGHTS	#12	---------
21	SOUTH TREE UPLIGHTS	#12	DMX
22	FOUNTAIN LIGHTS - NORTH	#12	DMX
23	FOUNTAIN LIGHTS - SOUTH	#12	DMX
24	2 EMPTY CONDUITS	---------	---------



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04-14-2023

consultant

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

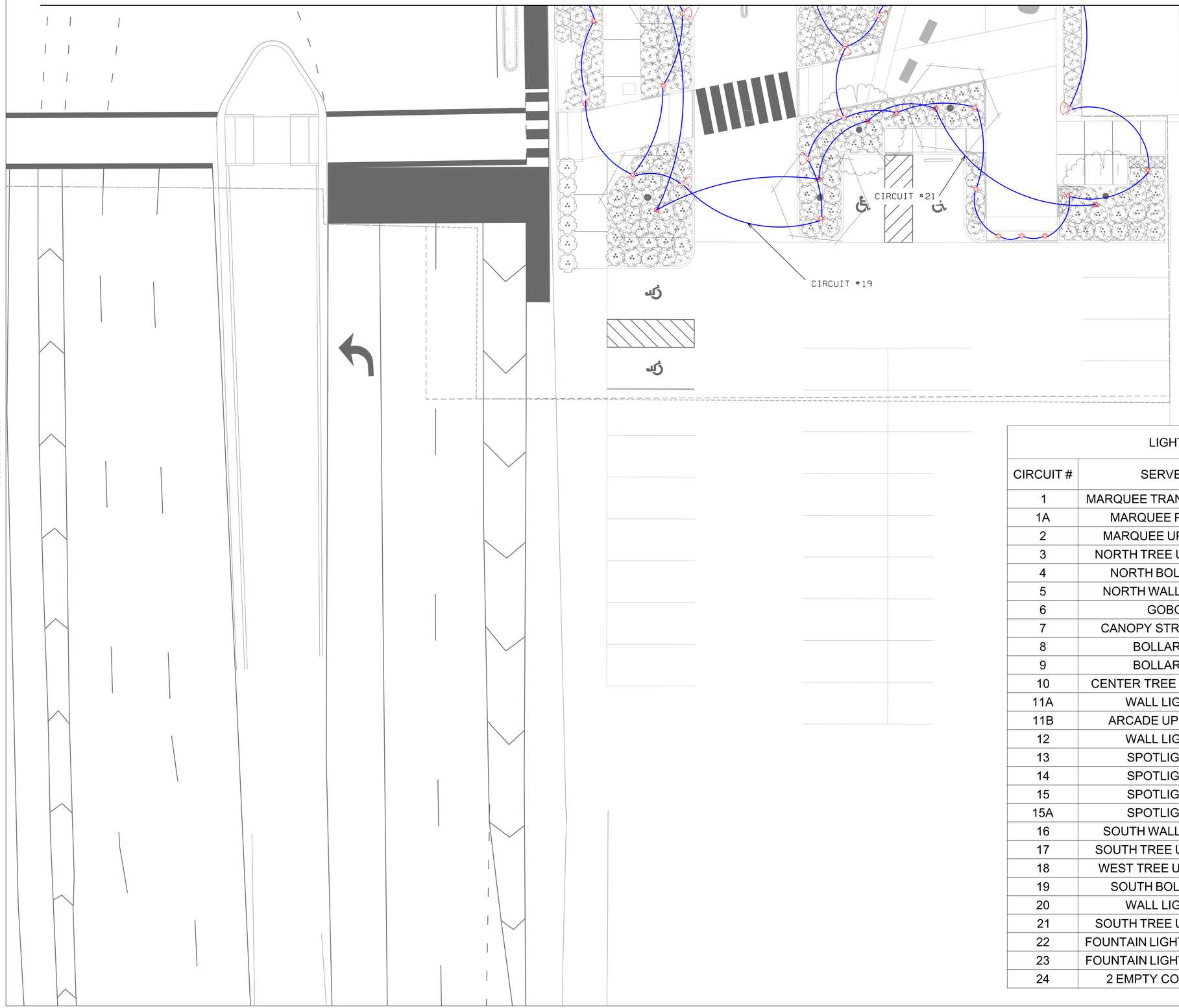
APRIL 14, 2023

sheet title

REQUIRED LIGHTING PLAN

sheet number

C-10.12



REQUIRED LIGHTING LEGEND

U-101	WALL LIGHT
U-102	LIGHTED BOLLARD 'A', 19" HT., 180 DEGREES
U-103	LIGHTED BOLLARD 'B', 39.5" HT., 360 DEGREES
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U-105	INGRADE LIGHT - ARCADE
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U-107	LED LIGHT STRIP-CANOPY
U-108	LED LIGHT STRIP-FOUNTAIN
U-109	FOUNTAIN UPLIGHT
U-110	TREE UPLIGHT
U-111	GOBO LIGHT
U-112	LANDSCAPE DRAIN

LIGHTING CIRCUIT SCHEDULE

CIRCUIT #	SERVES	POWER CABLE (AWG)	CONTROL CABLE
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1A	MARQUEE POWER	#4	---------
2	MARQUEE UPLIGHTS	#12	DMX
3	NORTH TREE UPLIGHTS	#12	DMX
4	NORTH BOLLARDS	#12	---------
5	NORTH WALL LIGHTS	#12	---------
6	GOBO	#12	DMX
7	CANOPY STRIP LIGHT	#12	DMX
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9	BOLLARDS	#12	---------
10	CENTER TREE UPLIGHTS	#12	DMX
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14	SPOTLIGHTS	#10	CAMERA, SPEAKER
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17	SOUTH TREE UPLIGHTS	#12	DMX
18	WEST TREE UPLIGHTS	#12	DMX
19	SOUTH BOLLARDS	#12	---------
20	WALL LIGHTS	#12	---------
21	SOUTH TREE UPLIGHTS	#12	DMX
22	FOUNTAIN LIGHTS - NORTH	#12	DMX
23	FOUNTAIN LIGHTS - SOUTH	#12	DMX
24	2 EMPTY CONDUITS	---------	---------

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04-14-2023

consultant

VOLKERT

revisions

north arrow + scale

N

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

REQUIRED LIGHTING PLAN

sheet number

C-10.13

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Plot Scales
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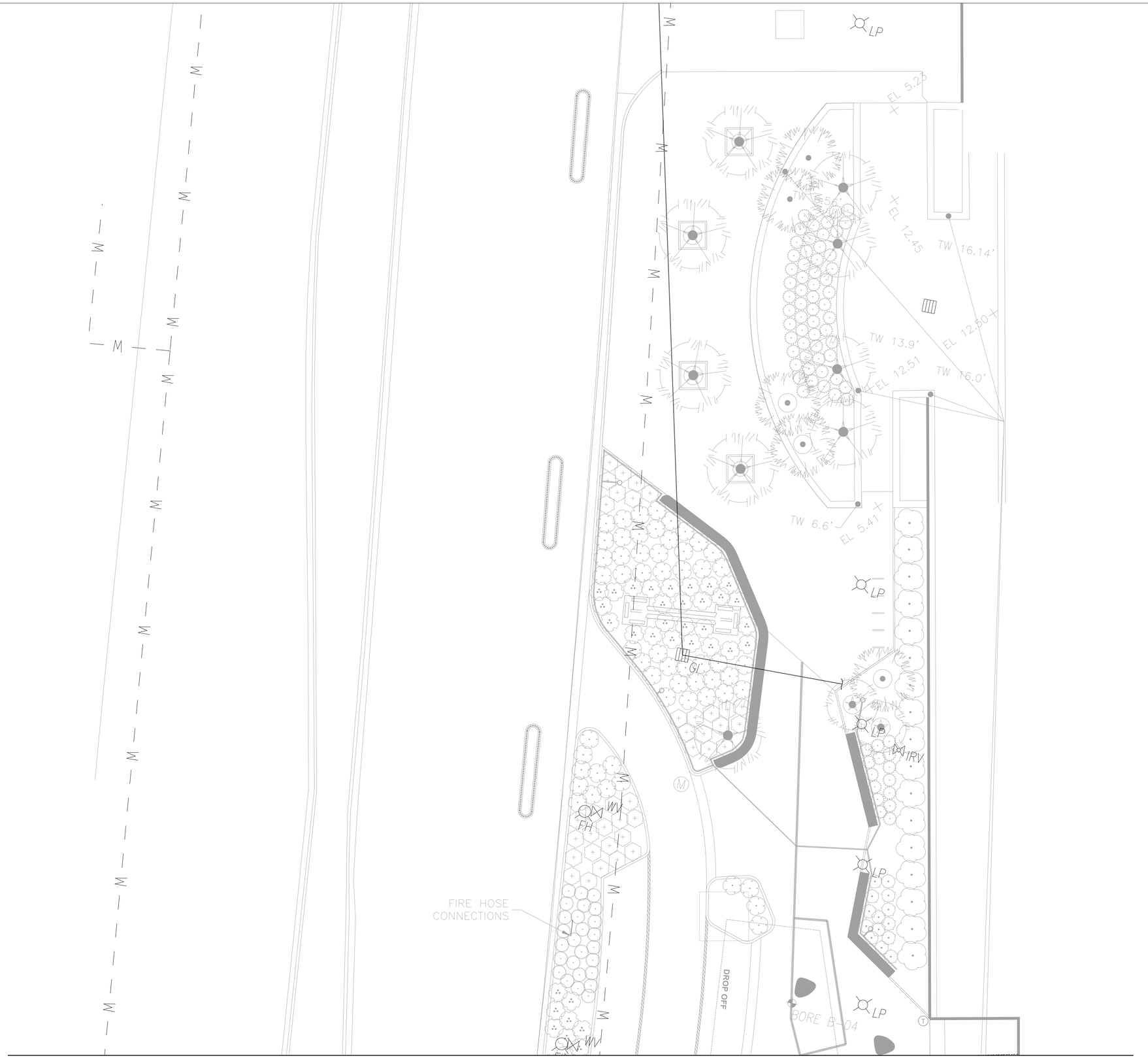
User: jordan.stringfellow
Project: 144602 - Heroes Plaza Project Design Plans Assembly\C-10.13_602_lighting.dgn



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www.tsw-design.com

seal

ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

EXISTING UTILITY SHEET

sheet number

C-11.00

MATCHLINE SHEET C-11.00

MATCHLINE SHEET C-11.02

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Atlanta, Georgia 30309
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consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

N

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

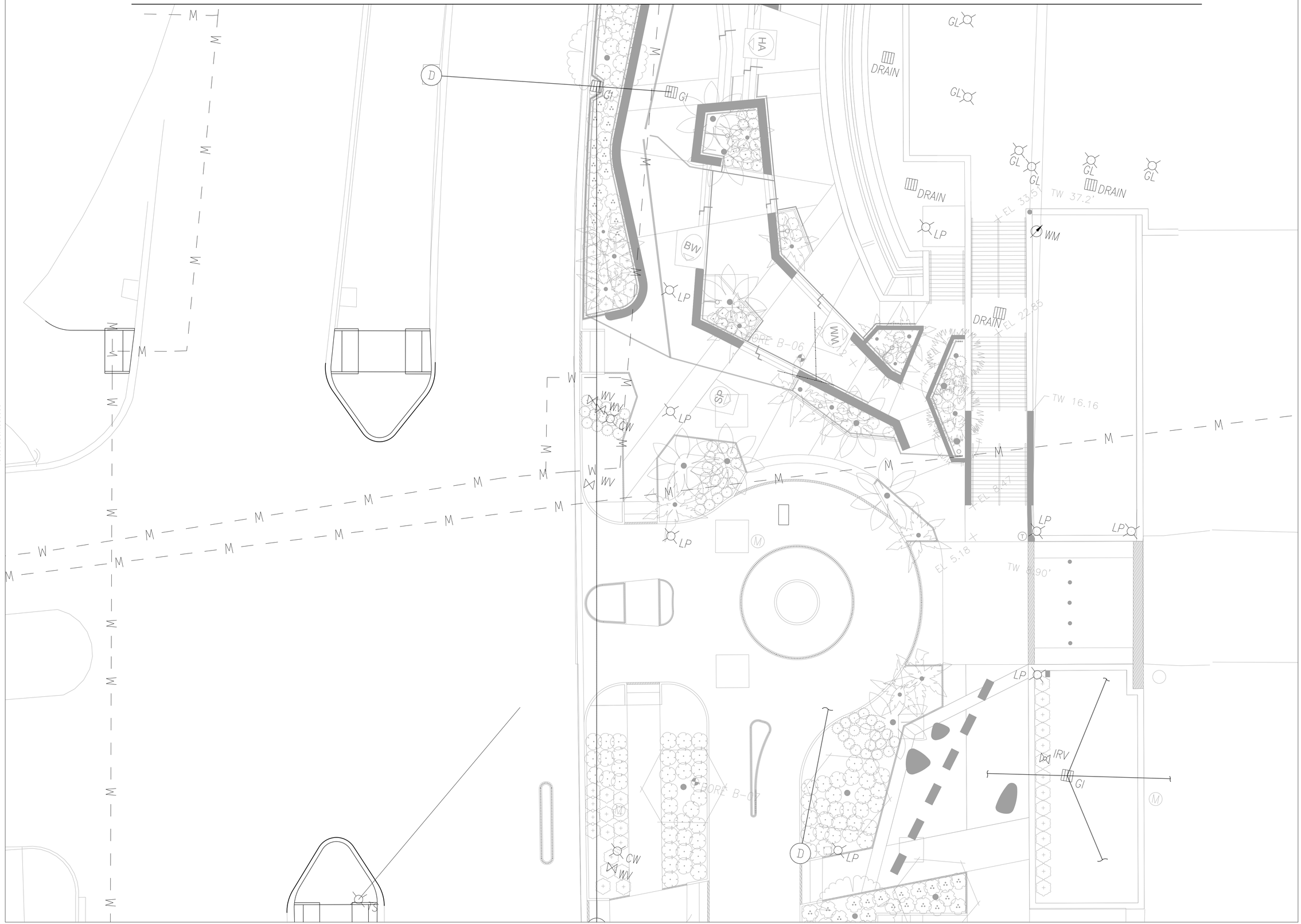
sheet title

EXISTING UTILITY SHEET

sheet number

C-11.01

MATCHLINE SHEET C-11.01



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revisions

north arrow + scale

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0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address

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251.342.1070 (EXT. 1292)

drawing information

project number: 22089
contact:
drawn by:
checked by: JHS

drawing date

APRIL 14, 2023

sheet title

EXISTING UTILITY SHEET

sheet number

C-11.02

NOTE:
CONTRACTOR SHALL INSTALL REQUIRED WATER LINE, VALVES, & FIRE HYDRANT IN ACCORDANCE WITH MAWSS STANDARD SPECIFICATIONS FOR WATER MAINS, SANITARY SEWERS AND SEWAGE PUMPING STATIONS.

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revisions

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0 5 10 15 25

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drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
UTILITY RELOCATION SHEET

sheet number
C-11.10

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Plot Scales
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User: jst_jordan.stringfellow
Project: $$114602 - Heroes Plaza$$Project Design$$Plans Assembly$$C-11.10_602_util-relocation.dgn

MATCHLINE SHEET C-11.10

NOTE:
CONTRACTOR SHALL INSTALL REQUIRED WATER LINE, VALVES, & FIRE HYDRANT IN ACCORDANCE WITH MAWSS STANDARD SPECIFICATIONS FOR WATER MAINS, SANITARY SEWERS AND SEWAGE PUMPING STATIONS.

MATCHLINE SHEET C-11.12

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seal

ALABAMA
No. 38421-E
PROFESSIONAL
ENGINEER
JORDAN HASTIE STRINGFELLOW

consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

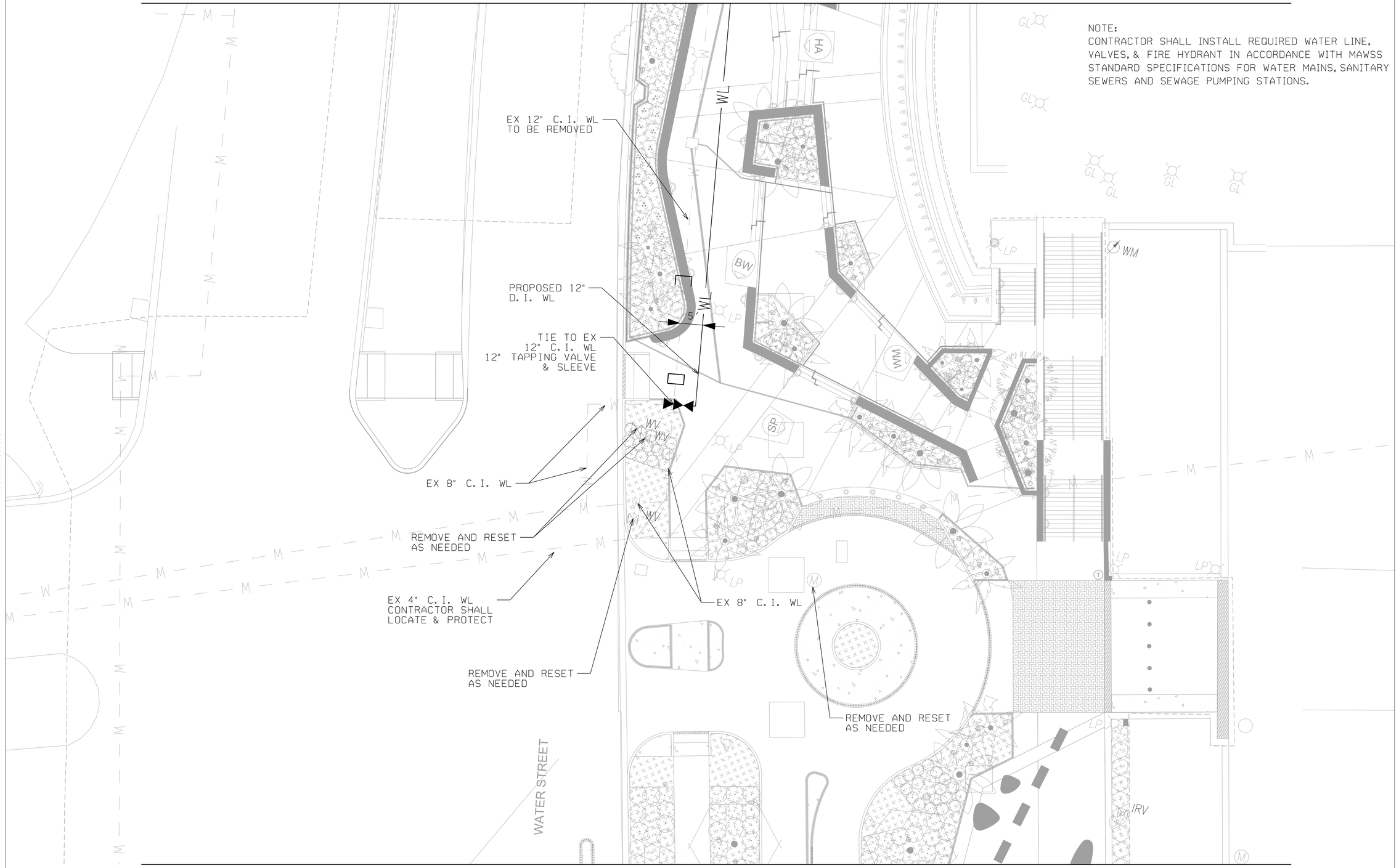
drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

sheet title
UTILITY RELOCATION SHEET

sheet number
C-11.11

MATCHLINE SHEET C-11.12



NOTE:
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MATCHLINE SHEET C-11.13

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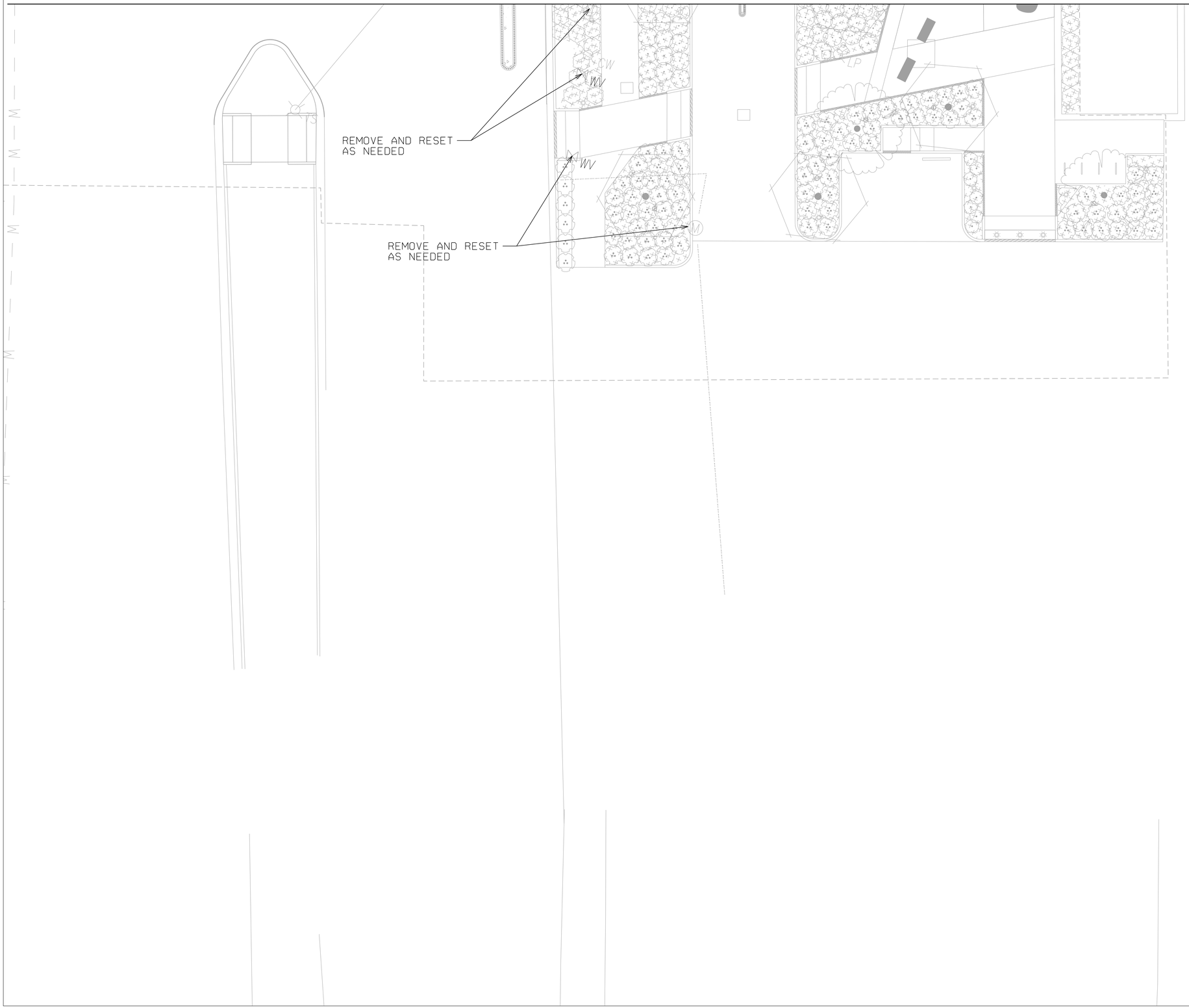
MATCHLINE SHEET C-11.12



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UTILITY RELOCATION SHEET

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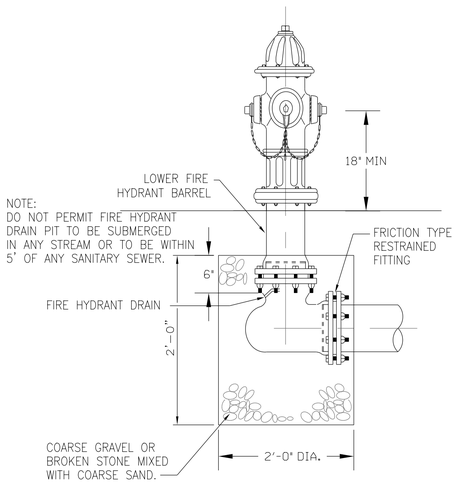
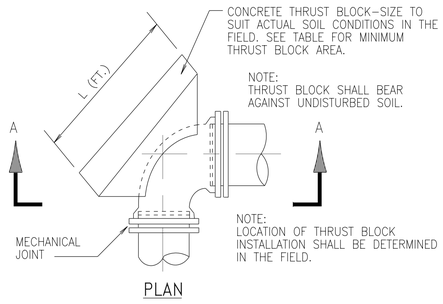
C-11.13

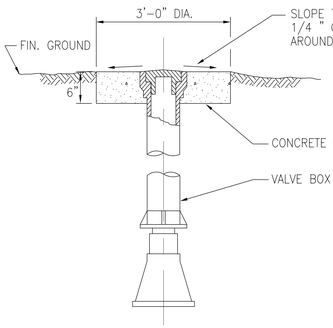
TYPICAL THRUST BLOCKS MINIMUM THRUST BLOCK AREA SQ. FT. L (FT.) X H (FT.)			
INSIDE DIA. PIPE LINE IN INCHES	90° BENDS	TEES, DEAD ENDS, OR 45° BENDS	22 ½° BENDS
6"	3.0	2.2	1.0
8"	5.5	4.0	1.5
10"	8.5	6.0	2.5
12"	12.0	9.0	3.5
16"	22.0	16.0	6.0
18"	27.0	20.0	8.0
20"	34.0	24.0	10.0
24"	48.0	34.0	14.0
30"	75.0	53.0	21.0



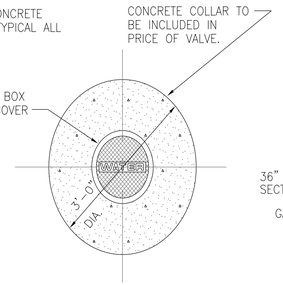
TYPICAL FIRE HYDRANT DRAIN PIT



PLAN

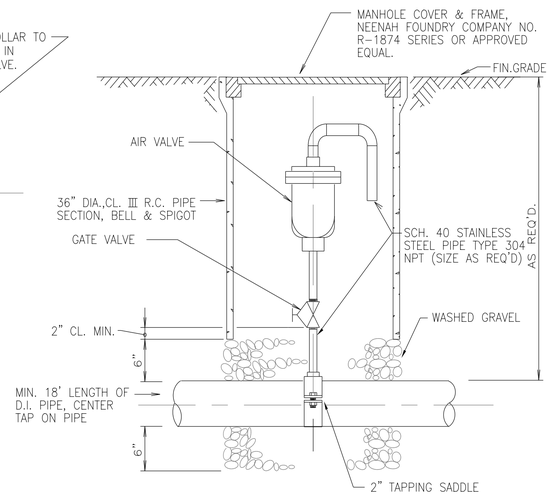


SECTION

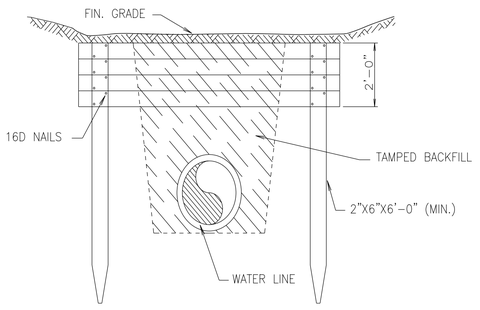


PLAN

VALVE BOX COLLAR DETAIL

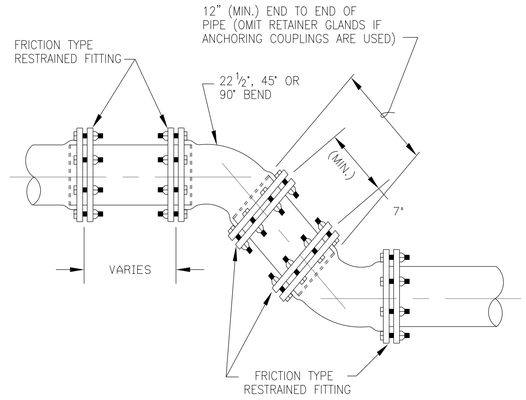


AIR RELEASE VALVE ASSEMBLY

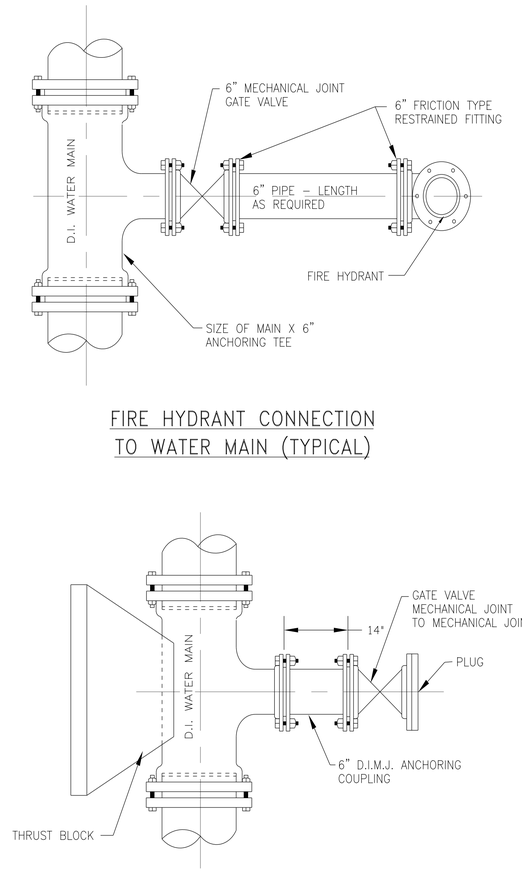


NOTE:
DITCH CHECKS SHALL EXTEND AND KEY UNDER SOIL (1'–0" MIN). ALL TIMBER SHALL BE 2" THICK ROUGH UNTREATED TIMBER.

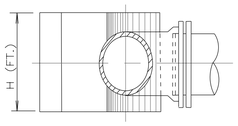
TYPICAL TIMBER DITCH CHECK



ANCHORING OF VERTICAL OR HORIZONTAL BENDS WHERE THRUST BLOCKS ARE NOT DESIRED



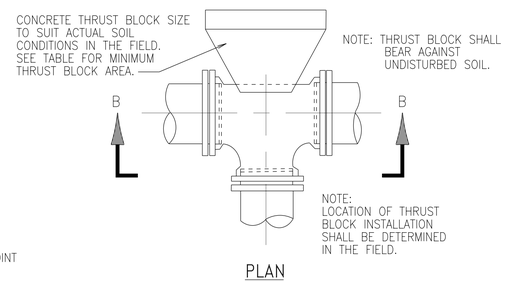
FIRE HYDRANT CONNECTION TO WATER MAIN (TYPICAL)



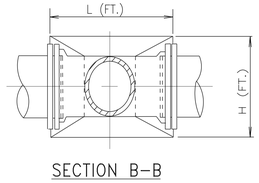
SECTION A–A

TYPICAL THRUST BLOCK DETAIL FOR BENDS

STUBOUT FOR FUTURE CONNECTION (TYPICAL)

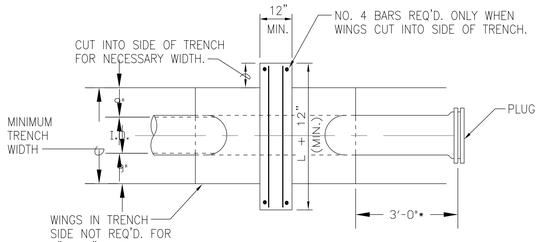


PLAN

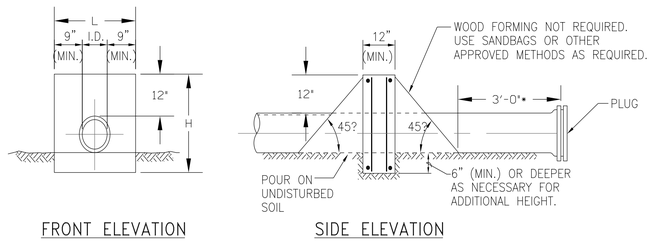


SECTION B–B

TYPICAL THRUST BLOCK DETAIL FOR TEES

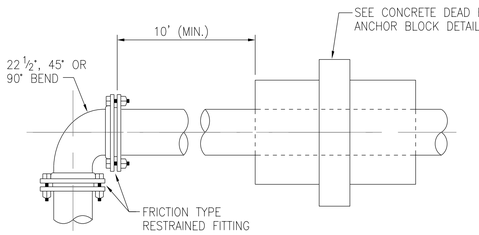


PLAN



FRONT ELEVATION SIDE ELEVATION

CONCRETE DEAD END ANCHOR BLOCK DETAILS



ANCHORAGE OF BENDS WHERE THRUST BLOCKS ARE NOT DESIRED – DEAD END ANCHORS

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consultant 04-14-2023

VOLKERT

revisions

north arrow + scale

scale: 1" = 10'-0"

0 5 10 15 25

project information

HERO PLAZA
PHASE 1

project address
1 S WATER ST.
MOBILE, AL 36609

client information
CITY OF MOBILE
P.O. BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information
project number: 22089
contact:
drawn by:
checked by: JHS

drawing date
APRIL 14, 2023

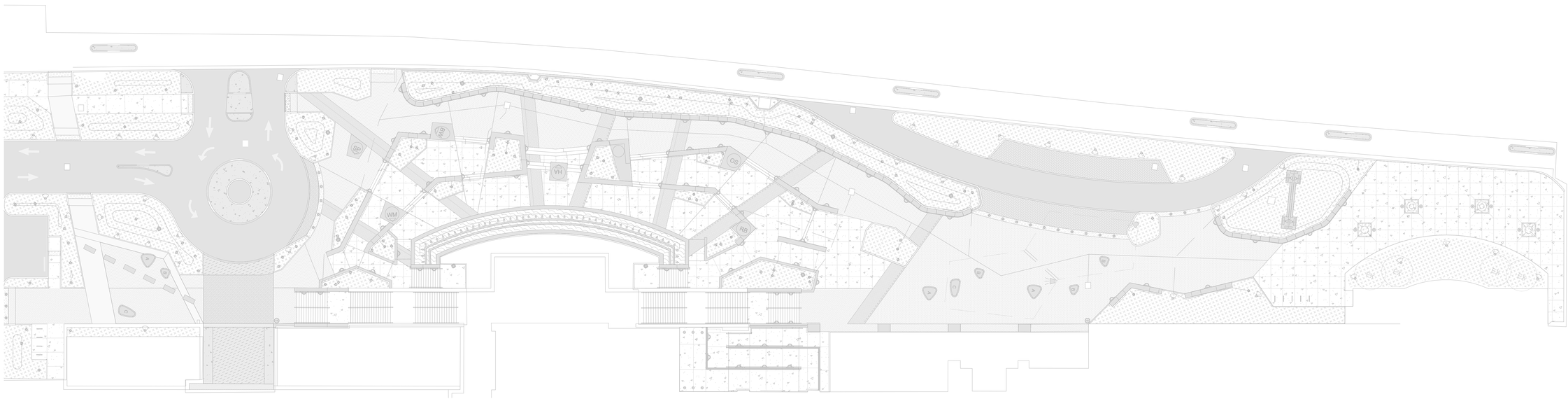
sheet title
WATERLINE CONSTRUCTION DETAILS

sheet number
C-11.14

HERO PLAZA PHASE 1

MOBILE, AL
100% CONSTRUCTION DOCUMENTS SET

STRUCTURAL SHEET LIST	
SHEET NUMBER	SHEET NAME
S0.00	COVER SHEET
S0.01	GENERAL NOTES
S0.02	SPECIAL INSPECTIONS
S0.02.1	SPECIAL INSPECTIONS
S0.02.2	SPECIAL INSPECTIONS
S0.03	GRAVITY & LATERAL LOADS
S1.10	PARTIAL PLAN - NORTH PORTION
S1.11	PARTIAL PLAN - CENTRAL PORTION
S1.12	PARTIAL PLAN - SOUTH PORTION
S2.00	FOUNDATION NOTES, SECTIONS AND DETAILS
S2.01	FOUNDATION SECTIONS AND DETAILS
S3.00	CONCRETE NOTES AND TYPICAL DETAILS
S3.01	CONCRETE DETAILS
S4.00	MASONRY NOTES AND TYPICAL DETAILS
S5.00	STEEL SECTIONS AND DETAILS



HERO PLAZA

NOTE:
THE 3D ISOMETRIC VIEWS SHOWN ON THIS SHEET ARE NOT CONSTRUCTION DETAILS AND ARE ONLY PROVIDED AS VISUAL GRAPHICS. SEE THE STRUCTURAL PLANS AND DETAILS FOR ALL STRUCTURAL REQUIREMENTS.

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LANDSCAPE ARCHITECTURE

Atlanta, GA | Tulsa, OK | Chattanooga, TN

1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

ALABAMA
REGISTERED
No. 37429
PROFESSIONAL
ENGINEER
MARTIN OCON
4-12-23

consultant

Browder + LeGuizamon and Associates, Inc. Engineers
6285 Barfield Road NE Suite 200
Atlanta, GA 30328

B+L PROJECT # 22147

revisions

No.	Description	Date
	DESIGN DEVELOPMENT PRICING SET	12/28/22
	DESIGN DEVELOPMENT SET	01/20/23
	90% CONSTRUCTION DOCUMENTS	03/03/23
	100% CONSTRUCTION DOCUMENTS	04/14/23

north arrow + scale

N

scale: 3/64" = 1'-0"

project information

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PHASE 1

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251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	B+L
drawn by:	B+L
checked by:	B+L

drawing date

APRIL 14, 2023

sheet title

COVER SHEET

sheet number

S0.00

1.00 GENERAL

1.01 STRUCTURE DESIGNED IN ACCORDANCE WITH THE FOLLOWING CODES:
- A. ICC INTERNATIONAL BUILDING CODE (IBC) 2021 WITH ALABAMA STATE AMENDMENTS
- B. ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- C. ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY

1.02 LOADS
- A. GRAVITY LOADS (SEE S0.03 SERIES)
- B. LATERAL LOADS (SEE S0.04 SERIES)

1.03 COORDINATE AND VERIFY FLOOR AND ROOF OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR ADDITIONAL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL AND MECHANICAL DRAWINGS. REFERENCE STRUCTURAL DRAWINGS FOR REQUIREMENTS AT OPENINGS.

1.04 FOR DIMENSIONS NOT SHOWN, SEE LANDSCAPE ARCHITECTURAL DRAWINGS.

1.05 SHOP DRAWING SUBMITTALS SHOULD BE TIMED BY THE CONTRACTOR AND VENDORS TO ALLOW FOR THE FOLLOWING:
- A. REVIEW BY THE CONTRACTOR PRIOR TO SENDING THE SHOP DRAWINGS TO THE ENGINEER. THIS IS REQUIRED, AS THE SHOP DRAWINGS ARE PREPARED FOR THE CONTRACTOR BY THE VENDOR, HENCE ARE IN EFFECT SHOP DRAWINGS FROM THE CONTRACTOR. AS EVIDENCE OF THIS REVIEW, THE SHOP DRAWINGS SHALL CONTAIN THE CONTRACTOR'S DATED REVIEW STAMP INDICATING THAT THE SHOP DRAWINGS HAVE BEEN REVIEWED BY THE CONTRACTOR AND SHALL CONTAIN EDITS, IN A CONSISTENT PEN COLOR OF THE CONTRACTOR'S CHOICE, TO INDICATE THAT THE CONTRACTOR HAS REVIEWED AND EDITED OR APPROVED, AS APPLIES, ALL MEMBER SIZES, QUANTITIES, DIMENSIONS, ETC. AFTER THIS CONTRACTOR REVIEW, THE SHOP DRAWINGS CAN BE SENT TO THE ENGINEER FOR REVIEW AND SUBSEQUENT RETURN TO THE CONTRACTOR.
- B. A MINIMUM OF 10 WORKING DAYS IN THE ENGINEER'S OFFICE AFTER THE CONTRACTOR'S REVIEW. CONSULT WITH THE ARCHITECT FOR TIME REQUIRED IN THE ARCHITECT'S OFFICE BEFORE AND AFTER THE ENGINEER'S REVIEW, INCLUDING SHIPPING TIME, ETC.
- C. TIME REQUIRED FOR REVISIONS TO THE SHOP DRAWINGS RESULTING FROM COMMENTS MADE ON THE SHOP DRAWINGS BY THE ENGINEER.
- D. TIME REQUIRED FOR RE-SUBMITTALS, IF NECESSARY. IF RE-SUBMITTALS ARE REQUIRED, THEY SHALL FIRST BE REVIEWED BY THE CONTRACTOR AS DISCUSSED IN ITEM A. THIS OFFICE REQUESTS RE-SUBMITTALS ONLY WHEN NECESSARY.

1.06 REVIEW OF SUBMITTALS AND/OR SHOP DRAWINGS BY THE STRUCTURAL ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS PRIOR TO SUBMITTAL TO THE STRUCTURAL ENGINEER. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS, OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO QUANTITIES, MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS.

1.07 NOTIFY THE STRUCTURAL ENGINEER IN WRITING OF CONDITIONS ENCOUNTERED IN THE FIELD CONTRADICTORY TO THOSE SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OVERALL JOB SAFETY AS WELL AS MEANS AND METHODS OF CONSTRUCTION, THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC.

1.08 CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ABOVE AND BELOW GRADE CONDITIONS INCLUDING DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION AND CONSTRUCTION.

1.09 COORDINATE STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL. NOTIFY STRUCTURAL ENGINEER OF ANY CONFLICT AND/OR OMISSION.

1.10 GENERAL NOTES DO NOT REPLACE SPECIFICATIONS.

1.11 WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.

1.12 CONTRACT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATIONS OF ACI, PCI, AISC, SJI OR OTHER STANDARDS. WHERE A CONFLICT OCCURS WITHIN THE CONTRACT DOCUMENTS, THE STRICTEST REQUIREMENT SHALL GOVERN.

1.13 ELECTRONIC DRAWING FILES WILL NOT BE PROVIDED TO THE CONTRACTOR. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.

1.14 STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR THE DESIGN OF STEEL STAIRS, HANDRAILS, CURTAIN WALL/WINDOW WALL SYSTEMS, COLD-FORMED METAL FRAMING, OR OTHER SYSTEMS NOT SHOWN IN THE STRUCTURAL DOCUMENTS. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED AS REQUIRED BY OTHER CONSULTANTS IN THE CONTRACT DOCUMENTS.

1.00 GENERAL CONT'D

1.15 IT IS EXPECTED THAT THE GENERAL CONTRACTOR IS EXPERIENCED IN THE TYPE OF CONSTRUCTION REQUIRED. THEREFORE, IT IS EXPECTED THAT THE GENERAL CONTRACTOR WILL COORDINATE THESE DRAWINGS WITH APPLICABLE ARCHITECTURAL, CIVIL, AND M/E/P DRAWINGS. THE CONSTRUCTION DOCUMENTS CONSIST OF THE ENTIRE SET OF DRAWINGS AND SPECIFICATIONS FROM ALL DISCIPLINES. THIS COORDINATION SHALL BE PERFORMED PRIOR TO ORDERING AND/OR FABRICATION OF ANY MATERIAL AND/OR THE CONSTRUCTION OF ANY ELEMENT.

1.17 SPECIAL INSPECTIONS SHALL BE IN ACCORDANCE WITH THE BUILDING CODE AND SHALL BE MADE BY A QUALIFIED PERSON APPROVED BY THE BUILDING OFFICIAL. SPECIAL INSPECTOR SHALL OBSERVE WORK FOR CONFORMANCE WITH APPROVED DRAWINGS AND SPECIFICATIONS. SEE THE SPECIAL INSPECTIONS LISTS ON S0.02 THRU S0.02.2.

1.18 SPECIAL INSPECTION REPORTS (SEE GENERAL NOTE 1.17) SHALL BE FURNISHED TO THE BUILDING OFFICIAL, ARCHITECT AND THE STRUCTURAL ENGINEER. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR, AND IF NOT CORRECTED, SHALL BE REPORTED TO THE BUILDING OFFICIAL, ARCHITECT AND STRUCTURAL ENGINEER.

1.19 THE THRESHOLD INSPECTOR MUST MAINTAIN A RUNNING LOG OF DEFICIENCIES. BEFORE PROJECT CLOSEOUT, ALL DEFICIENCIES MUST BE CORRECTED AND THE CORRECTIONS DOCUMENTED.

1.20 THRESHOLD INSPECTOR SHALL SUBMIT A FINAL REPORT STATING THAT THE STRUCTURAL WORK WAS, TO BEST OF THEIR KNOWLEDGE, PERFORMED IN ACCORDANCE WITH THE APPROVED DRAWINGS, SPECIFICATIONS AND THE BUILDING CODE.

1.21 THE STRUCTURE IS STABLE ONLY IN ITS COMPLETED FORM. TEMPORARY SUPPORTS REQUIRED FOR STABILITY DURING ALL INTERMEDIATE STAGES OF CONSTRUCTION SHALL BE DESIGNED, FURNISHED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTABILITY ANALYSIS AND ERECTION PROCEDURES, INCLUDING DESIGN AND ERECTION OF FALSEWORK, TEMPORARY BRACING, ETC.

1.22 CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DEPRESSED SLAB LOCATIONS AND EXTENTS, RECESSED ITEMS, CURB LOCATIONS, AND CMU WALL LOCATIONS. ARCHITECT OR ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY OR OMISSION.

1.23 CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING BOTTOM OF STRUCTURAL FRAMING AND TOP OF SLAB SLOPE.

1.24 STRUCTURAL DOCUMENTS ARE BEING RELEASED PRIOR TO DOCUMENTS BY OTHER DISCIPLINES (ARCHITECTURAL, MECHANICAL, ETC.). CONTRACTOR SHALL COORDINATE STRUCTURAL DOCUMENTS WITH OTHER PORTIONS OF THE CONTRACT DOCUMENTS AS THEY ARE RELEASED. ARCHITECT/ STRUCTURAL ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY OR OMISSION.

1.26 EACH RFI ISSUED TO THE DESIGN TEAM WHICH HAS A CORRESPONDING ANSWER ALREADY ON THE CONTRACT DOCUMENTS WILL RESULT IN A $300/RFI CREDIT TO BE ISSUED TO THE OWNER.

1.27 ALL REQUESTS FOR CHANGE AND REQUESTS FOR FIX (EVEN IF LABELED AS RFIS) MUST BE SUBMITTED THRU THE OWNER. THE OWNER WILL THEN CONSULT WITH THE DESIGN TEAM TO ASSESS THE REQUIRED SCHEDULE AND REMUNERATION FOR TIME SPENT, INCLUDING EXPENSES TO THE OWNER.

1.28 GC & ALL SUBS TO REVIEW ALL DWGS AND SUBMIT A CONSOLIDATED CLARIFICATION LIST BEFORE STARTING CONSTRUCTION FOR INCORPORATION INTO A CONSOLIDATED CONSTRUCTION SET TO MINIMIZE RFIS. CONSTRUCTION SCHEDULE SHOULD BE ACCOUNTED FOR AT THIS TIME TO ELIMINATE DELAYS.

1.29 GC MUST REVIEW ALL DRAWINGS AND EXISTING CONDITIONS AHEAD OF SCHEDULE. SCHEDULE TO PROVIDE AMPLE RESPONSE TIME TO FOR THE DESIGN TEAM.

1.30 A MINIMUM OF 5 WORKING DAYS IN THE ENGINEERS OFFICE SHOULD BE ALLOWED FOR RFIS AND A MINIMUM OF 10 WORKING DAYS FOR A REQUEST FOR CHANGE.

1.31 SCHEDULE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

1.32 ALL STRUCTURAL SIGNED AND SEALED PLANS THAT TO THE BEST OF THE ARCHITECT'S OR ENGINEER'S KNOWLEDGE THE PLANS AND SPECIFICATIONS COMPLY WITH THE MINIMUM BUILDING CODES.

1.33 STRUCTURAL INSPECTION PLANS PREPARED BY AND SIGNED BY ENGINEER/ARCHITECT OF RECORD, REVIEWED AND APPROVED BY THE SPECIAL INSPECTOR.

1.34 SHORING AND RESHORING PROCEDURES, PLANS AND DETAILS, REVIEWED, APPROVED AND SIGNED BY A SPECIAL INSPECTOR. IN THE EVENT SHORING AND RESHORING NOT REQUIRED, PROVIDE LETTER PREPARED BY AND SIGNED BY THE ENGINEER/ARCHITECT OF RECORD, REVIEWED AND APPROVED BY THE SPECIAL INSPECTOR TO THAT EFFECT.

2.00 FOUNDATION NOTES (SEE S2.00)

3.00 CONCRETE NOTES (SEE S3.00)

4.00 MASONRY NOTES (SEE S4.00)

5.00 STEEL NOTES (SEE S5.00)

DEFERRED SUBMITTALS (2018 IBC 107.3.4.1)

DEFERRED SUBMITTALS TO INCLUDE:
1. FIRE SUPPRESSION
2. FIRE ALARM
3. IRRIGATION
4. LOW VOLTAGE SYSTEMS
5. ALUMINUM GLAZING, MULLIONS, GLASSES AND LOUVERS
6. PRE-FAB CANOPIES AND CONNECTIONS
7. HANDRAILS/GLASS-RAILS

LISTED ITEMS SHALL BE SUBMITTED AS SHOP DRAWINGS, STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

11.00 QUALITY ASSURANCE PROGRAM

11.01 A CONCRETE TESTING AGENCY SHALL PERFORM THE FOLLOWING FUNCTIONS:
1. REVIEW CONCRETE MIX DESIGNS.
2. SAMPLE CONCRETE AT THE PROJECT SITE AND PREPARE COMPRESSIVE STRENGTH TEST SPECIMENS, TEST FOR SLUMP, AIR CONTENT, TEMPERATURE AND UNIT WEIGHT. TAKE A TEST SPECIMEN FOR EACH CONCRETE MIX DESIGN ON EACH DAY IN WHICH CONCRETE OF THAT MIX DESIGN IS PLACED.
3. PERFORM COMPRESSIVE TESTING AT 7 DAYS, TWO AT 28 DAYS WITH ONE TEST SPECIMEN HELD IN RESERVE.
4. SLUMP TOLERANCE SHALL BE 4", PLUS OR MINUS 1".
5. ALL CONCRETE EXPOSED TO FREEZING AND THAWING (EXTERIOR CONCRETE) SHALL HAVE AN AIR CONTENT OF 4.5% TO 7.5%.

11.02 A TESTING AGENCY SHALL PERFORM THE FOLLOWING FUNCTIONS:
1. VERIFICATION OF WELDER'S QUALIFICATIONS AND WELDING PROCEDURES AND MATERIALS.
2. VISUAL AND DIMENSIONAL WELD EXAMINATION, INCLUDING WELDING OF DECKING.
3. BOLT INSPECTION IN ACCORDANCE WITH "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS."

11.03 ALL INSPECTIONS, TESTINGS, AND VERIFICATIONS SHALL BE IN ACCORDANCE WITH FBC SECTION 1704 AND REQUIRED SPECIAL INSPECTION TABLE ON DRAWING S0.02.

ABBREVIATIONS

	@	At	I	I.F.	Inside Face
	&	And		IN	Inch
		Centerline		INFO.	Information
		Diameter		INT.	Interior
	'	Feet		ISO	Isometric View
	"	Inch, Ditto (same as above)	J	JST.	Joist
	#	Number, Pound (weight)		JT.	Joint
		Plate	K	K	Kip, Kilopound (1000 pounds)
	±	Plus/Minus		KLF	Kips per Linear Foot
A	A.B.	Anchor Bolt	L	L	Angle, Length
	ABV.	Above		LAB	Laboratory
	ACI	American Concrete Institute		LB	Pound (weight)
	ADD'L	Additional		LL	Live Load
	AISC	American Institute of Steel		LONG.	Longitudinal
	ALT.	Alternate		LVL.	Level
	APPROX.	Approximate		L.W.	Long Way
	ARCH.	Architect, Architectural		LW(C)	Light Weight (Concrete)
	ASCE	American Society of Civil Engineers	M	M	Bending Moment
	ASTM	American Society for Testing and Materials		MAX.	Maximum
				MB	Miscellaneous Rebar
				MC	Moment Connection
	AVG.	Average		MECH.	Mechanical
	AWS	American Welding Society		M/E/P	Mechanical/Electrical/Plumbing
B	B/O	Bottom of		MEZZ.	Mezzanine
	B/W	Between		MFR.	Manufacture, Manufacturer
	BLDG	Building		MIN.	Minimum
	BM	Beam		MISC.	Miscellaneous
	BOTT.	Bottom		MK.	Mark
	BRDG.	Bridge, Bridging		MTL	Metal
	BRG.	Bearing		MWRS	Main Wind-Force Resisting System
	BT.	Bent			
C	C	Channel	N	N.T.S.	Not To Scale
	C/C	Center to Center		N.F.	Near Face
	CAP.	Capacity		NW(C)	Normal Weight (Concrete)
	C.I.P.	Cast-in-Place	O	O.C.	On Center
	C.J.	Control Joint		O.F.	Outside Face
	CL.	Clear		O.M.R.F.	Ordinary Moment-Resistance Frame
	CMU	Concrete Masonry Unit			
	COEF.	Coefficient		OPNG.	Opening
	COL.	Column		OPP.	Opposite
	CONC.	Concrete	P	PE	Professional Engineer
	CONN.	Connection		P.E.B.	Pre-Engineered Building
	CONSTR.	Construction		P.E.J.	Premoulded Expansion Joint
	CONT.	Continuous, Continue		PERP	Perpendicular
	CORR.	Corridor		P.J.F.	Preformed Joint Filler
	CTR.	Center		PL.	Plate
	CU.YD.	Cubic Yard		PLF	Pounds per Linear Foot
D	D	Depth		PREFAB.	Prefabricated
	DBA.	Deformed Bar Anchor		PSF	Pounds per Square Foot
	DEG.	Degree		PSI	Pounds per Square Inch
	DEMO	Demolition		PT	Post-Tensioned, Pressure Treated
	DET.	Detail			
	DIA.	Diameter	Q	QTY	Quantity
	DIAG.	Diagonal	R	R	Radius
	DIM.	Dimension		REBAR	Reinforcing Bar
	DL	Dead Load		REF.	Reference
	DWG(s)	Drawing(s)		REINF.	Reinforcement, Reinforce
	DWL.	Dowel		REQ'D	Required
E	EA.	Each	S	SCHED.	Schedule
	E.B.	Expansion Bolt		SEC.	Section
	ECC.	Eccentric		SF	Square Foot
	E.E.	Each End		SHT.	Sheet
	E.F.	Each Face		SIM.	Similar
	EIFS	Exterior Insulation and Finish		S.M.R.F.	Special Moment-Resistance Frame
	E.J.	Expansion Joint			
	EL.	Elevation		S.O.G.	Slab on Grade
	ENG.	Engineer		SPECS	Specifications
	EQ.	Equal		SQ.	Square
	EQUIP.	Equipment		STD.	Standard
	E.S.	Each Side		STGR.	Stagger
	E.W.	Each Way		STIFF.	Stiffener
	EXP.	Expansion		STL.	Steel
	EXT.	Exterior		STIR.	Stirrup
F	FB.	Flat Bar		STR.	Structural, Straight
	F.F.	Far Face		SUB.	Subcontractor
	FFE	Finished Floor Elevation		S.W.	Short Way
	FIN.	Finish, Finished		SYM.	Symmetrical
	FL.	Floor	T	T/O	Top of
	FND.	Foundation		T&B	Top and Bottom
	FRM.	Frame		TEMP.	Temperature, Temporary
	FT	Foot, Feet		THK.	Thick, Thickness
	FTG	Footing		THRU	Through
G	GA	Gauge		TOL.	Tolerance
	GALV.	Galvanized		TYP.	Typical
	G.C.	General Contractor	U	U.N.O.	Unless Noted Otherwise
	GEN.	General	V	V	Velocity
	GR.	Grade, Ground		VERT.	Vertical
	GYP. BD.	Gypsum Board	W	W	Width, Wide Flange
H	H	Height		w/	With
	HC	Hollow Core		w/o	Without
	HK.	Hook		WT.	Weight
	HOR.	Horizontal		W.W.F.	Welded Wire Fabric
	H.S.	Headed Stud	NOTE: ABBREVIATIONS MAY BE SHOWN WITH OR WITHOUT PERIODS (I.E., W.W.F. OR WWF)		
	HVAC	Heating, Ventilating & Air			

N

NORTH ARROW LEGEND:
- GRAY ARROW AND "N" INDICATE TRUE NORTH
- BLACK ARROW INDICATES PROJECT NORTH

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Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

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consultant

Browder + LeGuizamon and Associates, Inc. Engineers
6285 Barfield Road NE Suite 200
Atlanta, GA 30328
B+L PROJECT # 22147

revisions

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	DESIGN DEVELOPMENT PRICING SET	12/28/22
	DESIGN DEVELOPMENT SET	01/20/23
	90% CONSTRUCTION DOCUMENTS	03/03/23
	100% CONSTRUCTION DOCUMENTS	04/14/23

north arrow + scale

N

scale: 1:1

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
PO BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	B+L
drawn by:	B+L
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APRIL 14, 2023

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GENERAL NOTES

sheet number

S0.01

STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS PER IBC

1. SPECIAL INSPECTIONS / TESTING -

   "SPECIAL STRUCTURAL INSPECTIONS" ARE NOT TO BE CONFUSED WITH, NOR RELIEVE THE OWNER OR OWNER'S AGENT FROM THE JURISDICTION BUILDING DEPARTMENT INSPECTIONS REQUIRED BY IBC SECTION 110. SPECIAL INSPECTIONS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE CONTRACT DOCUMENTS. MEANS AND METHODS AND JOBSITE SAFETY ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL TESTING REQUIREMENTS.

2. REPORTING FOR SPECIAL INSPECTION -

   THE SPECIAL INSPECTOR(S) SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INTERIM INSPECTION REPORTS TO THE JURISDICTION BUILDING DEPARTMENT AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AT A FREQUENCY AGREED UPON BY THE DESIGN PROFESSIONAL AND THE JURISDICTION BUILDING DEPARTMENT PRIOR TO THE START OF WORK. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE JURISDICTION BUILDING DEPARTMENT AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO COMPLETION OF THAT PHASE OF WORK. A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTIONS OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED TO THE JURISDICTION BUILDING DEPARTMENT AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AT THE CONCLUSION OF THE PROJECT. FREQUENCY OF INTERIM REPORT SUBMITTALS TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE:

   _____ WEEKLY _____ BI-WEEKLY _____ MONTHLY OTHER; SPECIFY: _____

   FREQUENCY OF INTERIM REPORT SUBMITTALS TO THE JURISDICTION BUILDING DEPARTMENT:

   _____ MONTHLY _____ BI-MONTHLY _____ UPON COMPLETION OTHER; SPECIFY: _____

3. REFER TO IBC SECTION 1705 AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING CONSTRUCTION DOCUMENTS FOR ADDITIONAL NON-STRUCTURAL SPECIAL INSPECTION ITEMS.

4. ANY FABRICATOR NEEDS TO BE APPROVED BY THE JURISDICTION BUILDING DEPARTMENT OR BE CERTIFIED BY AN INDUSTRY RECOGNIZED AGENCY QUALIFIED FOR SUCH CERTIFICATION. CERTIFICATION OF FABRICATORS ARE TO BE PROVIDED TO THE STRUCTURAL ENGINEER. THE SPECIAL INSPECTION ITEMS CONTAINED HEREIN ARE REQUIRED FOR ALL NON-CERTIFIED FABRICATORS

5. DEFINITION OF "PERIODIC" AND "CONTINUOUS" SPECIAL INSPECTIONS:
   CONTINUOUS: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.

   PERIODIC: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.

   WHERE "PERIODIC" SPECIAL INSPECTION IS REQUIRED, "PART-TIME" OR "INTERMITTEN" MEANS THAT INSPECTION OF THE TASK NEEDS TO BE PERFORMED FROM TIME TO TIME DURING THE PROGRESS OF THE TASK. THE PERIOD OF TIME BETWEEN INSPECTIONS VARIES GREATLY FOR DIFFERENT TYPES OF WORK DEPENDING ON THE TYPE OF INSPECTION DONE.

   THE PERIOD OF TIME BETWEEN INSPECTIONS ALSO DEPENDS ON THE PACE OF THE CONSTRUCTION, THE NUMBER OF WORKERS, AND THE QUALITY OF THE WORKMANSHIP, AND OTHER FACTORS.

   IT IS THE RESPONSIBILITY OF THE SPECIAL INSPECTOR TO PROVIDE INSPECTIONS AT AN APPROPRIATE FREQUENCY AND AT APPROPRIATE TIMES DURING CONSTRUCTION. THE INSPECTOR MUST HAVE ADEQUATE EXPERIENCE AND EXHIBIT GOOD JUDGEMENT IN DETERMINING THE FREQUENCY AND TIMING OF INSPECTIONS.

SPECIAL INSPECTIONS OF SEISMIC FORCE RESISTING AND DESIGNATED SYSTEMS

REQ. Y/N	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION: CONTINUOUS DURING TASK LISTED	FREQUENCY OF INSPECTION: PERIODICALLY DURING TASK LISTED	REFERENCE: IBC SECTION
	1. STRUCTURAL STEEL: (SDC B OR C WITH R>3 OR CANTILEVER COLUMNS, AND ALL SDC D, E, OR F STRUCTURES.)			
Y	a. SEISMIC-FORCE-RESISTING SYSTEM: SPECIAL INSPECTIONS OF STRUCTURAL STEEL IN THE SEISMIC-FORCE-RESISTING SYSTEMS OF BUILDING AND STRUCTURES SHALL BE PERFORMED IN ACCORDANCE WITH THE QUALITY ASSURANCE REQUIREMENTS OF AISC 341.	REFER TO SPECIAL INSPECTION AND VERIFICATION OF STEEL SEISMIC FORCE RESISTANCE SYSTEMS TABLE.		1705.12.1.1
Y	b. STRUCTURAL STEEL ELEMENTS: SPECIAL INSPECTIONS OF STRUCTURAL STEEL ELEMENTS IN THE SEISMIC-FORCE-RESISTING SYSTEMS OF BUILDINGS AND STRUCTURES OTHER THAN THOSE COVERED ABOVE, INCLUDING STRUTS, COLLECTORS, CHORDS, AND FOUNDATION ELEMENTS SHALL BE PERFORMED IN ACCORDANCE WITH THE QUALITY ASSURANCE REQUIREMENTS OF AISC 341.	REFER TO SPECIAL INSPECTION AND VERIFICATION OF STEEL SEISMIC FORCE RESISTANCE SYSTEMS TABLE.		1705.12.1.2
	2. STRUCTURAL WOOD: (SDC C, D, E, OR F)			
Y	a. FIELD GLUING OPERATIONS OF ELEMENTS IN THE SEISMIC-FORCE-RESISTING SYSTEM.	X	----	1705.12.2
Y	b. NAILING BOLTING, ANCHORING, AND OTHER FASTENING OF ELEMENTS OF THE SEISMIC-FORCE-RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR PANELS, AND HOLD DOWNS.	----	X	1705.12.2
	3. COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION: (SDC C, D, E, OR F)			
Y	a. WELDING OPERATIONS OF ELEMENTS OF THE SEISMIC-FORCE-RESISTING SYSTEM.	----	X	1705.12.3
Y	b. SCREW ATTACHMENTS, BOLTING, ANCHORING, AND OTHER FASTENING OF ELEMENTS OF THE SEISMIC-FORCE-RESISTING SYSTEM, INCLUDING SHEAR WALLS, BRACES, DIAPHRAGMS, COLLECTORS (DRAG STRUTS), AND HOLD DOWNS.	----	X	1705.12.3
	4. COLD-FORMED STEEL SPECIAL BOLTED MOMENT FRAMES (SDC D, E, OR F)			
Y	a. INSTALLATION OF COLD-FORMED STEEL SPECIAL COLTED MOMENT FRAMES IN THE SEISMIC FORCE-RESISTANCE SYSTEMS OF STRUCTURES.	----	X	1705.12.9

SPECIAL INSPECTIONS AND TESTS OF SOILS

REQ. Y/N	VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION: CONTINUOUS DURING TASK LISTED	FREQUENCY OF INSPECTION: PERIODICALLY DURING TASK LISTED	REFERENCE: IBC SECTION
Y	1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	----	X	1705.6
Y	2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	----	X	1705.6
Y	3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	----	X	1705.6
Y	4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	----	1705.6
Y	5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY.	----	X	1705.6

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scale: 3/4" = 1'-0"

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251.342.1070 (EXT. 1292)

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SPECIAL INSPECTIONS

sheet number

S0.02

SPECIAL INSPECTIONS AND VERIFICATION OF STEEL CONSTRUCTION

REQ. Y/N	VERIFICATION AND INSPECTION TASK	TYPE OF INSPECTION: QUALITY CONTROL TASK	TYPE OF INSPECTION: QUALITY ASSURANCE TASK	REFERENCE
	1. INSPECTION TASKS PRIOR TO WELDING:			AISC 360 TABLE N5.4-1
Y	a. WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE.	P	P	
Y	b. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	P	
Y	c. MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O	
Y	d. WELDER IDENTIFICATION SYSTEM.	O	O	
Y	e. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY).	O	O	
	1) JOINT PREPARATION.			
	2) DIMENSIONS (ALIGNMENT, ROOT FACE, BEVEL)			
	3) CLEANLINESS (CONDITION OF STEEL SURFACES)			
	4) TACKING (TACK WELD QUALITY AND LOCATION)			
	5) BACKING TYPE AND FIT (IF APPLICABLE)			
Y	f. CONFIGURATION AND FINISH OF ACCESS HOLES.	O	O	
Y	g. FIT-UP OF FILLET WELDS.	O	O	
	1) DIMENSIONS (ALIGNMENT, GAPS AT ROOT)			
	2) CLEANLINESS (CONDITION OF STEEL SURFACES)			
	3) TACKING (TACK WELD QUALITY AND LOCATION)			
Y	h. CHECK WELDING EQUIPMENT.	O	----	
	2. INSPECTION TASKS DURING WELDING:			AISC 360 TABLE N5.4-2
Y	a. USE OF QUALIFIED WELDERS.	O	O	
Y	b. CONTROL AND HANDLING OF WELDING CONSUMABLES.	O	O	
	1) PACKAGING			
	2) EXPOSURE CONTROL			
Y	c. NO WELDING OVER CRACKED TACK WELDS.	O	O	
Y	d. ENVIRONMENT CONDITIONS.	O	O	
	1) WIND SPEED WITHIN LIMITS			
	2) PRECIPITATION AND TEMPERATURE			
Y	e. WPS FOLLOWED.	O	O	
	1) SETTINGS ON WELDING EQUIPMENT			
	2) TRAVEL SPEED			
	3) SELECTED WELDING MATERIALS			
	4) SHIELDING GAS TYPE/FLOW RATE			
	5) PREHEAT APPLIED			
	6) INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)			
	7) PROPER POSITION (F, V, H, OH)			
Y	f. WELDING TECHNIQUES.	O	O	
	1) INTERPASS AND FINAL CLEANING.			
	2) EACH PASS WITHIN PROFILE LIMITATIONS.			
	3) EACH PASS MEETS QUALITY REQUIREMENTS.			

O: ITEMS NEED TO BE OBSERVED ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

P: ITEMS NEED TO BE PERFORMED FOR EACH WELD JOINT OR MEMBER.

SPECIAL INSPECTIONS AND VERIFICATION OF STEEL CONSTRUCTION

REQ. Y/N	VERIFICATION AND INSPECTION TASK	TYPE OF INSPECTION: QUALITY CONTROL TASK	TYPE OF INSPECTION: QUALITY ASSURANCE TASK	REFERENCE
	3. INSPECTION TASKS AFTER WELDING:			AISC 360 TABLE N5.4-3
Y	a. WELDS CLEANED	O	O	
Y	b. SIZE, LENGTH, AND LOCATION OF WELDS.	P	P	
Y	c. WELDS MEET VISUAL ACCEPTANCE CRITERIA.	P	P	
	1) CRACK PROHIBITION			
	2) WELD/BASE-METAL FUSION			
	3) CRATER CROSS SECTION			
	4) WELD PROFILES			
	5) WELD SIZE			
	6) UNDERCUT			
	7) POROSITY			
Y	d. ARC STRIKES.	P	P	
Y	e. k-AREA.	P	P	
Y	f. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED).	P	P	
Y	g. REPAIR ACTIVITIES.	P	P	
Y	h. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER.	P	P	
	4. INSPECTION TASKS PRIOR TO BOLTING:			AISC 360 TABLE N5.6-1
Y	a. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	
Y	b. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS.	O	O	
Y	c. PROPER FASTENERS SELECTED FOR THE JOINT DETAIL.	O	O	
	1) GRADE			
	2) TYPE			
	3) BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE			
Y	d. PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL.	O	O	
Y	e. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS.	O	O	
Y	f. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED.	P	O	
Y	g. PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS.	O	O	
	5. INSPECTION TASKS DURING BOLTING:			AISC 360 TABLE N5.6-2
Y	a. FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED.	O	O	
Y	b. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION.	O	O	
Y	c. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING.	O	O	
Y	d. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES.	O	O	
	6. INSPECTION TASKS AFTER BOLTING:			AISC 360 TABLE N5.6-3
Y	a. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS.	P	P	
	7. INSPECTION OF STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO PLACEMENT.			AISC 360 TABLE N6.1
Y	a. PLACEMENT AND INSTALLATION OF STEEL DECK.	P	P	
Y	b. PLACEMENT AND INSTALLATION OF STEEL HEADED ANCHOR STUDS.	P	P	
Y	c. DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS.	P	P	
	8. INSPECTION OF ANCHOR ROD PLACEMENT AND PLACEMENT OF EMBEDDED ITEMS.			AISC 360 SECTION N5.7
Y	a. DIAMETER, GRADE, TYPE, AND LENGTH OF ANCHOR ROD OR EMBEDDED ITEM.	P	P	
Y	b. EXTENT OR DEPTH OF EMBEDMENT INTO CONCRETE.	P	P	
Y	9. INSPECTION OF THE FABRICATED STEEL OR ERECTED STEEL FRAME TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE CONSTRUCTION DOCUMENTS.	P	P	AISC 360 SECTION N5.7

O: ITEMS NEED TO BE OBSERVED ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

P: ITEMS NEED TO BE PERFORMED FOR EACH WELD JOINT OR MEMBER.

SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

REQ. Y/N	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCE STANDARD	IBC REFERENCE
Y	1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	--	X	ACI 318 CH. 20, 25.2, 25.3, 26.5.1-26.5.3	1908.4
	2. REINFORCING BAR WELDING:				
N	a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706.	---	X	AWS D1.4 ACI 318:26.5.4	----
N	b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"	----	X		
N	c. INSPECT ALL OTHER WELDS.	X	----		
Y	3. INSPECT ANCHORS CAST IN CONCRETE.	X	----	ACI 318: 17.8.2	----
	4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.				
Y	a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	----	ACI 318: 17.8.2.4	----
Y	b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X	----	ACI 318: 17.8.2	----
Y	5. VERIFY USE OF REQUIRED DESIGN MIX.	----	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
Y	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	---	ASTM C 172 ASTM C 31 ACI 318: 26.4.5, 26.12	1908.10
Y	7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	----	ACI 318: 26.4.5	1908.6,1908.7,1908.8
Y	8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	---	X	ACI 318: 26.4.7 - 26.4.9	1908.9
	9. INSPECT PRESTRESSED CONCRETE FOR:				
N	a. APPLICATION OF PRESTRESSING FORCES.	X	----	ACI 318: 26.9.2.1	----
N	b. GROUTING OF BONDED PRESTRESSING TENDONS	X	----	ACI 318: 26.9.2.3	----
N	10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	----	X	ACI 318: CH. 26.9	----
Y	11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	----	X	ACI 318: 26.10.2	----
Y	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	----	X	ACI 318: 26.10.1 (b)	----
Y	13. CONCRETE STRENGTH TESTING AND VERIFICATION OF COMPLIANCE WITH CONSTRUCTION DOCUMENTS. (FIELD TESTING & REVIEWS OF LAB REPORTS)	----	X		----

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1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

ALABAMA REGISTERED No. 37429 PROFESSIONAL ENGINEER MARTIN OCON 4-14-23

consultant

Browder + LeGuizamon and Associates, Inc. Engineers
6285 Barfield Road NE Suite 200
Atlanta, GA 30328
B+L PROJECT # 22147

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north arrow + scale

N

scale: 3/4" = 1'-0"

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
PO BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	B+L
drawn by:	B+L
checked by:	B+L

drawing date

APRIL 14, 2023

sheet title

SPECIAL INSPECTIONS

sheet number

S0.02.1

LEVEL A QUALITY ASSURANCE OF MASONRY
(TMS 402-13/ACI 530-13/ASCE 5-3 TABLE 3.1.1)

REQ. Y/N	MINIMUM VERIFICATION
Y	PRIOR TO CONSTRUCTION, VERIFY CERTIFICATES OF COMPLIANCE USED IN MASONRY CONSTRUCTION.

LEVEL B QUALITY ASSURANCE OF MASONRY
(TMS 402-13/ACI 530-13/ASCE 5-13 TABLE 3.1.2)

REQ. Y/N	MINIMUM TESTS
Y	VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 B.1.b.3 FOR SELF-CONSOLIDATING GROUT.
Y	VERIFICATION OF f'_m AND f'_{AAC} IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY TMS 402-13/ACI 1530-13/ASCE 5-13.

MINIMUM SPECIAL INSPECTION

	INSPECTION TASK	FREQUENCY (a) CONT.	FREQUENCY (a) PERIODIC	REFERENCE FOR CRITERIA TMS 402 / ACI 530 / ASCE 5	REFERENCE FOR CRITERIA TMS 602 / ACI 530.1 / ASCE 6
Y	1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS.	----	X	----	ART. 1.5
	2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
Y	a. PROPORTIONS OF SITE-PREPARED MORTAR.	---	X	---	ART. 2.1, 2.6 A
Y	b. CONSTRUCTION OF MORTAR JOINTS.	----	X	----	ART. 3.3 B
Y	c. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	----	X	----	ART. 2.4 B, 2.4H
Y	d. LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS, AND ANCHORAGES	----	X	----	ART. 3.4, 3.6 A
Y	e. PRESTRESSING TECHNIQUE.	----	X	----	ART. 3.6 B
Y	f. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY.	X (b)	X (c)	----	ART. 2.1 C
	3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
Y	a. GROUT SPACE.	----	X	----	ART. 3.2 D, 3.2 F
Y	b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES.	----	X	SEC. 6.1	ART. 2.4, 3.4
Y	c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES.	----	X	SEC. 6.1, 6.2.1, 6.2.6, 6.2.7	ART. 3.2 E, 3.4, 3.6 A
Y	d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS.	----	X	----	ART. 2.6 B, 2.4 G.1.b
Y	e. CONSTRUCTION OF MORTAR JOINTS.	----	X	----	ART. 3.3 B
	4. VERIFY DURING CONSTRUCTION:				
Y	a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	----	X	----	ART. 3.3 F
Y	b. TYPE, SIZE, LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.	----	X	SEC.1.2.1(e), 6.1.4.3, 6.2.1	----
Y	c. WELDING OF REINFORCEMENT.	X	----	SEC.8.1.6.7.2, 9.3.3.4(c), 11.3.3.4(b)	----
Y	d. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F)	----	X	----	ART. 1.8 C, 1.8 D
Y	e. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	X	---	----	ART. 3.6 B
Y	f. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE.	X	----	----	ART. 3.5, 3.6 C
Y	g. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS.	X(b)	X(c)	----	ART. 3.3 B.9, 3.3 F.1.b
Y	h. INSTALLATION OF POST-INSTALLED ANCHORS ACCORDING TO MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. VERIFY ANCHOR DIMENSIONS, ADHESIVE IDENTIFICATION AND EXPIRATION DATE, HOLE DIMENSION, EDGE DISTANCES, EMBEDMENT DEPTH, TIGHTENING TORQUE, BASE-MATERIAL TEMPERATURE.	X(d)	X(e)	----	
Y	5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS.	---	X	----	ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

(a) FREQUENCY REFERS TO THE FREQUENCY OF SPECIAL INSPECTIONS, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODIC DURING THE LISTED TASK, AS DEFINED IN THE TABLE.

(b) REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.

(c) REQUIRED AFTER THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.

(d) REQUIRED FOR THE FIRST 10% OF EACH DIFFERENT TYPE OF ANCHOR AND/OR INSTALLER.

(e) REQUIRED FOR THE REMAINING 90% OF EACH DIFFERENT TYPE OF ANCHOR AND/OR INSTALLER.

LEVEL C QUALITY ASSURANCE OF MASONRY
(TMS 402-13/ACI 530-13/ASCE 5-13 TABLE 3.1.3)

REQ. Y/N	MINIMUM TESTS
Y	VERIFICATION OF f'_m AND f'_{AAC} IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4B PRIOR TO CONSTRUCTION AND FOR EVERY 5,000 SQ FT (465 SQ. M) DURING CONSTRUCTION.
Y	VERIFICATION OF PROPORTIONS OF MATERIALS IN PREMIXED OR PREBLENDED MORTAR, PRESTRESSING GROUT, AND GROUT OTHER THAN SELF-CONSOLIDATING GROUT, AS DELIVERED TO THE PROJECT SITE.
Y	VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 B.1.b.3 FOR SELF-CONSOLIDATING GROUT.

MINIMUM SPECIAL INSPECTION

	INSPECTION TASK	FREQUENCY (a) CONT.	FREQUENCY (a) PERIODIC	REFERENCE FOR CRITERIA TMS 402 / ACI 530 / ASCE 5	REFERENCE FOR CRITERIA TMS 602 / ACI 530.1 / ASCE 6
Y	1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS.	--	X	----	ART. 1.5
	2. VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
Y	a. PROPORTIONS OF SITE-MIXED MORTAR, GROUT, AND PRESTRESSING GROUT FOR BONDED TENDONS.	----	X	----	ART. 2.1, 2.6 A, 2.6 B, 2.6 C, 2.4 G.1.b
Y	b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES.	----	X	SEC 6.1	ART. 2.4, 3.4
Y	c. PLACEMENT OF MASONRY UNITS AND CONSTRUCTION OF MORTAR JOINTS.	----	X	----	ART. 3.3 B
Y	d. PLACEMENT OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS, AND ANCHORAGES.	X	----	SEC 6.1, 6.2.1, 6.2.6, 6.2.7	ART. 3.2 E, 3.4 3.6 A
Y	e. GROUT SPACE PRIOR TO GROUTING.	X	----	----	ART. 3.2 D, 3.2 F
Y	f. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS.	X	----	----	ART. 3.5, 3.6 C
Y	g. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	----	X	----	ART. 3.3 F
Y	h. TYPE, SIZE, AND LOCATION OF ANCHORS INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.	X	----	SEC 1..2.1(e), 6.1.4.3, 6.2.1	----
Y	i. WELDING OF REINFORCEMENT.	X	----	SEC. 8.1.6.7.2, 9.3.3.4 (c), 11.3.3.4 (b)	----
Y	j. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F).	----	X	----	ART. 1.8 C, 1.8 D
Y	k. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	X	----	----	ART. 3.6 B
Y	l. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS.	X	----	----	ART. 3.3 B.9, 3.3 F.1.b
Y	m. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY.	X	----	----	ART. 2.1 C.1
Y	n. INSTALLATION OF POST-INSTALLED ANCHORS ACCORDING TO MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. VERIFY ANCHOR DIMENSIONS, ADHESIVE IDENTIFICATION AND EXPIRATION DATE, HOLE DIMENSION, EDGE DISTANCES, EMBEDMENT DEPTH, TIGHTENING TORQUE, BASE-MATERIAL TEMPERATURE.	X(b)	X(c)	----	
Y	3. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS.	X	----	----	ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

(a) FREQUENCY REFERS TO THE FREQUENCY OF SPECIAL INSPECTIONS, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODIC DURING THE LISTED TASK, AS DEFINED IN THE TABLE.

(b) REQUIRED FOR THE FIRST 10% OF EACH DIFFERENT TYPE OF ANCHOR AND/OR INSTALLER.

(c) REQUIRED FOR THE REMAINING 90% OF EACH DIFFERENT TYPE OF ANCHOR AND/OR INSTALLER.

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north arrow + scale

N

scale: 3/4" = 1'-0"

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1 S WATER ST.
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CITY OF MOBILE
PO BOX 1827
MOBILE, AL 36633
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SPECIAL INSPECTIONS

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S0.02.2

GRAVITY LOAD DESIGN CODES:

A. "INTERNATIONAL BUILDING CODE, 2021 (IBC 2021).
B. "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-19).
C. "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (TMS 402-16/TMS 602-16). SPECIFICATION FOR MASONRY STRUCTURES.
D. "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" (ASCE/SEI 7-16).

SUPERIMPOSED DESIGN LOADS:

GRAVITY LOADS

A. DEAD LOADS
MISC. DEAD LOAD..... 10 psf
SOIL..... 120 pcf (ASSUMED, TYP.)

B. LIVE LOADS (LIVE LOAD REDUCTION AS PER CODE)
PUBLIC AREAS ..... 100 psf
STATUES ..... SELF-WEIGHT (APPROX. 1.5 KIPS EACH)

C. SNOW LOADS
GROUND SNOW LOAD, Pg ..... 0 psf
AS SUCH, THERE IS NO SNOW LOAD DESIGN REQUIRED.

D. RAIN LOADS
15- MINUTE PRECIPITATION INTENSITY..... 9.55 in./h
60- MINUTE PRECIPITATION INTENSITY..... 4.86 in./h

E. FLOOD LOADS
FLOOD ZONE CATEGORIZATION..... AE

LATERAL LOADS

WIND LOADS (ULTIMATE)

ANALYSIS PROCEDURE: ANALYTICAL METHOD - ASCE 7-16 DIRECTIONAL METHOD
WIND SPEED (3-SECOND GUST)..... 154 mph
RISK CATEGORY..... II
WIND EXPOSURE..... C
INTERNAL PRESSURE COEFFICIENT..... +0.18/-0.18
COEFFICIENTS AND PRESSURES:
VELOCITY PRESSURE @ HEIGHT z=h, Qh..... 46.54 psf
VELOCITY PRESSURE @ HEIGHT z, Qz..... 46.54 psf
GUST FACTOR, G..... 0.85
TOPOGRAPHIC FACTOR, Kzt..... 1.00
WIND DIRECTIONALITY FACTOR, Kd..... 0.85
V. PRESSURE EXPOSURE COEFF. @ HEIGHT z=h, Kh..... 0.90
V. PRESSURE EXPOSURE COEFF. @ HEIGHT z, Kz..... 0.90
GROUND ELEVATION FACTOR, Ke..... 1.00
WALL (MWRS - WINDWARD)..... +57.25 psf
WALL (MWRS - LEEWARD)..... -45.38 psf
WALL (MWRS - SIDE)..... -53.29 psf
ROOF (MWRS - ZONE1*)..... -61.20 psf
ROOF (MWRS - ZONE2*)..... -61.20 psf
ROOF (MWRS - ZONE3*)..... -45.38 psf
ROOF (MWRS - ZONE4*)..... -37.47 psf

COMPONENTS AND CLADDINGS LOAD (ULTIMATE)

TABLE 1: POSITIVE WIND PRESSURE ON GLAZING AND WALL COMPONENTS

BUILDING	LOCATION ON BUILDING	POSITIVE PRESSURE <20 FT²	POSITIVE PRESSURE <50 FT²	POSITIVE PRESSURE <100 FT²	POSITIVE PRESSURE <200 FT²
MAIN	FIELD 4	67.49 PSF	65.26 PSF	62.32 PSF	60.09 PSF
	CORNER 5	67.49 PSF	65.26 PSF	62.32 PSF	60.09 PSF

TABLE 2: NEGATIVE WIND PRESSURE ON GLAZING AND WALL COMPONENTS

BUILDING	LOCATION ON BUILDING	NEGATIVE PRESSURE <20 FT²	NEGATIVE PRESSURE <50 FT²	NEGATIVE PRESSURE <100 FT²	NEGATIVE PRESSURE <200 FT²
MAIN	FIELD 4	-71.68 PSF	-69.45 PSF	-66.51 PSF	-64.28 PSF
	CORNER 5	-84.24 PSF	-79.79 PSF	-73.90 PSF	-69.45 PSF

PERIMETER ZONE a = 5.0 ft	CORNER ZONE 2a = 10.0 ft

WIND LOADS (SERVICE)

ANALYSIS PROCEDURE: ANALYTICAL METHOD - ASCE 7-16 DIRECTIONAL METHOD
WIND SPEED (3-SECOND GUST..... 120 mph
RISK CATEGORY..... II
WIND EXPOSURE..... C
INTERNAL PRESSURE COEFFICIENT..... +0.18/-0.18
COEFFICIENTS AND PRESSURES:
VELOCITY PRESSURE @ HEIGHT z=h, Qh..... 28.26 psf
VELOCITY PRESSURE @ HEIGHT z, Qz..... 28.26 psf
GUST FACTOR, G..... 0.85
TOPOGRAPHIC FACTOR, Kzt..... 1.00
WIND DIRECTIONALITY FACTOR, Kd..... 0.85
V. PRESSURE EXPOSURE COEFF. @ HEIGHT z=h, Kh..... 0.90
V. PRESSURE EXPOSURE COEFF. @ HEIGHT z, Kz..... 0.90
GROUND ELEVATION FACTOR, Ke..... 1.00
WALL (MWRS - WINDWARD)..... +34.76 psf
WALL (MWRS - LEEWARD)..... -27.55 psf
WALL (MWRS - SIDE)..... -32.36 psf
ROOF (MWRS - ZONE1*)..... -37.16 psf
ROOF (MWRS - ZONE2*)..... -37.16 psf
ROOF (MWRS - ZONE3*)..... -27.55 psf
ROOF (MWRS - ZONE4*)..... -22.75 psf

COMPONENTS AND CLADDINGS LOAD (SERVICE)

TABLE 5: POSITIVE WIND PRESSURE ON GLAZING AND WALL COMPONENTS

BUILDING	LOCATION ON BUILDING	POSITIVE PRESSURE <20 FT²	POSITIVE PRESSURE <50 FT²	POSITIVE PRESSURE <100 FT²	POSITIVE PRESSURE <200 FT²
MAIN	FIELD 4	40.98 PSF	39.63 PSF	37.84 PSF	36.49 PSF
	CORNER 5	40.98 PSF	39.63 PSF	37.84 PSF	36.49 PSF

TABLE 6: NEGATIVE WIND PRESSURE ON GLAZING AND WALL COMPONENTS

BUILDING	LOCATION ON BUILDING	NEGATIVE PRESSURE <20 FT²	NEGATIVE PRESSURE <50 FT²	NEGATIVE PRESSURE <100 FT²	NEGATIVE PRESSURE <200 FT²
MAIN	FIELD 4	-43.52 PSF	-42.17 PSF	-40.38 PSF	-39.03 PSF
	CORNER 5	-51.15 PSF	-48.45 PSF	-44.87 PSF	-42.17 PSF

PERIMETER ZONE a = 5.0 ft	CORNER ZONE 2a = 10.0 ft

SEISMIC LOADS

ANALYSIS PROCEDURE: ASCE 7-16 ELASTIC ANALYSIS (SECTION 12.8)
ZIP CODE..... 36602
SEISMIC IMPORTANCE FACTOR, Ie..... 1.0
OCCUPANCY CATEGORY..... II
SOIL SITE CLASS..... D
SEISMIC DESIGN CATEGORY..... B
SHORT PERIOD MAPPED SPECTRAL RESPONSE ACCELERATION, Ss..... 0.094
1.0 SECOND PERIOD MAPPED SPECTRAL RESPONSE ACCELERATION, S1..... 0.060
SHORT PERIOD SPECTRAL RESPONSE COEFFICIENT, Sds..... 0.100
1.0 SECOND PERIOD SPECTRAL RESPONSE COEFFICIENT, Sd1..... 0.096

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scale: As indicated

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1 S WATER ST.
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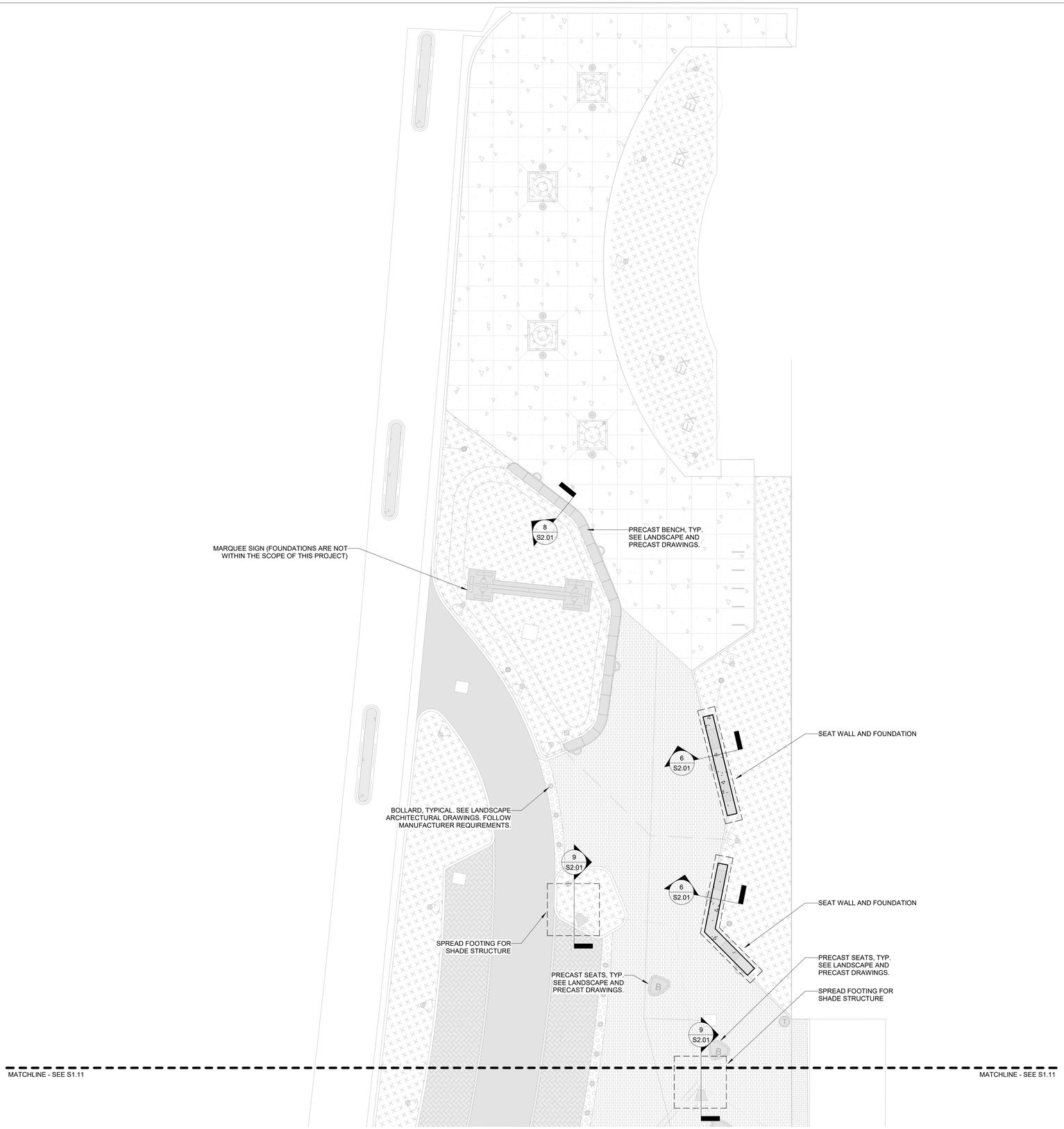
GRAVITY & LATERAL LOADS

sheet number

S0.03



1 OVERALL PLAN - NORTH

1" = 10'-0"

SLAB-ON-GRADE NOTES:

1. SLAB-ON-GRADE IS = 5" THICK (MINIMUM) CONCRETE SLAB ON PLASTIC VAPOR BARRIER ON GRADE (AS RECOMMENDED BY ACI 302) WITH #3 @ 16" O.C. E.W., SEE DETAILS 1&2/S2.00.
2. PROVIDE CONTROL JOINTS @ 15'-0" O.C. MAXIMUM IN SLAB ON GRADE.
3. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR SLAB EXTENTS, SLAB SLOPE, DRAIN LOCATIONS, AND LANDSCAPING DETAILS.
4. PROVIDE ALL EMBEDDED MEMBERS (PLATES, ANGLES AND ANCHOR BOLTS, ETC.) IN PLACE BEFORE POURING CONCRETE.
5. SEE SECTIONS 9 AND 10/S2.00 FOR MILD STEEL REINFORCEMENT IN TOP OF SLAB AT REENTRANT CORNERS, ENTRANCES, LOCATIONS OF PENETRATIONS, AND EDGES.
6. FOR SLAB-ON-GRADE SLAB OPENINGS SEE DETAIL 4/S3.00.
7. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SLAB DEPRESSIONS. SEE DETAIL 3/S2.00 FOR STRUCTURAL DETAILING.
8. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SLOPING SLABS ON GRADE. SEE DETAIL 11/S2.00 FOR STRUCTURAL DETAILING.
9. FOR OVERALL SITE DIMENSIONS AND WALL LOCATIONS, SEE LANDSCAPE ARCHITECTURAL DRAWINGS.
10. COORDINATE EXTERIOR FINISHES WITH LANDSCAPE ARCHITECTURAL DRAWINGS. FINISHES NOT SHOWN ON STRUCTURAL DRAWINGS FOR CLARITY.

FOUNDATION NOTES:

1. FOR FOUNDATION NOTES, SECTIONS AND DETAILS SEE S2 SERIES.
2. VERIFY DIMENSIONS AND ELEVATIONS WITH LANDSCAPE ARCHITECTURAL AND CIVIL DRAWINGS. REPORT ALL DISCREPANCIES TO LANDSCAPE ARCHITECT.
3. AT LOCATIONS WHERE TWO FOUNDATION TYPES INTERSECT, SEE DETAIL 6/S2.01.
4. TOP OF FOOTING ELEVATIONS TO BE 1'-0" BELOW TOP OF SLAB OR EXTERIOR GRADE, WHICHEVER IS LOWER, U.N.O.
5. GC TO COORDINATE REQUIRED FOUNDATIONS AND STRUCTURAL ELEMENTS IN THE FIELD WITH EXISTING FOUNDATIONS BELOW GRADE. NOTIFY B+L OF ANY CONFLICTS.
6. FOUNDATIONS DESIGNED FOR 1,500 PSF SOIL BEARING CAPACITY (PER THE GEOTECHNICAL REPORT).
7. GC TO COORDINATE ANY AND ALL REQUIRED SHORING, TIE-BACKS, SOLDIER PILES, ETC. FOR FOUNDATION EXCAVATIONS.

GENERAL PLAN NOTES

1. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF WALLS, SHADE STRUCTURES, TRELLISES, ETC.
2. VERIFY DIMENSIONS AND ELEVATIONS WITH LANDSCAPE ARCHITECTURAL AND CIVIL DRAWINGS. REPORT ALL DISCREPANCIES TO LANDSCAPE ARCHITECT.
3. FOR EXISTING STRUCTURES THAT ARE TO REMAIN, SEE LANDSCAPE ARCHITECTURAL DRAWINGS.
4. SEE LANDSCAPE ARCHITECTURAL AND CIVIL DRAWINGS FOR DEMO REQUIREMENTS.

LEGEND:

X'-X" / X'-X" : INDICATES STEP SLAB.

TOS : INDICATES TOP OF SLAB ELEVATION.

TOF : INDICATES TOP OF FOOTING ELEVATION.

(##) : INDICATES FOOTING TYPE.

C.J. : INDICATES SLAB ON GRADE CONTROL JOINT LOCATION.

—## : INDICATES FOUNDATION STEP LOCATION

KEY PLAN:

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Atlanta, GA | Tulsa, OK | Chattanooga, TN
1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

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ALABAMA REGISTERED No. 37429 PROFESSIONAL ENGINEER MARTIN OCON
4-12-23

consultant

Browder + LeGuizamon and Associates, Inc. Engineers
6285 Barfield Road NE Suite 200
Atlanta, GA 30328
B+L PROJECT # 22147

revisions

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north arrow + scale

N

scale: As indicated

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
PO BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
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PARTIAL PLAN - NORTH PORTION

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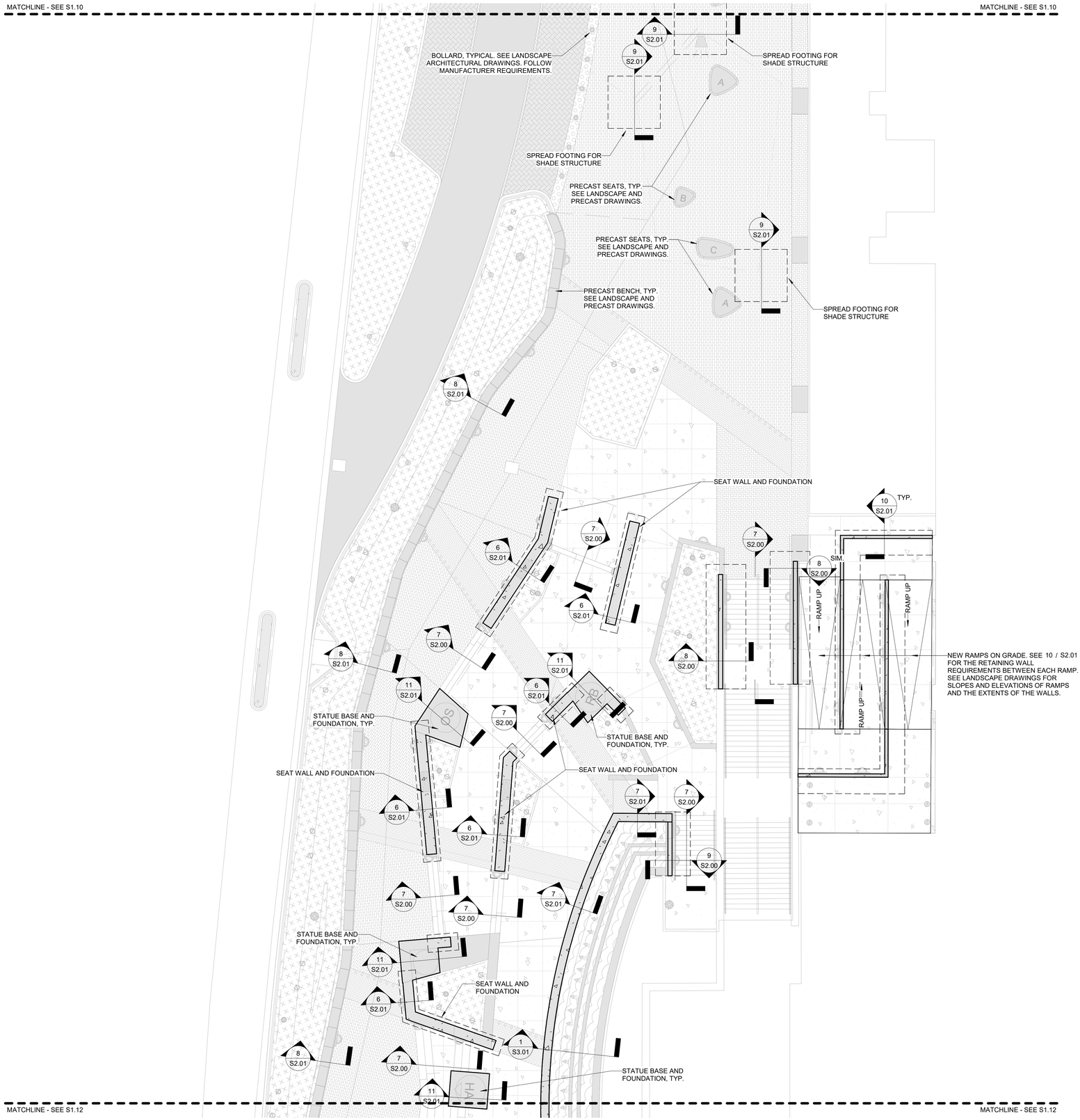

1 **OVERALL PLAN - CENTRAL**

1" = 10'-0"

SLAB-ON-GRADE NOTES:

1. SLAB-ON-GRADE IS = 5" THICK (MINIMUM) CONCRETE SLAB ON PLASTIC VAPOR BARRIER ON GRADE (AS RECOMMENDED BY ACI 302) WITH #3 @ 16" O.C. E.W., SEE DETAILS 1&2/S2.00.
2. PROVIDE CONTROL JOINTS @ 15'-0" O.C. MAXIMUM IN SLAB ON GRADE.
3. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR SLAB EXTENTS, SLAB SLOPE, DRAIN LOCATIONS, AND LANDSCAPING DETAILS.
4. PROVIDE ALL EMBEDDED MEMBERS (PLATES, ANGLES AND ANCHOR BOLTS, ETC.) IN PLACE BEFORE POURING CONCRETE.
5. SEE SECTIONS 9 AND 10/S2.00 FOR MILD STEEL REINFORCEMENT IN TOP OF SLAB AT REENTRANT CORNERS, ENTRANCES, LOCATIONS OF PENETRATIONS, AND EDGES.
6. FOR SLAB-ON-GRADE SLAB OPENINGS SEE DETAIL 4/S3.00.
7. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SLAB DEPRESSIONS. SEE DETAIL 3/S2.00 FOR STRUCTURAL DETAILING.
8. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SLOPING SLABS ON GRADE. SEE DETAIL 11/S2.00 FOR STRUCTURAL DETAILING.
9. FOR OVERALL SITE DIMENSIONS AND WALL LOCATIONS, SEE LANDSCAPE ARCHITECTURAL DRAWINGS.
10. COORDINATE EXTERIOR FINISHES WITH LANDSCAPE ARCHITECTURAL DRAWINGS. FINISHES NOT SHOWN ON STRUCTURAL DRAWINGS FOR CLARITY.

FOUNDATION NOTES:

1. FOR FOUNDATION NOTES, SECTIONS AND DETAILS SEE S2 SERIES.
2. VERIFY DIMENSIONS AND ELEVATIONS WITH LANDSCAPE ARCHITECTURAL AND CIVIL DRAWINGS. REPORT ALL DISCREPANCIES TO LANDSCAPE ARCHITECT.
3. AT LOCATIONS WHERE TWO FOUNDATION TYPES INTERSECT, SEE DETAIL 6/S2.01.
4. TOP OF FOOTING ELEVATIONS TO BE 1'-0" BELOW TOP OF SLAB OR EXTERIOR GRADE, WHICHEVER IS LOWER, U.N.O.
5. GC TO COORDINATE REQUIRED FOUNDATIONS AND STRUCTURAL ELEMENTS IN THE FIELD WITH EXISTING FOUNDATIONS BELOW GRADE. NOTIFY B+L OF ANY CONFLICTS.
6. FOUNDATIONS DESIGNED FOR 1,500 PSF SOIL BEARING CAPACITY (PER THE GEOTECHNICAL REPORT).
7. GC TO COORDINATE ANY AND ALL REQUIRED SHORING, TIE-BACKS, SOLDIER PILES, ETC. FOR FOUNDATION EXCAVATIONS.

GENERAL PLAN NOTES

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2. VERIFY DIMENSIONS AND ELEVATIONS WITH LANDSCAPE ARCHITECTURAL AND CIVIL DRAWINGS. REPORT ALL DISCREPANCIES TO LANDSCAPE ARCHITECT.
3. FOR EXISTING STRUCTURES THAT ARE TO REMAIN, SEE LANDSCAPE ARCHITECTURAL DRAWINGS.
4. SEE LANDSCAPE ARCHITECTURAL AND CIVIL DRAWINGS FOR DEMO REQUIREMENTS.

LEGEND:

X'-X" / X'-X" : INDICATES STEP SLAB.

TOS : INDICATES TOP OF SLAB ELEVATION.

TOF : INDICATES TOP OF FOOTING ELEVATION.

(##) : INDICATES FOOTING TYPE.

C.J. : INDICATES SLAB ON GRADE CONTROL JOINT LOCATION.

: INDICATES FOUNDATION STEP LOCATION

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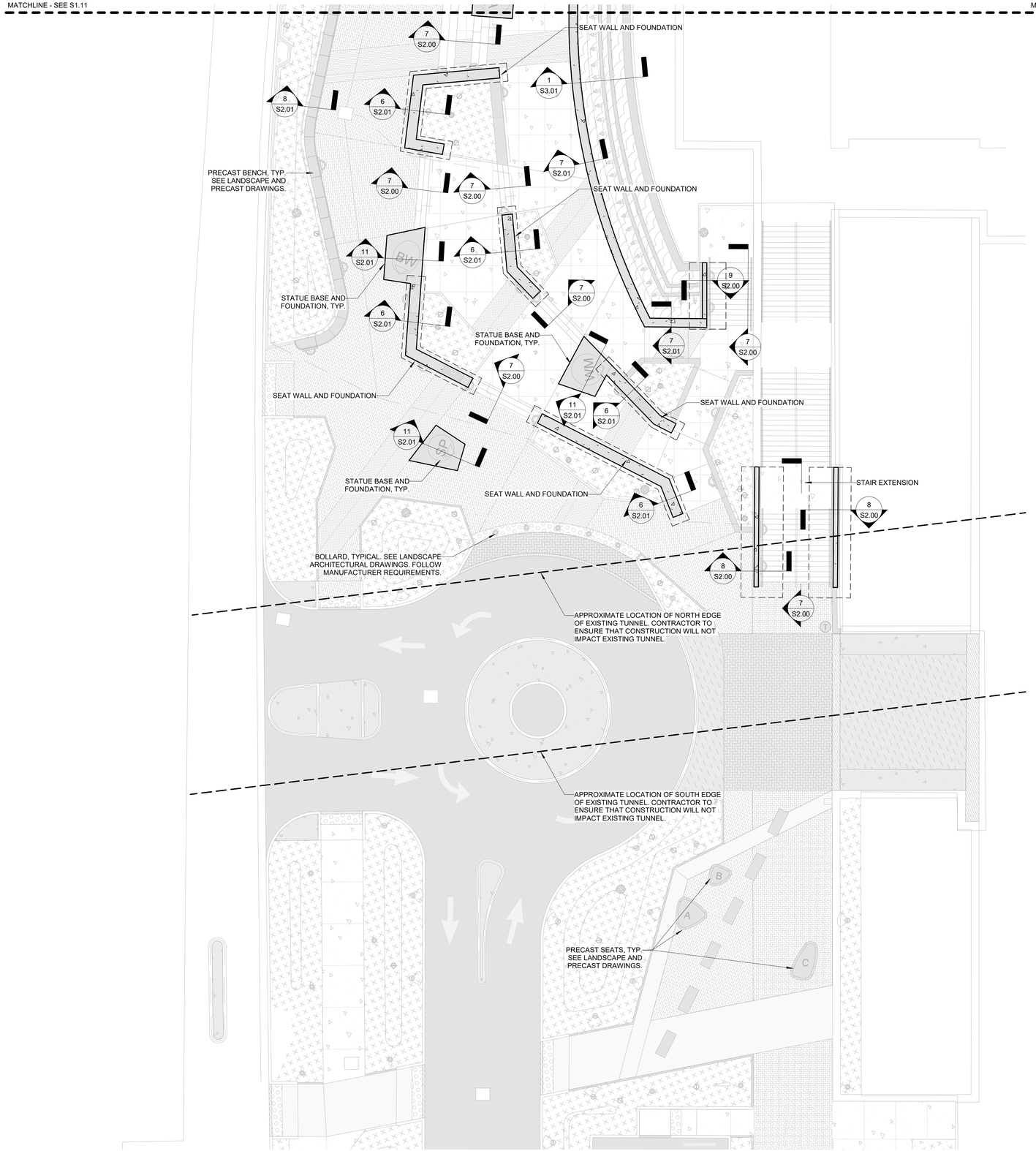

1 **OVERALL PLAN - SOUTH**

1" = 10'-0"

SLAB-ON-GRADE NOTES:

1. SLAB-ON-GRADE IS = 5" THICK (MINIMUM) CONCRETE SLAB ON PLASTIC VAPOR BARRIER ON GRADE (AS RECOMMENDED BY ACI 302) WITH #3 @ 16" O.C. E.W., SEE DETAILS 1&2/S2.00.
2. PROVIDE CONTROL JOINTS @ 15'-0" O.C. MAXIMUM IN SLAB ON GRADE.
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GENERAL PLAN NOTES

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(##) : INDICATES FOOTING TYPE.

C.J. : INDICATES SLAB ON GRADE CONTROL JOINT LOCATION.

: INDICATES FOUNDATION STEP LOCATION

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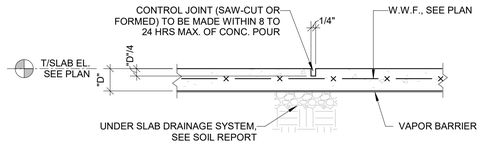
PARTIAL PLAN - SOUTH PORTION

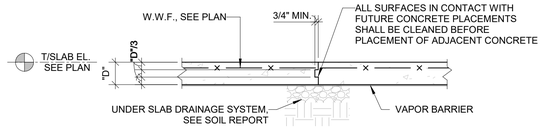
sheet number

S1.12



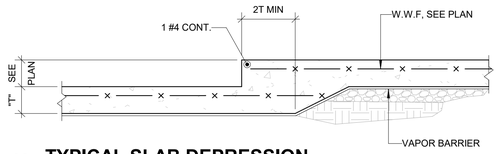
1 SLAB-ON-GRADE CONTROL JOINT

3/4" = 1'-0"



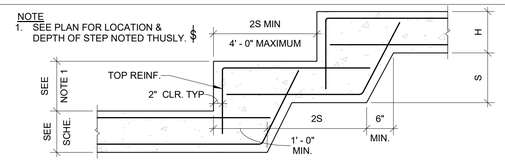
2 SLAB-ON-GRADE CONSTRUCTION JOINT

3/4" = 1'-0"



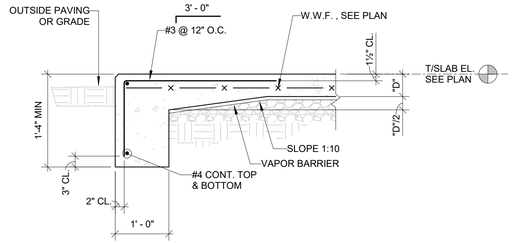
3 TYPICAL SLAB DEPRESSION

3/4" = 1'-0"



4 TYPICAL STEPPED FOOTING DETAIL

3/4" = 1'-0"

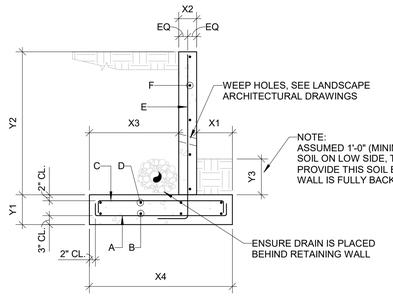


5 TYPICAL TURNED DOWN SLAB

3/4" = 1'-0"

	HEIGHT	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft
DIMENSIONS	X1	0.75 ft	0.75 ft	1 ft	1 ft	1 ft	1.5 ft
	X2	6 in	6 in	6 in	6 in	8 in	8 in
	X3	0.75 ft	1.25 ft	2 ft	3 ft	3.33 ft	3.83 ft
	X4	2 ft	2.5 ft	3.5 ft	4.5 ft	5 ft	6 ft
	Y1	10 in	10 in	10 in	10 in	12 in	14 in
	Y2	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft
	Y3	1 ft	1 ft	1 ft	1 ft	1 ft	1 ft

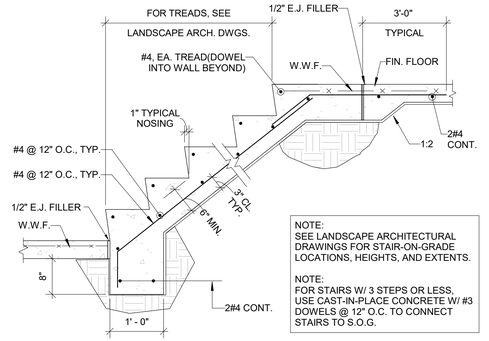
	HEIGHT	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft
REINFORCEMENT	A	#4@18"	#4@18"	#4@18"	#4@18"	#4@12"	#4@12"
	B	#4@18"	#4@18"	#4@18"	#4@18"	#4@18"	#4@12"
	C	#4@18"	#4@18"	#4@18"	#4@18"	#4@12"	#4@12"
	D	#4@18"	#4@18"	#4@18"	#4@18"	#4@18"	#4@12"
	E	#4@18"	#4@18"	#4@18"	#4@12"	#5@12"	#6@12"
	F	#4@18"	#4@18"	#4@18"	#4@18"	#4@12"	#4@12"



NOTES:
- WALL HEIGHT LISTED IS FROM TOP OF FOOTING TO TOP OF WALL.
- TOP OF FOOTING SHALL BE 1'-0" BELOW BOTTOM OF WALL ELEVATION PER CIVIL/LANDSCAPE DRAWINGS.
- DRAINS MUST BE PLACED ON THE RETAINED SIDE OF THE SITE WALLS (NOTIFY BLA IF DRAINS ARE NOT TO BE PROVIDED). SEE CIVIL DRAWINGS FOR DRAIN ROUTING.
- DESIGN SOIL BEARING PRESSURE = 1500 PSF
- SEE GEOTECHNICAL ENGINEERING REPORT FOR FURTHER INFORMATION/REQUIREMENTS.
- SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR FURTHER LANDSCAPE ARCHITECTURAL REQUIREMENTS.

6 SITE WALL/CURB WALL SCHEDULE

1/2" = 1'-0"

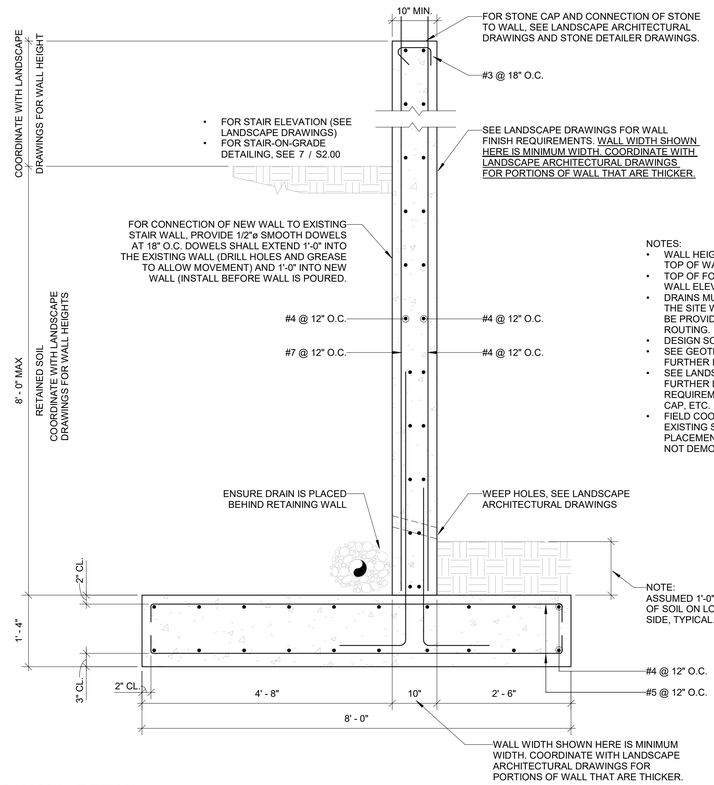


NOTE:
SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR STAIR-ON-GRADE LOCATIONS, HEIGHTS, AND EXTENTS.

NOTE:
FOR STAIRS W/ 3 STEPS OR LESS, USE CAST-IN-PLACE CONCRETE W/ #3 DOWELS @ 12" O.C. TO CONNECT STAIRS TO S.O.G.

7 TYPICAL STAIR-ON-GRADE SECTION

3/4" = 1'-0"



NOTES:
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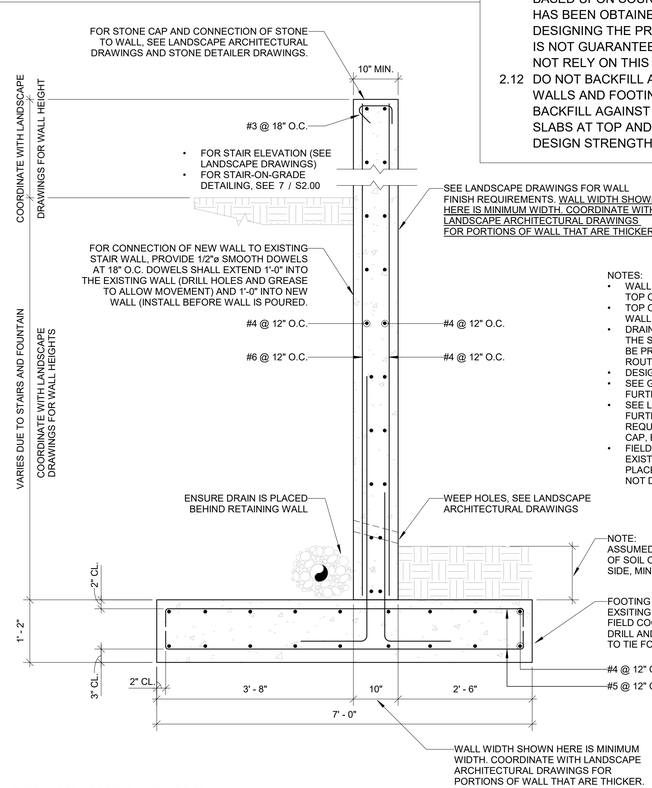
- DESIGN SOIL BEARING PRESSURE = 1500 PSF
- SEE GEOTECHNICAL ENGINEERING REPORT FOR FURTHER INFORMATION/REQUIREMENTS.
- SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR FURTHER LANDSCAPE ARCHITECTURAL REQUIREMENTS, e.g. WALL VENEER, STONE WALL CAP, ETC.
- FIELD COORDINATE REQUIRED DEMOLITION OF EXISTING SLAB/STAIRS ON GRADE TO ALLOW FOR PLACEMENT OF RETAINING WALLS AND RAMPS (DO NOT DEMOLISH EXISTING BUILDING FOUNDATIONS).

8 STAIR WALL DETAIL

3/4" = 1'-0"



9 STAIR WING WALL DETAIL

3/4" = 1'-0"

2.00 FOUNDATIONS AND SLAB ON GRADE

2.01 SHALLOW FOUNDATIONS ARE DESIGNED BASED UPON 1500 PSF BEARING PRESSURE PER THE GEOTECHNICAL RECOMMENDATIONS OF SOUTHERN EARTH SCIENCES IN THEIR REPORT DATED 10-25-2022.

RETAINING WALL DESIGN PARAMETERS:

ACTIVE EARTH PRESSURE (IMPORTED FILL)	36 PCF
PASSIVE EARTH PRESSURE (IMPORTED FILL)	360 PCF
FRICTION COEFFICIENT (IMPORTED FILL)	0.40 COEFF.
ACTIVE EARTH PRESSURE (IN-SITU SOIL)	43 PCF
PASSIVE EARTH PRESSURE (IN-SITU SOIL)	300 PCF
FRICTION COEFFICIENT (IN-SITU SOIL)	0.40 COEFF.

2.02 GEOTECHNICAL ENGINEER SHALL VERIFY THE BEARING PRESSURE NOTED ABOVE. THE GEOTECHNICAL ENGINEER SHALL VERIFY THE CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS AND BACKFILLS BEFORE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, OR WALLS.

2.03 CONTRACTOR SHALL FOLLOW ALL RECOMMENDATIONS OF THE SOIL REPORT.

2.04 SOIL BELOW INTERIOR CONCRETE SLABS ON GRADE AND ANY FILL WITHIN 10'-0" OF THE BUILDING LIMIT SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR, EXCEPT THAT THE TOP 2'-0" OF FILL BELOW FLOOR SLABS SHALL BE COMPACTED TO 98% OF STANDARD PROCTOR. ALL FOOTINGS SHALL BEAR ON ORIGINAL UNDISTURBED SOIL OR CONTROLLED FILL, U.N.O.

2.05 SUBGRADE PREPARATION FOR FOUNDATIONS AND SLABS ON GRADE SHALL BE PERFORMED IN ACCORDANCE WITH THE SUBSURFACE INVESTIGATION REPORT REFERENCED IN GENERAL NOTE 2.01. SPECIFICATION SECTION "EXCAVATION FILLING AND BACKFILLING FOR BUILDINGS".

2.06 UNLESS NOTED OTHERWISE, TYPICAL SLAB ON GRADE SHALL BE MINIMUM 5" THICK WITH SLAB ON GRADE PLACED OVER A POLY VAPOR BARRIER OVER A MINIMUM OF 6" COMPACTED, WELL GRADED AGGREGATE SUBBASE ON COMPACTED SUBGRADE. REINFORCE SLABS ON GRADE WITH ONE LAYER OF #3 @ 16" O.C. PROVIDE POSITIVE SUPPORT 3" CLEAR FROM BOTTOM OF SLAB. VAPOR BARRIER SHALL BE 10 MIL. (MINIMUM) THICK AS RECOMMENDED BY ACI 302.1R-6, SECTION 3.2.3.

2.07 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, PLACE CONTROL JOINTS AT COLUMN LINES AND AT INTERMEDIATE LINES SUCH THAT THE MAXIMUM JOINT SPACING DOES NOT EXCEED 36 x SLAB ON GRADE THICKNESS APART AS RECOMMENDED BY ACI 302.1R . SEE PLAN FOR LOCATIONS OF CONTROL JOINTS AND/OR CONSTRUCTION JOINTS IN CONCRETE SLABS ON GRADE. CONTRACTOR SHALL SUBMIT PLANS SHOWING LOCATION OF SLAB CONTROL JOINTS PRIOR TO PLACEMENT OF SLAB. LOCATE CONSTRUCTION JOINTS AT CONTROL JOINTS, SUBJECT TO PRIOR APPROVAL.

2.08 REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL SUBGRADE COMPACTION REQUIREMENTS. REFER TO GEOTECHNICAL REPORT, CIVIL/PLUMBING DRAWINGS FOR SUB-SLAB DRAINAGE SYSTEM REQUIREMENTS AND DETAILS.

2.09 SIDES OF FOUNDATIONS SHALL BE FORMED UNLESS CONDITIONS PERMIT EARTH FORMING. FOUNDATIONS PLACED AGAINST THE EARTH REQUIRE THE FOLLOWING PRECAUTIONS: (1) SLOPE SIDES OF EXCAVATIONS AS APPROVED BY GEOTECHNICAL ENGINEER AND (2) CLEAN UP SLOUGHING BEFORE AND DURING CONCRETE PLACEMENT.

2.10 WHERE FOOTING STEPS ARE NECESSARY, THEY SHALL BE NO STEEPER THAN ONE VERTICAL TO TWO HORIZONTAL.

2.11 DATA CONCERNING SUBSURFACE MATERIALS OR CONDITIONS WHICH ARE BASED UPON SOUNDINGS, TEST PITS, TEST BORINGS, OR OTHER MEANS, HAS BEEN OBTAINED BY THE STRUCTURAL ENGINEER FOR ITS USE IN DESIGNING THE PROJECT. THE ACCURACY OF COMPLETENESS OF THE DATA IS NOT GUARANTEED, AND THEREFORE, THE GENERAL CONTRACTOR SHALL NOT RELY ON THIS INFORMATION WITHOUT INDEPENDENT VERIFICATION.

2.12 DO NOT BACKFILL AGAINST CANTILEVER RETAINING WALLS UNTIL THE WALLS AND FOOTINGS HAVE ATTAINED FULL DESIGN STRENGTH. DO NOT BACKFILL AGAINST CANTILEVER OR FOUNDATION WALLS BEFORE THE SLABS AT TOP AND BOTTOM ARE CAST AND HAVE REACHED 75% OF THEIR DESIGN STRENGTH.

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FOUNDATION NOTES, SECTIONS AND DETAILS

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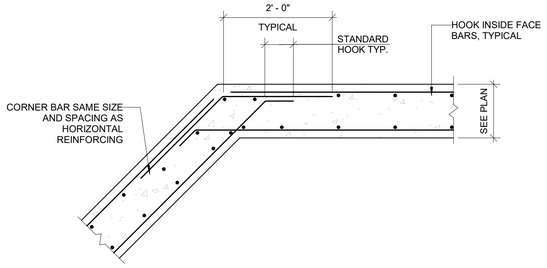
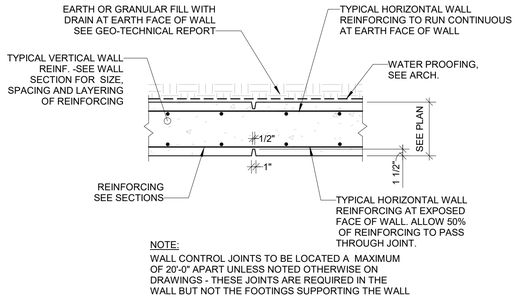


1 ANGLED WALL PLAN DETAIL

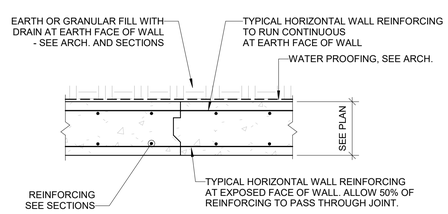
3/4" = 1'-0"



NOTE:
WALL CONTROL JOINTS TO BE LOCATED A MAXIMUM OF 20'-0" APART UNLESS NOTED OTHERWISE ON DRAWINGS - THESE JOINTS ARE REQUIRED IN THE WALL BUT NOT THE FOOTINGS SUPPORTING THE WALL

2 VERTICAL WALL CONSTRUCTION JOINT DETAIL

3/4" = 1'-0"

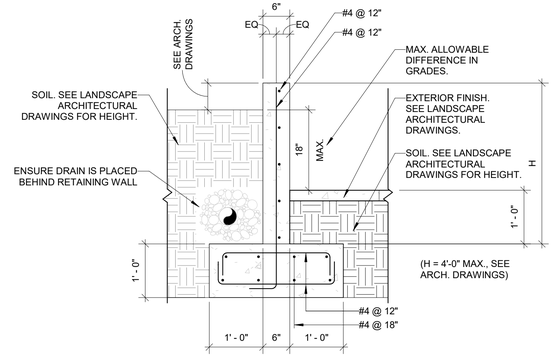


NOTE:
WALL CONTROL JOINTS TO BE LOCATED A MAXIMUM OF 20'-0" APART UNLESS NOTED OTHERWISE ON DRAWINGS - THESE JOINTS ARE REQUIRED IN THE WALL BUT NOT THE FOOTINGS SUPPORTING THE WALL

ALTERNATE DETAIL

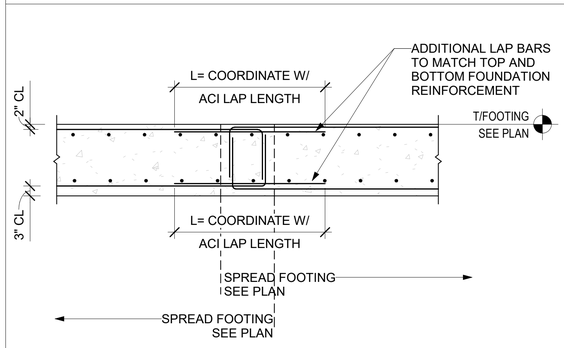
3 VERTICAL WALL CONSTRUCTION JOINT DETAIL (ALT)

3/4" = 1'-0"



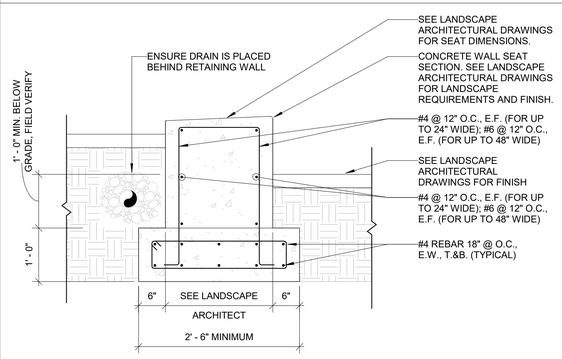
4 CONCRETE PLANTER WALL SECTION

3/4" = 1'-0"



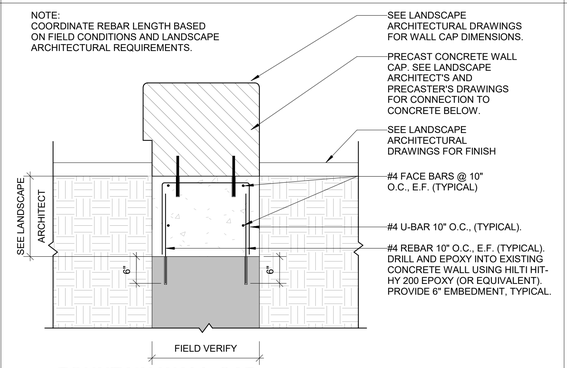
5 DETAIL AT OVERLAPPING FOOTING

1/2" = 1'-0"



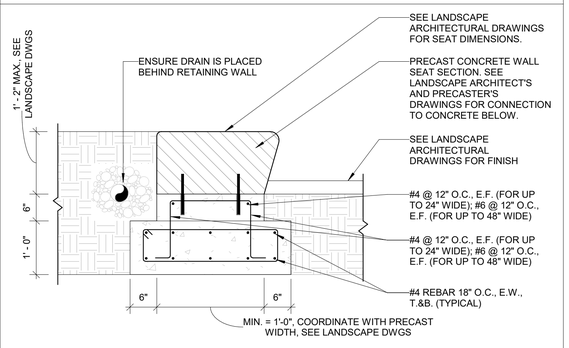
6 CONCRETE SEAT WALL DETAIL

3/4" = 1'-0"



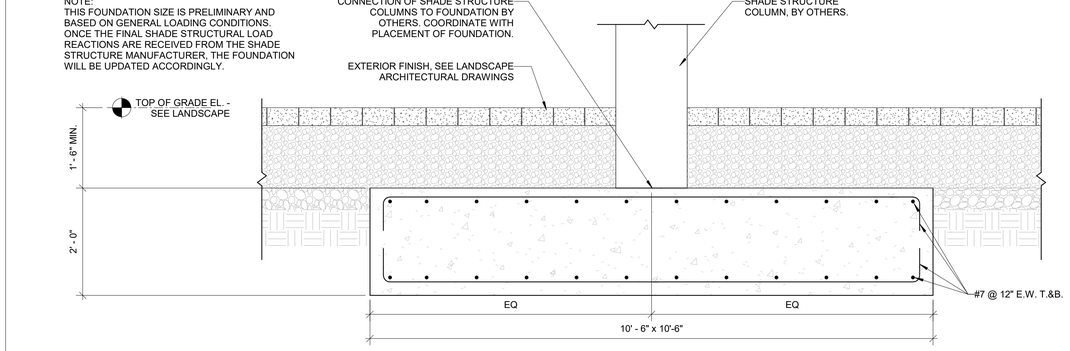
7 FOUNTAIN WALL CAP

3/4" = 1'-0"



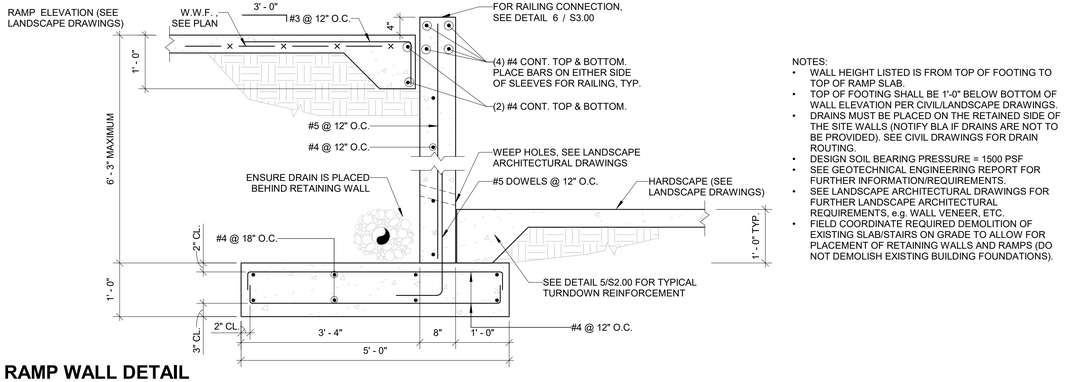
8 PRECAST SEAT WALL DETAIL

3/4" = 1'-0"



9 SECTION THRU SHADE STRUCTURE FOUNDATION

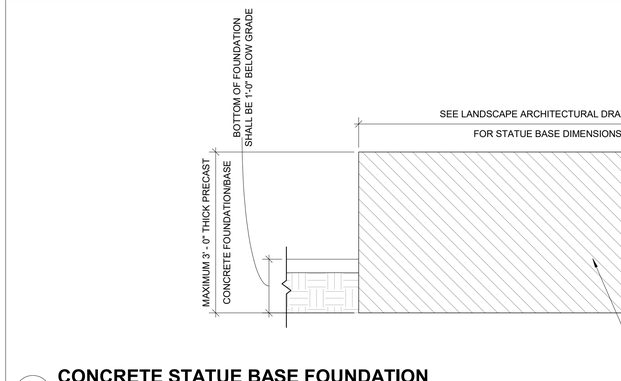
3/4" = 1'-0"



NOTES:
- WALL HEIGHT LISTED IS FROM TOP OF FOOTING TO TOP OF RAMP SLAB.
- TOP OF FOOTING SHALL BE 1'-0" BELOW BOTTOM OF WALL ELEVATION PER CIVIL/LANDSCAPE DRAWINGS.
- DRAINS MUST BE PLACED ON THE RETAINED SIDE OF THE SITE WALLS (NOTIFY BLA IF DRAINS ARE NOT TO BE PROVIDED). SEE CIVIL DRAWINGS FOR DRAIN ROUTING.
- DESIGN SOIL BEARING PRESSURE = 1500 PSF
- SEE GEOTECHNICAL ENGINEERING REPORT FOR FURTHER INFORMATION/REQUIREMENTS.
- SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR FURTHER LANDSCAPE ARCHITECTURAL REQUIREMENTS, e.g. WALL VENEER, ETC.
- FIELD COORDINATE REQUIRED DEMOLITION OF EXISTING SLAB/STAIRS ON GRADE TO ALLOW FOR PLACEMENT OF RETAINING WALLS AND RAMPS (DO NOT DEMOLISH EXISTING BUILDING FOUNDATIONS).

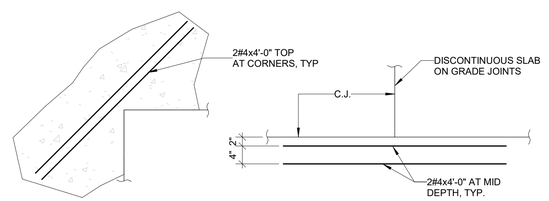
10 RAMP WALL DETAIL

3/4" = 1'-0"



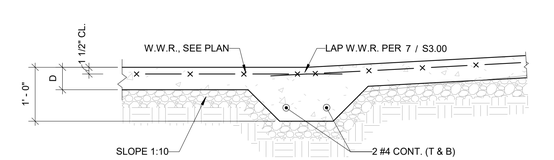
11 CONCRETE STATUE BASE FOUNDATION

3/4" = 1'-0"



12 TYPICAL REINFORCING IN SLAB ON GRADE

3/4" = 1'-0"



NOTE:
THIS DETAIL IS APPLICABLE FOR CONDITIONS WHERE THE SLAB IS RAMPING UP OR DOWN.

13 SECTION AT SLAB ON GRADE RAMP

3/4" = 1'-0"

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Atlanta, GA | Tulsa, OK | Chattanooga, TN
1447 Peachtree Street NE, Suite 850
Atlanta, Georgia 30309
404.873.6730
www.tsw-design.com

seal

ALABAMA
MARTIN OCON
No. 37429
PROFESSIONAL
ENGINEER
4-12-23

consultant

Browder + LeGuizamon and Associates, Inc. Engineers
6285 Barfield Road NE Suite 200
Atlanta, GA 30328
B+L PROJECT # 22147

revisions

No.	Description	Date
	DESIGN DEVELOPMENT SET	01/20/23
	90% CONSTRUCTION DOCUMENTS	03/03/23
	100% CONSTRUCTION DOCUMENTS	04/14/23

north arrow + scale

N

scale: As indicated

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
PO BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

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APRIL 14, 2023

sheet title

FOUNDATION SECTIONS AND DETAILS

sheet number

S2.01

CONCRETE PROTECTION FOR REINFORCEMENT			
			CONCRETE COVER (IN.)
a) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH			3
b) CONCRETE EXPOSED TO EARTH OR WEATHER		#6 THROUGH #18 BARS	2
		#5 BAR, W31 OR D31 WIRE, AND SMALLER	1 1/2
		COLUMN TIES	1 1/2
		PT SLABS	1
c) CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, WALLS, JOISTS	#14 AND #18 BARS	1 1/2
		#11 AND SMALLER	3/4
	BEAMS, COLUMNS	PRIMARY REINFORCEMENT	1 1/2
		TIES, STIRRUPS, SPIRALS	1
	PT SLAB		3/4 (1- 3/4 @ UNRESTRAINED AREAS)

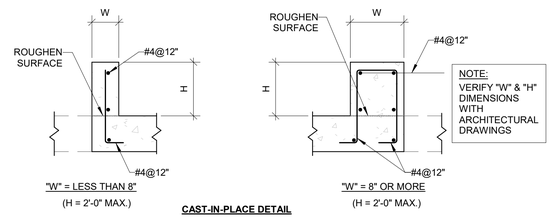
1 CONCRETE PROTECTION FOR REINFORCEMENT

1:1

LAP CLASS A/CLASS B SCHEDULE												
Fc =	3000 PSI				4000 PSI				5000 PSI			
	LENGTH				LENGTH				LENGTH			
BAR SIZE	TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
LAP CLASS	A	B	A	B	A	B	A	B	A	B	A	B
#3	16"	17"	16"	16"	16"	16"	16"	16"	16"	16"	16"	16"
#4	18"	23"	16"	18"	16"	20"	16"	16"	16"	18"	16"	16"
#5	26"	34"	20"	26"	23"	29"	17"	23"	20"	26"	16"	20"
#6	35"	46"	27"	35"	31"	40"	24"	31"	28"	36"	21"	28"
#7	57"	74"	44"	57"	50"	65"	38"	50"	45"	58"	34"	45"
#8	72"	93"	55"	72"	62"	81"	48"	62"	56"	72"	43"	56"
#9	87"	113"	67"	87"	76"	98"	58"	76"	68"	88"	52"	68"
#10	106"	137"	82"	106	92"	119"	71"	92"	82"	107"	63"	82"
#11 GR75	156"	203"	120"	156	135"	176"	104"	135"	121"	157"	93"	121"

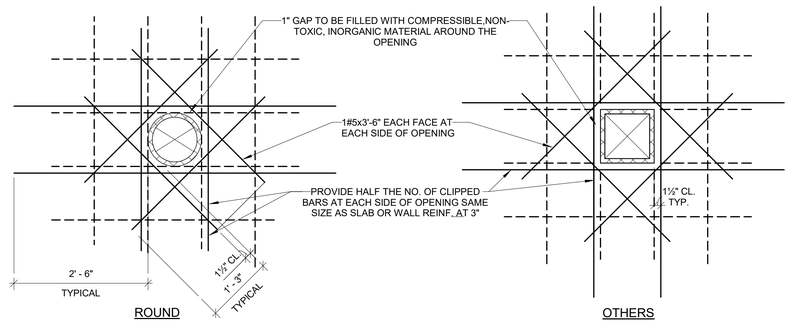
2 CLASS B LAP

1/2" = 1'-0"



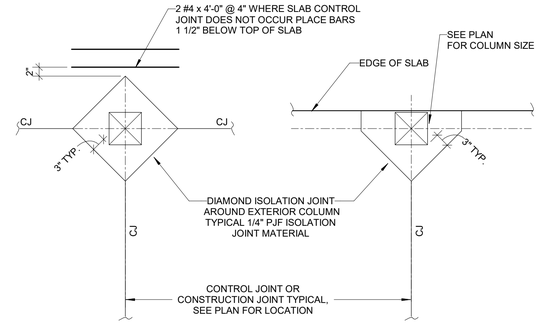
3 TYPICAL CONCRETE CURB DETAIL

3/4" = 1'-0"



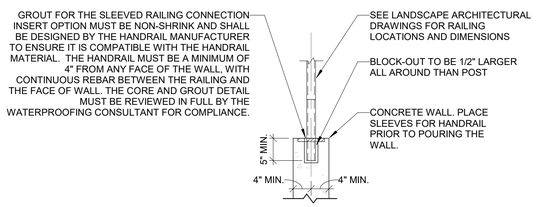
4 DETAIL REINFORCING SLAB AND WALL OPENING - 12"

3/4" = 1'-0"



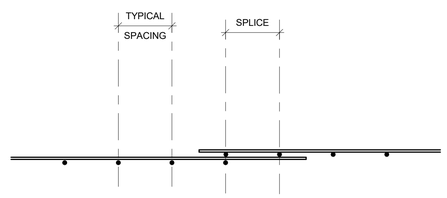
5 ISOLATION JOINT DETAILS

3/4" = 1'-0"



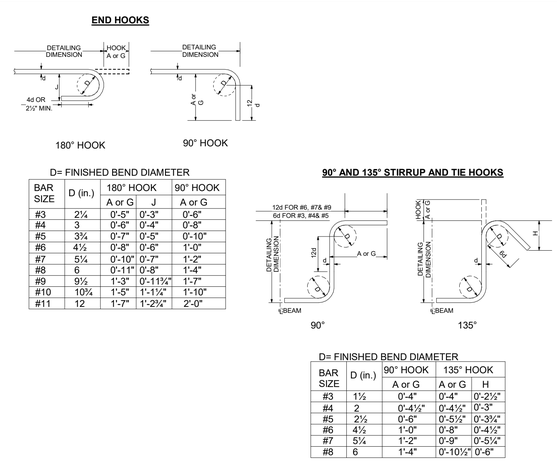
6 TYPICAL RAILING DETAIL - CORE OPTION

3/4" = 1'-0"



7 DETAIL OF TYPICAL W.W.R. SLAB REINF. LAP SPLICE

1 1/2" = 1'-0"



D= FINISHED BEND DIAMETER

BAR SIZE	D (in.)	180° HOOK		90° HOOK
		A or G	J	A or G
#3	2¼	0'-5"	0'-3"	0'-6"
#4	3	0'-6"	0'-4"	0'-8"
#5	3¾	0'-7"	0'-5"	0'-10"
#6	4½	0'-8"	0'-6"	1'-0"
#7	5¼	0'-10"	0'-7"	1'-2"
#8	6	0'-11"	0'-8"	1'-4"
#9	9½	1'-3"	0'-11¾"	1'-7"
#10	10¾	1'-5"	1'-1¼"	1'-10"
#11	12	1'-7"	1'-2¾"	2'-0"

D= FINISHED BEND DIAMETER

BAR SIZE	D (in.)	90° HOOK	135° HOOK	
		A or G	A or G	H
#3	1½	0'-4"	0'-4"	0'-2½"
#4	2	0'-4½"	0'-4½"	0'-3"
#5	2½	0'-6"	0'-5½"	0'-3¾"
#6	4½	1'-0"	0'-8"	0'-4½"
#7	5¼	1'-2"	0'-9"	0'-5¼"
#8	6	1'-4"	0'-10½"	0'-6"

8 HOOK LENGTH DETAIL

1 1/2" = 1'-0"

3.00 REINFORCED CONCRETE

3.01 STRUCTURE DESIGNED IN ACCORDANCE WITH THE ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

3.02 CONCRETE SHALL BE NORMAL WEIGHT (145-150 PCF) U.N.O. AND HAVE THE FOLLOWING MINIMUM 28 DAY STRENGTHS:
FOUNDATIONS ..... 4,000 psi
SLAB ON GRADE..... 4,000 psi
BEAMS..... 4,000 psi

3.03 HORIZONTAL REINFORCEMENT IN WALLS, FOOTINGS AND TURNDOWN SLABS SHALL BE CONTINUOUS AROUND CORNERS. WHERE HORIZONTAL REINFORCEMENT IS INDICATED ONLY ON THE INTERIOR OR EXTERIOR FACE OF WALLS, THESE BARS SHALL BE CONTINUOUS AROUND BENDS AND CORNERS. ADDITIONAL HORIZONTAL CORNER BARS OF THE SAME SIZE AND SPACING SHALL BE PROVIDED AT THE OPPOSITE FACE.

3.04 CONCRETE PROTECTION FOR REINFORCEMENT SEE TABLE 1/S3.00

3.05 DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI 315-99, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT - 1999".

3.06 THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE OWNER'S TESTING LABORATORY. OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S RESPONSIBILITY.

3.07 USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.

3.08 CHAMFER OR ROUND ALL EXPOSED CORNERS, 3/4" MINIMUM (COORDINATE WITH ARCHITECTURAL REQUIREMENTS).

3.09 TIE ALL REINFORCING STEEL AND EMBEDMENTS SECURELY INTO PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES.

3.10 DO NOT PLACE PIPES OR DUCTS EXCEEDING ONE-THIRD OF THE SLAB OR WALL THICKNESS WITHIN THE SLAB UNLESS SPECIFICALLY SHOWN AND DETAILED ON STRUCTURAL DRAWINGS. SEE MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR LOCATION OF SLEEVES, ACCESSORIES, ETC.

3.11 ALL CONCRETE CONSTRUCTION SHALL BE INSPECTED BY OR UNDER THE SUPERVISION OF A LICENSED DESIGN PROFESSIONAL OR BY A QUALIFIED INSPECTOR (REF: ACI 318, 1.3.1).

3.12 PROVIDE FOR AN ALLOWANCE OF 1.5% OF REINFORCING BARS TO BE FABRICATED AND PLACED DURING PROGRESS OF WORK AS MAY BE DIRECTED BY THE STRUCTURAL ENGINEER IN ADDITION TO ALL OF THE STEEL INDICATED ON THE DRAWINGS. CREDIT OWNER WITH ANY UNUSED PORTION OF THIS ALLOWANCE AT COMPLETION OF CONCRETE CONSTRUCTION.

3.13 UNLESS NOTED OTHERWISE, LAP, SPLICE, OR EMBEDMENT LENGTHS SHALL CONFORM TO ACI 318 CLASS B TENSION SPLICE.

3.14 DO NOT WELD OR TACK WELD REINFORCING STEEL UNLESS APPROVED OR DIRECTED BY THE STRUCTURAL ENGINEER.

3.15 HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED ONLY WHERE INDICATED ON THE PLANS.THE LOCATION OF VERTICAL CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.

3.16 CONSTRUCTION JOINTS SHALL BE THOROUGHLY ROUGHENED BY MECHANICAL MEANS AND CLEANED. DETAIL CONCRETE REINFORCEMENT AND ACCESSORIES IN ACCORDANCE WITH ACI SP-66 (04) DETAILING MANUAL. SUBMIT SHOP DRAWINGS FOR APPROVAL, SHOWING ALL FABRICATION DIMENSIONS AND LOCATIONS FOR PLACING REINFORCING STEEL AND ACCESSORIES. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED.

3.17 REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 UNLESS NOTED OTHERWISE. ALL #11 BARS SHALL CONFORM TO ASTM A615 GRADE 75.

3.18 WELDED WIRE FABRIC (MESH) SHALL CONFORM TO ASTM A1064 AND SHALL BE PROVIDED IN FLAT SHEETS (ROLLS NOT PERMITTED).

3.19 PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE; SPLICE ONLY AS SHOWN OR APPROVED; STAGGER SPLICES WHERE POSSIBLE; USE CLASS B TENSION SPLICE UNLESS NOTED OTHERWISE.

3.20 DOWELS SHALL MATCH THE SIZE AND SPACING OF THE SPECIFIED REINFORCEMENT AND SHALL BE LAPPED WITH CLASS B TENSION SPLICES UNLESS NOTED OTHERWISE.

3.21 SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE REINFORCING BAR SIZES AND PLACEMENT. WRITTEN DESCRIPTION OF REINFORCEMENT WITHOUT ADEQUATE SECTIONS, ELEVATIONS, AND DETAILS IS NOT ACCEPTABLE.

3.22 PROVIDE DOWELS FROM FOUNDATIONS THE SAME SIZE AND NUMBER AS THE VERTICAL WALL OR COLUMN REINFORCING, UNLESS NOTED OTHERWISE.

3.23 DETAIL ALL CONCRETE WALLS AND BEAMS ON THE SHOP DRAWINGS IN ELEVATION UNLESS SPECIFICALLY APPROVED OTHERWISE.

3.24 CONCRETE WALLS SHALL HAVE VERTICAL KEYED CONSTRUCTION OR TOOLED CONTROL JOINTS AT 20'-0" O.C. MAXIMUM, UNLESS NOTED OTHERWISE ON THE DRAWINGS. STOP HORIZONTAL REINFORCEMENT 2" CLEAR OF EACH SIDE OF CONSTRUCTION JOINTS. ALLOW ONLY 50% OF HORIZONTAL WALL REINFORCEMENT TO PASS THROUGH CONTROL JOINTS. CONTROL JOINTS ARE REQUIRED IN THE WALLS BUT NOT IN THE FOOTINGS SUPPORTING THE WALLS.

3.25 CAMBER FORMWORK OF FLOOR MEMBERS WITH CLEAR SPANS MORE THAN 30'-0" (CAMBER REQUIRED = L/480).

3.26 IT IS NOT PERMITTED TO WET-STICK ANY EMBEDDED ITEMS, REINFORCEMENT, ANCHORS, OR ANY CAST-IN STRUCTURAL ELEMENT IN CONCRETE.

3.27 NO BACKFILL SHALL BE PLACED AGAINST CONCRETE OR CMU WALLS UNTIL CONCRETE (AND,OR MORTAR, WHERE OCCURS) HAS ATTAINED FULL STRENGTH AND WALLS HAVE BEEN BRACED AGAINST LATERAL THRUST - SUCH BRACING SHALL REMAIN IN PLACE UNTIL SLAB ON EARTH (AND SUPPORTED SLAB, IF ANY HAS BEEN PLACED AND ALLOWED TO CURE FOR 28 DAYS.

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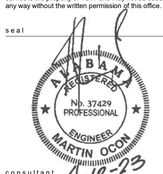

consultant

Browder + LeGuizamon and Associates, Inc. Engineers
6285 Barfield Road NE Suite 200
Atlanta, GA 30328
B+L PROJECT # 22147

revisions

No.	Description	Date
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	100% CONSTRUCTION DOCUMENTS	04/14/23

north arrow + scale

scale: As indicated

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
PO BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	B+L
drawn by:	B+L
checked by:	B+L

drawing date

APRIL 14, 2023

sheet title

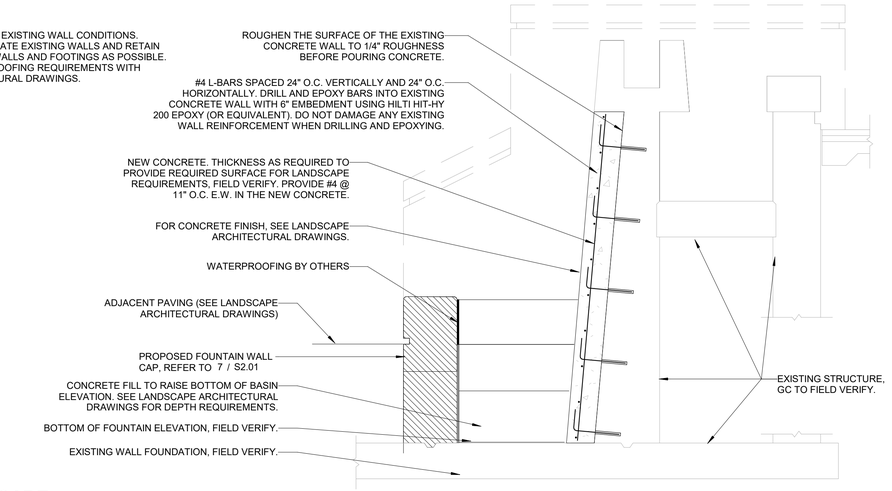
CONCRETE NOTES AND TYPICAL DETAILS

sheet number

S3.00

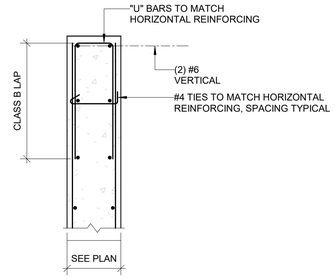
NOTES:

1. GC TO FIELD VERIFY ALL EXISTING WALL CONDITIONS.
2. CONTRACTOR TO EVALUATE EXISTING WALLS AND RETAIN AS MUCH OF EXISTING WALLS AND FOOTINGS AS POSSIBLE.
3. COORDINATE WATERPROOFING REQUIREMENTS WITH LANDSCAPE ARCHITECTURAL DRAWINGS.



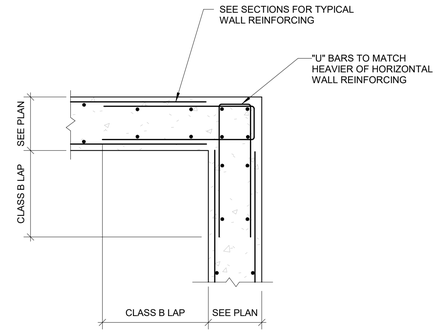
1 FOUNTAIN FACADE

1/2" = 1'-0"



2 END OF WALL PLAN DETAIL

3/4" = 1'-0"



3 CORNER WALL PLAN DETAIL

3/4" = 1'-0"

4 WALL INTERSECTION PLAN DETAIL

3/4" = 1'-0"

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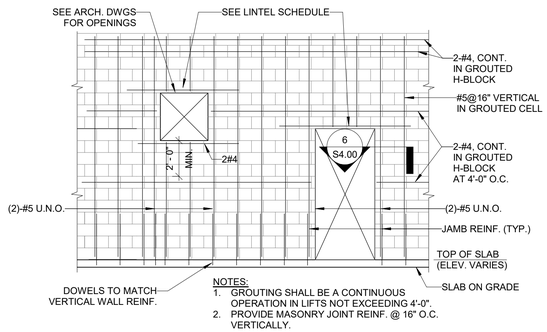
sheet title

CONCRETE DETAILS

sheet number

S3.01



NOTES:
1. GROUTING SHALL BE A CONTINUOUS OPERATION IN LIFTS NOT EXCEEDING 4'-0".
2. PROVIDE MASONRY JOINT REINF. @ 16" O.C. VERTICALLY.

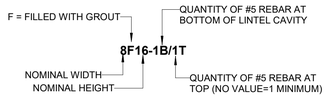
1 TYPICAL MASONRY DETAIL

1/4" = 1'-0"

CMU LINTEL SCHEDULE

OPENING WIDTH		NON-LOAD BEARING	LOAD BEARING	PRECAST
		8"	16"	
MIN.	MAX.	8" BLOCK	8" BLOCK	8" BLOCK
	3'-0"	1 # 4	2 # 4	8F8-1B
3'-0"	5'-0"	1 # 5	2 # 5	8F8-1B
5'-0"	7'-0"	2 # 4	2 # 6	8F16-1B
7'-0"	9'-0"	2 # 5	4 # 5	8F16-2B

NOTES:
1. USE 3000 PSI MINIMUM GROUT FOR CMU LINTELS UNLESS NOTED OTHERWISE.
2. PROVIDE 8" MINIMUM BEARING AT NON-LOAD BEARING WALLS AND 16" MINIMUM BEARING EACH END AT LOAD BEARING WALLS.
3. FOR PRECAST LINTELS:



2 LINTEL SCHEDULE

3/4" = 1'-0"

LINTEL SCHEDULE

OPENING WIDTH		STEEL
		
MIN.	MAX.	
3'-0"	7'-0"	L5x5x5/16"
7'-0"	9'-0"	L5x5x5/16"
9'-0"	11'-0"	BENT PLATE PL 3/8 x 6 x 0'-5"

NOTES:
1. USE STEEL ANGLES SHOWN FOR ALL CONDITIONS, U.N.O.
2. BEARING FOR STEEL ANGLES TO BE 8" MINIMUM HORIZONTAL.

3 LINTEL SCHEDULE

3/4" = 1'-0"

MASONRY OPENINGS: AT EACH SIDE OF OPENING FILL 2 CELLS PER GENERAL NOTES. ADD 2-#5 IN EACH CELL FULL HEIGHT OF WALL AND PROVIDE 2 DOWELS AT TOP AND BOTTOM.

END CMU WALL DETAIL

AT CORNERS FILL 3 CELLS PER GENERAL NOTES. ADD 2 #5 IN EACH CELL FULL HEIGHT OF WALL AND PROVIDE 3 DOWELS AT TOP AND BOTTOM.

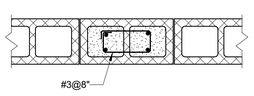
CORNER CMU WALL DETAIL

AT INTERSECTION FILL 3 CELLS PER GENERAL NOTES. ADD 2 #5 IN EACH CELL FULL HEIGHT OF WALL AND PROVIDE 3 MATCHING DOWELS AT TOP AND BOTTOM.

CMU WALL INTERSECTION DETAIL

4 TYPICAL CMU WALL REINFORCING DETAILS

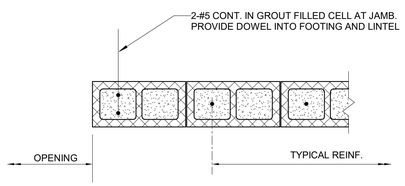
1" = 1'-0"



UNDER BEAM FILL 2 CELLS PER GENERAL NOTES. ADD 2 #5 IN EACH CELL FROM FOOTING TO BEARING LAP BARS W/ INTERSECTING BOND BEAMS AND PROVIDE 4 MATCHING DOWELS TO FOOTING.

5 CMU WALL - BEAM BEARING

1" = 1'-0"



6 JAMB DETAIL

1" = 1'-0"

4.00 MASONRY

4.01 CONCRETE MASONRY DESIGN AND CONSTRUCTION SHALL CONFORM TO: ACI 530/ASCE 5, BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES AND ACI 530.1/ASCE 6, SPECIFICATIONS FOR CONCRETE MASONRY CONSTRUCTION.

4.02 PROVIDE TYPE S MORTAR IN ACCORDANCE WITH ASTM C270, UNLESS NOTED OTHERWISE. MORTAR BED JOINTS SHALL NOT EXCEED 5/8" INCH THICKNESS.

4.03 LAY MASONRY UNITS IN RUNNING BOND UNLESS NOTED OTHERWISE.

4.04 PROVIDE HORIZONTAL JOINT REINFORCEMENT COMPLYING WITH ASTM A82, NO. 9 GAUGE OR HEAVIER, ZINC COATED, OR W1.7 HORIZONTAL JOINT LADDER REINFORCING PLACED 16" ON CENTER UNLESS NOTED OTHERWISE. PROVIDE SPECIAL ACCESSORIES FOR CORNERS AND INTERSECTIONS. PLACE REINFORCEMENT ABOVE ALL WALL OPENINGS AT FIRST COURSE ABOVE OPENING.

4.05 PROVIDE CONTROL JOINTS IN ALL CONCRETE MASONRY WALLS AT LOCATIONS APPROVED BY THE ARCHITECT AT A MAXIMUM SPACING OF 3 TIMES THE WALL HEIGHT OR 40'-0", WHICHEVER IS LESS.

4.06 PROVIDE MINIMUM 2#4 VERTICAL WITH GROUT FULL HEIGHT AT EACH SIDE OF OPENING AND PROVIDE 1#5 WITH GROUT FULL HEIGHT IN TWO CONSECUTIVE CELLS OF END WALLS. PERIMETER MASONRY WALL SHALL BE REINFORCED WITH #5 @ 24" VERTICAL UNLESS NOTED OTHERWISE.

4.07 MASONRY REINFORCING STEEL SHALL BE PLACED IN THE CENTER OF THE WALL UNLESS NOTED OTHERWISE. LAP, SPLICE, OR EMBEDMENT LENGTHS SHALL CONFORM TO ACI 530 DEVELOPMENT LENGTHS.

4.08 ALL MASONRY WALLS TO BE FULLY GROUTED, BELOW GRADE, AS OCCURS.

4.09 WHERE CMU WALLS OR PIERS ARE SHOWN TO HAVE VERTICAL REINFORCING, FILL ALL CELLS CONTAINING VERTICAL REINFORCING WITH 3,000 PSI PEA-GRAVEL CONCRETE OR GROUT CONFORMING WITH ASTM C476 WITH MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI, UNLESS NOTED OTHERWISE. LAY BLOCK A MAXIMUM OF 4'-0" HIGH PRIOR TO FILLING CELLS WITH CONCRETE. IF UNITS BECOME WET, DO NOT INSTALL UNITS UNTIL THEY ARE IN AN AIR-DRIED CONDITION.

4.10 PROVIDE LIGHT WEIGHT, HOLLOW, LOAD-BEARING CONCRETE MASONRY UNITS (CMU) CONFORMING TO ASTM C90, UNLESS NOTED OTHERWISE.

4.11 PROVIDE CONCRETE MASONRY WITH MINIMUM COMPRESSIVE STRENGTH, f'm = 2000 PSI CORRESPONDING TO UNIT STRENGTH OF 2000 PSI ON NET CROSS-SECTIONAL AREA OF CMU DETERMINED IN ACCORDANCE WITH ASTM C140.

4.12 SIDE AND TOP OF MASONRY WALL PANELS SHALL BE ANCHORED TO THE STRUCTURE AT A MAXIMUM SPACING OF 24" O.C. UNLESS NOTED OTHERWISE.

4.13 DO NOT PLACE CONDUIT OR PIPES IN THE SAME CELL AS REINFORCEMENT.

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1447 Peachtree Street NE, Suite 850
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404.873.6730
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	100% CONSTRUCTION DOCUMENTS	04/14/23

north arrow + scale

scale: As indicated

project information

HERO PLAZA
PHASE 1

project address

1 S WATER ST.
MOBILE, AL 36609

client information

CITY OF MOBILE
PO BOX 1827
MOBILE, AL 36633
251.342.1070 (EXT. 1292)

drawing information

project number:	22089
contact:	B+L
drawn by:	B+L
checked by:	B+L

drawing date

APRIL 14, 2023

sheet title

MASONRY NOTES AND TYPICAL DETAILS

sheet number

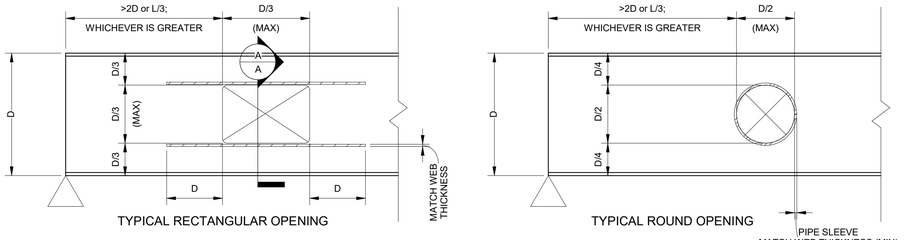
S4.00

CONNECTION DESIGN TABLE	
BEAM SIZE	MIN. # OF BOLTS
W27	5 ROWS DOUBLE SHEAR
W21, W24,	4 ROWS DOUBLE SHEAR
W14 TO W18,	3 ROWS DOUBLE SHEAR
W12 OR LESS	2 ROWS DOUBLE SHEAR

NOTE:
THIS IS TO BE USED FOR MINIMUM QUANTITIES ONLY. MORE BOLTS MAY BE REQUIRED BY DESIGN CONDITIONS.

1 CONNECTION DESIGN TABLE

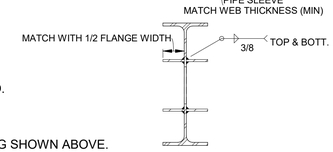
3/4" = 1'-0"



TYPICAL RECTANGULAR OPENING

TYPICAL ROUND OPENING

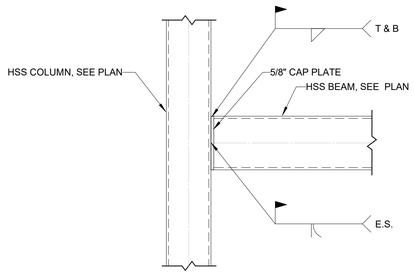
NOTES:
1. COORDINATE ALL OPENING LOCATIONS WITH ARCH & MEP.
2. OPENINGS SHALL BE CENTRALLY PLACED IN THE WEB.
3. LOCATION FOR THE OPENINGS SHALL BE WITHIN THE MIDDLE THIRD OF THE SPAN.
4. CLEAR SPACING BETWEEN OPENINGS SHALL NOT BE LESS THAN THE 2xBEAM DEPTH, 2D.
5. CORNERS OF RECTANGULAR OPENING SHALL BE ROUNDED.
6. POINT LOADS SHALL NOT BE APPLIED LESS THAN D FROM SIDE OF ADJACENT OPENING.
7. NO OPENINGS ARE ALLOWED @ MOMENT FRAMES.
8. 3.5" OR LESS SQUARE AND ROUND OPENING DO NOT REQUIRE ADDITIONAL REINFORCING SHOWN ABOVE.



A-A

2 TYP. BEAM PENETRATION DETAIL

1 1/2" = 1'-0"



3 TYP. HSS STEEL BEAM TO COLUMN CONN.

3/4" = 1'-0"

5.00 STRUCTURAL STEEL,

5.01 STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED ACCORDING TO THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AND THE CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS.

5.02 MATERIALS ARE TO BE AS FOLLOWS:

STRUCTURAL STEEL (W-SHAPE).....	ASTM A992 (Fy = 50 ksi)
STRUCTURAL STEEL (MISC. STEEL).....	ASTM A36
STEEL PIPE (WATTLE FENCE POST).....	ASTM A847 (Fy = 50 ksi)
STRUCTURAL TUBING.....	ASTM A1085, (Fy = 50 ksi)
STRUCTURAL BOLTS.....	ASTM A325, MIN. 3/4" DIAMETER
ANCHOR RODS.....	ASTM F1554 GR. (36/55/105)
STUD CONNECTORS.....	(NELSON) 3/4" DIA. H.S. U.N.O.
EXPANSION BOLTS.....	(1) HILTI KWIK BOLT 3 (2) SIMPSON STRONG-BOLT WEDGE ANCHOR (3) POWER FASTENERS POWER STUD+ SD1
MASONRY EXPANSION ANCHOR; ALL-THREAD STEEL ANCHOR WITH INJECTION ADHESIVE.....	(1) GROUT FILLED CONCRETE BLOCK - HILTI HIT-HY 150 MAX, HOLLOW BLOCK - HILTI HIT-HY 20 (2) POWERS FASTENERS PE1000+ (3) SIMPSON SET 22

5.03 PROVIDE TEMPORARY BRACING OF STRUCTURAL FRAMING UNTIL ALL PERMANENT BRACING, MOMENT CONNECTIONS AND FLOOR & ROOF DECKS (DIAPHRAGMS) ARE COMPLETELY INSTALLED AND ALL TRUSS, TRUSS ASSEMBLY AND COLUMN/BEAM CONNECTIONS ARE COMPLETED.

5.04 THE STRUCTURAL DESIGN OF THE BUILDING IS BASED ON THE FULL INTERACTION OF ALL ITS COMPONENT PARTS, WITH NO PROVISIONS MADE FOR CONDITIONS OCCURRING DURING CONSTRUCTION. THEREFORE, CONTRACTOR SHALL PROVIDE ADEQUATE BRACING DURING CONSTRUCTION.

5.05 STEEL CONNECTIONS SHALL BE DESIGNED BY THE CONTRACTOR. THIS DESIGN SERVICE SHALL BE INCLUDED IN THE CONTRACTOR'S SCOPE OF SERVICE. SHOP DRAWINGS AND CALCULATIONS OF SUCH CONNECTIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT STATE. REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR DESIGN AND ADEQUACY OF SUCH CONNECTIONS.

5.06 THE STRUCTURAL STEEL MEMBERS HAVE NOT BEEN DESIGNED TO ACCOMMODATE THE TORSION RESULTING FROM THE ECCENTRIC LOADING OF THE PRECAST PANELS, CURTAINWALL SYSTEM, LIGHT GAUGE METAL FRAMING, ETC. SUPPLEMENTARY SECONDARY BRACING SHALL BE DESIGNED AND PROVIDED BY THE SUPPLIER TO ELIMINATE THE TORSION.

5.07 STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED ACCORDING TO AISC LOAD AND RESISTANCE FACTOR DESIGN (LRFD) SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.

5.08 SUBMIT SHOP DRAWINGS PREPARED IN ACCORDANCE WITH AISC MANUAL "DETAILING FOR STEEL CONSTRUCTION". DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED.

5.09 WELDING TO BE BY QUALIFIED WELDERS USING E70XX ELECTRODES AND IN ACCORDANCE WITH AWS D1.1.

5.10 WELDER'S CERTIFICATE SHALL BE AVAILABLE AT THE JOB SITE.

5.11 MINIMUM FILLET WELD SIZE TO BE 3/16" " UNLESS NOTED OTHERWISE.

5.12 ALL STIFFENER PLATES, ANGLES, ETC., WHERE SHOWN IN CONTACT WITH OTHER STEEL MEMBERS, TO BE CONNECTED WITH 3/16" FILLET WELD ALL AROUND UNLESS NOTED OTHERWISE.

5.13 BOLTED CONNECTIONS SHALL BE ASSEMBLED AND INSPECTED ACCORDING TO "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM 490."

5.14 DO NOT USE GAS CUTTING TORCHES FOR CORRECTING FABRICATION ERRORS IN THE STRUCTURAL FRAMING.

5.15 ALL EXPOSED STRUCTURAL STEEL RECEIVING INTUMESCENT PAINT SHOULD BE SHOP PRIMED. SEE ARCHITECTURAL DRAWINGS FOR LOCATION.

5.16 PAINT STRUCTURAL STEEL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. DO NOT PAINT STEEL SURFACES TO BE ENCASED IN CONCRETE, WHICH WILL RECEIVE FIREPROOFING, CONNECTIONS DESIGNATED AS FRICTION TYPE, OR TO BE WELDED. STEEL SURFACES RECEIVING AUTOMATICALLY WELDED SHEAR CONNECTOR STUDS IN THE FIELD SHALL NOT BE PAINTED.

5.17 ALL THE EXPOSED STEEL SHOULD BE FABRICATED TO AISC'S ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SPECIFICATIONS.

5.18 STRUCTURAL STEEL (INCLUDING MASONRY RELIEF ANGLE) EXPOSED TO WEATHER SHALL BE GALVANIZED.

5.19 COORDINATE EMBEDDED ITEMS REQUIRED FOR ARCHITECTURAL, STRUCTURAL, AND MECHANICAL ELEMENTS.

5.20 STEEL COLUMNS ARE TO BE CONTINUOUS WITH NO SPLICES UNLESS NOTED OTHERWISE. ALL STEEL COLUMNS TO HAVE 5/8" CAP PLATE UNLESS NOTED OTHERWISE.

5.21 CONNECTIONS OF STRUCTURAL STEEL SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON DRAWINGS:

A. WHERE BEAM REACTIONS ARE NOT SHOWN ON THE DRAWINGS, CONNECTIONS SHALL BE DETAILED FOR THE MAXIMUM UNIFORM LOAD WHICH THE BEAM WILL SUPPORT (AS A SIMPLE BEAM) FOR THE SPAN SHOWN ON THE DRAWING. COMPOSITE BEAMS ARE TO BE DESIGNED FOR 1.5 x THE MAXIMUM UNIFORM LOAD WHICH THE BEAM WILL SUPPORT AS A SIMPLE BEAM FOR THE SPAN SHOWN ON DRAWINGS.

B. CONNECTIONS FOR BEAMS SHALL BE ADEQUATE TO PROVIDE FOR THE REACTION DUE TO MAXIMUM UNIFORMLY DISTRIBUTED LOAD FOR THAT SPAN, PER THE TABLES IN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, 13th PART 3 OF AISC 360-05.

C. WHERE REACTIONS ARE SUBJECT TO ECCENTRICITY, SUCH ECCENTRICITY SHALL BE TAKEN INTO ACCOUNT.

5.22 THE CAMBER OF STEEL MEMBERS SHALL BE VERIFIED IN THE SHOP AND FIELD PER THE SPECIFICATIONS.

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PO BOX 1827
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APRIL 14, 2023

sheet title

STEEL SECTIONS AND DETAILS

sheet number

S5.00

"Green Building Benefits" of Specifying and Constructing Decorative Architectural Fountains and Water Features By Roman Fountains

* Fountains use re-circulated water, minimizing water waste and run-off, providing for site water use reduction and water efficient landscaping.
* Fountains serve as sound masks and barriers to lessen urban environmental noise pollution.
* Fountains serve as air filters, removing dust, dirt, allergens and other pollutants, thereby improving air quality.
* Fountains serve as nature's air conditioners, reducing ambient temperatures surrounding the water feature, and providing thermal comfort at the fountain site.
* Fountains use less water on a per square foot basis than the same planted area requiring sprinkler and drip irrigation, providing for water efficient landscaping.
* Fountains reduce the 'heat island effect' generated by paved or concreted landscape and hardscape surfaces.
* Fountains enhance the 'urban livability' of the building environment and convey a positive quality of life to occupants and visitors.
* Fountains offer opportunities to optimize energy performance, efficiency and sustainability using energy efficient motors and LED lighting products.
* PVC pipe saves energy, reduces CO2 emissions and takes less energy to produce than many competing products. PVC pipe saves fossil fuels; the principal raw material (nearly 60%) is chlorine derived from common salt, one of the most plentiful natural resources on earth. PVC is 100% recyclable.

NOTICE OF STATED AND INTENDED USE FOR DECORATIVE ARCHITECTURAL VIEWING PURPOSES ONLY UNLESS SPECIFICALLY REPRESENTED, IDENTIFIED, OR OTHERWISE SPECIFIED AND DESIGNED AS A "WATERPLAY" FOUNTAIN

It is hereby acknowledged, agreed and understood by specifier / purchaser / owner/ operator of this equipment and/or system that its stated and intended use is for decorative viewing purposes only, and not for public bathing, swimming, public entry or public recreational use. As such Roman Fountains Corporation assumes no responsibility or liability whatsoever for personal injury, sickness, illness, disease, or other accidents which may occur as a result of the equipment/system being used, operated or otherwise maintained in a manner inconsistent with its stated and intended purpose. Specifier/Purchaser/Owner/Operator is solely responsible for determining whether any specific codes, rules, regulations or guidelines for fountains apply to this project prior to construction, installation and operation and for notifying the public of the stated and intended use and operation of this decorative architectural fountain and for lawful enforcement thereof, including posting any and all signs, notices, warnings, instructions and barriers and providing personnel as necessary to enforce compliance with its intended use.

NOTICE

ANY ALTERATIONS, ADDITIONS, DELETIONS, CHANGES, MARKINGS, OR MODIFICATIONS TO ROMAN FOUNTAINS NOTES, NOTICES, INSTRUCTIONS, WARNINGS, CAUTIONS, LISTED INSTALLER RESPONSIBILITIES, TERMS, CONDITIONS, ETC. ARE NULL & VOID' AND SHALL NOT BE CONSIDERED, ACCEPTED OR RECOGNIZED BY ROMAN FOUNTAINS AS PART OF THE REVIEW OR APPROVAL PROCESS.

ROMAN FOUNTAINS

PREPARED FOR: TSW DESIGN - ATLANTA, GA

PROJECT NAME: MOBILE CONVENTION CENTER - HERO PLAZA
MOBILE ALABAMA

PROJECT DATE: April 14, 2023

PROJECT LEAD: TOM HANSON - Atlanta Office

PROJECT NUMBER: 13338 - ISSUE "D" PROGRESS SET FOR DESIGN REVIEW

SHEET DESCRIPTION	DWG. #
FOUNTAIN EQUIPMENT LIST, PERFORMANCE CRITERIA, & PUMP CURVE	WFN-1
GENERAL INSTALLATION NOTES	WFN-2
FOUNTAIN FITTING DETAILS 1 OF 2	WFD-1
FOUNTAIN FITTING DETAILS 2 OF 2	WFD-2
FOUNTAIN SITE PLAN	WFM-1
FOUNTAIN PIPING & INSTRUMENTATION DIAGRAM	WFM-1A
FOUNTAIN EMBED DIMENSIONS	WFM-1B
FOUNTAIN SUCTION, DRAIN, & VENT PIPING PLAN	WFM-2
FOUNTAIN DISCHARGE & FILL PIPING PLAN	WFM-3
FOUNTAIN MECHANICAL ROOM DETAILS	WFM-4
FOUNTAIN MECHANICAL ROOM "DRY PRIME" DETAILS	WFM-5
FOUNTAIN MECHANICAL ROOM FILTER & TREATMENT DETAILS	WFM-6
FOUNTAIN ELECTRICAL CONDUIT PLAN	WFE-1
FOUNTAIN ELECTRICAL PANEL SCHEMATIC	WFE-2
TYPICAL ELECTRICAL DETAILS & ARTICLE 680 NEC REQUIREMENTS	WFI-1

IMPORTANT SCHEDULING NOTICE TO CLIENT

In accordance with Roman Fountains standard quotation and published terms and conditions of sale, orders for components and/or systems are not released for fabrication and shipment until one (1) set of submittals/shop drawings clearly marked "REVIEWED" by customer is received at our offices in Sarasota, Florida.

Delivery times quoted in written proposals commence from the date one (1) complete set of reviewed submittal/shop drawings is received with no changes or revisions required.

This is a company policy requirement, to insure accurate client/manufacturer communication pertaining to scope of work & responsibility. Thank You.

CONFIRM INCOMING POWER: _____

DRAWING "REVIEWED" FOR SCOPE BY: _____
SIGNATURE OF AUTHORIZED INDIVIDUAL/COMPANY NAME

DATE: _____

NOTE: POWER SHALL BE VERIFIED & CONFIRMED BY CONTRACTOR WITH APPROVED DRAWINGS. IF THERE ARE NO CHANGES, THE POWER REQUIREMENT LISTED WILL APPLY.

NOTE: The proper design, operation, and performance of this system is based on the selection and use of equipment manufactured and/or selected by Roman Fountains Corporation, Sarasota, Florida, USA, (941) 484-8224. Substitution of equipment, other than that selected and furnished by Roman Fountains, voids the system warranty and performance guaranty and installer assumes full responsibility for system installation, operation and performance.

ATTENTION: In accordance with Roman Fountains standard quotation and terms and conditions of sale, components and systems are not released for fabrication and shipment until approved submittals and shop drawings are received at factory.

IMPORTANT NOTICE TO CONTRACTOR AND OWNER: Certain events beyond the reasonable and foreseeable control of Roman Fountains Corporation can cause certain fountain system equipment damage or failure.

Control and removal of foreign objects entering the fountain such as coins, plastic and paper products, wrappers, lint, dust, dirt, container lids and caps, pull tabs, glass, metal, surrounding landscape coverings such as leaves, twigs, soil, seeds, bark, wood chips, gravel cover, wood products, insects, vermin, animal wastes, vegetation, plant matter, algae, chemicals, detergents, fertilizers, or other objects either as a result of natural, willful or forced occurrence is the responsibility of the contractor and owner, and Roman Fountains shall not be held responsible or liable for any incidental or consequential equipment, component, structural or any other direct or indirect damage as a result of foreign objects or debris entering the fountain system by any means, including water quality and sanitation issues.

Contractor and owner shall take any and all precautions necessary in order to prevent damage to equipment and components, including providing adequate screening/grating devices and performing periodic inspection and cleaning of fountain pool, without impairing proper equipment operation, regardless of whether such devices are required per specification, or shown in manufacturers shop/installation drawings and details.

NOTICE: Roman Fountains Standard Warranty terms & conditions apply to all product/system sales. Contact factory for complete warranty form. Any and all terms to the contrary are "NULL & VOID".

CORPORATE OFFICE, MANUFACTURING & DISTRIBUTION FACILITY
Phone #: (941) 484-8224 Fax #: (941) 484-9302
1125 Commerce Blvd., N.
Sarasota, FL. 34243
http://www.romanfountains.com

EASTERN ENGINEERING & SALES OFFICE
Phone #: (877) 794-1802 Fax #: (770) 300-0074
Johns Creek, GA. 30022

DRAWING SUBMITTAL
NOT FOR CONSTRUCTION
FOR CLIENT REVIEW.

IMPORTANT NOTICE TO FOUNTAIN CONTRACTOR/INSTALLER (MECHANICAL AND ELECTRICAL):
NOTWITHSTANDING THE CONTRACT DOCUMENTS, INCLUDING ARCHITECT'S FINAL "FOR CONSTRUCTION" PLANS AND SPECIFICATION DATA, THE FOUNTAIN SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH ROMAN FOUNTAINS FINAL AND APPROVED SET OF SHOP/INSTALLATION DRAWINGS, DETAILS AND INSTRUCTIONS, AND MAINTAINED IN STRICT ACCORDANCE WITH ROMAN FOUNTAINS OPERATION & MAINTENANCE MANUALS AND INSTRUCTIONS, OR ROMAN FOUNTAINS PRODUCT WARRANTY AND SYSTEM PERFORMANCE GUARANTEE IS VOID.

GENERAL NOTES PERTAINING WATER FEATURE CONSTRUCTION, INSTALLATION, & OPERATION

WATERPROOFING

Roman Fountains recommends all fountains be properly waterproofed and all fountain components be properly sealed with suitable waterproof sealant to ensure a watertight fountain installation.

Any waterproofing details or specifications that may appear on Roman Fountains plans or equipment details are for general reference only and shall not be interpreted or relied on as a formal specification or recommendation. Conversely, the absence of waterproofing details or specification on Roman Fountains plans, details, or product sheets does not imply that waterproofing is not a project requirement.

It is the responsibility of the project Architect / Engineer / Fountain Design Consultant to specify any and all waterproofing requirements, products, installation / application methods, procedures, and other details as may be necessary and required for the fountain structure and components.

It is the responsibility of the waterproofing contractor to review the project specifications for waterproofing requirements for the fountain and related components, and to provide the specified waterproofing products and systems to ensure the integrity of the fountains's waterproofing system.

It is the responsiblity of the fountain equipment installer to coordinate all waterproofing materials, systems, application, procedures and methods with the waterproofing contractor, in accordance with the project specifications.

Roman Fountains assumes no responsibility or liability whatsoever for any waterproofing issues related to its design package, scope of work, or equipment supply. If the fountain contractor has questions pertaining to waterproofing, they shall be directed to the project Architect / Engineer / Fountain design consultant, whom is solely responsible for that system.

LINERS & MEMBRANES

Equipment manufactured, supplied and otherwise furnished by Roman Fountains is primarily designed for embedment or casting directly into concrete or gunite structural material. It is not designed for natural or synthetic liner or membrane installation including fiberglass or metal liners, shells, covers or cladding. Any such requirement for liner or membrane installation or adaptation is the responsibility of the specifier, purchaser and installer, including but not limited to flanges, clamping devices, gaskets, fastening devices, coatings, adhesives or bonding agents.

TESTING

1. Perform in the presence of the owner, architect, or authorized representative for designated duration with no pressure loss or noticeable leaks.
2. Do not include equipment in tests which could be damaged by high pressure.
3. Flush out all pipes with clean water prior to performing leak tests.
4. Perform tests as follows:

System	Test Pressure	Medium
Water	75 psi	Water
Drainage	10 ft.	Water

5. Automatic make-up water systems shall be thoroughly tested and operative at the time of final observation. Do not exceed 50 PSI line pressure.
6. After the system has operated for one week, contractor and owner's representative shall inspect water make-up rates and agree that water usage is appropriate for system of this type, are within local ordinances or codes, and that such rates are not indicative of excessive leakage from system. A water meter shall be placed on the fill line for this purpose, if necessary to document precise water usage.

IMPORTANCE OF FLUSHING SYSTEM PRIOR TO STARTUP

Certain events beyond the reasonable and foreseeable control of Roman Fountains Corporation can cause certain fountain system equipment damage or failure.

Control and removal of foreign objects entering the fountain such as coins, plastic and paper products, wrappers, lint, dust, dirt, container lids and caps, pull tabs, glass, metal, surrounding landscape coverings such as leaves, twigs, soil, seeds, bark, wood chips, gravel cover, wood products, insects, vermin, animal wastes, vegetation, plant matter, algae, chemicals, detergents, fertilizers, or other objects either as a result of natural, willful or forced occurrence is the responsibility of the contractor and owner, and Roman Fountains shall not be held responsible or liable for any incidental or consequential equipment, component, structural or any other direct or indirect damage as a result of foreign objects or debris entering the fountain system by any means, including water quality and sanitation issues.

Contractor and owner shall take any and all precautions necessary in order to prevent damage to equipment and components, including providing adequate screening/grating devices and performing periodic inspection and cleaning of fountain pool, without impairing proper equipment operation, regardless of whether such devices are required per specification, or shown in manufacturers shop/installation drawings and details.

WATER CHEMISTRY FOR ALL CHEMICALLY TREATED WATER FEATURES SHALL BE MAINTAINED AS FOLLOWS

Free Chlorine: 1.0-3.0 ppm
Combined Chlorine: None
Bromine: 2.0-4.0 (If used in lieu of Chlorine)
pH: 7.4-7.6
Total Alkalinity: 80-100 ppm
TDS: 1000-2000 ppm
Calcium Hardness: 200-400 ppm
Cyanuric Acid: 20 ppm MAX (0 ppm in Spas and Indoor Features)

Roman Fountains shall not be responsible for water quality and water chemistry issues which may result in hard water scaling, high iron content, staining or any other chemical action or reaction to equipment or structures that may occur, nor shall Roman Fountains assume any responsibility for incidental or consequential damage, deterioration, or other adverse effects to surrounding landscape or hardscape, fountain structure, piping, or equipment as result of water quality and chemistry issues.

Fountain owner / operator shall be solely responsible for performing any and all testing deemed necessary to ascertain fountain water quality and chemistry issues prior to constructing the fountain, and for selecting and providing all water treatment equipment (except when specifically requested to be included as part of the Fountain Equipment package). Roman Fountains is not responsible for providing chemical additives which may be required to render the water suitable for use including health, water quality, and sanitation issues.

All fountain equipment & components furnished by Roman Fountains is designed and manufactured for use in fresh water and / or chemically treated fresh water applications only. Do not install or operate any equipment in salt, brine, or brackish water, or warranty is void.

HUMIDITY, MOLD, & MILDEW

Roman Fountains is not responsible for any humidity, mold or mildew that may occur as a result of operating the fountain. Requirements for air dryers, de-humidifiers, and HVAC issues are the sole responsibility of others.

NATURAL DISCOLORATION OF METALS

Discoloration of brass or copper fittings and components in fountains is a natural occurrence and is not considered by the company to be a product defect or warranty item. Water chemistry may turn the metal green or brown in appearance. Removal of the discoloration can be accomplished using a soft wire wheel brush and brass or copper cleaner if so desired. To minimize this natural occurrence, the material can be treated by owner or installer with a sealant such as Adsil MicroGuard prior to being installed into the fountain basin.

GENERAL NOTES PERTAINING TO THIS FOUNTAIN DRAWING & ENGINEERING PACKAGE

Where conflicts exist, written dimensions shall take precedence over scaled measurements.

Any alterations to this design document in whole or in part made without the express written consent and permission of Roman Fountains Corporation shall be at sole risk of the individual or company making such unauthorized alterations, and Roman Fountains Corporation shall not have or accept any liability or legal exposure arising from said alterations.

Any alterations, additions, deletions, changes, markings, or modifications to Roman Fountains Notes, Instructions, Warnings, Listed Installer Responsibilities, Terms, Conditions, Etc. made during the Review and Approval process shall NOT be considered, accepted, or recognized by Roman Fountains unless specifically incorporated into the drawings by Roman Fountains, and resubmitted for final approval.

The proper design, operation, and performance of this system is based on the selection and use of equipment manufactured and/or selected by Roman Fountains Corporation, Sarasota, FL, USA, (941) 484-8224. Substitution of equipment, other than that selected and furnished by Roman Fountains, voids the system warranty and performance guaranty and installer assumes full responsibility for system installation, operation and performance.

Contractor / installer is responsible for confirming and correlating all dimensions at jobsite. Roman Fountains is not responsible for construction means, methods, techniques, sequences, steps, or procedures, or for any safety requirements, codes, precautions, rules, regulations or programs pertaining to the construction project, including but not limited to OSHA confined space requirements for pump rooms, vaults, or pits.

DEFINITIONS OF SCOPE TERMINOLOGY APPEARING IN DOCUMENTS

The term "furnish" shall mean "to obtain and deliver to the jobsite". The term "install" shall mean "to fix in position and connect for use". The term "provide" shall mean "to furnish and install".

Where language indicates that one trade is to "install" and another trade is to "connect", the term "install" shall mean "to fix in position", and "connect" shall mean "to make plumbing, mechanical and electrical connections" as indicated on the construction plans.

Roman Fountains Corporation shall by definition "furnish" equipment, components, materials and documents to the job site.

LIABILITY DISCLAIMER

Due diligence, good faith and care has been exercised in the preparation and production of these drawings, with reasonable and customary precautions, document quality control and redundant checking procedures having been taken to insure production of an accurate, informative, high quality drawing package.

However, in spite of these precautions and procedures, the possibility of errors and/or omissions always exists, as can be reasonably expected in the preparation of any complex technical drawing or document, regardless of circumstances. Therefore, the recipient is cautioned, and otherwise assumed to have carefully, completely and thoroughly examined all such drawings, including all details and notations incorporated herein, and shall immediately notify Roman Fountains Corporation in the event any errors or omissions are discovered or otherwise presumed.

All drawings are produced, prepared and submitted under the express condition and understanding that our contractual liability and responsibility is strictly limited to the correction and/or incorporation of information that has been determined or otherwise presumed to have been omitted, in error or otherwise excluded.

Roman Fountains shall not be responsible or liable for any civil or structural design drawings, details, notations or any other aspects of the project regarding fountain layout, structure or construction/building practices, including, but not limited to, concrete design, specifications and slab pour methods, concrete reinforcements such as rebar type, size and locations, or concrete structural waterproofing specifications, materials and methods, etc.

Any structure depicted or appearing on our plans shall be shown solely for dimensional reference and general structural orientation in order to adequately identify, coordinate, orient, locate and install our equipment package, and shall not be relied on for any other purposes.

Client is advised to enlist the services of a licensed professional engineer familiar and experienced with such work when designing/constructing any fountain pool or pump room structure, who shall accept complete responsibility and liability for all structural and civil engineering details pertaining to the project.

No liability or responsibility is assumed or otherwise accepted whatsoever by the company or its employees for any incidental or consequential damages or losses that occur as a result of possible, presumed or actual errors or omissions, whether we are notified or not.

QUALIFICATIONS FOR BIDDERS / INSTALLERS

This fountain system is designed, engineered, and sold under the assumption that the purchaser / owner has reviewed, and is familiar with, the fountain project and understands the complexities of the equipment and has, or will contract with, competent and experienced installers. In addition, the purchaser / owner has, or will contract with, competent and experienced operation, maintenance, and service personnel familiar with such equipment to properly care for the system.

Architect / Owner is responsible for all contractor / installer qualifications and determinations as to suitability of bidders to perform the required work. Roman Fountains shall in no way be held responsible for determining whether or not the end user has adequate knowledge and capabilities to install, maintain, and operate this fountain system.

RESPONSIBILITY FOR SPECIAL LABELING OR CERTIFICATION REQUIREMENTS

All component items used in the production of our products are U.L. Listed whenever such labeling is available from the O.E.M. or material.

Should any product require a "third party" label or certification as an assembly (E.G. N.E.C., U.L., or E.T.L. listing) such requirements shall be determined, contracted, and paid by others.

Roman Fountains shall be neither responsible nor liable for special labeling or certification requirements, including third party product testing, unless specifically included in its proposals, quotations, and drawings, regardless of project specifications or code requirements.

THE INTENDED USE FOR THIS FOUNTAIN IS FOR DECORATIVE ARCHITECTURAL VIEWING PURPOSES ONLY; THIS WATER FEATURE IS NOT DESIGNED AS A "WATERPLAY" FOUNTAIN

It is hereby acknowledged, agreed and understood by specifier / purchaser / owner / operator of this equipment and/or system that its stated and intended use is for decorative viewing purposes only, and not for public bathing, swimming, public entry or public recreational use.

Roman Fountains Corporation assumes no responsibility or liability whatsoever for personal injury, sickness, illness, disease, or other accidents which may occur as a result of the equipment/system being used, operated or otherwise maintained in a manner inconsistent with its stated and intended purpose.

Specifier/Purchaser/Owner/Operator is solely responsible for determining whether any specific codes, rules, regulations or guidelines for fountains apply to this project prior to construction, installation and operation and for notifying the public of the stated and intended use and operation of this decorative architectural fountain and for lawful enforcement thereof, including posting any and all signs, notices, warnings, instructions and barriers and providing personnel as necessary to enforce compliance with its intended use.

LIMITED WARRANTY

THIS WARRANTY IS NOT IN FORCE UNTIL PAYMENT IS RECEIVED IN FULL OR ALL MATERIALS ORDERED PER THE PURCHASE ORDER, INCLUDING CHANGE ORDERS AND / OR ADDENDUMS, AND FINAL APPROVED SHOP DRAWINGS

Roman Fountains Corporation warrants its equipment to be free from defects in materials and workmanship, when properly installed and maintained, under normal use and service, for a period of one year from date of shipment. Equipment, components and items used by Roman Fountains, but manufactured by others, shall be warranted to the extent of the original manufacturer's warranty.

If the equipment is found defective under this warranty, the Buyer must notify Roman Fountains, in writing, within the warranty period. After receipt of shipping advice and Return Materials authorization (RMA) number, the Buyer may return the product directly to Roman Fountains Corporation, Customer Service Dept., 1225 Commerce Blvd., N., Sarasota, Florida, U.S.A., 34243.

All equipment returned to Roman Fountains must be carefully and properly packed and freight and insurance charges must be prepaid. Replacements or repaired equipment will be returned to the sender freight prepaid, F.O.B. Factory. This Warranty does not cover, and Roman Fountains is not responsible for, the removal or replacement of equipment on the job site and will not honor charges for such work. This Warranty does not cover, and Roman Fountains is not responsible for, any loss of use, time, incidental, or consequential damages should any of the equipment fail during the warranty period, but agrees only to put into proper operating condition or at Roman Fountains' option replace such equipment, free of all charges except transportation. The correction of any defects by repairs or, at Roman Fountains' option, replacement by Roman Fountains shall constitute fulfillment of all obligations and liability of Roman Fountains to the buyer under this Warranty and the contract of sale. Warranty on replaced or repaired equipment shall be 90 days from date of return shipment or expiration of the original warranty period, whichever comes last.

Roman Fountains is not responsible for damage to its equipment through improper installation, maintenance, use, or attempts to operate equipment above its rated capacity or voltage, intentionally or otherwise, or for unauthorized repairs, or damage due to flooding due to mechanical, electrical, or structural failure.

Failure to notify Roman Fountains of unsatisfactory operation or any improper or unauthorized installation, maintenance, use, repairs, or adjustments shall terminate this Warranty and shall relieve Roman Fountains from any further responsibility or obligation.

Buyer's exclusive and sole remedy under this Warranty is limited to repair or replacement of defective equipment returned "freight pre-paid" to Roman Fountains. Roman Fountains shall not be liable for special, consequential, incidental or other damages in any claim, action, suit or proceeding arising under this Warranty or the contract of sale, nor shall there be any liability thereunder for claims for labor, loss of profits or goodwill, repairs or other expenses incidental to replacement. This Warranty does not cover lenses, lamps, ballasts, batteries, or other equipment that may be supplied or warranted directly to the user by their manufacturers.

EXCEPT AS SPECIFICALLY PROVIDED ABOVE, ROMAN FOUNTAINS MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, AND NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE MADE, AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE OF THIS DOCUMENT. NO REPRESENTATIVE OR EMPLOYEE OF ROMAN FOUNTAINS IS AUTHORIZED TO EXTEND, EXPAND, OR AMEND THIS WARRANTY IN ANY MANNER WHATSOEVER.

NOTICE

All shipments, unless otherwise noted, are F.O.B. factory, Sarasota, FL, U.S.A., freight collect.

The Buyer is advised to immediately inspect for shipping damage, apparent and /or hidden. If detected, notify the transportation company immediately and file your claim. The freight company is responsible for paying claims.

Buyer agrees that installation of all equipment shall be performed in strict accordance with Article 680 of the latest version of the NEC and in accordance with all national, state and local codes, by a licensed and experienced contractor / electrician qualified to perform such work.

Prior to re-lamping or performing other work that exposes an individual to lethal electrical power, ALWAYS turn all power OFF, in accordance with OSHA and N.E.C. regulations and guidelines.

01-01-2020
(SUPERSEDES ANY AND ALL PRIOR WARRANTIES.)

SCOPE OF RESPONSIBILITY & PERFORMANCE GUARANTEE

Roman Fountains will guarantee the decorative fountain system to perform to the specified operating heights, spray patterns, and water volumes, and to create the designed lighting effects, provided the entire equipment package as listed on our final submittal documents is supplied by Roman Fountains, and the installation, operation and maintenance of the equipment is in strict accordance with Roman Fountains installation and operating instructions, submittals, shop drawings and installation blueprints.

Roman Fountains will provide consultation and design services as they pertain to the fountain equipment package supplied, including the fountain display system, filtration system, water treatment system, overflow and drain system, water makeup and low level protection system, pump and lighting control system, lighting fixture and electrical junction box system, pump selection and pump room layout, electrical conduit and conductor sizing as it pertains to our equipment package, and suction and discharge sump design, as applicable.

The consultation and design information will be detailed on schematic, installation and submittal blueprints showing correct orientation and installation of Roman Fountains equipment as coordinated with the contract drawings. Upon receipt and acceptance of a bona-fide written purchase order with all terms and conditions satisfied, final installation drawings will be furnished to the owner/architect/engineer/contractor, as required by Roman Fountains as an integral part of its fountain equipment package. Any drawings or documents marked "preliminary" shall not be used for installation purposes.

Roman Fountains will not install, or accept responsibility for (1) the actual installation of the system equipment, (2) the design of the power distribution system, or (3) any other portion of the project not specifically enumerated, such as pool structure, hardscape design and construction and equipment room structural design and construction, or health code requirements.

Equipment not included in this scope of work: interconnecting piping, misc. plumbing and electrical fittings, filter media, water treatment chemicals, conduit, wiring, electrical load centers, electrical transformers, pipe hangers, pump and strainer supports or housekeeping pads, companion flanges, gaskets, fasteners, reducers, increasers and other equipment required to complete the installation unless specifically enumerated and identified as being furnished by Roman Fountains. This scope further does not include provisions for specially designed or fabricated waterstop equipment or penetrating sleeves, clamping or flashing rings, special sumps or other similar items unless specifically included in Roman Fountains system equipment lists and/or shop/installation drawings.

Engineer stamped or sealed drawings are not included in this scope and it shall be the responsibility of the client to obtain and pay the cost of such engineering certifications if so required.

DRAWING SUBMITTAL
NOT FOR CONSTRUCTION
FOR CLIENT REVIEW.

ROMAN FOUNTAINS

SO# 13338

MOBILE CONVENTION CENTER - HERO PLAZA
MOBILE ALABAMA
For: TSW DESIGN
ATLANTA, GA

ROMAN FOUNTAINS CORP.
Manufacturing Facility
1125 Commerce Blvd., N,
Sarasota, FL 34243
Phone #: (941) 484-8224
Fax #: (941) 484-9302
http://www.romanfountains.com

ROMAN FOUNTAINS CORP.
Atlanta Engineering Office
9875 Medlock Bridge Parkway
Suite 250
Johns Creek, GA. 30022
Phone #: (877) 794-1802
Fax #: (770) 300-0074

Scale:	None
Drawn By:	JEH
Checked By:	PH
Date:	04/14/23

Revisions:

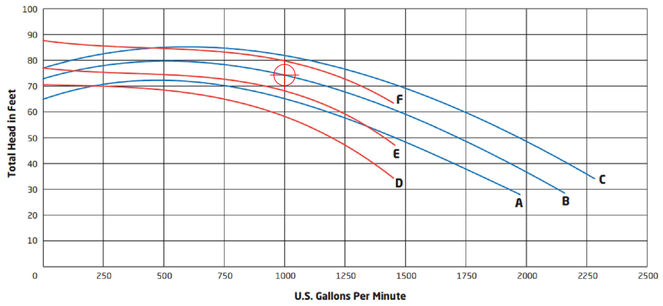
No.	Date	By	Comments
A	04/14/23	JEH	ISSUED AS PRELIM
B	01/16/23	JEH	BASIN REVISIONS
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

GENERAL INSTALLATION NOTES

Drawing Number:

WFN-1

BADU Block & Normblock Multi 125/250 Series (20 HP, 25 HP, 30 HP)



Normblock Multi 125/250
(Horizontal Pump)

A. 125/250 (Ø 235mm) - 20 HP S.F. 1.25
B. 125/250 (Ø 245mm) - 25 HP S.F. 1.15
C. 125/250 (Ø 255mm) - 30 HP S.F. 1.15

BADU Block Multi 125/250
(Vertical Pump w/ plastic strainer housing - 8" suction port)

D. 125/250 (Ø 235mm) - 20 HP S.F. 1.25
E. 125/250 (Ø 245mm) - 25 HP S.F. 1.15
F. 125/250 (Ø 255mm) - 30 HP S.F. 1.15

DESIGN POINT OF 1000 GPM @ 75' USED BASED ON THE LIFT REQUIREMENT FOR THIS APPLICATION

PERFORMANCE CRITERIA

The Mobile Convention Center Hero Plaza water feature is a multi-level waterwall which arcs outwards, spans approximately 118' and is 9'-10" from front grade to top of the waterwall. Stairs and a multi-tiered stepping water fall flank each side of the water wall but will be removed and replaced with a single waterfall flanking each side and all water falls into a lower pool. The intent of the water wall flow is to provide a weir depth is approximately 3/8", this is the depth of water just before it falls over the side of the water wall. This depth will provide water action as it runs down the face, white noise, but should limit splashing outwards beyond the collection pools. Water is collected in the lower pool which runs the length of the feature. This pools provide the water storage location for the feature.

Illumination for the fountain pools is provided by 47 freestanding submersible RGBW colored LED lights, located in the lower basin. No lighting will be provided in the upper troughs or spillways. The overall intent is to up-light the falling water over the front of the feature.

The majority of the mechanical components for the fountain are located in the mechanical room approximately 30' from the water feature. The exception to this are the level sensors located in the upper and lower basins of the water feature.

The display pumps and filtration equipment shall be supplied to the job site preassembled and factory tested and mounted on a stainless steel skids (or approved equivalent). The exact pump design points are to be determined but centrifugal pumps with lifting capabilities must be used. The filtration system will utilize a sand filter, UV sterilizer, and chemical control system. Cold water supply will be controlled via a 3/4" cold water fill manifold system. Also located in the pump room will be the required wall mounted U.L. Listed Control/Lighting Panels.

(All calculations shown below are approximate. Actual field conditions and final feature dimensions may differ.)

Fountain Information

Upper Pool 1	Area:	250 Square Feet
	Depth:	1'-6"
	Volume:	2,805 Gallons
Lower Pool:	Area:	472 Square Feet
	Depth:	1'-6"
	Volume:	5,097 Gallons
Total Fountain Volume:		7,902 Gallons
Weir Depth:		3/8"
Inner Weir Length:		117'-6"
Outer Weir Length:		125'-0"
Weir Requirement:		2000 GPM at 20 Ft of Head
Ea. Display Pump Delivers:		1000 GPM at 20 Feet of Head (VFD Control)
Max Vertical Lift:		12'-6"
Filtration Type:		3.1 Square Foot Sand
Filtration Pump Rate:		40 GPM @ 45 Feet of Head
Filtration Turnover Rate:		3hrs 17 Mins.
Treatment Type:		NSF UV & NSF Chemical Controls (pH & Chlorine)

CLIENT NOTE

PLEASE READ THIS CRITERIA CAREFULLY. IF THIS IS NOT YOUR UNDERSTANDING AND EXPECTATION OF THE AESTHETICS, OPERATION AND PERFORMANCE OF THIS FOUNTAIN FEATURE, PLEASE NOTIFY US IN WRITING IMMEDIATELY, OTHERWISE THIS DESCRIPTION WILL BE THE BASIS FOR THE DESIGN, MANUFACTURE AND SUPPLY OF THIS SYSTEM.

NOTE: POWER SHALL BE VERIFIED & CONFIRMED BY CONTRACTOR WITH APPROVED DRAWINGS. IF THERE ARE NO CHANGES, THE POWER REQUIREMENT LISTED WILL APPLY.

DRAWING SUBMITTAL
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ROMAN FOUNTAINS

Mobile Convention Center – Mobile Alabama
HERO PLAZA
FOUNTAIN SYSTEM EQUIPMENT LIST

Item #	Qty	Component #	Description
01	12	Display Discharge Refurbishment	Anti-Vortex/Diverter Plate Assembly; Channel plate of single piece 1/8" thick Brass or 304 Stainless Steel plate, brushed natural finish, with 7/16" clearance holes for 3/8" stainless steel anchoring hardware, with 3/8" S.S. anchor studs and hardware sets. Roman Fountains RA/DP-10104 or approved equal.
02	10	Wall Mount Overflow	Wall-Inlet/Drain Fitting, machined cast bronze drain body with removable bronze grate, S.S. fasteners, bonding screw and 2" (F) N.P.T. connection. Includes two (2) Item #02B.Roman Fountains ROVS-200-V or approved equal.
03	8	Suction Sump Refurbishment	24" Square Anti-Vortex Plate Assembly; 304 Stainless Steel or Solid brass 3/16" thick anti-vortex plate with brass spacers and "TORX" type S.S. vandal resistant safety fasteners and wrench. Roman Fountains RAVS-2400 or approved equal.
04	2	Level Sensor Refurbishment	Wall-Mounted Combination Water Level/Low Level Cutoff Sensor; with 304 Stainless Steel or Brass cover plate, debris screen, stainless steel fasteners. Unit features multi-level float-type sensor of brass and Buna-N construction with a 1-3/4" adjustability range and includes 100 ft. of pre-attached, 4-conductor, color-coded sensor cable. Roman Fountains RCOM-V/NA, or approved equal.
05	1	Water Treatment Skid	Skid-Mounted Dual-Point Automatic Water Treatment System Station; consisting a chemical spill containment skid measuring approx. 52"W x 52"L. System consists of: • BecSys3 Dual-Point controller with digital read-out, flow cell mixing sampling chamber with clear view cover, and ORP and pH electrodes with Mag Flow Meter • One (1) Stenner 45MJL1 metering pump mounted on a Peabody PCS 1.0 253-30825 (Blue) • One (1) Stenner 45MJL1 metering pump mounted on a Peabody PCS 1.0 253-30827 (Natural) • One (1) Stenner Containment 10 Gal tank (Gray) • One (1) Stenner Containment 10 Gal tank (White) Includes all necessary valves, tubing, hoses, fittings & clamps. Roman Fountains RSM-5-WTS or approved equal.
06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station, consisting of a reinforced 11 gauge, mill finish stainless steel platform with leveling feet, measuring approximately 42" wide x 36" long. System shall include: • One (1) Pentair Tagelus 60D; 24-1/2" diameter high rate 3.1 sq.ft. sand filter with multi-port dial valve, pressure gauge • One (1) FlowVis FV-2 2" flow meter & check valve • One (1) NeoTech Reflex D322 UV Disinfection Chamber Schedule 80 PVC piping and valves, as required to meet the design intent. Unit shall be factory assembled, and tested prior to shipment. Roman Fountains RSM-4-60D-FS or approved equal.
07	1	Boost Pump Skid	Skid-Mount Boost Pump Station, consisting of a reinforced 11 gauge, mill finish stainless steel platform with leveling feet, measuring approximately 15" wide x 36" long. System shall include: • One (1) Speck BADU EcoM3 V; 1.65 HP variable speed self-priming filter pump with integral strainer Schedule 80 PVC piping and valves, as required to meet the design intent. Unit shall be factory assembled, and tested prior to shipment. Roman Fountains RSM-3 or approved equal.
08	2	Fill Manifold	Fill Manifold System, constructed of copper and brass with 3/4" 120 VAC slow-close solenoid fill valve, manual bypass and isolation valves, union fittings, hose bibb, plugged female threaded risers on each loop side for water hammer arrestor connection (by Installer), liquid-filled inlet pressure gauge and 3/4" (F) N.P.T. connections. (Right to left hand flow direction) Roman Fountains RMS-075-SC or approved equal.
09	2	20 HP Pump Skid	Skid-Mount Pump Station; consisting of a reinforced 11 gauge, mill finish stainless steel platform with leveling feet, measuring approximately 15" wide x 48" long. System shall include a Speck Normblock 100/250; 20 HP self-priming pump with 8" Basket strainer, pressure gauges, (Schedule 80 PVC) piping, fittings, manual regulating/isolation valves and check valves. Unit is pre-plumbed (Schedule 80 PVC) and factory tested, prior to shipment. Roman Fountains RSM-1-3000 or approved equal.
10	2	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive (VFD). Advanced Pump Control Drive. Built-in PLC function. Pump control including; OPTIFLOW, Blockage Detect, Dry Run Protection and more. Advanced connectivity options including Modbus RTU and BACnet on-board. Built-in Disconnect Lockable Main Switch. Simple Commissioning. Internal EMC filter. Operates up to 50° C. Bluetooth connectivity. Outdoor rated. Dust-tight. Washdown ready. NEMA 4X / IP66. Roman Fountains RVFD-ECO-20 or approved equal.
11	2	Skid Mount Vacuum Pump	Skid-Mount Vacuum Pump Station; Busch R5 oil-lubricated rotary vane vacuum pump pumping 2.1 ACFM at 2.25 Torr. Includes all necessary valves, tubing, hoses, fittings & clamps. Roman Fountains RSM-1-VAC or approved equal.
12	2	Large Flush Mount Junction Box	Flush-Mounted Submersible Junction Box; cast bronze construction with neoprene gasket, stainless steel fasteners, one 1" (F) N.P.T. bottom power conduit connection, and four (6) 3/4" N.P.T. side connections with brass cord seal fittings (shipped loose, installed in field). Junction box shall have a minimum volume of 60.0 cubic inches and shall include an internal grounding lug. Roman Fountains RJB-B/6-100-C or approved equal.
13	5	Large Conduit Mount Junction Box	Flush-Mounted Submersible Junction Box; cast bronze construction with neoprene gasket, stainless steel fasteners, one 1" (F) N.P.T. bottom power conduit connection, and four (7) 3/4" N.P.T. side connections with brass cord seal fittings (shipped loose, installed in field). Junction box shall have a minimum volume of 60.0 cubic inches and shall include an internal grounding lug. Roman Fountains RJB-B/7-100-C or approved equal.
14	2	Vacuum Pump Switch	Water Sensor Switch, conductivity meter or approved equal with 2" mounting assembly and wiring.
15	1	Floor Drain	Floor Drain Fitting, cast bronze with integral waterstop flange, bonding screw, threaded closure plug with recessed head and 2" (F) N.P.T. outlet connection. Roman Fountains RFD-200 or approved equal.
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture, U.L. Listed, 24VDC, (9) high output RGBW LED diodes (Red, Green, Blue + Day White), stainless steel housing and fasteners, tempered glass lens, silicone lens gasket, chromed brass cord entrance fitting and 25 feet of 18 AWG SJOW cable. Roman Fountains RFL-FS-RGBW-24V or approved equal.
17	15	Potting Compound	Potting Compound, re-enterable, electrical insulating compound, designed for use in RJB-Series junction boxes (required by NEC 680). 21.2 oz. size. Roman Fountains RPC-2114-D or approved equal.
18	47	Conduit Cord Seal	Conduit Cord Seal; naval brass cord compression fitting complete with neoprene cord grommet and copper friction washer, 1/2" or 3/4" (M) N.P.T. connection, as specified. Roman Fountains RCSF or approved equal.
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel; U.L. 508 Listed Custom Pump Control Panel, consisting of main disconnect, power distribution breaker(s) (as required); pump contactor(s) w/overload relay(s); water level make-up/low level equipment protection circuit, 7 day/24 hour electronic timeclock(s), 3-pos. H.O.A. selector switch and field connection terminal blocks. The panel is pre-wired in a NEMA 4 enclosure and factory tested with all loads, circuits and switching functions verified prior to delivery. Roman Fountains RPCP series or approved equal.
21	2	Floor Mount Grate Drain	Floor-Inlet/Drain Fitting, machined cast bronze drain body with removable bronze grate, S.S. fasteners, integral waterstop flange, bonding screw and 2" (F) N.P.T. connection. Roman Fountains ROVS-200-F or approved equal.
22	2	Vacuum Pump Control	Pump Control Panel; U.L. 508 Listed Custom Pump Control Panel, consisting of main disconnect and visual water alarm
23	2	Wall Drain	Wall Drain Fitting, cast bronze with integral waterstop flange, bonding screw, threaded closure plug with recessed head and 2" (F) N.P.T. outlet connection. Roman Fountains RFD-200 or approved equal.
24	2	Wall Drain	Wall Drain Fitting, cast bronze with integral waterstop flange, bonding screw, threaded closure plug with recessed head and 2" (F) N.P.T. outlet connection. Roman Fountains RFD-200 or approved equal.

* NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR.

ROMAN FOUNTAINS
SO# 13338

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MOBILE ALABAMA
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Fax #: (941) 484-9302
http://www.romanfountains.com

ROMAN FOUNTAINS CORP.
Atlanta Engineering Office
9875 Medlock Bridge Parkway
Suite 250
Johns Creek, GA. 30022
Phone #: (877) 794-1802
Fax #: (770) 300-0074

Scale:	None
Drawn By:	JEH
Checked By:	PH
Date:	04/14/23

Revisions:

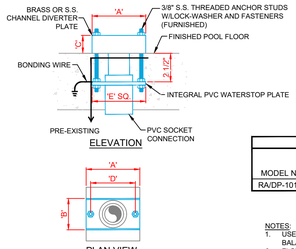
No.	Date	By	Comments
A	04/14/23	JEH	ISSUED AS PRELIM
B	01/16/23	JEH	BASIN REVISIONS
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

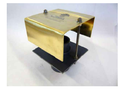
FOUNTAIN EQUIPMENT LIST, PERFORMANCE CRITERIA, & PUMP CURVE

Drawing Number:

WFN-2

RA/DP-10104
Anti-Vortex/Diverter Plate/Waterstop Assembly
Scale: None





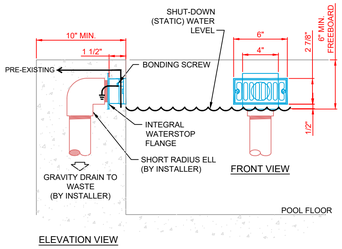
TECHNICAL DATA							
MODEL NO.	'A' DIM	'B' DIM	'C' DIM	'D' DIM	MAX. PIPE SIZE	MAXIMUM FLOW RATE @ 16" W.D.
RA/DP-10104	10"	10"	4"	8-1/2"	4"	200 GPM

NOTES:
1. USE FITTINGS IN MULTIPLES IF NECESSARY TO ACHIEVE BALANCED FLOW.
2. FLOW RATES ARE BASED ON A 16" WATER DEPTH.
3. LOCATE FITTINGS TO ALLOW SUFFICIENT CLEARANCE AROUND OPEN ENDS OF PLATE.
4. ADDITIONAL SIZES AVAILABLE, CALL FACTORY FOR DETAILS.

SPECIFICATION DATA: Anti-Vortex/Diverter Plate/Waterstop Assembly; channel plate of single piece 1/8" thick brass or s.s. plate, brushed natural finish, with 7/16" clearance holes for 3/8" stainless steel anchoring hardware, pre-existing; PVC waterstop slab penetration fitting fabricated from schedule 80 PVC with solvent welded waterstop flange, PVC (socket) bottom connection with 3/8" S.S. anchor studs and hardware sets. Each fitting must be refurbished and each may require a slightly different level of care & repair.

QTY. (12) | ITEM # 01

ROVS-200-W
2" Sidewall Overflow Drain
Scale: None

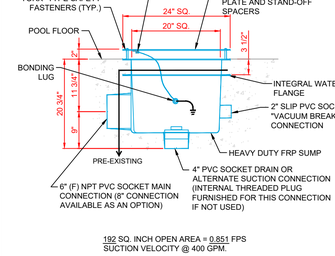


NOTE: INSTALLER MUST CONSULT LOCAL CODES FOR TERMINATION OF DRAIN LINES

SPECIFICATION DATA: Sidewall Overflow Drain; Bronze drain body, removable bronze grille-type face plate, stainless steel fasteners, pre-existing integral waterstop flange, bonding screw, 2" (F) N.P.T. connection and natural bronze finish. Faceplate and hardware must be refurbished. Each fitting may require a different level of care and repair.

QTY. (10) | ITEM # 02

RAVS-2400
24" Sq. Anti-Vortex Plate & Sump Assembly
Scale: None



192 SQ. INCH OPEN AREA = 0.851 FPS
SUCTION VELOCITY @ 400 GPM.

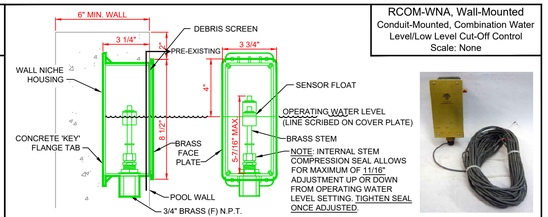
SAFETY NOTICE
THE ANTI-VORTEX PLATE MUST BE FIRMLY IN PLACE AND SECURELY FASTENED TO SUMP BODY AT ALL TIMES TO GUARD AGAINST THE POSSIBILITY OF SUCTION ENTRAPMENT. NEVER REMOVE PLATE UNLESS FOUNTAIN IS SHUT OFF AND COMPLETELY DRAINED.

SPECIFICATION DATA: 24" Square Anti-Vortex Plate and Sump Assembly; pre-existing Heavy Duty FRP sump with integral waterstop flange 4" bottom (PVC socket) connection. Must refurbish the solid brass or s.s. 3/16" thick anti-vortex plate with brass spacers "TORX" type S.S. vandal resistant safety fasteners and wrench. Each sump will require a different level of care and repair.

RECOMMENDED MAXIMUM FLOW RATE: 400 GPM @ 16" WATER DEPTH.

QTY. (8) | ITEM # 03

RCOM-WNA, Wall-Mounted
Conduit-Mounted, Combination Water Level/Low Level Cut-Off Control
Scale: None



TECHNICAL DATA					
MODEL No.	CABLE SIZE	CABLE LENGTH	MAX. AMPS	MAX. VOLTS	SWITCH FUNCTIONS
RCOM-WNA	22/4	100'	3VA	30VAC	SINGLE OR DUAL

WARNING: Do not run sensor wire in conduit with any other conductors.

NOTE:
1. A normally closed, electrically actuated, 120VAC solenoid valve is required to operate water makeup function; specify RSV-S Series valve. (Ref. Cat. sheet 4.18)
2. A lighting and/or motor contactor is required to operate the low level cutoff function; consult factory.

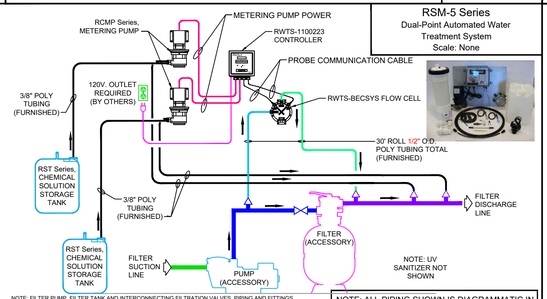
SPECIFICATION DATA: Pre-Existing Wall Mounted Combination Water Level/Low Level Cutoff Sensor, consists of a sensor housing of molded thermoplastic with brass cover plate; debris screen; stainless steel fasteners and 3/4" (F) N.P.T. conduit connection. Repair or replace internal multi-level float-type sensor of brass and Buna-N construction with a 1-3/4" adjustability range. Must include 100 feet of pre-attached, 4-conductor, color coded sensor cable.

QTY. (2) | ITEM # 04

TECHNICAL DATA						
MODEL #	PUMP GPD	CHEMICAL STORAGE TANK CAPACITY	DISCHARGE TUBE SIZE	CHEMICAL SPILL CONTAINMENT CAPACITY
RSM-5-15	0.2 TO 3.0	15 GALLONS	3/8"	66 GALLONS
RSM-5-30	0.2 TO 3.0	30 GALLONS	3/8"	66 GALLONS

SPECIFICATION DATA: Chemical Metering Pump Station; consisting of a 66 gallon chemical spill containment skid with 3/4" drain measuring approximately 4'-4" square, two NSF chemical storage tanks, one gray and one white for chemical identification safety, and two NSF chemical metering pumps, one mounted on each chemical storage tank, metering up to 3.0 gallons per day at 25 psi max.

RSM-5 Series
Dual-Point Automated Water Treatment System
Scale: None



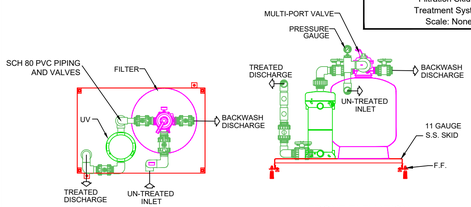
NOTE: FILTER PUMP, FILTER TANK AND INTERCONNECTING FILTRATION VALVES, PIPING AND FITTINGS ARE NOT INCLUDED IN THE BASIC WATER TREATMENT KIT. CONTACT FACTORY FOR THESE ITEMS.
NOTE: THIS EQUIPMENT SCHEMATIC IS TYPICAL FOR SOLID/EROSION SYSTEMS. THE USE OF A PRE-FILTER PRIOR TO SOLENOID VALVE IS OPTIONAL, BUT IS RECOMMENDED.

NOTE: ALL PIPING SHOWN IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO REPRESENT THE ACTUAL PIPE ROUTING FOR THIS SYSTEM.

SPECIFICATION DATA: Skid-Mounted Dual-Point Automatic Water Treatment System Station; consisting a chemical spill containment skid measuring approx. 52"W x 52"L, System consists of: BecSys3 Dual-Point controller with digital read-out, flow cell mixing sampling chamber with clear view cover, and ORP and pH electrodes. One (1) Stenner 45MJL1 metering pump mounted on One (1) Stenner Containment 15 Gal tank (Gray). One (1) Stenner 45MJL1 metering pump mounted on One (1) Stenner Containment 15 Gal tank (White). Includes all necessary valves, tubing, hoses, fittings & clamps. Roman Fountains RSM-5-WTS or approved equal. Becsys system to include mag flow meter and cabling

QTY. (1) | ITEM # 05

RSM-5 Series
Filtration Skid & Treatment System
Scale: None

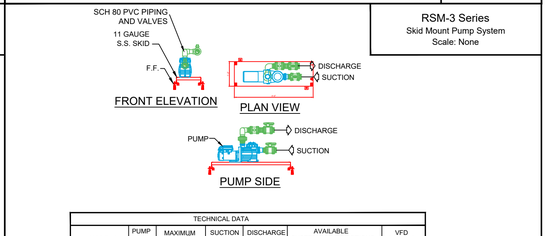


TECHNICAL AND HYDRAULIC DATA							
MODEL NO.	FILTER TYPE	MAXIMUM TANK DIAMETER	Maximum FLOW RATE	UV SYSTEM	BACKWASH CONN.	#20 SILICA SAND REQ'D.
RSM-4-400	SAND	19-1/2"	40 GPM	RUV-T2-11	2"	175 LBS.
RSM-4-600	SAND	24-1/2"	60 GPM	RUV-T2-12	2"	325 LBS.
RSM-4-100	CARTRIDGE	13-1/2"	100 GPM	RUV-T2-13	N/A	N/A
RSM-4-320-IWF	CARTRIDGE	20-1/2"	100 GPM	RUV-N-D322	N/A	N/A

SPECIFICATION DATA: Skid-Mounted Treatment Station; consisting of a reinforced 11 gauge, mill finish stainless steel platform with leveling feet measuring approximately 32"W x 48"L, optional sand, cartridge or bio-bead filter, UV system and chemical injection fittings required and as specified in table above; necessary isolation and check valves, Schedule 80 PVC piping.

QTY. (1) | ITEM # 06

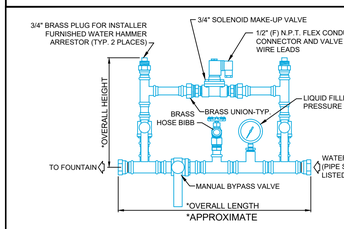
RSM-3 Series
Skid Mount Pump System
Scale: None



TECHNICAL DATA						
MODEL #	PUMP HP	MAXIMUM FLOW	SUCTION SIZE	DISCHARGE SIZE	AVAILABLE SYSTEM POWER OPTIONS	VFD CONTROL
RSM-3-165-VS	1.65	145 GPM	2"	2"	120/208-240V,1PH	STANDARD
RSM-3-270-VS	2.7	165 GPM	2"	2"	120/208-240V,1PH	STANDARD
RSM-3-400	4.0	250 GPM	4"	4"	120/208-240V,1PH, 3PH	OPTIONAL
RSM-3-500	5.0	450 GPM	4"	4"	120/208-240V,1PH, 3PH	OPTIONAL
RSM-3-750	7.5	475 GPM	4"	4"	120/208-240V,1PH, 3PH	OPTIONAL
RSM-3-1000	10.0	575 GPM	4"	4"	120/208-240V,1PH, 3PH	OPTIONAL

SPECIFICATION DATA: Skid-Mounted Filter Boost Pump Station; consisting of a reinforced 11 gauge, mill finish stainless steel platform with leveling feet measuring approximately 15"W x 48"L, variable speed pump (Optional on 4HP and up) and strainer with the horsepower and power requirement as specified in table above; necessary isolation and check valves, Schedule 80 PVC piping.

QTY. (1) | ITEM # 07



RMS-075-NS
Fill Manifold Systems
Scale: None

TECHNICAL DATA				
MODEL	FILL LINE PIPE SIZE	APPROX. MANUAL FILL RATE/50 P.S.I.	*OVERALL LENGTH	*OVERALL HEIGHT
RMS-075-NS	3/4"	12 GPM	1'-8 1/4"	1'-0 1/8"
RMS-100-NS	1"	25 GPM	1'-9 1/2"	1'-0 1/4"
RMS-150-NS	1 1/2"	80 GPM	2'-3 1/2"	1'-0 5/8"
RMS-200-NS	2"	120 GPM	2'-8 1/2"	1'-0 5/8"

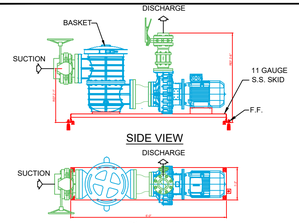
NOTES:
1. Water supply to manifold must include a backflow preventer (specified by others) to meet local code requirements: To be provided, By Installer.
2. Regulate upstream pressure to a maximum of 50 P.S.I., for proper operation. Provide pressure regulator as required (by installer) to maintain pressure range.
3. Minimum pressure required to operate: 5 P.S.I.

SPECIFICATION DATA: Fill Manifold System,constructed of copper and brass with a 3/4" 120VAC solenoid fill valve, manual bypass and isolation valves, union fittings, hose bibb, plugged female threaded risers on each loop side for water hammer arrestor connection (by Installer), liquid-filled inlet pressure gauge and 3/4" (F) N.P.T. connections.

QTY. (2) | ITEM # 08

120V. VALVE COIL
FLOW ORIENTATION
RIGHT-TO LEFT

RSM-350 Series
Skid Mount Pump System
Scale: None

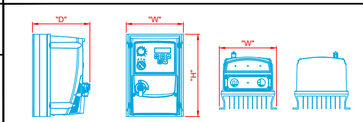


TECHNICAL DATA							
MODEL #	PUMP HP	MAXIMUM FLOW	SUCTION SIZE	DISCHARGE SIZE	BASKET SIZE	AVAILABLE SYSTEM POWER OPTIONS	VFD CONTROL
RSM-350-750	7.5	350 GPM	4"	3"	6"	208-230/460V, 3Ø	OPTIONAL
RSM-350-1000	10	475 GPM	4"	3"	6"	208-230/460V, 3Ø	OPTIONAL
RSM-350-1500	15	1080 GPM	6"	4"	8"	208-230/460V, 3Ø	OPTIONAL
RSM-350-2000	20	1180 GPM	6"	4"	8"	208-230/460V, 3Ø	OPTIONAL

SPECIFICATION DATA: Skid-Mounted Pump Station; consisting of a reinforced 11 gauge, mill finish stainless steel platform with leveling feet measuring approximately 15"W x 48"L, single speed pump (Item #10 VFD) and strainer with the horsepower and power requirement as specified in table above; necessary isolation and check valves, Schedule 80 PVC piping.

QTY. (2) | ITEM # 09

RVFD-E3 Series
Variable Frequency Drive
NEMA 4X Enclosure
Scale: NONE

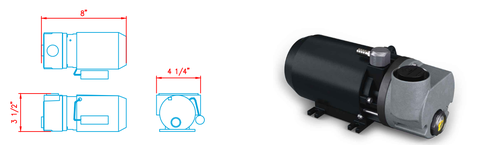


3PH 480V				
380-480VAC +/- 10% 3-Phase Input	HP	kW	Output Amps	Frame Size
RVFD-050-480V-E3	0.5	0.37	1.2	1
RVFD-100-480V-E3	1	0.75	2.2	1
RVFD-200-480V-E3	2	1.5	4.1	1
RVFD-300-480V-E3	3	2.2	5.8	2
RVFD-500-480V-E3	5	4.0	9.5	2
RVFD-750-480V-E3	7.5	5.5	14	3
RVFD-1000-480V-E3	10	7.5	18	3
RVFD-1500-480V-E3	15	11	24	3
RVFD-2000-480V-E3	20	15	30	4
RVFD-2500-480V-E3	25	18.5	39	4
RVFD-3000-480V-E3	30	22	46	4

Frame Size	Dimensions (Inches)			Weight (lbs)
	H	W	D	
1	9.2"	6.4"	6.4"	5.1
2	10.2"	7.5"	7.2"	7.8
3	12.3"	8.4"	9.3"	14.6
4	14.2"	9.5"	10.7"	21

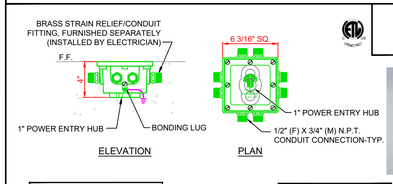
QTY. (2) | ITEM # 10

RSM-3 Series
Skid Mount Vacuum Pump System
Scale: None



SPECIFICATION DATA: Skid-Mounted Rotary Vane Vacuum Pump Station; consisting of a reinforced 11 gauge, mill finish stainless steel platform with leveling feet measuring approximately 15"W x 15"L, Busch R5 oil-lubricated rotary vane vacuum pump pumping 2.1 ACFM at 2.25 Torr. Includes all necessary valves, tubing, hoses, fittings & clamps. Roman Fountains RSM-1-VAC or approved equal.

QTY. (2) | ITEM # 11



RJB-8/6-100-F
Flush-Mount Submersible Junction Box
Scale: None

Bottom tap (power entry) ONE 1" (F) N.P.T.
3/4" (F)N.P.T. CORD SEAL SIDE taps - (5) THRU (8): Quantity: (6)

NOTE: NOT TO BE USED IN SWIMMING POOL OR SPA APPLICATIONS.

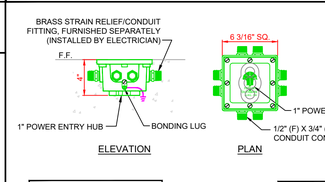
NOTE: BRASS STRAIN RELIEF FITTINGS FURNISHED BY ROMAN FOUNTAINS, INSTALLED INTO BOX BY ELECTRICIAN.

NOTE: ONCE WIRING IS COMPLETED, FLASH LIGHTING CIRCUITS TO VERIFY PROPER OPERATION. THEN CAULK OR PUTTY ALL CONDUIT CONNECTIONS IN J-BOX WITH TWO (2) OF RPC-2114-D, POTTING COMPOUND.

SPECIFICATION DATA: Conduit-Mounted Submersible Junction Box, cast bronze construction with neoprene gasket, stainless steel fasteners, one 1" OR, two 3/4" (F) N.P.T. bottom power conduit connection(s), and (6) 3/4" N.P.T. side connections with brass cord seal fittings (shipped loose and installed in field). Junction box has a minimum volume of 60.0 cubic inches and includes an internal grounding lug.

INSTALLATION: Roman Fountains recommends the following procedures be followed when installing underwater junction boxes.
1. Check local electrical codes before installing. Must comply with NEC article 680.
2. Use only 'Everdur' or brass pipe for conduit where exposed to water.
3. After making and verifying all connections, use putty provided to seal all conduit entries into j-box.
4. Once conduits are sealed, pot junction box with RPC-2114-D potting compound.
5. Use good quality thread sealant on junction boxes.
6. Test conduit system to eliminate all leaks.

QTY. (2) | ITEM # 12



RJB-8/7-100-F
Flush-Mount Submersible Junction Box
Scale: None

Bottom tap (power entry) ONE 1" (F) N.P.T.
3/4" (F)N.P.T. CORD SEAL SIDE taps - (5) THRU (8): Quantity: (7)

NOTE: NOT TO BE USED IN SWIMMING POOL OR SPA APPLICATIONS.

NOTE: BRASS STRAIN RELIEF FITTINGS FURNISHED BY ROMAN FOUNTAINS, INSTALLED INTO BOX BY ELECTRICIAN.

NOTE: ONCE WIRING IS COMPLETED, FLASH LIGHTING CIRCUITS TO VERIFY PROPER OPERATION. THEN CAULK OR PUTTY ALL CONDUIT CONNECTIONS IN J-BOX WITH TWO (2) OF RPC-2114-D, POTTING COMPOUND.

SPECIFICATION DATA: Conduit-Mounted Submersible Junction Box, cast bronze construction with neoprene gasket, stainless steel fasteners, one 1" OR, two 3/4" (F) N.P.T. bottom power conduit connection(s), and (7) 3/4" N.P.T. side connections with brass cord seal fittings (shipped loose and installed in field). Junction box has a minimum volume of 60.0 cubic inches and includes an internal grounding lug.

INSTALLATION: Roman Fountains recommends the following procedures be followed when installing underwater junction boxes.
1. Check local electrical codes before installing. Must comply with NEC article 680.
2. Use only 'Everdur' or brass pipe for conduit where exposed to water.
3. After making and verifying all connections, use putty provided to seal all conduit entries into j-box.
4. Once conduits are sealed, pot junction box with RPC-2114-D potting compound.
5. Use good quality thread sealant on junction boxes.
6. Test conduit system to eliminate all leaks.

QTY. (5) | ITEM # 13

RVFD-E3 Series
Variable Frequency Drive
NEMA 4X Enclosure
Scale: NONE

SPECIFICATION DATA Type 2818 Conductivity / Resistivity Electrode, stainless steel body with 3/4" NPT connection and 0.055 to 100 uS/cm operating range, or approved equal. With 2" T PVC mount for sensor and vacuum connection.

QTY. (2) | ITEM # 14

SEE SHEET WFD-2 FOR ADDITIONAL DETAILS.

NOTE: DETAILS SHOWN ABOVE ARE GENERIC IN NATURE & PROVIDED PRIMARILY FOR ITEM IDENTIFICATION PURPOSES. FOR PROJECT SPECIFIC REQUIREMENTS, SEE LONG BILL OF MATERIALS ON SHEET WFN-2. PROJECT SPECIFIC DIMENSIONS, SECTIONS & INSTALLATION DETAILS LOCATED ON PLAN SHEETS.

DRAWING SUBMITTAL
NOT FOR CONSTRUCTION
FOR CLIENT REVIEW.

ROMAN FOUNTAINS
SO# 13338

MOBILE CONVENTION CENTER - HERO PLAZA
MOBILE, AL
For: TSW DESIGN
ATLANTA, GA

ROMAN FOUNTAINS CORP.
Manufacturing Facility
1125 Commerce Blvd., N,
Sarasota, FL 34243
Phone #: (941) 484-8224
Fax #: (941) 484-9302
http://www.romanfountains.com

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Atlanta Engineering Office
9875 Medlock Bridge Parkway
Suite 250
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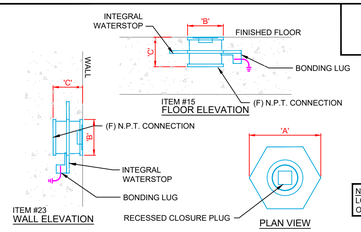
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

FOUNTAIN FITTINGS DETAILS 1 OF 2

Drawing Number:

WFD-1

RFD-Series
Cast Bronze Floor Drain
Scale: None



NOTE: INSTALLER MUST CONSULT LOCAL CODES FOR TERMINATION OF DRAIN LINES

TECHNICAL DATA					
MODEL	CONNECTION SIZE	DIMENSION 'A'	DIMENSION 'B'	DIMENSION 'C'	SLAB THICKNESS
RFD-150	1 1/2"	4 7/8"	2 1/2"	2 3/16"	4" MIN.
RFD-200	2"	5 5/8"	3"	2 5/16"	6" MIN.
RFD-300	3"	6 1/2"	4 3/8"	3 1/8"	6" MIN.
RFD-400	4"	8 1/8"	5 1/2"	3 3/4"	6" MIN.

ITEM #15
ITEM #23

NOTE: A 'P'-TRAP MAY BE REQUIRED PER CODE; BY INSTALLER

SPECIFICATION DATA: Cast Bronze Floor & Wall Drain Fitting; with integral waterstop flange; bonding screw, threaded closure plug with recessed head and (F) N.P.T. outlet connection.

QTY. (1) ITEM # 15
QTY. (2) ITEM # 23

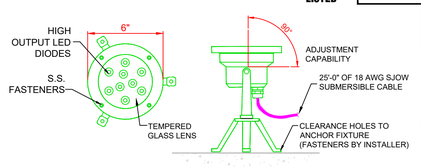
NOT USED
Lighting Control Panel
Scale: None

QTY. (0) ITEM # 19

RFL-FS-RGBW-24VDC-36W
Freestanding LED Submersible Light Fixture
Scale: None

24VDC LED

c UL us LISTED



NOTE: POWER SUPPLY REQUIRED TO OPERATE FIXTURES. CONTACT FACTORY FOR REQUIREMENTS.
NOTE: PROCESSOR REQUIRED TO OPERATE 'RGBW' FIXTURES IN PROGRAMMABLE MODE. CONTACT FACTORY FOR REQUIREMENTS.

TECHNICAL DATA								
MODEL NO.	LIGHT SOURCE	LIGHT COLOR	BEAM ANGLE	INPUT VOLTAGE	OUTPUT WATTS	CABLE TYPE	MAX. CABLE LENGTH	IP RATING
RFL-FS-RGBW-24VDC-36W	(9) RGBW DIODES	(RED/GREEN /BLUE/DAY WHITE)	30 DEG.	24V. DC	36.0	18-7 AWG SJOW	25'-0"	68

SPECIFICATION DATA: UL Listed Freestanding RGBW (Red/Green/Blue/Day White)LED Submersible Light Fixture; 25'-0" of 18 AWG SJOW cable; 24VDC.

QTY. (47) ITEM # 16

RPCP/RLCP Series
PumpControl Panel
Scale: None

FRONT VIEW SIDE VIEW

*ENCLOSURE SIZE VARIES WITH FUNCTIONS & FEATURES. CONSULT FACTORY FOR 'NOT-TO-EXCEED' DIMENSIONS FOR SPECIFIC UNIT.

'TYPICAL'

NOTE: WALL-MOUNT CONTROL PANEL IN AN AREA WHICH WILL AT ALL TIMES MEET OR EXCEED THE MINIMUM CLEARANCE REQUIREMENTS SET FORTH BY LOCAL AND THE NATIONAL ELECTRICAL CODES

THIS CONTROL PANEL SHALL NOT BE SIZED FOR NOR CONTAIN CIRCUITS FOR: SUMP PUMP, VENTILATION BLOWER, UTILITY LIGHT FIXTURES, CONVENIENCE OUTLET, OR ANY OTHER LOADS NOT SPECIFIED UNDER THIS CONTROL PANEL DESCRIPTION.

DANGER

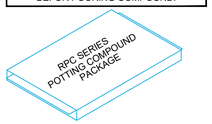
FATAL ELECTRICAL SHOCK CAN OCCUR IF FOUNTAIN ELECTRICAL EQUIPMENT IS NOT INSTALLED PROPERLY. THIS EQUIPMENT SHOULD ONLY BE INSTALLED BY QUALIFIED ELECTRICIANS WITH PROPER GROUNDING AND GROUND FAULT INTERRUPTION CIRCUIT BREAKERS IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, SECTION 680, AND ALL OTHER APPLICABLE SECTIONS OF THE CODE.

NOTE: THIS REPRESENTS A "TYPICAL" PUMP CONTROL PANEL CONFIGURATION. ACTUAL PANEL WILL BE PROJECT SPECIFIC AND MAY DIFFER FROM THIS DETAIL

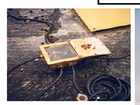
SPECIFICATION DATA: U.L. 508 Listed Custom Control Panel, consisting of main disconnect, power distribution breakers (Class A GFCI as required); pump contactors w/overload relay(s); lighting contactor(s); water level makeup/low level equipment protection circuit(s), 7 day/24 hour electronic time clock(s), 3-pos H.O.A. selector switche(s) and field connection terminal blocks. The panel is pre-wired in a NEMA 4 enclosure and factory tested with all loads, circuits and switching functions verified prior to delivery.

TYP. (1) ITEM # 20

INSTALLER NOTE
DO NOT OPEN AND MIX CONTENTS UNTIL READY TO POUR!!! PLUG ALL CONDUITS BEFOR POURING COMPOUND.



RPC-2114-D
Potting Compound
Scale: None



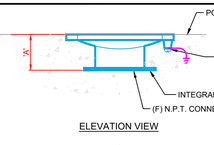
RPC-2114-A, 2.9-oz. size		ONE PACK EQUALS 5.24 CU. IN.
RPC-2114-C, 12.3-oz. size		ONE PACK EQUALS 22.19 CU. IN.
RPC-2114-D, 21.2-oz. size	X	ONE PACK EQUALS 38.24 CU. IN.

NOTE: ARTICLE 680-52(b) OF THE NATIONAL ELECTRICAL CODE (N.E.C.) REQUIRES THAT ALL UNDERWATER JUNCTION BOXES AND ALL UNDERWATER ENCLOSURES BE FILLED WITH AN APPROVED POTTING COMPOUND TO PREVENT THE ENTRY OF MOISTURE.

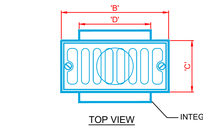
SPECIFICATION DATA: Potting Compound, re-enterable, electrical insulating and poting compound, designed for use in RJB-Series junction boxes (required by NEC 680).

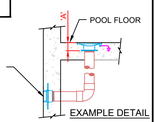
QTY. (15) ITEM # 17

ROVS-F Series
Floor Inlet/Drain Fitting
Scale: None



NOTE: INSTALLER MUST CONSULT LOCAL CODES FOR TERMINATION OF DRAIN LINES



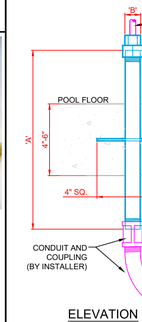


TECHNICAL DATA								
Model No.	Connection Size	Dimension 'A'	Dimension 'B'	Dimension 'C'	Dimension 'D'	Open Area	Max. Drain Rate
ROVS-200-F	2"	2"	6"	2-13/16"	4" Sq.	6.5 Sq. In.	50 GPM
ROVS-300-F	3"	3"	12"	4"	6" Sq.	18 Sq. In.	75 GPM

SPECIFICATION DATA: Floor Inlet/Drain Fitting, cast bronze body with removable bronze grate; stainless steel fasteners; integral waterstop flange with bonding screw and (F) N.P.T. connection.

QTY. (2) ITEM # 21

RCSF SERIES
Conduit Slab Fitting with Cord Seal
Scale: None

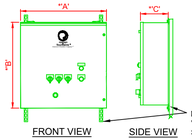


TECHNICAL DATA					
MODEL	CONDUIT SIZE	DIM. 'A'	DIM. 'B'	CORD SEAL CABLE SIZE
RCSF-050	1/2"	10"	1"	16/3 OR 18/3
RCSF-075	3/4"	10"	1-1/2"	10/3 OR 12/3

SPECIFICATION DATA: Conduit Slab Fitting With Cord Seal, all brass conduit slab nipple with welded brass waterstop flange, bonding screw, naval brass cord compression fitting complete with neoprene cord grommet and copper friction washer. 1/2" or 3/4" connection, as specified.

QTY. (41) ITEM # 18

RPCP-Series
Vacuum Pump Control Panel
Scale: None



* PLEASE CONSULT FACTORY FOR 'NOT-TO-EXCEED' DIMENSIONS

'TYPICAL'

NOTE: THIS REPRESENTS A "TYPICAL" PUMP CONTROL PANEL CONFIGURATION. ACTUAL PANEL WILL BE PROJECT SPECIFIC AND MAY DIFFER FROM THIS DETAIL

NOTE: WALL-MOUNT CONTROL PANEL IN AN AREA WHICH WILL AT ALL TIMES MEET OR EXCEED THE MINIMUM CLEARANCE REQUIREMENTS SET FORTH BY LOCAL AND THE NATIONAL ELECTRICAL CODES

THIS CONTROL PANEL SHALL NOT BE SIZED FOR NOR CONTAIN CIRCUITS FOR: SUMP PUMP, VENTILATION BLOWER, UTILITY LIGHT FIXTURES, CONVENIENCE OUTLET, OR ANY OTHER LOADS NOT SPECIFIED UNDER THIS CONTROL PANEL DESCRIPTION.

DANGER

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SPECIFICATION DATA: Pump Control Panel; U.L. 508 Listed Custom Pump Control Panel, consisting of main disconnect switch, power distribution breaker; pump contactors w/motor protectors; water level make-up/low level equipment protection circuitry, 3-pos. H.O.A. selector switches and field connection terminal blocks, and light alarm. The panel is pre-wired in a NEMA 4 enclosure and factory tested with all loads, circuits and switching functions verified prior to delivery.

TYP. (2) ITEM # 22

NOTE: DETAILS SHOWN ABOVE ARE GENERIC IN NATURE & PROVIDED PRIMARILY FOR ITEM IDENTIFICATION PURPOSES. FOR PROJECT SPECIFIC REQUIREMENTS, SEE LONG BILL OF MATERIALS ON SHEET WFN-2. PROJECT SPECIFIC DIMENSIONS, SECTIONS & INSTALLATION DETAILS LOCATED ON PLAN SHEETS.

DRAWING SUBMITTAL
NOT FOR CONSTRUCTION
FOR CLIENT REVIEW.

ROMAN FOUNTAINS
SO# 13338

MOBILE CONVENTION CENTER - HERO PLAZA
MOBILE, AL
For: TSW DESIGN
ATLANTA, GA

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Manufacturing Facility
1125 Commerce Blvd., N,
Sarasota, FL 34243
Phone #: (941) 484-8224
Fax #: (941) 484-9302
http://www.romanfountains.com

ROMAN FOUNTAINS CORP.
Atlanta Engineering Office
9875 Medlock Bridge Parkway
Suite 250
Johns Creek, GA. 30022
Phone #: (877) 794-1802
Fax #: (770) 300-0074

Scale:	None
Drawn By:	JEH
Checked By:	PH
Date:	04/17/2023

Revisions:

No.	Date	By	Comments
A	04/14/23	JEH	ISSUED AS PRELIM
B	01/16/23	JEH	BASIN REVISIONS
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

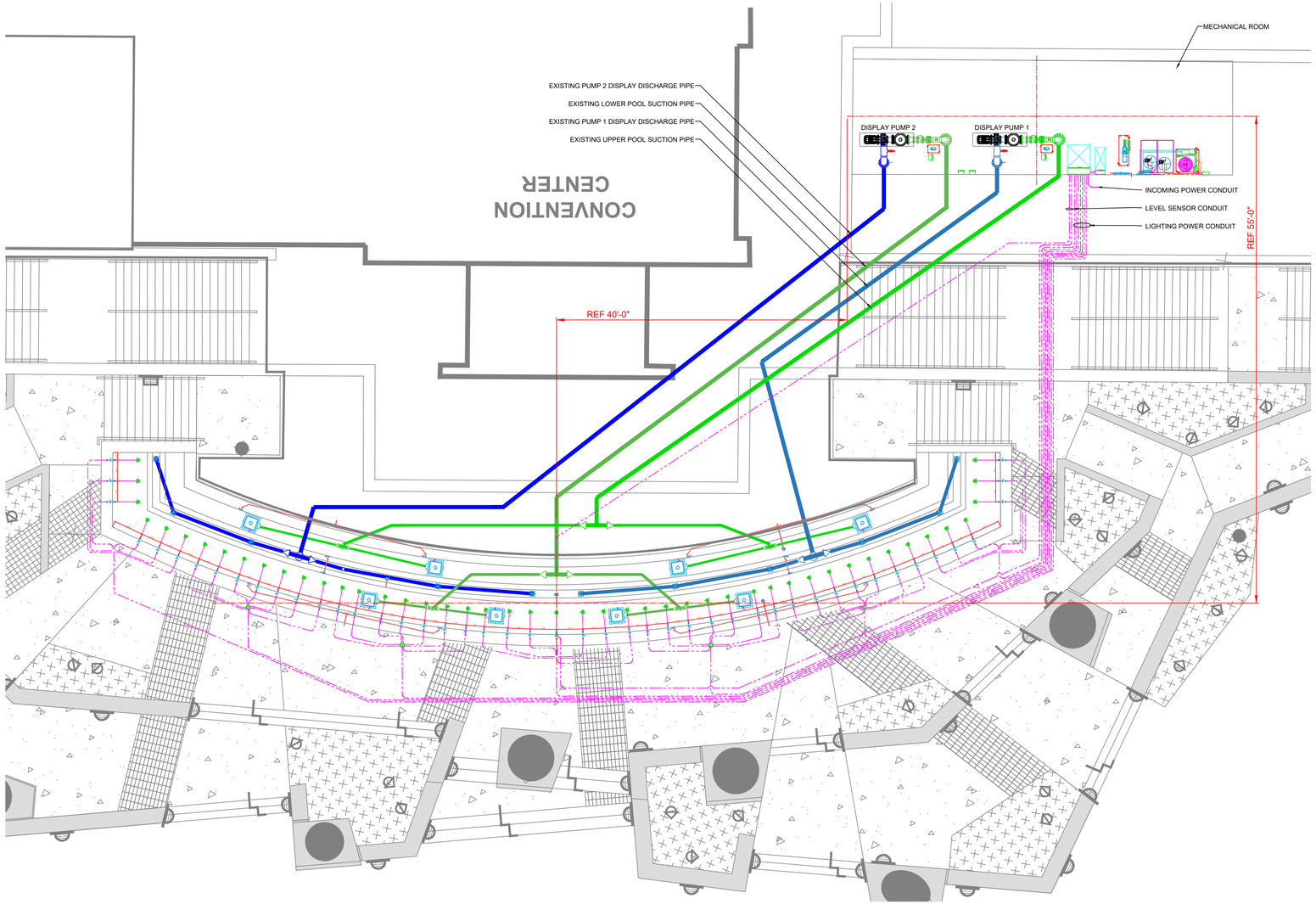
FOUNTAIN FITTINGS
DETAILS 2 OF 2

Drawing Number:

WFD-2

IMPORTANT NOTE: ALL PLUMBING FROM THE MECHANICAL ROOM TO THE WATER FEATURE IS PRE-EXISTING. THE BELOW SCHEMATIC IS DRAWN TO THE BEST OF OUR KNOWLEDGE TO REPRESENT THE LOCATION AND SIZE OF THE PIPING. PIPING SHOULD BE SCOPED FOR CRACKS, BREAKS AND INFILTRATION. IF ISSUES EXIST, THE PIPING WILL NEED TO BE LINED OR SEALED FOR OPERATION.

THE LOWER BASIN WILL RECEIVE SUBMERSIBLE RGBW LIGHTS WHICH WILL REQUIRE CONDUIT TO BE RUN FROM THE MECHANICAL ROOM TO THE PLAZA IN FRONT OF THE FEATURE. FROM THE PLAZA, JUNCTION BOXES WILL FEED LINES WHICH PASS THROUGH THE WALL OF THE FEATURE AND PROVIDE POWER TO THE LIGHTS. THE ONLY REMAINING CONDUIT SHALL BE THE LEVEL SENSORS IN THE UPPER AND LOWER BASINS. BASED ON INSPECTION, ONLY THE UPPER POOL LEVEL SENSOR IS VISIBLE AND MUST BE REPLACED. IT IS ASSUMED THE LOWER POOL HAS A LEVEL SENSOR AND IT WILL ALSO NEED REPLACING. IF THE LOWER POOL DOES NOT HAVE A LEVEL SENSOR, ONE WILL BE REQUIRED.



FOUNTAIN SITE PLAN
SCALE: 1/8"=1'-0"

ROMAN FOUNTAINS

Mobile Convention Center – Mobile Alabama
HERO PLAZA
FOUNTAIN SYSTEM EQUIPMENT LIST

Item #	Qty	Component #	Description
01	12	Display Discharge Refurbishment	Anti-Vortex/Diverter Plate Assembly
02	10	Wall Mount Overflow	Refurbish/provide Wall Mount Overflow
03	8	Suction Sump Refurbishment	24" Square Anti-Vortex Plate Assembly
04	2	Level Sensor Refurbishment	Wall-Mounted Combination Water Level/Low Level Cutoff Sensor
05	1	Water Treatment Skid	Skid-Mounted Dual-Point Automatic Water Treatment System Station
06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station
07	1	Boost Pump Skid	Skid-Mount Boost Pump Station
08	2	Fill Manifold	Fill Manifold System
09	3	20 HP Pump Skid	Skid-Mount Pump Station
10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
11	3	Skid Mount Vacuum Pump	Skid-Mount Vacuum Pump Station
12	2	Large Flush Mount Junction Box	Flush-Mounted Submersible Junction Box
13	5	Large Conduit Mount Junction Box	Flush-Mounted Submersible Junction Box
14	2	Vacuum Pump Switch	Water Sensor Switch
15	1	Floor Drain	Floor Drain Fitting
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture
17	15	Potting Compound	Potting Compound
18	47	Conduit Cord Seal	Conduit Cord Seal;
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel
21	2	Floor Mount Grate Drain	Floor-Inlet/Drain Fitting
22	3	Vacuum Pump Ctrl	Vacuum pump controls
23	1	Filter/Boost Pump	Filter/Board pump station
24	2	Wall Drain	Wall Drain Fitting with Plug

*NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR, SEE WFN-2 FOR FULL BOM

NOTES:

1. ALL PRESSURE/ SUCTION PIPING SHOWN IN VAULTS OR SKIDS IS BASED ON SCHEDULE 80 PVC. ALL EXTERNAL PRESSURE/ SUCTION/ GRAVITY DRAIN PIPING (BY INSTALLER) REQUIRES SCHEDULE 80 OR SCHEDULE 40 PVC. REFER TO LOCAL JURISDICTIONAL REGULATIONS FOR ANY ADDITIONAL REQUIREMENTS.
2. ALL PIPING, VALVES, CONDUIT, FITTINGS, CONDUCTORS, ETC. REQUIRED TO COMPLETE PROJECT ARE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR, UNLESS STATED OTHERWISE ON DRAWING WFN-2 (EQUIPMENT LIST).

USE STRANDED COPPER WIRE ONLY, FOR WIRING ALL FOUNTAIN ELECTRICAL ITEMS

3. INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN EXPERIENCED IN POOL WIRING, AND IN STRICT CONFORMANCE WITH NEC SECTION 680, AND ALL LOCAL CODE REQUIREMENTS.
4. THE PROPER DESIGN, OPERATION AND PERFORMANCE OF THIS SYSTEM IS BASED ON THE SELECTION AND USE OF EQUIPMENT MANUFACTURED AND/OR SELECTED BY ROMAN FOUNTAINS CORPORATION, SARASOTA, FLORIDA, U.S.A.; PH. (941) 484-8224. SUBSTITUTION OF EQUIPMENT OTHER THAN THAT SELECTED AND FURNISHED, VOIDS THE SYSTEM WARRANTY AND PERFORMANCE GUARANTEE, AND INSTALLER ASSUMES FULL RESPONSIBILITY FOR ITS OPERATION AND PERFORMANCE.
5. ALL PIPING AND CONDUITS SHOWN ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO REPRESENT THE ACTUAL PIPE ROUTING FOR THIS PROJECT.

CAUTION: INSTALLER TO VERIFY THAT ELEVATIONS AND OTHER DIMENSIONAL INFORMATION PROVIDED HEREIN, AGREE WITH ACTUAL SITE CONDITIONS. PLEASE REPORT ANY DEVIATIONS OR POTENTIAL INSTALLATION CHANGES IMMEDIATELY TO ROMAN FOUNTAINS. PHONE #(877) 794-1802.

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IMPORTANT NOTE: PUMP SKID LOCATED IN MECHANICAL ROOM. FINAL LOCATION TO BE COORDINATED WITH ARCHITECT, BY INSTALLER. IF PUMP SKID IS GREATER THAN 100' FROM FOUNTAIN, CALL ROMAN FOUNTAINS AT (941) 484-8224.

DRAWING SUBMITTAL
NOT FOR CONSTRUCTION
FOR CLIENT REVIEW.

ROMAN FOUNTAINS
SO# 13338

MOBILE CONVENTION CENTER - HERO PLAZA
MOBILE ALABAMA
For: TSW DESIGN
ATLANTA, GA

ROMAN FOUNTAINS CORP.
Manufacturing Facility
1125 Commerce Blvd., N,
Sarasota, FL 34243
Phone #: (941) 484-8224
Fax #: (941) 484-9302
http://www.romanfountains.com

ROMAN FOUNTAINS CORP.
Atlanta Engineering Office
9875 Medlock Bridge Parkway
Suite 250
Johns Creek, GA. 30022
Phone #: (877) 794-1802
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Scale:	AS SHOWN
Drawn By:	JEH
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Revisions:

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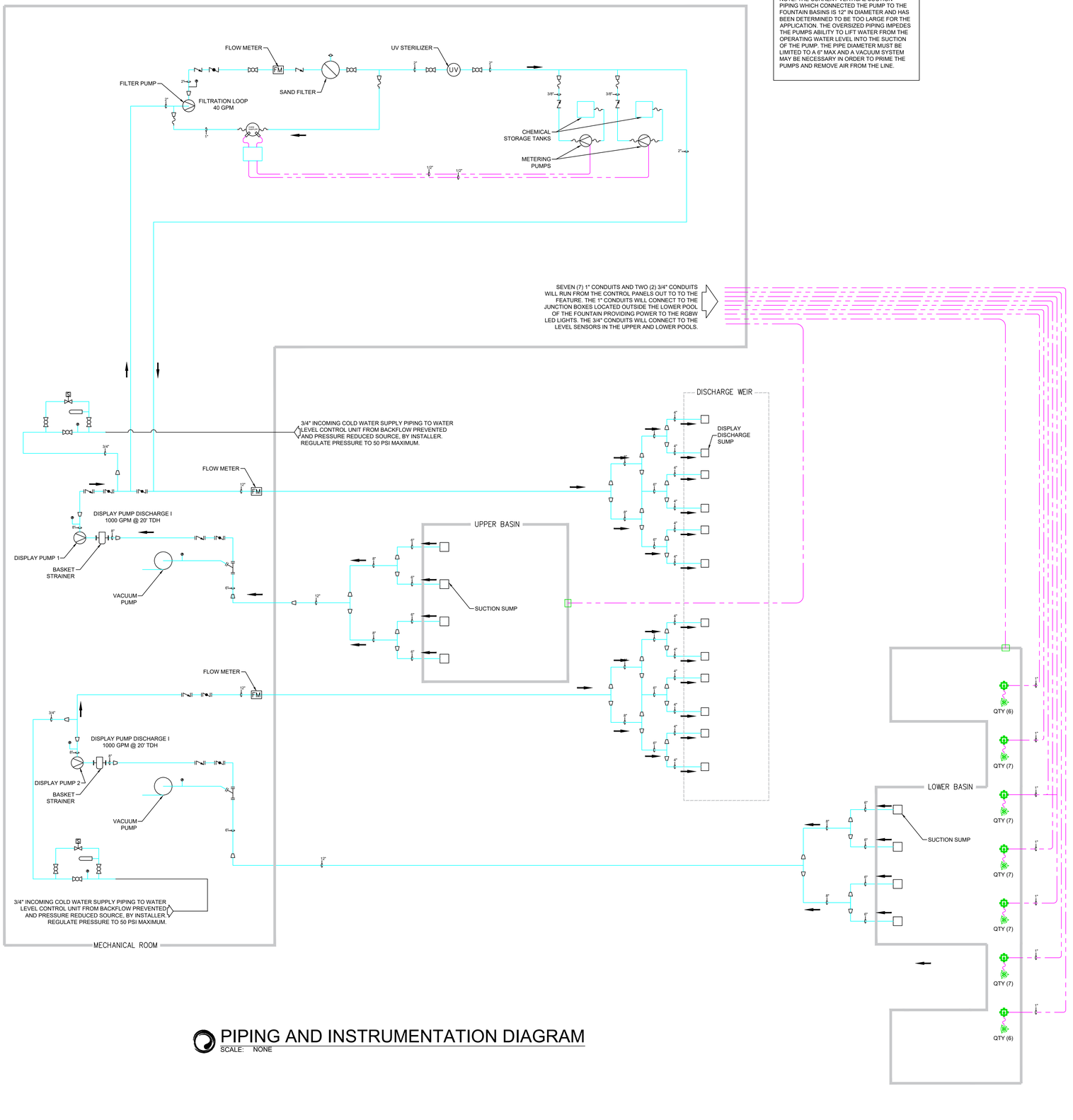
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

FOUNTAIN PLUMBING & CONDUIT SITE PLAN

Drawing Number:

WFM-1



NOTE: THE CURRENT VERTICAL SUCTION PIPING WHICH CONNECTED THE PUMP TO THE FOUNTAIN BASINS IS 12" IN DIAMETER AND HAS BEEN DETERMINED TO BE TOO LARGE FOR THE APPLICATION. THE OVERSIZED PIPING IMPEDES THE PUMPS ABILITY TO LIFT WATER FROM THE OPERATING WATER LEVEL INTO THE SUCTION OF THE PUMP. THE PIPE DIAMETER MUST BE LIMITED TO A 6" MAX AND A VACUUM SYSTEM MAY BE NECESSARY IN ORDER TO PRIME THE PUMPS AND REMOVE AIR FROM THE LINE.

ROMAN FOUNTAINS

Mobile Convention Center – Mobile Alabama
HERO PLAZA
FOUNTAIN SYSTEM EQUIPMENT LIST

Item #	Qty	Component #	Description
01	12	Display Discharge Refurbishment	Anti-Vortex/Diverter Plate Assembly
02	10	Wall Mount Overflow	Refurbish/provide Wall Mount Overflow
03	6	Suction Sump Refurbishment	24" Square Anti-Vortex Plate Assembly
04	2	Level Sensor Refurbishment	Wall-Mounted Combination Water Level/Low Level Cutoff Sensor
05	1	Water Treatment Skid	Skid-Mounted Dual-Point Automatic Water Treatment System Station
06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station
07	1	Boost Pump Skid	Skid-Mount Boost Pump Station
08	2	Fill Manifold	Fill Manifold System
09	3	20 HP Pump Skid	Skid-Mount Pump Station
10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
11	3	Skid Mount Vacuum Pump	Skid-Mount Vacuum Pump Station
12	2	Large Flush Mount Junction Box	Flush-Mounted Submersible Junction Box
13	5	Large Conduit Mount Junction Box	Flush-Mounted Submersible Junction Box
14	2	Vacuum Pump Switch	Water Sensor Switch
15	1	Floor Drain	Floor Drain Fitting
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture
17	15	Potting Compound	Potting Compound
18	47	Conduit Cord Seal	Conduit Cord Seal;
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel
21	2	Floor Mount Grate Drain	Floor-Inlet/Drain Fitting
22	3	Vacuum Pump Ctrl	Vacuum pump controls
23	1	Filter/Boost Pump	Filter/Boost pump station
24	2	Wall Drain	Wall Drain Fitting with Plug

*** NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR.**
SEE WFN-2 FOR FULL BOM

NOTES:

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   USE STRANDED COPPER WIRE ONLY, FOR WIRING ALL FOUNTAIN ELECTRICAL ITEMS
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IMPORTANT NOTE: PUMP SKID LOCATED IN MECHANICAL ROOM. FINAL LOCATION TO BE COORDINATED WITH ARCHITECT, BY INSTALLER. IF PUMP SKID IS GREATER THAN 100' FROM FOUNTAIN, CALL ROMAN FOUNTAINS AT (941) 484-8224.

IMPORTANT NOTE: PUMP & LIGHTING TIMECLOCK-LOAD CENTER LOCATED IN MECHANICAL ROOM. FINAL LOCATION TO BE COORDINATED WITH ARCHITECT, BY INSTALLER. IF MECHANICAL ROOM IS GREATER THAN 100' FROM FOUNTAIN, CALL ROMAN FOUNTAINS AT (941) 484-8224.

PIPE FITTING LEGEND

- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- CONTROL VALVE
- SOLENOID RELAY
- REDUCER
- BREAK
- FLEX HOSE

PIPING AND INSTRUMENTATION DIAGRAM

SCALE: NONE

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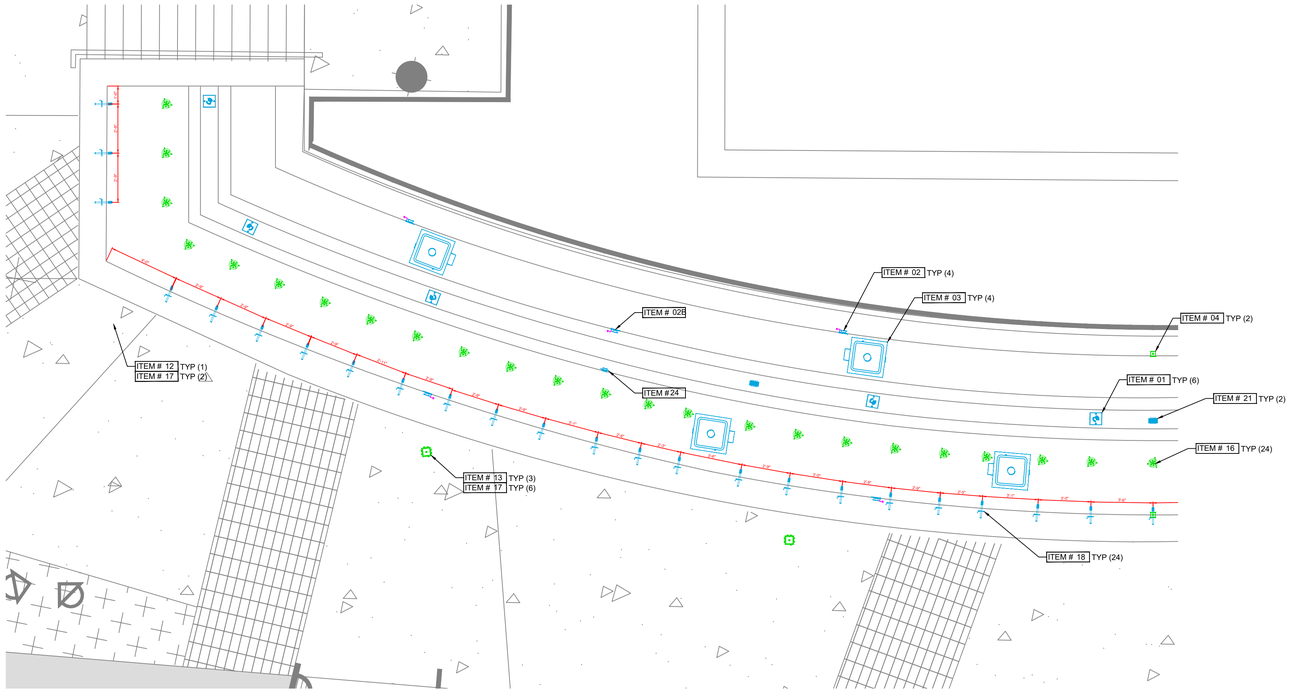
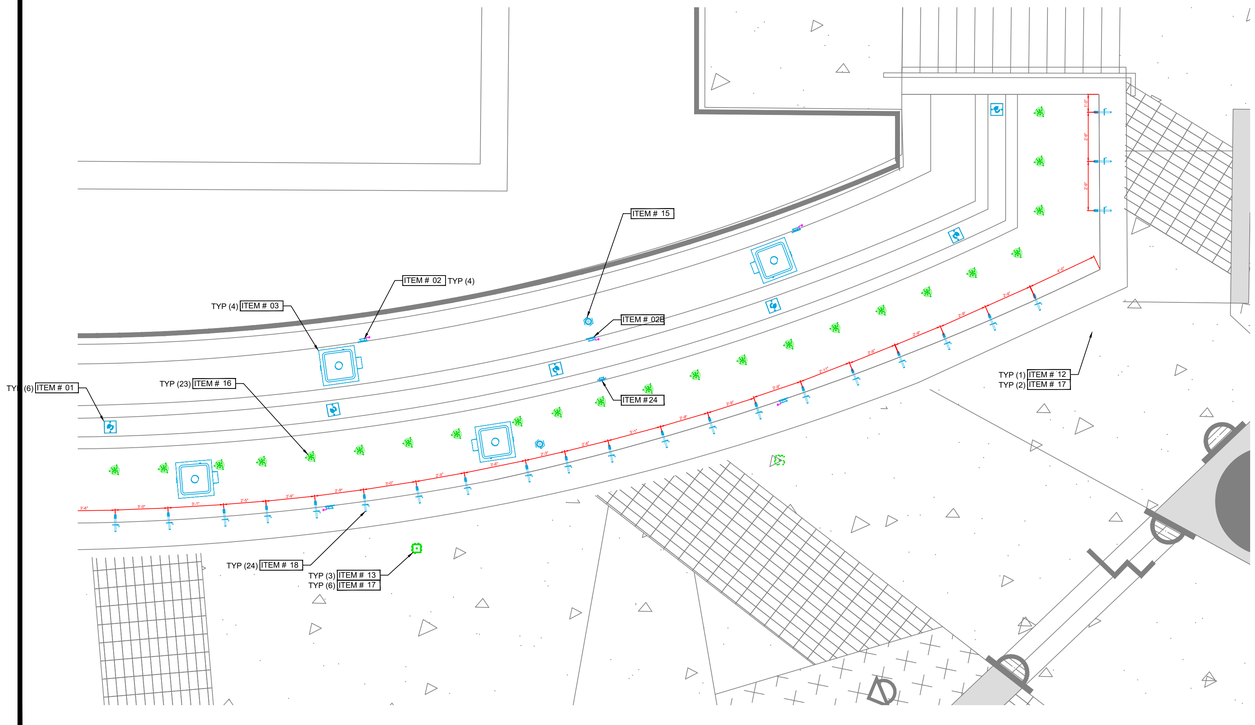
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

FOUNTAIN PIPING & INSTRUMENTATION DIAGRAM

Drawing Number:

WFM-1A





FOUNTAIN SITE PLAN
SCALE: 1/8"=1'-0"

ROMAN FOUNTAINS	Mobile Convention Center – Mobile Alabama HERO PLAZA FOUNTAIN SYSTEM EQUIPMENT LIST	
Item #	Qty	Component #	Description
01	12	Display Discharge Refurbishment	Anti-Vortex/Diverter Plate Assembly
02	10	Wall Mount Overflow	Refurbish/provide Wall Mount Overflow
03	8	Suction Sump Refurbishment	24" Square Anti-Vortex Plate Assembly
04	2	Level Sensor Refurbishment	Wall-Mounted Combination Water Level/Low Level Cutoff Sensor
05	1	Water Treatment Skid	Skid-Mounted Dual-Point Automatic Water Treatment System Station
06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station
07	1	Boost Pump Skid	Skid-Mount Boost Pump Station
08	2	Fill Manifold	Fill Manifold System
09	3	20 HP Pump Skid	Skid-Mount Pump Station
10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
11	3	Skid Mount Vacuum Pump	Skid-Mount Vacuum Pump Station
12	2	Large Flush Mount Junction Box	Flush-Mounted Submersible Junction Box
13	5	Large Conduit Mount Junction Box	Flush-Mounted Submersible Junction Box
14	2	Vacuum Pump Switch	Water Sensor Switch
15	1	Floor Drain	Floor Drain Fitting
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture
17	15	Potting Compound	Potting Compound
18	47	Conduit Cord Seal	Conduit Cord Seal;
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel
21	2	Floor Mount Grate Drain	Floor-Inlet/Drain Fitting
22	3	Vacuum Pump Ctrl	Vacuum pump controls
23	1	Filter/Boost Pump	Filter/Board pump station
24	2	Wall Drain	Wall Drain Fitting with Plug

*** NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR, SEE WFN-2 FOR FULL BOM**

NOTES:

1. ALL PRESSURE/ SUCTION PIPING SHOWN IN VAULTS OR SKIDS IS BASED ON SCHEDULE 80 PVC. ALL EXTERNAL PRESSURE/ SUCTION/ GRAVITY DRAIN PIPING (BY INSTALLER) REQUIRES SCHEDULE 80 OR SCHEDULE 40 PVC. REFER TO LOCAL JURISDICTIONAL REGULATIONS FOR ANY ADDITIONAL REQUIREMENTS.
2. ALL PIPING, VALVES, CONDUIT, FITTINGS, CONDUCTORS, ETC. REQUIRED TO COMPLETE PROJECT ARE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR, UNLESS STATED OTHERWISE ON DRAWING WFN-2 (EQUIPMENT LIST).

USE STRANDED COPPER WIRE ONLY, FOR WIRING ALL FOUNTAIN ELECTRICAL ITEMS

3. INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN EXPERIENCED IN POOL WIRING, AND IN STRICT CONFORMANCE WITH NEC SECTION 680, AND ALL LOCAL CODE REQUIREMENTS.
4. THE PROPER DESIGN, OPERATION AND PERFORMANCE OF THIS SYSTEM IS BASED ON THE SELECTION AND USE OF EQUIPMENT MANUFACTURED AND/OR SELECTED BY ROMAN FOUNTAINS CORPORATION, SARASOTA, FLORIDA, U.S.A.; PH. (941) 484-8224. SUBSTITUTION OF EQUIPMENT OTHER THAN THAT SELECTED AND FURNISHED, VOIDS THE SYSTEM WARRANTY AND PERFORMANCE GUARANTEE, AND INSTALLER ASSUMES FULL RESPONSIBILITY FOR ITS OPERATION AND PERFORMANCE.
5. ALL PIPING AND CONDUITS SHOWN ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO REPRESENT THE ACTUAL PIPE ROUTING FOR THIS PROJECT.

CAUTION: INSTALLER TO VERIFY THAT ELEVATIONS AND OTHER DIMENSIONAL INFORMATION PROVIDED HEREIN, AGREE WITH ACTUAL SITE CONDITIONS. PLEASE REPORT ANY DEVIATIONS OR POTENTIAL INSTALLATION CHANGES IMMEDIATELY TO ROMAN FOUNTAINS. PHONE #(877) 794-1802.

DANGER

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IMPORTANT NOTE: PUMP SKID LOCATED IN MECHANICAL ROOM. FINAL LOCATION TO BE COORDINATED WITH ARCHITECT, BY INSTALLER. IF PUMP SKID IS GREATER THAN 100' FROM FOUNTAIN, CALL ROMAN FOUNTAINS AT (941) 484-8224.

IMPORTANT NOTE: ALL DISCHARGE, SUCTION, OVERFLOW, DRAIN AND FILL EQUIPMENT IS PRE-EXISTING AND EMBEDDED IN THE CONCRETE FLOOR AND WALLS OF THE FOUNTAIN. THIS EMBED EQUIPMENT IS ASSUMED TO BE IN A STATE THAT CAN BE REFURBISHED. THE EQUIPMENT LIST SHOWS WHICH EQUIPMENT IS EXPECTED TO BE REFURBISHED AND THIS SET OF DRAWINGS ATTEMPTS TO THE BEST OF ITS ABILITY TO SHOW WHAT STATE THE EQUIPMENT SHOULD REFURBISHED TO.

THE LIGHTING EQUIPMENT IN THE LOWER BASIN WILL BE NEWLY ADDED, THIS INCLUDES ITEMS 12, 13, 16, 17 AND 18. THE SLAB PENETRATIONS WITH CORD SEALS WILL BE EMBEDDED INTO THE NEW OUTER WALL OF THE LOWER POOL. THESE ARE DIMENSIONED IN THE DRAWING TO THE LEFT. DIMENSIONS ARE WHAT IS EXPECTED TO WORK BEST BUT FIELD CONDITIONS MAY DETERMINE CHANGES. IF THESE CONDITIONS EXIST PLEASE CONTACT ROMAN FOUNTAINS WITH DESIGN QUESTIONS.

DRAWING SUBMITTAL
NOT FOR CONSTRUCTION
FOR CLIENT REVIEW.

ROMAN FOUNTAINS

SO# 13338

MOBILE CONVENTION CENTER - HERO PLAZA

MOBILE ALABAMA

For: TSW DESIGN

ATLANTA, GA

ROMAN FOUNTAINS CORP.
Manufacturing Facility
1125 Commerce Blvd., N,
Sarasota, FL 34243
Phone #: (941) 484-8224
Fax #: (941) 484-9302
http://www.romanfountains.com

ROMAN FOUNTAINS CORP.
Atlanta Engineering Office
9875 Medlock Bridge Parkway
Suite 250
Johns Creek, GA. 30022
Phone #: (877) 794-1802
Fax #: (770) 300-0074

Scale:	AS SHOWN
Drawn By:	JEH
Checked By:	PH
Date:	04/14/23

Revisions:

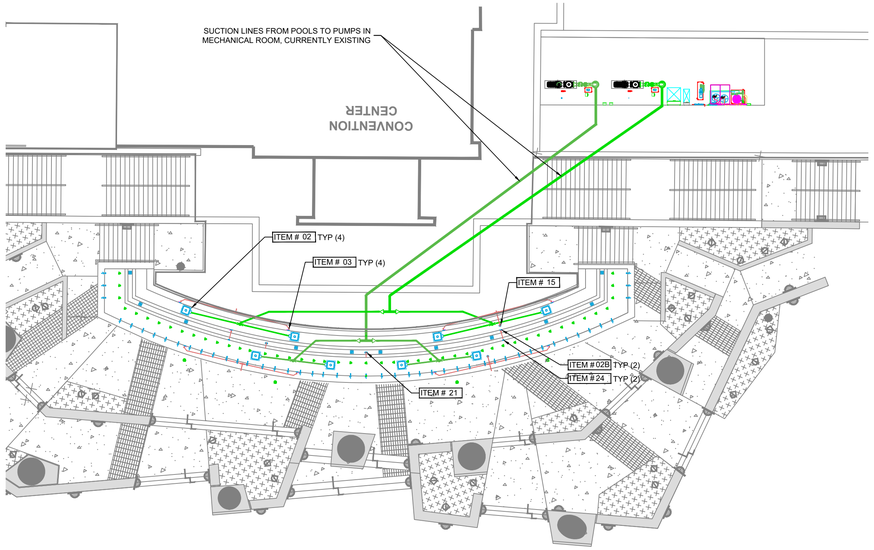
No.	Date	By	Comments
A	04/14/23	JEH	ISSUED AS PRELIM
B	01/16/23	JEH	BASIN REVISIONS
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

FOUNTAIN SITE PLAN

Drawing Number:

WFM-1

IMPORTANT NOTE: ALL DRAINS TO WASTE ARE PRE-EXISTING AND THE LOCATION OF THE LOWER BASIN FLOOR AND OVERFLOW DRAINS ARE NOT NOT KNOWN AS THEY ARE COVERED WITH LANDSCAPING. LOCATIONS ARE ASSUMED AND THE QUANTITY AND SIZE OF THE DRAINS ARE BASED ON THE ORIGINAL DESIGN DRAWINGS. ALL FLOOR DRAINS AND OVERFLOW DRAINS ARE TO REMAIN AND NO ADDITIONAL DRAINS ARE NEEDED, ASSUMING THE CURRENT DRAINS FUNCTION.

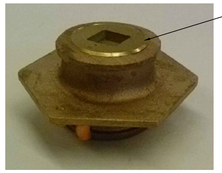


FOUNTAIN SUCTION, DRAIN, & VENT PIPING PLAN
SCALE: 1/4"=1'-0"

IMPORTANT NOTE: ALL DISCHARGE, SUCTION, OVERFLOW, DRAIN AND FILL EQUIPMENT IS PRE-EXISTING AND EMBEDDED IN THE CONCRETE FLOOR AND WALLS OF THE FOUNTAIN. THIS EMBED EQUIPMENT IS ASSUMED TO BE IN A STATE THAT CAN BE REFURBISHED. THE PHOTOS PROVIDED HERE ARE OF THE FITTINGS/EQUIPMENT IN THEIR CURRENT STATE AS WELL AS PHOTOS OF NEW FITTINGS/EQUIPMENT WITH THE SAME PURPOSE. THE CURRENT EQUIPMENT SHALL BE REFURBISHED TO NEW OR LIKE-NEW QUALITY MATCHING THE REFURBISHED PHOTOS AS BEST AS POSSIBLE. THIS TASK MAY TAKE SIGNIFICANT FABRICATION OR PARTS.

IMPORTANT NOTE: THE INSTALLER WILL BE REQUIRED TO PROVIDE SUBSTANTIAL FABRICATION AND/OR REFURBISHMENT TO THE CURRENT EMBEDDED FOUNTAIN FITTINGS. THE EMBEDDED BODIES OF THE FITTINGS ARE NOT REMOVABLE BUT MUST BE BROUGHT TO OPERATIONAL STATUS. THE FACE PLATES, DIVERTER PLATES, GRATING, ETC WHICH ARE REMOVABLE WILL NEED TO BE ATTACHED/CONNECTED TO THE CURRENT FITTINGS. DRILLING, TAPPING AND PROVIDING MOUNTING BRACKETS MAY BE REQUIRED.

ITEM #15 CURRENT
SCALE: NONE



ITEM #15 REFURBISHED
SCALE: NONE

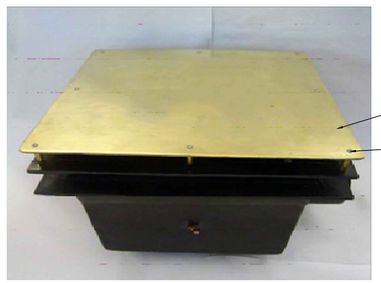
ROMAN FOUNTAINS	Mobile Convention Center – Mobile Alabama HERO PLAZA FOUNTAIN SYSTEM EQUIPMENT LIST	
Item #	Qty	Component #	Description
01	12	Display Discharge Refurbishment	Anti-Vortex/Diverter Plate Assembly
02	10	Wall Mount Overflow	Refurbish/provide Wall Mount Overflow
03	8	Suction Sump Refurbishment	24" Square Anti-Vortex Plate Assembly
04	2	Level Sensor Refurbishment	Wall-Mounted Combination Water Level/Low Level Cutoff Sensor
05	1	Water Treatment Skid	Skid-Mounted Dual-Point Automatic Water Treatment System Station
06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station
07	1	Boost Pump Skid	Skid-Mount Boost Pump Station
08	2	Fill Manifold	Fill Manifold System
09	3	20 HP Pump Skid	Skid-Mount Pump Station
10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
11	3	Skid Mount Vacuum Pump	Skid-Mount Vacuum Pump Station
12	2	Large Flush Mount Junction Box	Flush-Mounted Submersible Junction Box
13	5	Large Conduit Mount Junction Box	Flush-Mounted Submersible Junction Box
14	2	Vacuum Pump Switch	Water Sensor Switch
15	1	Floor Drain	Floor Drain Fitting
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture
17	15	Potting Compound	Potting Compound
18	47	Conduit Cord Seal	Conduit Cord Seal;
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel
21	2	Floor Mount Grate Drain	Floor-Inlet/Drain Fitting
22	3	Vacuum Pump Ctrl	Vacuum pump controls
23	1	Filter/Boost Pump	Filter/Board pump station
24	2	Wall Drain	Wall Drain Fitting with Plug

***NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR, SEE WFN-2 FOR FULL BOM**

ITEM #02 CURRENT
SCALE: NONE

ITEM #03 CURRENT
SCALE: NONE

ITEM #21 CURRENT
SCALE: NONE



ITEM #02 REFURBISHED
SCALE: NONE

ITEM #03 REFURBISHED
SCALE: NONE

ITEM #21 REFURBISHED
SCALE: NONE

NOTES:

1. ALL PRESSURE/ SUCTION PIPING SHOWN IN VAULTS OR SKIDS IS BASED ON SCHEDULE 80 PVC. ALL EXTERNAL PRESSURE/ SUCTION/ GRAVITY DRAIN PIPING (BY INSTALLER) REQUIRES SCHEDULE 80 OR SCHEDULE 40 PVC. REFER TO LOCAL JURISDICTIONAL REGULATIONS FOR ANY ADDITIONAL REQUIREMENTS.
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⚡ DANGER ⚡

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PIPING SCHEMATIC SYMBOL LEGEND

Symbol	Description
	Piping crossing underneath another pipe.
	A reducer fitting, by installer, is required at this location to change the pipe size.
	Piping turning downward in plan view via a 90 degree elbow. This allows another 90 degree elbow,located directly below the shown schematic elbow, to change the pipe direction to any angle.
	Piping turning downward in plan view or directly away from the viewer in section view via a 90 degree elbow.
	Piping turning upward in plan view or directly towards the viewer in section view via a 90 degree elbow.
	Direction of water flow inside piping.

+ IMPORTANT NOTE:
INSTALL PIPING IN EQUIDISTANT LENGTHS WHERE INDICATED, TO PROVIDE BALANCED FLOW DISTRIBUTION.

DRAWING SUBMITTAL
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MOBILE ALABAMA
For: TSW DESIGN
ATLANTA, GA

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Scale:	AS SHOWN
Drawn By:	JEH
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Date:	04/14/23

Revisions:

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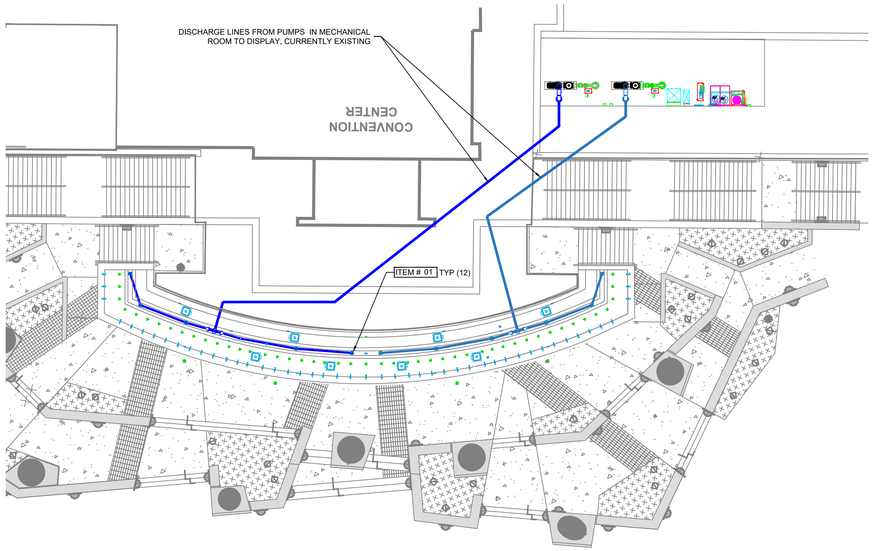
B	01/16/23	JEH	BASIN REVISIONS
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

FOUNTAIN SUCTION, DRAIN, & VENT PIPING PLAN

Drawing Number:

WFM-2



FOUNTAIN SUCTION, DRAIN, & VENT PIPING PLAN
SCALE: 1/4"=1'-0"

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ROMAN FOUNTAINS

Mobile Convention Center – Mobile Alabama
HERO PLAZA
FOUNTAIN SYSTEM EQUIPMENT LIST

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06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station
07	1	Boost Pump Skid	Skid-Mount Boost Pump Station
08	2	Fill Manifold	Fill Manifold System
09	3	20 HP Pump Skid	Skid-Mount Pump Station
10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
11	3	Skid Mount Vacuum Pump	Skid-Mount Vacuum Pump Station
12	2	Large Flush Mount Junction Box	Flush-Mounted Submersible Junction Box
13	5	Large Conduit Mount Junction Box	Flush-Mounted Submersible Junction Box
14	2	Vacuum Pump Switch	Water Sensor Switch
15	1	Floor Drain	Floor Drain Fitting
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture
17	15	Potting Compound	Potting Compound
18	47	Conduit Cord Seal	Conduit Cord Seal;
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel
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22	3	Vacuum Pump Ctrl	Vacuum pump controls
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*NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR, SEE WFN-2 FOR FULL BOM

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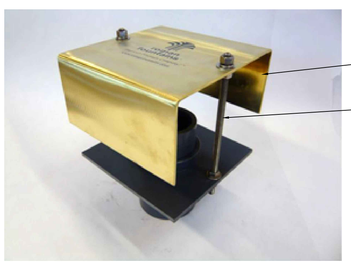
ITEM #01 CURRENT
SCALE: NONE



ITEM #01 REFURBISHED
SCALE: NONE

PIPING SCHEMATIC SYMBOL LEGEND

Symbol	Description
	Piping crossing underneath another pipe.
	A reducer fitting, by installer, is required at this location to change the pipe size.
	Piping turning downward in plan view via a 90 degree elbow. This allows another 90 degree elbow located directly below the shown schematic elbow, to change the pipe direction to any angle.
	Piping turning downward in plan view or directly away from the viewer in section view via a 90 degree elbow.
	Piping turning upward in plan view or directly towards the viewer in section view via a 90 degree elbow.
	Direction of water flow inside piping.

IMPORTANT NOTE:
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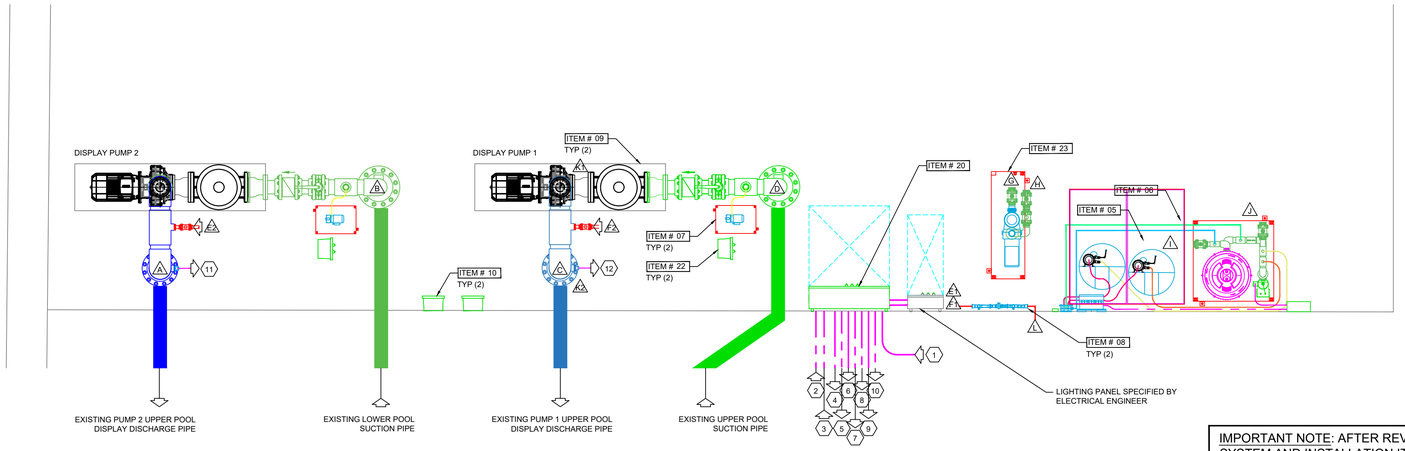
A	04/14/23	JEH	ISSUED AS PRELIM
B	01/16/23	JEH	BASIN REVISIONS
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

FOUNTAIN DISCHARGE & FILL PIPING PLAN

Drawing Number:

WFM-3



MECHANICAL ROOM PLAN VIEW

SCALE: 3/8"=1'-0"

Item #	Qty	Component #	Description
01	12	Display Discharge Refurbishment	Anti-Vortex/Diverter Plate Assembly
02	10	Wall Mount Overflow	Refurbish/provide Wall Mount Overflow
03	8	Suction Sump Refurbishment	24" Square Anti-Vortex Plate Assembly
04	2	Level Sensor Refurbishment	Wall-Mounted Combination Water Level/Low Level Cutoff Sensor
05	1	Water Treatment Skid	Skid-Mounted Dual-Feed Automatic Water Treatment System Station
06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station
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08	2	Fill Manifold	Fill Manifold System
09	3	20 HP Pump Skid	Skid-Mount Pump Station
10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
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15	1	Floor Drain	Floor Drain Fitting
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture
17	15	Potting Compound	Potting Compound
18	47	Conduit Cord Seal	Conduit Cord Seal;
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel
21	2	Floor Mount Grate Drain	Floor-Inlet/Drain Fitting
22	3	Vacuum Pump Ctrl	Vacuum pump controls
23	1	Filter/Boost Pump	Filter/Boost pump station
24	2	Wall Drain	Wall Drain Fitting with Plug

***NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR, SEE WFN-2 FOR FULL BOM**

VAULT PIPING PENETRATION LEGEND

SYM.	SIZE	DESCRIPTION
A	10"	DISPLAY DISCHARGE PIPING CONNECTION, EXISTING PENETRATION
B	12"	SUCTION PIPING CONNECTION, EXISTING PENETRATION
C	10"	DISPLAY DISCHARGE PIPING CONNECTION, EXISTING PENETRATION
D	12"	SUCTION PIPING CONNECTION, EXISTING PENETRATION
E	3/4"	FILL/MAKE-UP PIPING CONNECTION FROM FILL MANIFOLD
F	3/4"	FILL/MAKE-UP PIPING CONNECTION FROM FILL MANIFOLD
G	3/4"	FILL/MAKE-UP PIPING CONNECTION
H	3/4"	FILL/MAKE-UP PIPING CONNECTION
I	2"	FILTER/BOOST PUMP SUCTION PIPING CONNECTION
M	2"	FILTER/BOOST PUMP DISCAHRGE PIPING CONNECTION
J	2"	FILTER SKID INLET PIPING CONNECTION
K	2"	FILTER SKID DISCHARGE PIPING CONNECTION
L	2"	DISCHARGE TO FILTER SKID PIPING CONNECTION
N	3/4"	C.W.S. IN PIPING FROM BACKFLOW PROTECTED SOURCE (BY INSTALLER) REGULATE PRESSURE TO 50 PSI MAXIMUM
P	1/2"	VACUUM PUMP PIPING CONNECTION
Q	1/2"	VACUUM PUMP PIPING CONNECTION

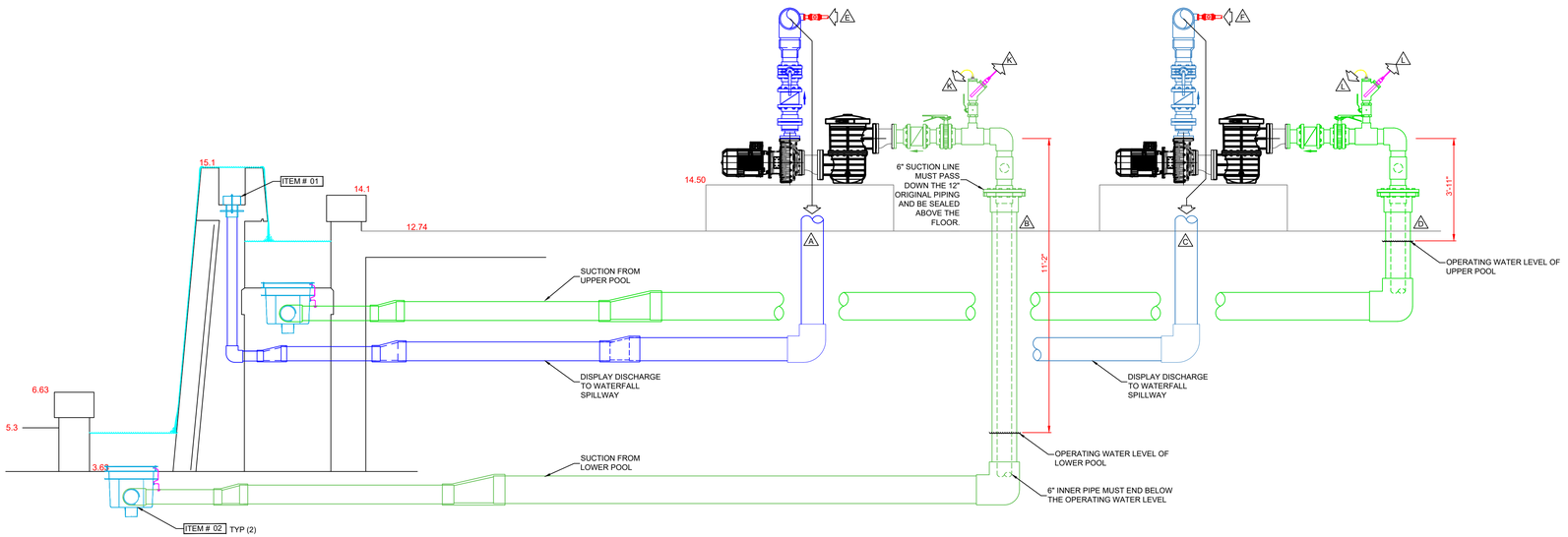
PANEL CONDUIT PENETRATION LEGEND

SYM.	SIZE	DESCRIPTION
1	1"C	CONDUIT CONNECTION FOR MAIN POWER IN
2	3/4"C	CONDUIT CONNECTION FOR WATER LEVEL SENSOR
3	3/4"C	CONDUIT CONNECTION FOR WATER LEVEL SENSOR
4	1"C	CONDUIT CONNECTION FOR BASIN LIGHTING (LIGHTING FEED #1)
5	1"C	CONDUIT CONNECTION FOR BASIN LIGHTING (LIGHTING FEED #2)
6	1"C	CONDUIT CONNECTION FOR BASIN LIGHTING (LIGHTING FEED #3)
7	1"C	CONDUIT CONNECTION FOR BASIN LIGHTING (LIGHTING FEED #4)
8	1"C	CONDUIT CONNECTION FOR BASIN LIGHTING (LIGHTING FEED #5)
9	1"C	CONDUIT CONNECTION FOR BASIN LIGHTING (LIGHTING FEED #6)
10	1"C	CONDUIT CONNECTION FOR BASIN LIGHTING (LIGHTING FEED #7)
11	3/4"C	CONDUIT CONNECTION FOR FLOW METER SIGNAL
12	3/4"C	CONDUIT CONNECTION FOR FLOW METER SIGNAL
13	3/4"C	CONDUIT CONNECTION FOR WATER SENSOR SIGNAL
14	3/4"C	CONDUIT CONNECTION FOR WATER SENSOR SIGNAL

IMPORTANT NOTE: AFTER REVIEW OF THE CURRENT SYSTEM AND INSTALLATION IT IS CONCLUDED THAT THE SUCTION PIPING RISING UP THROUGH THE MECHANICAL ROOM FLOOR IS TOO LARGE FOR THE APPLICATION. THE INSTALLED PIPING IS 12" BUT THE INSTALLED PUMPS ARE DESIGNED TO LIFT WATER THROUGH A 6" SUCTION. THE INCREASE IN PIPE SIZE REQUIRES SIGNIFICANTLY MORE SUCTION AND POWER TO LIFT THE WATER, MORE SUCTION AND POWER THAN IS PROVIDED BY THE INSTALLED PUMPS.

THE SUCTION PIPING MUST BE REDUCED TO 6", THE PUMPS SHOULD BE LOWERED TO MINIMIZE THE ELEVATION ABOVE THE MECHANICAL ROOM FLOOR, AND THE PUMPS MUST BE SIZED APPROPRIATELY. THE CURRENT 12" PIPE WILL BE USED AS A SLEEVE FOR THE 6" PIPE, WHICH WILL NEED TO TRAVEL DOWN THE CENTER OF THE 12" PIPE AND END BELOW OPERATING WATER LEVEL. A PRIME ASSIST VACUUM PUMP WILL BE USED DURING INITIAL START UP AND REMOVE ALL AIR FROM THE SUCTION LINES. ONCE PRIMED, THE DISPLAY PUMPS WILL BE ABLE TO DRAW WATER FROM THE 6" LINE AND PROVIDE IT TO THE DISPLAY.

THE PUMP 1, DRAWING WATER FROM THE UPPER POOL WILL WORK LESS THAN PUMP 2 BECAUSE OF THE SHORTER LIFT OF WATER. FOR THIS REASON, THE PUMP 1 WILL ALSO PROVIDE WATER TO THE FILTER BOOST PUMP AND FILTRATION SYSTEM. THE FILTERED WATER WILL RETURN TO THE PUMP 1 DISCHARGE LINE.



MECHANICAL ROOM ELEVATION VIEW

SCALE: 3/8"=1'-0"

NOTES:

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   USE STRANDED COPPER WIRE ONLY, FOR WIRING ALL FOUNTAIN ELECTRICAL ITEMS
3. INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN EXPERIENCED IN POOL WIRING, AND IN STRICT CONFORMANCE WITH NEC SECTION 680, AND ALL LOCAL CODE REQUIREMENTS.
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NEC ARTICLE 680.12 NOTICE

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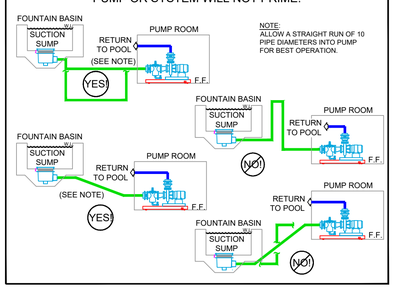
FOUNTAIN WATER MUST 'GRAVITY FLOW' INTO PUMP OR SYSTEM WILL NOT PRIME!



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FOR CLIENT REVIEW.

ROMAN FOUNTAINS

SO# 13338

MOBILE CONVENTION CENTER - HERO PLAZA

MOBILE ALABAMA

For: TSW DESIGN

ATLANTA, GA

ROMAN FOUNTAINS CORP.
Manufacturing Facility
1125 Commerce Blvd., N,
Sarasota, FL 34243
Phone #: (941) 484-8224
Fax #: (941) 484-9302
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ROMAN FOUNTAINS CORP.
Atlanta Engineering Office
9875 Medlock Bridge Parkway
Suite 250
Johns Creek, GA. 30022
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D	03/14/23	JEH	100% PROGRESS

FOUNTAIN MECHANICAL ROOM DETAILS

Drawing Number:

WFM-4

ROMAN FOUNTAINS	Mobile Convention Center -- Mobile Alabama HERO PLAZA FOUNTAIN SYSTEM EQUIPMENT LIST	
Item #	**Qty**	**Component #**	**Description**
01	12	Display Discharge Refurbishment	Anti-Vortex/Diverter Plate Assembly
02	10	Wall Mount Overflow	Refurbish/provide Wall Mount Overflow
03	8	Suction Sump Refurbishment	24" Square Anti-Vortex Plate Assembly
04	2	Level Sensor Refurbishment	Wall-Mounted Combination Water Level/Low Level Cutoff Sensor
05	1	Water Treatment Skid	Skid-Mounted Dual-Point Automatic Water Treatment System Station
06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station
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08	2	Fill Manifold	Fill Manifold System
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10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
11	3	Skid Mount Vacuum Pump	Skid-Mount Vacuum Pump Station
12	2	Large Flush Mount Junction Box	Flush-Mounted Submersible Junction Box
13	5	Large Conduit Mount Junction Box	Flush-Mounted Submersible Junction Box
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15	1	Floor Drain	Floor Drain Fitting
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture
17	15	Potting Compound	Potting Compound
18	47	Conduit Cord Seal	Conduit Cord Seal;
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel
21	2	Floor Mount Grate Drain	Floor-Inlet/Drain Fitting
22	3	Vacuum Pump Ctrl	Vacuum pump controls
23	1	Filter/Boost Pump	Filter/Boost pump station
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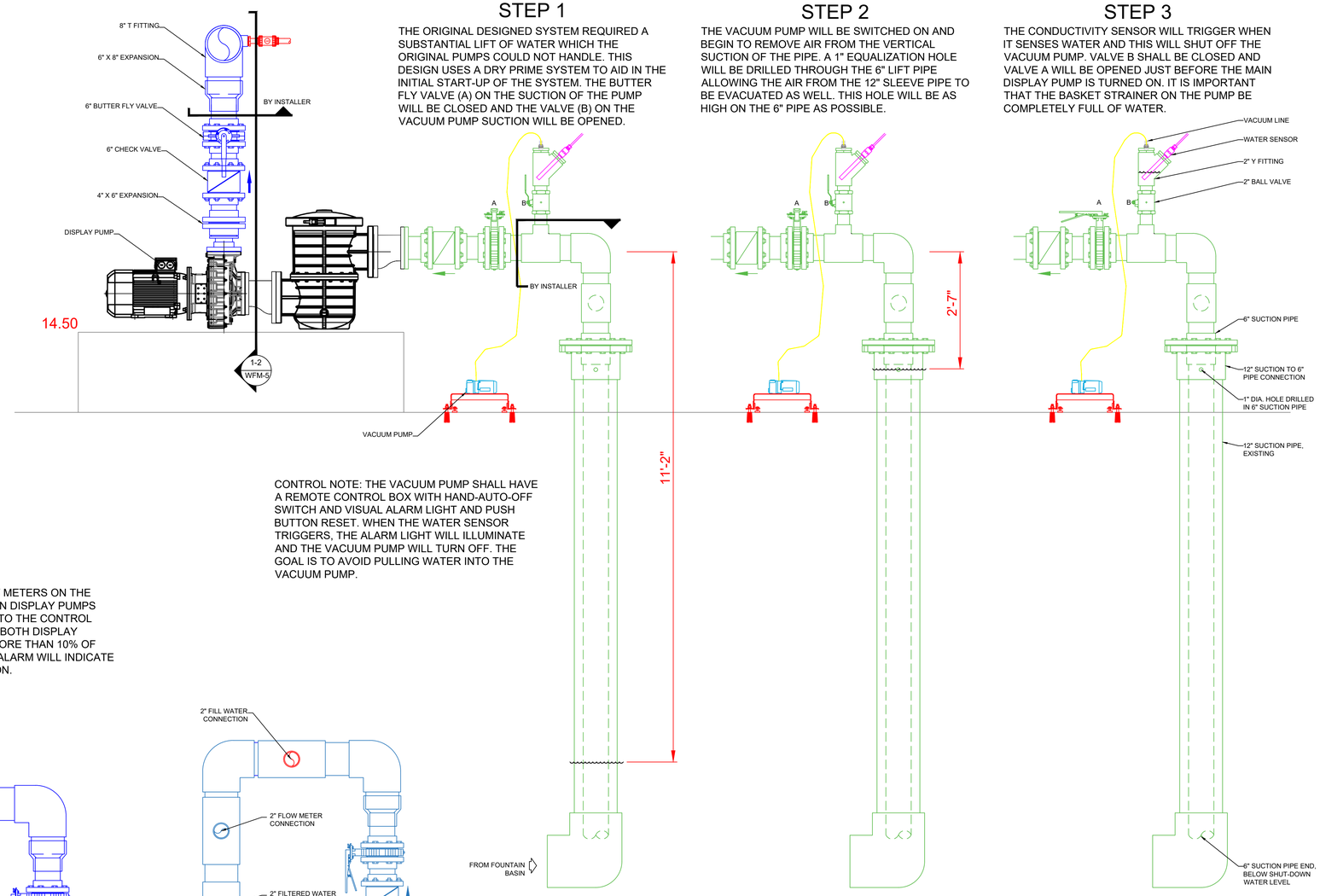
***NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR, SEE WFN-2 FOR FULL BOM**



STEP 1

THE ORIGINAL DESIGNED SYSTEM REQUIRED A SUBSTANTIAL LIFT OF WATER WHICH THE ORIGINAL PUMPS COULD NOT HANDLE. THIS DESIGN USES A DRY PRIME SYSTEM TO AID IN THE INITIAL START-UP OF THE SYSTEM. THE BUTTER FLY VALVE (A) ON THE SUCTION OF THE PUMP WILL BE CLOSED AND THE VALVE (B) ON THE VACUUM PUMP SUCTION WILL BE OPENED.

STEP 2

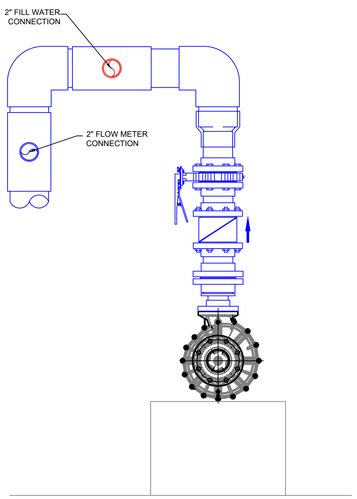
THE VACUUM PUMP WILL BE SWITCHED ON AND BEGIN TO REMOVE AIR FROM THE VERTICAL SUCTION OF THE PIPE. A 1" EQUALIZATION HOLE WILL BE DRILLED THROUGH THE 6" LIFT PIPE ALLOWING THE AIR FROM THE 12" SLEEVE PIPE TO BE EVACUATED AS WELL. THIS HOLE WILL BE AS HIGH ON THE 6" PIPE AS POSSIBLE.

STEP 3

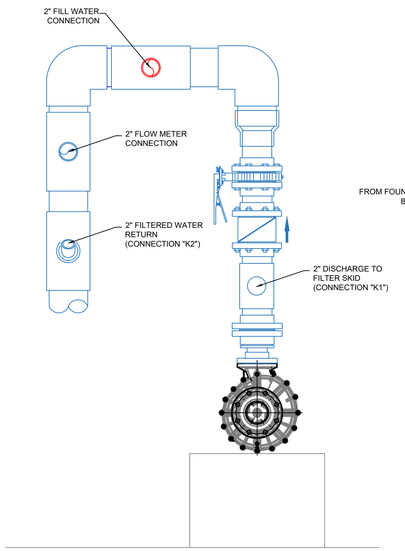
THE CONDUCTIVITY SENSOR WILL TRIGGER WHEN IT SENSES WATER AND THIS WILL SHUT OFF THE VACUUM PUMP. VALVE B SHALL BE CLOSED AND VALVE A WILL BE OPENED JUST BEFORE THE MAIN DISPLAY PUMP IS TURNED ON. IT IS IMPORTANT THAT THE BASKET STRAINER ON THE PUMP BE COMPLETELY FULL OF WATER.

CONTROL NOTE: THE VACUUM PUMP SHALL HAVE A REMOTE CONTROL BOX WITH HAND-AUTO-OFF SWITCH AND VISUAL ALARM LIGHT AND PUSH BUTTON RESET. WHEN THE WATER SENSOR TRIGGERS, THE ALARM LIGHT WILL ILLUMINATE AND THE VACUUM PUMP WILL TURN OFF. THE GOAL IS TO AVOID PULLING WATER INTO THE VACUUM PUMP.

IMPORTANT NOTE: THE FLOW METERS ON THE DISCHARGE SIDE OF THE MAIN DISPLAY PUMPS SHALL SEND A SIGNAL BACK TO THE CONTROL PANEL. THE FLOW THROUGH BOTH DISPLAY PUMPS SHOULD NOT VARY MORE THAN 10% OF THE OTHER, IF SO, A VISUAL ALARM WILL INDICATE THE NEED FOR INVESTIGATION.



ELEVATION "PUMP 2"
SCALE: 3/4"=1'-0"



ELEVATION "PUMP 1"
SCALE: 3/4"=1'-0"

MECHANICAL ROOM "DRY PRIME" DETAILS
SCALE: 3/4"=1'-0"

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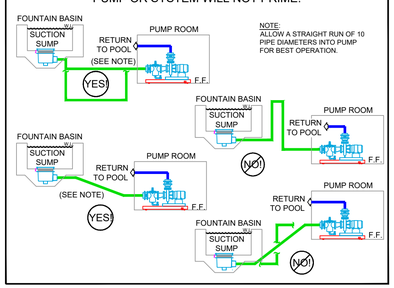

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FOUNTAIN MECHANICAL ROOM "DRY PRIME" DETAILS

Drawing Number:

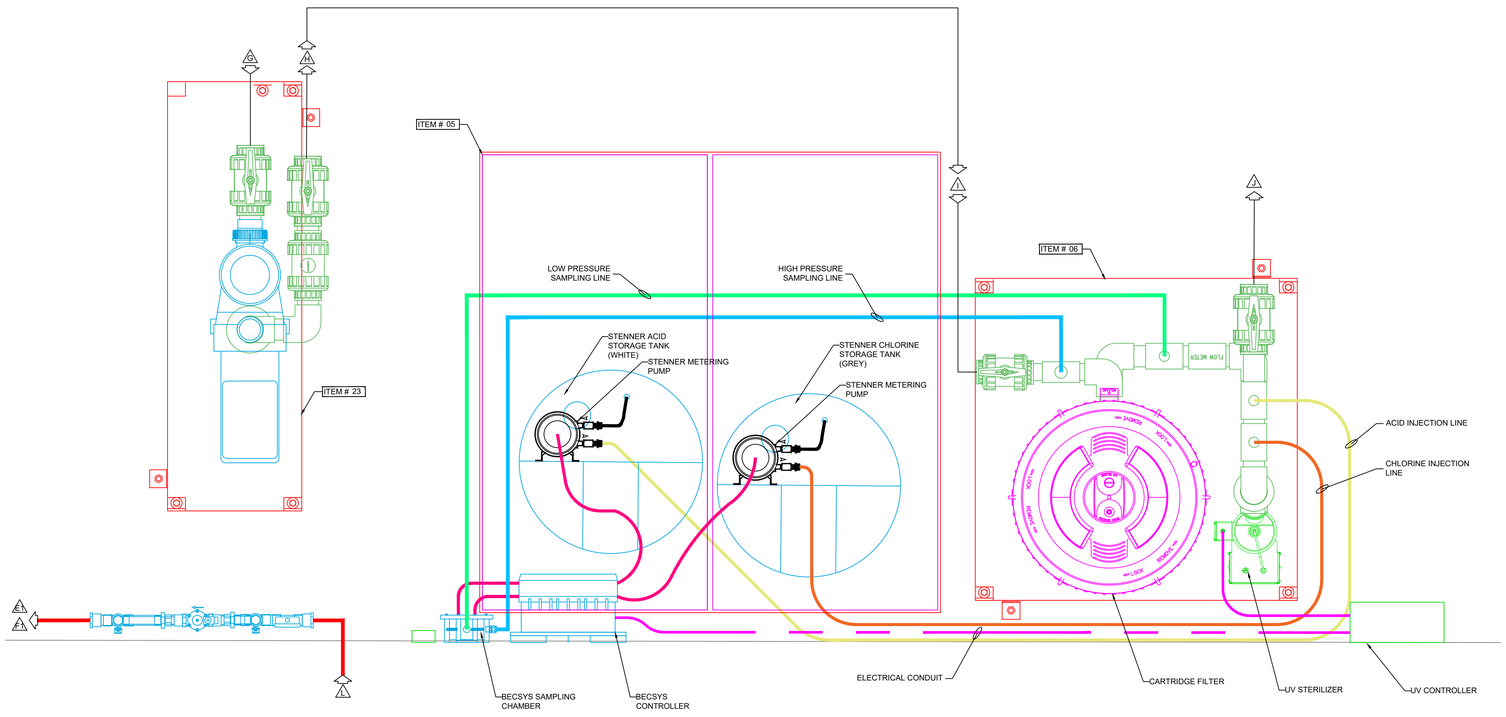
WFM-5

FILTER & TREATMENT PROCESS SUMMARY

DISPLAY PUMP 1'S DISCHARGE HAS A PORT WHICH WILL CONNECT TO THE SUCTION OF ITEM #23'S FILTER BOOSTER PUMP. THIS PUMP WILL DRAW WATER FROM THE DISCHARGE LINE (CONNECTION "K" ON WFM-4) AND PUSH IT FROM CONNECTION "H" TO "I" WHERE IT WILL ENTER THE CARTRIDGE FILTER.

WATER WILL BE SAMPLED FROM THE INLET OF THE FILTER (HIGH PRESSURE SIDE) AND IT WILL PASS THROUGH THE BECSYS MIXING CHAMBER AND ANALYZED BY THE CHEMICAL CONTROLLER. BASED ON THE RESULTS, CHLORINE OR ACID MAY BE ADDED IF NEEDED. THE WATER WILL PASS THROUGH THE FILTER AND INTO THE UV STERILIZER. THE STERILIZER IS A POINT OF CONTACT DEVICE, INACTIVATING PATHOGENS ON THE SPOT.

WATER THEN EXITS THE UV STERILIZER AND THROUGH THE CHEMICAL INJECTION SYSTEM. CHLORINE IS ADDED AS A SECONDARY TREATMENT TO KEEP THE WATER FRESH WHILE IN THE POOLS AND ACID IS ADDED IF THE PH IS TOO HIGH. PROPER BALANCE IS KEY FOR PROPERLY TREATED WATER. FILTERED AND TREATED WATER WILL EXIT CONNECTION "J" AND TRAVEL BACK TO THE PUMP 1 DISCHARGE LINE AND OUT TO THE WATER WALL TO BE CIRCULATED IN BOTH POOLS.



MECHANICAL ROOM FILTRATION & TREATMENT DETAILS

SCALE: 1-1/2"=1'-0"

VAULT PIPING PENETRATION LEGEND

SYM.	SIZE	DESCRIPTION
A	10"	DISPLAY DISCHARGE PIPING CONNECTION, EXISTING PENETRATION
B	12"	SUCTION PIPING CONNECTION, EXISTING PENETRATION
C	10"	DISPLAY DISCHARGE PIPING CONNECTION, EXISTING PENETRATION
D	12"	SUCTION PIPING CONNECTION, EXISTING PENETRATION
E	3/4"	FILL/MAKE-UP PIPING CONNECTION FROM FILL MANIFOLD
F	3/4"	FILL/MAKE-UP PIPING CONNECTION FROM FILL MANIFOLD
G	3/4"	FILL/MAKE-UP PIPING CONNECTION
H	3/4"	FILL/MAKE-UP PIPING CONNECTION
G	2"	FILTER/BOOST PUMP SUCTION PIPING CONNECTION
H	2"	FILTER/BOOST PUMP DISCAHRGE PIPING CONNECTION
I	2"	FILTER SKID INLET PIPING CONNECTION
J	2"	FILTER SKID DISCHARGE PIPING CONNECTION
K	2"	DISCHARGE TO FILTER SKID PIPING CONNECTION
L	3/4"	C.W.S. IN PIPING FROM BACKFLOW PROTECTED SOURCE (BY INSTALLER) REGULATE PRESSURE TO 50 PSI MAXIMUM
M	1/2"	VACUUM PUMP PIPING CONNECTION
N	1/2"	VACUUM PUMP PIPING CONNECTION

ROMAN FOUNTAINS

Mobile Convention Center – Mobile Alabama
HERO PLAZA
FOUNTAIN SYSTEM EQUIPMENT LIST

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10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
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*NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR, SEE WPN-2 FOR FULL BOM

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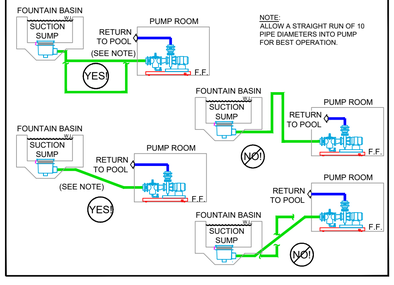

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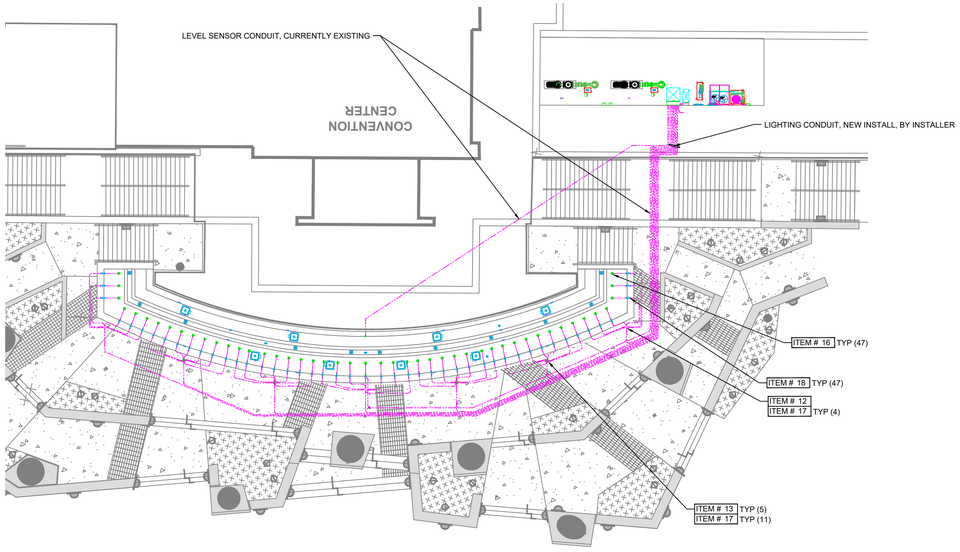
FOUNTAIN MECHANICAL ROOM FILTER & TREATMENT DETAILS

Drawing Number:

WFM-6

IMPORTANT NOTE: ACTUAL CONDUIT LAYOUT AND RUN WILL BE HANDLED BY THE ELECTRICAL ENGINEER OF RECORD. BELOW IS FOR CONCEPT ONLY AND SHOWS THE BOM ITEMS NECESSARY FOR CONDUIT CONNECTIONS.



FOUNTAIN ELECTRICAL PLAN
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24	2	Wall Drain	Wall Drain Fitting with Plug

***NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR. SEE WPH-2 FOR FULL BOM**

CONTROL LOGIC: IF THE UPPER POOL OVER FILLS, THE EXCESS WATER WILL FLOW THROUGH A DRAIN AT AN OVERFLOW ELEVATION ON THE UPPER WALL WHICH WILL PASS THROUGH THE WALL VIA A 2" DIA. PATHWAY. THIS WILL NEED TO BE NEW CONSTRUCTION. THERE ARE CURRENTLY FOUR WALL MOUNT OVERFLOWS THAT FLOW TO THE CITY'S SANITARY OR STORM WATER DRAIN. THE OVERFLOWS CONNECTING THE UPPER BASIN OVERFLOW INTO THE LOWER BASIN WILL NEED TO BE INSTALLED 3/4" BELOW THE ELEVATION OF THE EXISTING WALL MOUNT OVERFLOW DRAINS. TWO OF THESE OVERFLOWS SHALL BE REQUIRED FOR THE UPPER BASIN. IF THE WATER LEVEL IS LOW, THE WATER LEVEL SENSOR IN THE UPPER BASIN WILL TRIGGER AND THE FILL SOLENOID WILL OPEN ALLOWING CITY WATER TO ENTER PUMP 1'S DISCHARGE PIPING. THESE EXISTING OVERFLOWS SHOULD ONLY BE USED IN THE CASE OF STORM WATER EVACUATION.

IF THE LOWER POOL OVER FILLS, THE EXCESS WATER WILL FLOW THOUGH ONE OF FOUR WALL MOUNT OVERFLOW DRAINS (EXISTING) AND TO THE CITY'S SANITARY OR STORM WATER DRAIN. THIS DRAINAGE ROUTE WILL EVACUATE ANY OVERFLOW FROM THE UPPER BASIN AND ANY OVER FLOW FROM THE LOWER BASIN WITH THE EXCEPTION OF HURRICANE INFLOW AND ABNORMAL RAIN EVENTS. IF THE WATER LEVEL IS LOW, THE WATER LEVEL SENSOR IN THE LOWER BASIN WILL TRIGGER AND THE FILL SOLENOID WILL OPEN ALLOWING CITY WATER TO ENTER PUMP 2'S DISCHARGE PIPING.

BECAUSE THIS SYSTEM WAS DESIGNED WITH TWO WATER LEVELS IN THE SAME WATER FEATURE, THE OPERATING WATER LEVEL OF BOTH POOLS REQUIRE EXTRA CARE TO MAINTAIN THE OPERATING LEVELS. THE WATER FALLS WATER SOURCE IS FROM BOTH POOLS, DESPITE THE WEIR EDGE OF THE WATER FALLS INTO THE UPPER AND LOWER BASIN BEING LEVEL THERE STILL LIES A CHANCE OF UNEQUAL FLOW TO ONE OR THE OTHER POOLS. ANY UNEQUAL FLOW, REGARDLESS OF HOW SMALL, WILL EVENTUALLY RESULT IN OVERFLOWING ONE POOL AND RUNNING THE OTHER NEAR DRY. THIS IS THE REASONS FOR THE DUAL LEVEL CONTROL SYSTEM AND TWO WATER FILL MANIFOLDS IN THE MECHANICAL ROOM.

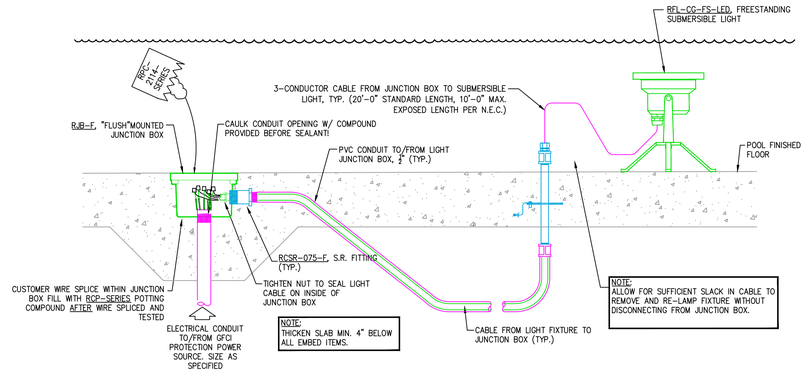
NOTES:

1. ALL PRESSURE/ SUCTION PIPING SHOWN IN VAULTS OR SKIDS IS BASED ON SCHEDULE 80 PVC. ALL EXTERNAL PRESSURE/ SUCTION/ GRAVITY DRAIN PIPING (BY INSTALLER) REQUIRES SCHEDULE 80 OR SCHEDULE 40 PVC. REFER TO LOCAL JURISDICTIONAL REGULATIONS FOR ANY ADDITIONAL REQUIREMENTS.
2. ALL PIPING, VALVES, CONDUIT, FITTINGS, CONDUCTORS, ETC. REQUIRED TO COMPLETE PROJECT ARE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR, UNLESS STATED OTHERWISE ON DRAWING WFN-2 (EQUIPMENT LIST).
   USE STRANDED COPPER WIRE ONLY, FOR WIRING ALL FOUNTAIN ELECTRICAL ITEMS
3. INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN EXPERIENCED IN POOL WIRING, AND IN STRICT CONFORMANCE WITH NEC SECTION 680, AND ALL LOCAL CODE REQUIREMENTS.
4. THE PROPER DESIGN, OPERATION AND PERFORMANCE OF THIS SYSTEM IS BASED ON THE SELECTION AND USE OF EQUIPMENT MANUFACTURED AND/OR SELECTED BY ROMAN FOUNTAINS CORPORATION, SARASOTA, FLORIDA, U.S.A.; PH. (941) 484-8224. SUBSTITUTION OF EQUIPMENT OTHER THAN THAT SELECTED AND FURNISHED, VOIDS THE SYSTEM WARRANTY AND PERFORMANCE GUARANTEE, AND INSTALLER ASSUMES FULL RESPONSIBILITY FOR ITS OPERATION AND PERFORMANCE.
5. ALL PIPING AND CONDUITS SHOWN ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO REPRESENT THE ACTUAL PIPE ROUTING FOR THIS PROJECT.

CAUTION: INSTALLER TO VERIFY THAT ELEVATIONS AND OTHER DIMENSIONAL INFORMATION PROVIDED HEREIN, AGREE WITH ACTUAL SITE CONDITIONS. PLEASE REPORT ANY DEVIATIONS OR POTENTIAL INSTALLATION CHANGES IMMEDIATELY TO ROMAN FOUNTAINS. PHONE #(877) 794-1802.

⚡ DANGER ⚡

FATAL ELECTRICAL SHOCK CAN OCCUR IF FOUNTAIN ELECTRICAL EQUIPMENT IS NOT INSTALLED PROPERLY. THIS EQUIPMENT SHOULD ONLY BE INSTALLED BY QUALIFIED ELECTRICIANS WITH PROPER GROUNDING AND GROUND FAULT INTERRUPTION CIRCUIT BREAKERS IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, SECTION 680, AND ALL OTHER APPLICABLE SECTIONS OF THE CODE.



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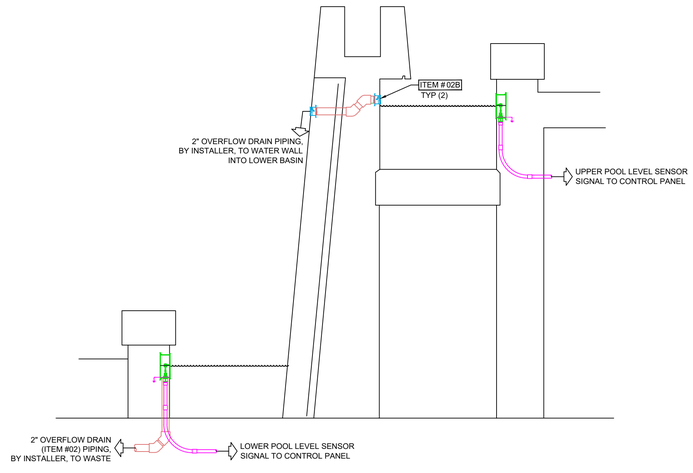
* METALLIC CONDUIT MUST BE BONDED TO FOUNTAIN POOL STRUCTURE, PER THE NATIONAL ELECTRICAL CODE, AS REQUIRED.

NOTE: INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN EXPERIENCED IN POOL WIRING, AND IN STRICT CONFORMANCE WITH NEC SECTION 680, AND ALL LOCAL CODE REQUIREMENTS.

TYPICAL JUNCTION BOX, CORD SEAL, LIGHT INSTALL DETAIL
SCALE: NONE



FOUNTAIN LEVEL CONTROL LOGIC
SCALE: 1/2"=1'-0"

DRAWING SUBMITTAL
NOT FOR CONSTRUCTION
FOR CLIENT REVIEW.

ROMAN FOUNTAINS

SO# 13338

MOBILE CONVENTION CENTER - HERO PLAZA

MOBILE ALABAMA

For: TSW DESIGN

ATLANTA, GA

ROMAN FOUNTAINS CORP.
Manufacturing Facility
1125 Commerce Blvd., N,
Sarasota, FL 34243
Phone #: (941) 484-8224
Fax #: (941) 484-9302
http://www.romanfountains.com

ROMAN FOUNTAINS CORP.
Atlanta Engineering Office
9875 Medlock Bridge Parkway
Suite 250
Johns Creek, GA. 30022
Phone #: (877) 794-1802
Fax #: (770) 300-0074

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Drawn By:	JEH
Checked By:	PH
Date:	04/14/23

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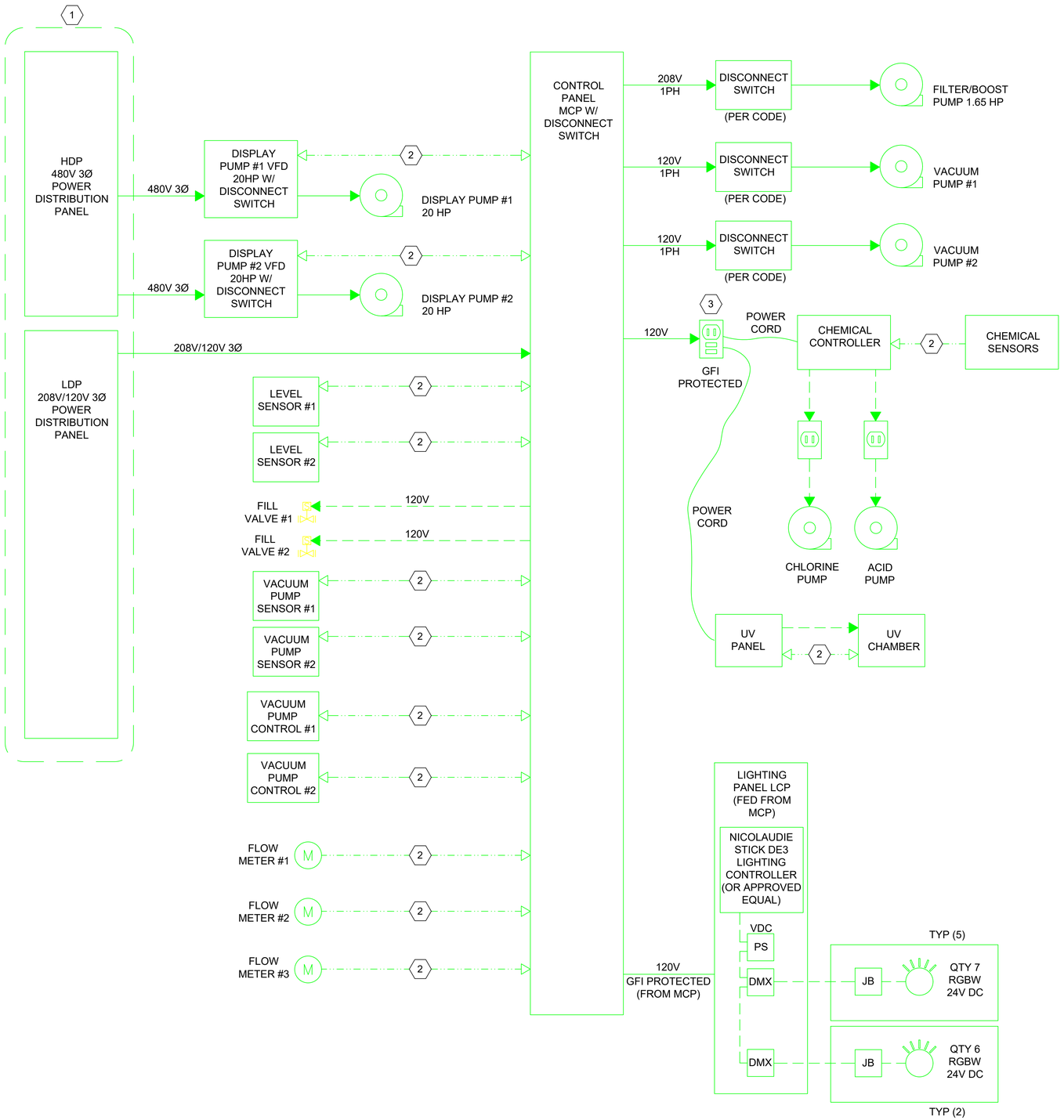
B	01/16/23	JEH	BASIN REVISIONS
C	03/03/23	JEH	70% PROGRESS
D	03/14/23	JEH	100% PROGRESS

FOUNTAIN ELECTRICAL CONDUIT PLAN

Drawing Number:

WFE-1



FOUNTAIN ELECTRICAL PLAN

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

Mobile Convention Center – Mobile Alabama
HERO PLAZA
FOUNTAIN SYSTEM EQUIPMENT LIST

Item #	Qty	Component #	Description
01	12	Display Discharge Refurbishment	Anti-Vortex/Diverter Plate Assembly
02	10	Wall Mount Overflow	Refurbish/provide Wall Mount Overflow
03	8	Suction Sump Refurbishment	24" Square Anti-Vortex Plate Assembly
04	2	Level Sensor Refurbishment	Wall-Mounted Combination Water Level/Low Level Cutoff Sensor
05	1	Water Treatment Skid	Skid-Mounted Dual-Point Automatic Water Treatment System Station
06	1	Filtration Skid	Skid-Mount Cartridge Filtration Station
07	1	Boost Pump Skid	Skid-Mount Boost Pump Station
08	2	Fill Manifold	Fill Manifold System
09	3	20 HP Pump Skid	Skid-Mount Pump Station
10	3	20 HP Variable Frequency Drive	Advanced Application 20 HP Variable Frequency Drive
11	3	Skid Mount Vacuum Pump	Skid-Mount Vacuum Pump Station
12	2	Large Flush Mount Junction Box	Flush-Mounted Submersible Junction Box
13	5	Large Conduit Mount Junction Box	Flush-Mounted Submersible Junction Box
14	2	Vacuum Pump Switch	Water Sensor Switch
15	1	Floor Drain	Floor Drain Fitting
16	47	RGBW Free Standing Lights	Freestanding LED Submersible Light Fixture
17	15	Potting Compound	Potting Compound
18	47	Conduit Cord Seal	Conduit Cord Seal;
19	0	NOT USED	NOT USED
20	1	Pump Control Panel	Pump Control Panel
21	2	Floor Mount Grate Drain	Floor Inlet/Drain Fitting
22	3	Vacuum Pump Ctrl	Vacuum pump controls
23	1	Filter/Boost Pump	Filter/Board pump station
24	2	Wall Drain	Wall Drain Fitting with Plug

*NOTE: CONCRETE EMBED ITEM, REQUIRED FOR POUR, SEE WFN-2 FOR FULL BOM

SHEET KEYNOTES

1. FEEDER BY SITE ELECTRICAL ENGINEER
2. REFER TO MFG MANUALS FOR POWER AND/OR CONTROL SIGNALS TO BE IMPLEMENTED
3. INTERLOCATED WITH FILTER PUMP

NOTES:

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LINETYPE LEGEND

- AC POWER
- AC CONTROL SIGNAL
- ANALOG SIGNAL
- DMX CONTROL

BLOCK DIAGRAM SYMBOLS LEGEND LEGEND

- GFCI RECEPTACLE
- LIGHT
- PUMP
- FLOW - CONTROL
- FLOW - ELECTRICAL
- VALVE - SOLENOID
- FLOW - METER

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FOUNTAIN
ELECTRICAL PANEL
SCHEMATIC

Drawing Number:

WFE-2

READ THIS FIRST

"GOOD FAITH INFORMATION" DISCLAIMER NOTICE

ALL DETAILS DEPICTED ON THIS SHEET ARE FURNISHED AS A GENERAL REFERENCE GUIDE ONLY, AS A COURTESY AND IN GOOD FAITH, TO ASSIST THE INSTALLER WITH TYPICAL INSTALLATION METHODS FOR A FOUNTAIN SYSTEM.

ROMAN FOUNTAINS CORPORATION DOES NOT FURNISH ANY COMPONENT ITEM DEPICTED IN ANY DETAIL ON THIS SHEET UNLESS SPECIFICALLY IDENTIFIED WITH A ROMAN FOUNTAINS CORPORATION MODEL NUMBER AND SPECIFICALLY ITEMIZED IN THE FOUNTAIN SYSTEM EQUIPMENT LIST FOUND ON SHEET WFN-2 OF THIS DRAWING SET.

FURTHER, ROMAN FOUNTAINS CORPORATION ASSUMES NO RESPONSIBILITY OR LIABILITY WHATSOEVER FOR THE USE OF THESE DETAILS AND PRODUCTS AND THE INSTALLER IS ADVISED TO REFER TO ARCHITECTS PROJECT SPECIFICATIONS AND PROJECT ENGINEERING DETAILS AND REQUIREMENTS WHICH SHALL TAKE PRECEDENCE OVER ANY DEVICES, INSTALLATION DETAILS, METHODS, OR REQUIREMENTS DEPICTED IN THESE GENERAL GUIDELINES.

INSTALLER IS RESPONSIBLE FOR ANY AND ALL 'CODE AND STANDARD' REQUIREMENTS PERTAINING TO THE INSTALLATION OF ANY AND ALL EQUIPMENT REQUIRED FOR A COMPLETE AND ACCEPTABLE INSTALLATION, WHETHER INDICATED IN THESE GENERAL GUIDELINES OR NOT.

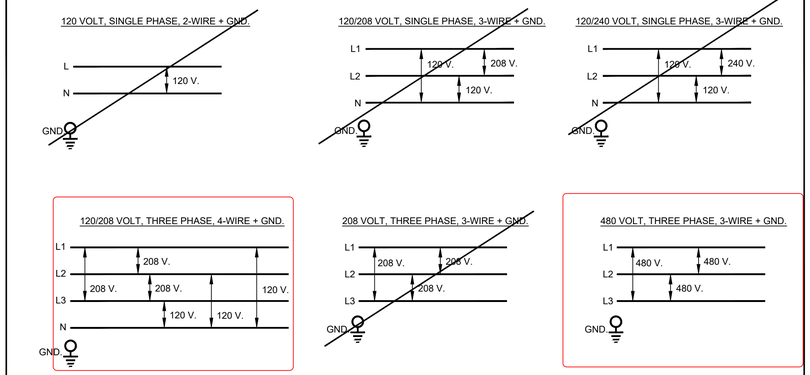
Color code for conductors for general wiring;
1. Color code conductors insulation as follows:

CONDUCTOR	208-240/120	440-480/277	12-24/AC-DC
Phase A	BLACK (BL)	BROWN (BR)	GRAY (GY), BROWN (BR)
Phase B	RED (RD)	ORANGE (OR)	
Phase C	BLUE (BU)	YELLOW (YL)	
NEUTRAL (COM)	WHITE (WH)		PURPLE (PU), BLUE (BU)
GROUND	GREEN (GRN)	GREEN (GRN)	GREEN (GRN)

2. For conductors #6 AWG or larger, permanent plastic - colored tape may be used to mark conductor insulation. Tape shall cover not less than 2 inches of conductor insulation within enclosure.

CONDUCTOR	DEVICES	LIGHT FIXTURES	SOLENOIDS	PLC-INPUTS	PLC-OUTPUTS
Phase	RED (RD)	BLACK (BL)	BLACK (BL)	YELLOW (YL)	ORANGE (OR), RED (RD)
NEUTRAL (COM)	WHITE (WH)	WHITE (WH)	WHITE (WH)	WHITE (WH)	WHITE (WH)
GROUND	GREEN (GRN)	GREEN (GRN)	GREEN (GRN)	GREEN (GRN)	GREEN (GRN)

RECOMMENDED WIRE COLOR CODE



INSTALLER NOTE: POWER REQUIRED FOR THIS PROJECT IS "CLOUDED"

ELECTRICAL POWER SUPPLY OPTIONS

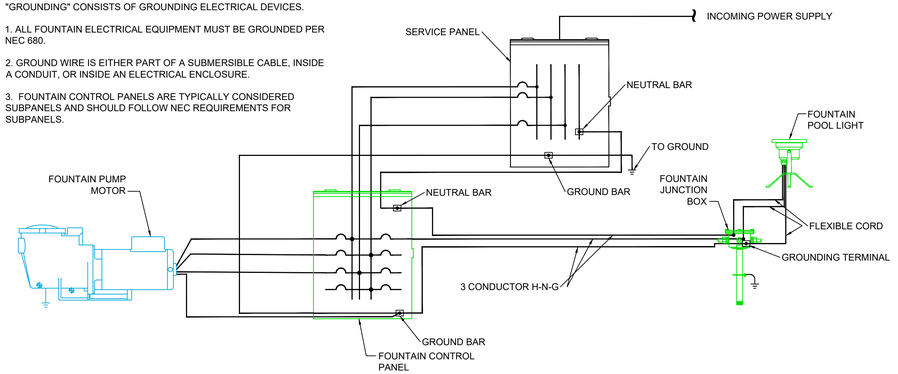
SCALE: NONE

"GROUNDING" CONSISTS OF GROUNDING ELECTRICAL DEVICES.

1. ALL FOUNTAIN ELECTRICAL EQUIPMENT MUST BE GROUNDED PER NEC 680.

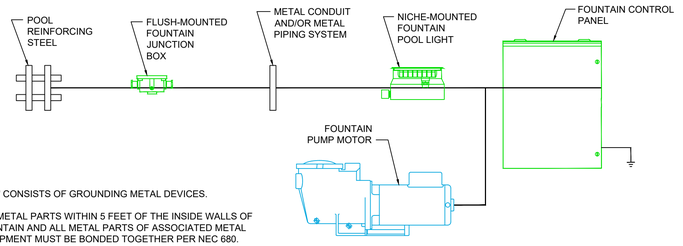
2. GROUND WIRE IS EITHER PART OF A SUBMERSIBLE CABLE, INSIDE A CONDUIT, OR INSIDE AN ELECTRICAL ENCLOSURE.

3. FOUNTAIN CONTROL PANELS ARE TYPICALLY CONSIDERED SUBPANELS AND SHOULD FOLLOW NEC REQUIREMENTS FOR SUBPANELS.



TYPICAL FOUNTAIN "GROUNDING" SCHEMATIC

SCALE: NONE



"BONDING" CONSISTS OF GROUNDING METAL DEVICES.

1. ALL METAL PARTS WITHIN 5 FEET OF THE INSIDE WALLS OF FOUNTAIN AND ALL METAL PARTS OF ASSOCIATED METAL EQUIPMENT MUST BE BONDED TOGETHER PER NEC 680.
2. ALL BONDING CONDUCTORS SHALL BE OF A SOLID COPPER BONDING JUMPER, INSULATED, COVERED OR BARE, NOT SMALLER THAN 8 AWG, PER NEC.
3. ALL BONDING SHALL BE CONTINUOUS WITHOUT SPLICES. ALL CONNECTIONS SHALL BE MADE BY EXOTHERMIC WELD OR FITTING APPROVED FOR SUCH USE IN FOUNTAINS AND POOLS.
4. BONDING WIRES ORIGINATE FROM EITHER A GROUNDING ROD OR FROM THE FOUNTAIN CONTROL PANEL (IF PANEL FEED IS WITH A MINIMUM #8 AWG BOND/GROUND WIRE).
5. BONDING WIRES ARE TYPICALLY EXTERNAL FROM CONDUITS BUT COULD ORIGINATE FROM THE FOUNTAIN CONTROL PANEL TO A SUBMERSIBLE JUNCTION BOX, THROUGH A CONDUIT, TO AN INTERNAL BONDING LUG. BUT THEN THE REST OF THE BONDING WIRES SHOULD RUN EXTERNAL BY USE OF JUNCTION BOX EXTERNAL BONDING LUG TO THE POOL REINFORFCING STEEL (REBAR) AND TO OTHER POOL METAL DEVICES SUCH AS NICHE LIGHTS.
6. FOUNTAIN CONTROL PANELS ARE TYPICALLY CONSIDERED SUBPANELS AND SHOULD FOLLOW NEC REQUIREMENTS FOR SUBPANELS.

TYPICAL FOUNTAIN "BONDING" SCHEMATIC

SCALE: NONE

EXCERPT FROM 2020 EDITION OF NEC ARTICLE 680 PERTAINING TO DECORATIVE FOUNTAINS

V. Fountains

680.50 General. The provisions of Part I and Part V of this article shall apply to all permanently installed fountains as defined in 680.2. Fountains that have water common to a pool and fountains intended for recreational use by pedestrians, including splash pads, shall additionally comply with the requirements in Part II of this article. Part V does not cover self-contained, portable fountains. Portable fountains shall comply with Parts II and III of Article 422.

680.51 Luminaires, Submersible Pumps, and Other Submersible Equipment.
(A) Ground-Fault Circuit Interrupter. Luminaires, submersible pumps, and other submersible equipment, unless listed for operation at low voltage contact limit or less and supplied by a transformer or power supply that complies with 680.23(A)(2), shall be protected by a ground-fault circuit interrupter.
(B) Operating Voltage. No luminaires shall be installed for operation on supply circuits over 150 volts between conductors. Submersible pumps and other submersible equipment shall operate at 300 volts or less between conductors.
(C) Luminaire Lenses. Luminaires shall be installed with the top of the luminaire lens below the normal water level of the fountain unless listed for above-water locations. A luminaire facing upward shall comply with either (1) or (2):
(1) Have the lens guarded to prevent contact by any person
(2) Be listed for use without a guard
(D) Overheating Protection. Electrical equipment that depends on submersion for safe operation shall be protected against overheating by a low-water cutoff or other approved means when not submerged.
(E) Wiring. Equipment shall be equipped with provisions for threaded conduit entries or be provided with a suitable flexible cord. The maximum length of each exposed cord in the fountain shall be limited to 3.0 m (10 ft). Cords extending beyond the fountain perimeter shall be enclosed in approved wiring enclosures. Metal parts of equipment in contact with water shall be of brass or other approved corrosion-resistant metal.
(F) Servicing. All equipment shall be removable from the water for relamping or normal maintenance. Luminaires shall not be permanently embedded into the fountain structure such that the water level must be reduced or the fountain drained for relamping, maintenance, or inspection.
(G) Stability. Equipment shall be inherently stable or be securely fastened in place.

680.52 Junction Boxes and Other Enclosures.
(A) General. Junction boxes and other enclosures used for other than underwater installation shall comply with 680.24.
(B) Underwater Junction Boxes and Other Underwater Enclosures. Junction boxes and other underwater enclosures shall meet the requirements of 680.52(B)(1) and (B)(2).
(1) Construction.
(a) Underwater enclosures shall be equipped with provisions for threaded conduit entries or compression glands or seals for cord entry.
(b) Underwater enclosures shall be listed and rated for prolonged submersion and made of copper, brass, or other corrosion-resistant material.
(2) Installation. Underwater enclosure installations shall comply with 680.52(B)(2)(a) and (B)(2)(b).
(a) Underwater enclosures shall be filled with a listed potting compound to prevent the entry of moisture.
(b) Underwater enclosures shall be firmly attached to the supports or directly to the fountain surface and bonded as required. Where the junction box is supported only by conduits in accordance with 314.23(E) and (F), the conduits shall be of copper, brass, stainless steel, or other corrosion-resistant metal. Where the box is fed by nonmetallic conduit, it shall have additional supports and fasteners of copper, brass, or other approved corrosion-resistant material.

680.54 Grounding and Bonding
(A) Grounding.The following equipment shall be connected to the equipment grounding conductor:
(1) Other than listed low-voltage luminaires not requiring grounding, all electrical equipment located within the fountain or within 1.5 m (5 ft) of the inside wall of the fountain.
(2) All electrical equipment associated with the recirculating system of the fountain.
(3) Panelboards that are not part of the service equipment and that supply any electrical equipment associated with the fountain.
(B) Bonding. The following parts shall be bonded together and connected to an equipment grounding conductor on a branch circuit supplying the fountain.
(1) All metal piping systems associated with the fountain.
(2) All metal fittings within or attached to the fountain.
(3) Metal parts of electrical equipment associated with the fountain water-circulating system, including pump motors
(4) Metal raceways that are within 1.5m (5ft) of the inside wall or perimeter of the fountain and that are not separated from the fountain by a permanent barrier.
(5) All metal surfaces that are within 1.5m (5ft) of the inside wall or perimeter of the fountain and that are not separated from the fountain by a permanent barrier.
(6) Electrical devices and controls that are not associated with the fountain and are located less than 1.5m (5ft) of the inside wall or perimeter of the fountain.

680.55 Methods of Grounding.
(A) Applied Provisions. The provisions of 680.21(A), 680.23(B)(3), 680.23(F)(1) and (F)(2), 680.24(F), and 680.25 shall apply.
(B) Supplied by a Flexible Cord. Electrical equipment that is supplied by a flexible cord shall have all exposed non-current-carrying metal parts grounded by an insulated copper equipment grounding conductor that is an integral part of this cord. The equipment grounding conductor shall be connected to an equipment grounding terminal in the supply junction box, transformer enclosure, power supply enclosure, or other enclosure.

680.56 Cord-and-Plug-Connected Equipment.
(A) Ground-Fault Circuit Interrupter. All electrical equipment, including power-supply cords, shall be protected by ground-fault circuit interrupters.
(B) Cord Type. Flexible cord immersed in or exposed to water shall be of a type for extra-hard usage, as designated in Table 400.4, and shall be a listed type with a "W" suffix.
(C) Sealing. The end of the flexible cord jacket and the flexible cord conductor termination within equipment shall be covered with, or encapsulated in, a suitable potting compound to prevent the entry of water into the equipment through the cord or its conductors. In addition, the ground connection within equipment shall be similarly treated to protect such connections from the deteriorating effect of water that may enter into the equipment.
(D) Terminations. Connections with flexible cord shall be permanent, except that grounding-type attachment plugs and receptacles shall be permitted to facilitate removal or disconnection for maintenance, repair, or storage of fixed or stationary equipment not located in any water-containing part of a fountain.

NOTE: For a complete copy of 2020 edition of NEC Article 680 (680.1 through 680.74) please contact:
NFPA
1 Batterymarch Park
Quincy, Massachusetts USA 02169-7471

DRAWING SUBMITTAL
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TYPICAL ELECTRICAL DETAILS & ARTICLE 680 NEC REQUIREMENTS

Drawing Number:

WFI-1