Design-Build Request for Proposals

RFP # 541

Federal Courthouse Parking Garage

Pursuant to FL Stat Section 287.057

City of Fort Lauderdale

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SECTION 1 INTRODUCTION

1.1 Purpose

The City of Fort Lauderdale, Florida ("City") has issued this Request for Proposal (RFP) to solicit competitive proposals from a single entity ("Firm" or "Proposer" or "Design-Build Firm (DBF)") to provide complete design-build services for a new five – story, pre-cast Federal Courthouse Parking Garage for the City's Transportation and Mobility Department. The selected DBF will be responsible for the design, construction, testing, and start-up of the facility, which will provide a minimum capacity of 284 spaces. The Project must comply with all applicable building codes, permitting requirements, and the specifications set forth in the Design Criteria Package and supporting documents.

This project is located at 1000 SE 3rd Avenue, Fort Lauderdale, Florida. The scope of work includes, but is not limited to, the design and construction of a (5) five – story pre-cast parking garage with at least 284 parking spaces, full compliance with applicable building codes, permitting requirements, and all project criteria and delivery of all elements necessary to meet the intent of the Design Criteria Package and supporting documents.

The proposed construction site has limited staging and parking space, which must be factored into the construction approach.

The City will retain services within the scope of architecture or professional engineering and within the scope of construction contracting. The City will solicit proposals and establish a competitive selection process in accordance with City of Fort Lauderdale Code of Ordinances Section 2-181(f)(6) to procure the services of a qualified DBF.

The Design-Criteria Professional, **Desman Inc, including their sub-consultants,** are not eligible to render design-build services for this solicitation. Pursuant to Florida Statutes 287.055 (9) (b), "A design criteria professional who has been selected to prepare the design criteria package is not eligible to render services under a design-build contract executed pursuant to the design criteria package." The City reserves the right to disqualify any proposal from a team which includes any sub-consultant and/or individual who has played a substantial role in the development of the design criteria package or whose involvement with the design-build team would confer upon that team an unfair competitive advantage because of such sub-consultant's or member's prior involvement in the project.

1.2 Online strategic sourcing platform

The City uses the City's online strategic sourcing platform to administer the competitive solicitation process, including but not limited to soliciting responses, issuing addenda, posting results and issuing notification of an intended decision. Proposers are strongly encouraged to read the various vendor guides and tutorials available in the City's online strategic sourcing platform well in advance of their intention of submitting a response to ensure familiarity with the use of the City's online strategic sourcing platform. The City shall not be responsible for a proposer's inability to submit a response by the submission deadline date and time for any reason, including issues arising from the use of the City's online strategic sourcing platform. There is no charge to register and download the RFP from the City's online strategic sourcing platform and to participate in the solicitation, nor will any fees be charged to the awarded DBF.

It is the sole responsibility of the proposer to ensure that its bid is submitted electronically through the City's online strategic sourcing platform no later than the time and date specified in this solicitation. **PAPER PROPOSAL SUBMITTALS WILL NOT BE ACCEPTED. PROPOSALS MUST BE SUBMITTED ELECTRONICALLY VIA** the City's online strategic sourcing platform. In the event of any conflict or discrepancy between bid price(s) submitted by bidder electronically into the City's online strategic sourcing platform Unit Price field(s), any other forms or attachments (whether part of the City's solicitation documents or documents created and uploaded by the bidder, or another section/field of the System, the online unit price(s) inputted electronically into the System by the bidder shall govern.

1.3 Electronic Bid Openings

This solicitation will be opened electronically via the City's online strategic sourcing platform at the date and time indicated in the solicitation. Once the Procurement Specialist opens the solicitation, the bid tabulations, (where applicable) may be viewed immediately on a computer, laptop, cell phone, or any other device with WiFi access.
Anyone requesting assistance or having further inquiry in this matter must contact the Procurement Specialist indicated on the solicitation, via the Question and Answer (Q&A) forum on the City's online strategic sourcing platform before the Last Day for Questions indicated in the Solicitation.

1.4 A pre-proposal meeting

A pre-proposal meeting will be held on **Thursday, October 16, 2025, at 10:00 am** via Microsoft Teams (virtual). There will be no site visit.

- Date: Thursday, October 16, 2025
- Time: 10:00 AM (EST)
- Location: Microsoft Teams (virtual)

Join the meeting now
Meeting ID: 211 535 543 178 9
Passcode: mf3pU6e2

Dial in by phone
+1 954-686-7296,,599501075# United States, Fort Lauderdale
Find a local number
Phone conference ID: 599 501 075#
Join on a video conferencing device
Tenant key: fortlauderdale1@m.webex.com
Video ID: 114 284 440 7

While attendance is not mandatory, it is strongly suggested that all DBFs attend the pre-proposal conference. It will be the sole responsibility of the DBF to inspect the City's locations and become familiar with the scope of the City's requirements and systems prior to submitting a proposal. No variation in price or conditions shall be permitted based upon a claim of ignorance. Submission of a proposal will be considered evidence that the proposer has familiarized himself with the nature and extent of the work, equipment, materials, and labor required.

It is recommended that DBFs have the solicitation document available at the pre-proposal meeting,

If a person decides to appeal any decision made by the board, agency, or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

1.5 Point of Contact

City of Fort Lauderdale, Procurement Services Division
Attn: Inessa Rubin, Sr. Procurement Specialist
101 NE 3rd Ave. Suite 1650
Fort Lauderdale, FL 33301
Telephone: (954) 828-6099
E-mail: irubin@fortlauderdale.gov

1.6 Compliance and Legal Conditions

In order to comply fully with the requirements of the City's Code of Ordinances below and Florida Statutes 287.055, the following procedures shall be followed in selecting firms to provide design-build services and in negotiating design-build contracts.

It will be the sole responsibility of the proposer to familiarize themselves with the following ordinances and statutes:

a) City of Fort Lauderdale Ordinance Section 2-181(f)(6) – Design/build contracts

b) Florida Statutes 287.055 – Acquisition of professional architectural, engineering, landscape architectural, or surveying and mapping services; definitions; procedures; contingent fees prohibited; penalties.

c) Florida Statutes 287.055 (9) Applicability to Design-Build Contracts

1.7 Concerning sub-Contractors, Suppliers, and Others

The amount of work that is sublet by the Design Build Firm shall be limited by the condition that the Bidder shall, with his own organization, perform at least forty percent (40%) of the total dollar amount of the Work to be performed under the Agreement.

1.8 Personal investigation

Proposers shall satisfy themselves by personal investigation and by such other means as they may think necessary or desirable, as to the conditions affecting the proposed work and the cost. No information derived from maps, plans, specifications, or from the Engineer, City Manager, or their assistants shall relieve the DBF from any risk or from fulfilling all terms of the contract.

1.9 Design Criteria Package

This Project consists of a Design Criteria Package, seventy three (73) sheets. The Design Criteria Package may be obtained **free of charge** at the City's online strategic sourcing platform.

1.10 Audit of Contractor's Records

Upon execution of the Contract, the City reserves the right to conduct any necessary audit of the Contractor's records. Such an audit, or audits, may be conducted by the City or its representatives at any time prior to final payment, or thereafter, for a period up to three (3) years. The City may also require submittal of the records from either the Contractor, the Sub-contractor, or both. For the purpose of this Section, records shall include all books of account, supporting documents and papers deemed necessary by the City to assure compliance with the contract provisions.

Failure of the Contractor or Subcontractor to comply with these requirements may result in disqualification or suspension from bidding for future contracts or disapproval as a Sub-contractor at the option of the City.

The Contractor shall assure that each of its Sub-contractors will provide access to its records pertaining to the project upon request by the City.

1.11 Reservation for Award and Rejection of Bids

The City reserves the right to accept or reject any or all bids, part of bids, and to waive minor irregularities or variations to specifications contained in bids, and minor irregularities in the bidding process. The City also reserves the right to award the contract on a split order basis, lump sum basis, individual item basis, or such combination as shall best serve the interest of the City. The City reserves the right to make an award to the responsive and responsible bidder whose product or service meets the terms, conditions, and specifications of the ITB and whose bid is considered to best serve the City's interest. In determining the responsiveness of the offer and the responsibility of the Bidder, the following shall be considered when applicable: the ability, capacity and skill of the Bidder to perform as required; whether the Bidder can perform promptly, or within the time specified, without delay or interference; the character, integrity, reputation, judgment, experience and efficiency of the Bidder; the quality of past performance by the Bidder; the previous and existing compliance by the Bidder with related laws and ordinances; the sufficiency of the Bidder's financial resources; the availability, quality and adaptability of the Bidder's supplies or services to the required use; the ability of the Bidder to provide future maintenance, service or parts; the number and scope of conditions attached to the bid.

1.12 Lobbyist Ordinance

ALL PROPOSERS PLEASE NOTE: Any proposer submitting a response to this solicitation must comply, if applicable, with City of Fort Lauderdale Ordinance No. C-11-42 & Resolution No. 07-101, Lobbying Activities. Copies of Ordinance No. C-11-42 and Resolution No. 07-101 may be obtained from the City Clerk's Office on the 7th Floor of City Hall, 100 N. Andrews Avenue, Fort Lauderdale, Florida. The Ordinance may also be viewed on the City's website at https://www.fortlauderdale.gov/home/showdocument?id=6036

1.13 Debarred or Suspended Bidders or Proposers

The proposer certifies, by submission of a response to this solicitation, that neither it nor its principals and sub-consultants are presently debarred or suspended by any Federal department or agency.

1.14 Prohibition Against Contracting with Scrutinized Companies

Subject to Odebrecht Construction, Inc., v. Prasad, 876 F.Supp.2d 1305 (S.D. Fla. 2012), affirmed, Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation, 715 F.3d 1268 (11th Cir. 2013), with regard to the "Cuba Amendment," the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in Iran Terrorism Sectors List, created pursuant to Section 215.473, Florida Statutes (2024), as may be amended or revised, and that it does not have business operations in Cuba or Syria, as provided in Section 287.135, Florida Statutes (2024), as may be amended or revised. The Contractor certifies that it is not on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2024), as may be amended or revised, and that it is not engaged in a boycott of Israel. The City may terminate this Agreement at the City's option if the Contractor is found to have submitted a false certification as provided under subsection (5) of Section 287.135, Florida Statutes (2024), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List, or been placed on a list created pursuant to Section 215.473, Florida Statutes (2024), as may be amended or revised, relating to scrutinized active business operations in Iran, or been placed on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2024), as may be amended or revised, or is engaged in a boycott of Israel, or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2024), as may be amended or revised.

By submitting a proposal or response, the company, principals, or owners certify that it is not listed on the Scrutinized Companies with Activities in Sudan List or listed on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or is engaged in business operations in Cuba or Syria.

1.15 Inconsistencies

Any seeming inconsistency between different provisions of the plans, specifications, proposal or contract, or any point requiring explanation must be inquired into by the proposer, in writing up to the Q&A End Date, as published in the solicitation document. After proposals are opened, the proposers shall abide by the decision of the City as to such interpretation. No modifications to proposals will be permitted after the date and hour of the proposal opening.

1.16 Addenda and Interpretations

No interpretations of the meaning of the plans, specifications or other contract documents will be made orally to any proposer. Prospective proposers must request such interpretation in writing as instructed in the RFP. To be considered, such request must be received by the Q&A deadline as indicated in the City's online strategic sourcing platform. Material changes, if any, to the scope of services or bidding procedures will only be transmitted by written addendum. It is the proposer's responsibility to verify if addenda have been issued in the City's online strategic sourcing platform. Failure of any proposer to receive any such addenda or interpretation shall not relieve any proposer from any obligation under its RFP as submitted. All addenda so issued shall become a part of the contract document. Proposer shall verify in the City's online strategic sourcing platform that he/she has all addenda before submitting a proposal.

1.17 Forms of Proposals

Each proposal and its accompanying statements must be submitted electronically, in good order with all forms and blanks completed. The proposal must be signed by one duly authorized to do so, and in case signed by a deputy or subordinate, the principal's properly written authority to such deputy or subordinate must accompany the proposal. No proposal will be accepted, for any reason whatsoever, which is not submitted to the City as stated above, within the specified time

1.18 Bids Firm for Acceptance (120 days)

Proposer warrants, by virtue of bidding, that his proposal and the prices quoted in this proposal will be firm for acceptance by the City for a period of one hundred and twenty (120) days from the date of bid opening unless otherwise stated in the RFP. The City shall award contract within this time period or shall request to the recommended awarded vendor an extension to hold pricing, until products/services have been awarded

1.19 Additional Items of Services

The City may require additional items or services of a similar nature, but not specifically listed in the contract. The DBF agrees to provide such items or services, and shall provide the City prices on such additional items or services. If the price(s) offered are not acceptable to the City, and the situation cannot be resolved to the satisfaction of the City, the City reserves the right to procure those items or services from other vendors, or to cancel the contract upon giving the DBF thirty (30) days' written notice.

1.20 Deletion or Modification of Services

The City reserves the right to delete any portion of the Contract at any time without cause, and if such right is exercised by the City, the total fee shall be reduced in the same ratio as the estimated cost of the work deleted, bears to the estimated cost of the work originally planned. If work has already been accomplished on the portion of the Contract to be deleted, the DBF shall be paid for the deleted portion on the basis of the estimated percentage of completion of such portion.

If the DBF and the City agree on modifications or revisions to the task elements, after the City has approved work to begin on a particular task or project, the DBF will submit a request for a Change Order and a revised budget to the City for approval prior to proceeding with the work.

1.21 Rejection of Proposals

The City reserves the right to reject any proposal if the evidence submitted by the proposer, or if the investigation of such proposer, fails to satisfy the City that such proposer is properly qualified to carry out the obligations and to complete the work contemplated. Any or all proposals will be rejected, if there is reason to believe that collusion exists among proposers. A proposal will be considered irregular and may be rejected, if it shows serious omissions, alterations in form, additions not called for, conditions or unauthorized alternates, or irregularities of any kind. The City reserves the right to reject any or all proposals and to waive such technical errors as may be deemed best for the interests of the City.

1.22 Bid Protest Procedure

Any proposer or bidder who is not recommended for award of a contract and who alleges a failure by the City to follow the City's procurement ordinance or any applicable law may protest to the Procurement Division – Deputy Director of Finance, by delivering a letter of

protest within five (5) days after a Notice of Intent to award is posted on the City's website at the following link: https://www.fortlauderdale.gov/government/departments-a-h/finance/procurement-services/notices-of-intent-to-award

The complete protest ordinance may be found on the City's website at the following link: https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-182DIREPRAWINAW

1.23 Local Business Preference

Not applicable to this solicitation

1.24 Disadvantaged Business Enterprise Preference

Not applicable to this solicitation

1.25 Resolution of Disputes

Questions, claims, difficulties and disputes of whatever nature which may arise relative to the technical interpretation of the Contract Documents and fulfillment of this Agreement as to the character, quality, amount and value of any work done and materials furnished, or proposed to be done or furnished under, or by reason of, the Contract Documents which cannot be resolved by mutual agreement of City Project Manager and Consultant shall be submitted to the City Manager or his designee and Consultant's representative for resolution. Prior to any litigation being commenced, for any disputes which remain unresolved, within sixty (60) days after final completion of the Work, the Parties shall participate in mediation to address all unresolved disputes to a mediator agreed upon by the Parties. Should any objection not be resolved in mediation, the Parties retain all their legal rights and remedies provided under the laws of Florida. Failure by a Party to comply in strict accordance with the requirements of this Article, then said Party specifically waives Florida. All non-technical administrative disputes (such as billing and payment) shall be determined by Contract Administrator.

1.25.1 During the pendency of any dispute and after a determination thereof, Consultant and Contract Administrator shall act in good faith to mitigate any potential damages including utilization of construction schedule changes and alternate means of construction. During the pendency of any dispute arising under this Agreement, other than termination herein, Consultant shall carry on the Work and adhere to the progress schedule. The Work shall not be delayed or postponed pending resolution of any disputes or disagreements.

1.25.2 For any disputes which remain unsolved, within sixty (60) calendar days after Final Completion of the Work, the Parties shall participate in mediation to address all unresolved disputes. A mediator shall be mutually agreed upon by the Parties. Should any objection not be resolved in mediation, the Parties retain all their legal rights and remedies under applicable law. If a Party objecting to a determination, fails to comply in strict accordance with the requirements of this Article, said Party specifically waives all of its rights provided hereunder, including its rights and remedies under applicable law.

1.26 Withdrawals

Any proposer may, without prejudice to him/herself, withdraw his/her proposal at any time prior to the expiration of the time during which proposals may be submitted. Such request for withdrawal must be in writing and signed in the same manner and by the same person who signed the proposal. After expiration of the period for receiving proposals, no proposal can be withdrawn, modified, or explained

****END OF SECTION 1****

SECTION 2
GENERAL CONDITIONS

Unless otherwise modified in the Project's Special Conditions, the following General Conditions shall be part of the Contract:

GC - 01 - DEFINITIONS - The following words and expressions, or pronouns used in their stead, shall wherever they appear in the Contract and the Contract Documents, be construed as follows:

"Addendum" or "Addenda" - shall mean the additional Contract provisions issued in writing, by the Engineer, prior to the receipt of bids.

"Bid" – shall mean the offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

"Bidder" – shall mean any person, firm, company, corporation or entity submitting a bid for the Work.

"Bonds" –shall mean bid, performance and payment bonds and other instruments of security, furnished by Contractor and his surety in accordance with the Contract Documents.

"City" – shall mean the City of Fort Lauderdale, Florida, a Florida municipal corporation. In the event the City exercises its regulatory authority as a government body, the exercise of such regulatory authority and the enforcement of any rules, regulations, codes, laws and ordinances shall be deemed to have occurred pursuant to City's authority as a governmental body and shall not be attributable in any manner to the City as a party to this Contract.

"Consultant" – shall mean a person, firm, company, corporation or other entity employed by the City to perform the professional services for the project.

"Contractor" – shall mean the successful Bidder who has been employed by the City to perform the construction and related services for the project.

"Contract Work" - shall mean everything expressed or implied to be required to be furnished and furnished by the Contractor by any one or more of the parts of the Contract Documents referred to in the Contract hereof. In the case of any inconsistency in or between any parts of this Contract, the Project Manager shall determine which shall prevail.

"Design Documents" – shall mean the construction plans and specifications included as part of a Bid/Proposal Solicitation prepared either by the City or by the Consultant under a separate Agreement with the City.

"Engineer" - shall include the terms "professional engineer" and "licensed engineer" and means a person who is licensed to engage in the practice of engineering under Florida Statute, Chapter 471. An Engineer may be a City employee or a consultant hired by the City.

"Extra Work" - shall mean work other than that required by the Contract.

"Inspector" – shall mean an authorized representative of the City assigned to make necessary inspections of materials furnished by Contractor and of the Work performed by Contractor.

"Notice" - shall mean written notice sent by certified United States mail, return receipt requested, or sent by commercial express carrier with acknowledgement of delivery, or via fax or email, or by hand delivery with a request for a written receipt of acknowledgment of delivery and shall be served upon the Contractor either personally or to its place of business listed in the Bid.

“Owner” - shall mean the City of Fort Lauderdale.

“Project Manager” - shall mean a professional designated by the City to manage the Project under the supervision and direction of the Public Works Director or designee.

"Public Works Director" – shall mean the Public Works Director of the City of Fort Lauderdale.

"Site" - shall mean the area upon or in which the Contractor's operations are carried out and such other areas adjacent thereto as may be designated as such by the Project Manager.

"Sub-contractor" - shall mean any person, firm, company, corporation or other entity, other than employees of the Contractor, who or which contracts with the contractor, to furnish, or actually furnishes labor and materials, or labor and equipment, or labor, materials and equipment at the site.

"Surety" - shall mean any corporation or entity that executes, as Surety, the Contractor's performance and payment bond securing the performance of this Contract.

GC - 02 - SITE INVESTIGATION AND REPRESENTATION - The Contractor acknowledges that it has satisfied itself as to the nature and location of the Work under the Contract Documents, the general and local conditions of the Site, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, and roads, field conditions, the type of equipment and facilities needed preliminary to and during the prosecution of the Work and all other matters which can in any way affect the Work or the cost thereof under the Contract Documents.

The Contractor acknowledges that it has conducted extensive tests, examinations and investigations and represents and warrants a thorough familiarization with the nature and extent of the Contract Documents, the Work, locality, soil conditions, moisture conditions and all year-round local weather and climate conditions (past and present), and, in reliance on such tests, examination and investigations conducted by Contractor and the Contractor’s experts, has determined that no conditions exist that would in any manner affect the Bid Price and that the project can be completed for the Bid Price submitted.

Any failure by the Contractor to acquaint itself with all the Site conditions shall not relieve Contractor from responsibility for properly estimating the difficulty or cost thereof under the Contract Documents.

GC - 03 - SUBSTITUTIONS - If the Contractor desires to use materials and/or products of manufacturer's names different from those specified in the Contract Documents, the Bidder requesting the substitution shall make written application as described herein. The burden of proving the equality of the proposed substitution rests on the Contractor making the request. To be acceptable, the proposed substitution shall meet or exceed all expressed requirements of the

Contract Documents shall be submitted upon the Contractor's letterhead. The following requirements shall be met in order for the substitution to be considered:

1. Requests for substitution shall be accompanied by such technical data, as the party making the request desires to submit. The Project Manager will consider reports from reputable independent testing laboratories, verified experience records from previous users and other written information valid in the circumstances; and

2. Requests for substitution shall completely and clearly indicate in what respects the materials and/or products differ from those indicated in the Contract Documents; and

3. Requests for substitutions shall be accompanied by the manufacturer's printed recommendations clearly describing the installation, use and care, as applicable, of the proposed substitutions; and

4. Requests for substitution shall be accompanied by a complete schedule of changes in the Contract Documents, if any, which must be made to permit the use of the proposed substitution.

If a proposed substitution is approved by the Project Manager, an addendum will be issued to prospective bidders not less than three (3) working days prior to the date set for opening of bids. Unless substitutions are received and approved as described above, the successful Bidder shall be responsible for furnishing materials and products in strict accordance with the Contract Documents.

GC- 04 – CONSTRUCTION RESOURCES – Contractor shall provide all labor and equipment necessary to complete the installation within a timely manner. Contractor shall provide details as to manpower and equipment to be dedicated to the project in its Work Plan. Contractor is responsible for making arrangements, obtaining and purchasing construction water services if required to complete the work.

GC - 05 - CONTROL OF THE WORK - The Project Manager shall have full control and direction of the Work in all respects. The Project Manager and/or his authorized designee(s) shall, at all times, have the right to inspect the Work and materials. The Contractor shall furnish all reasonable facilities for obtaining such information, as the Project Manager may desire respecting the quality of the Work and materials and the manner of conducting the Work. Should the Contractor be permitted to perform night Work, or to vary the period which work is ordinarily carried on in the daytime, he shall give ample notice to the Project Manager so that proper and adequate inspection may be provided. Such Work shall be done only under such regulations as are furnished in writing by the Project Manager, and no extra compensation shall be allowed to the Contractor therefore. In the event of night work, the Contractor shall furnish such light, satisfactory to the Project Manager, as will ensure proper inspection. Nothing herein contained shall relieve the Contractor from compliance with any and all City ordinances relating to noise or Work during prohibited hours.

GC - 06 - SUB-CONTRACTOR - The Contractor shall not sublet, in whole or any part of the Work without the written consent and approval of the Project Manager. Within ten (10) days after official notification of starting date, the Contractor must submit in writing, to the Project

Manager, a list of all Sub-contractors. No Work shall be done by any sub-contractor until such Sub-

contractor has been officially approved by the Project Manager. A sub-contractor not appearing on the original list will not be approved without written request submitted to the Project Manager and approved by the Public Works Director. In all cases, the Contractor shall give his personal attention to the Work of the Sub-contractors and the Sub-contractor is liable to be discharged by the Contractor, at the direction of the Project Manager, for neglect of duty, incompetence or misconduct.

Acceptance of any sub-contractor, other person, or organization by the Project Manager shall not constitute a waiver of any right of Project Manager to reject defective Work or Work not in conformance with the Contract Documents.

Contractor shall be fully responsible for all acts and omissions of its Sub-contractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between City and any sub-contractor or other person or organization having a direct contract with Contractor, nor shall it create any obligation on the part of City to pay or to see to the payment of any moneys due to any sub-contractor or other person, or organization, except as may otherwise be required by law.

GC - 07 - QUANTITIES - Contractor recognizes and agrees that the quantities shown on plans and Bid/Price Schedule are estimates only and may vary during actual construction. No change shall be made involving any departure from the general scheme of the Work and that no such change involving a material change in cost, either to the City or Contractor, shall be made, except upon written permission of the City. However, the Project Manager shall have the right to make minor alternations in the line, grade, plan, form or materials of the Work herein contemplated any time before the completion of the same. That if such alterations shall diminish the quantity of the Work to be done, such alterations shall not constitute a claim for damages or anticipated profits. That if such alterations increase the amount of the Work to be done, such increase shall be paid for according to the quantity actually performed and at the unit price or prices stipulated therefore in the Contract. The City shall, in all cases of dispute, determine the amount or quantity of the several kinds of Work which are to be paid for under this Contract, and shall decide all questions relative to the execution of the same, and such estimates and decisions shall be final and binding.

Any Work not herein specified, which might be fairly implied as included in the Contract, of which the City shall judge, shall be done by the Contractor without extra charge. However, such cost increases shall be authorized either by the Public Works Director or designee, or the City Commission based upon the purchasing threshold amounts provided for in Chapter 2 of the City of Fort Lauderdale's Code of Ordinances.

GC - 08 - NO ORAL CHANGES - Except to the extent expressly set forth in the Contract, no change in, or modification, termination or discharge of the Contract in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by the parties charged, therewith or their duly authorized representative.

GC - 09 - PERMITS AND PROTECTION OF PUBLIC – Permits on file with the City and/or those permits to be obtained by the Contractor, shall be considered directive in nature, and will be considered a part of this Contract. A copy of all permits shall be given to the City and become

part of the Contract Documents. Terms of permits shall be met prior to acceptance of the Work and release of the final payment.

Contractor shall secure all permits and licenses required for completing the Project. Contractor will obtain the necessary State, County, and City construction/work permits if required.

The Contractor shall comply with all applicable Codes, Standards, Specifications, etc. related to all aspects of the Project.

Where there are telephones, light or power poles, water mains, conduits, pipes or drains or other construction, either public or private, in or on the streets or alleys, the Work shall be so conducted that no interruption or delay will be caused in the operation or use of the same. Proper written notice shall be given to all affected parties prior to proceeding with the Work.

The Contractor shall not be permitted to interfere with public travel and convenience by grading or tearing up streets indiscriminately, but the Work of constructing the various items in this contract shall proceed in an orderly, systematic and progressive manner.

GC - 10 - DISEASE REGULATIONS - The Contractor shall enforce all sanitary regulations and take all precautions against infectious diseases as the Project Manager may deem necessary. Should any infectious or contagious diseases occur among his employees, he shall arrange for the immediate removal of the employee from the Site and isolation of all persons connected with the Work.

GC - 11 - CONTRACTOR TO CHECK PLANS, SPECIFICATIONS, AND DATA - The Contractor shall verify all dimensions, quantities, and details shown on the plans, supplementary drawings, schedules, and shall notify the Project Manager of all errors, omissions, conflicts and discrepancies found therein within three (3) working days of discovery. Failure to discover or correct errors, conflictions, or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory Work, faulty construction, or improper operation resulting therefrom nor from rectifying such condition at its own expense.

GC - 12 - MATERIALS AND WORKMANSHIP - All material shall be new and the workmanship shall, in every respect, be in conformity with approved modern practice and with prevailing standards of performance and quality. In the event of a dispute, the Project Manager's decision shall be final. Wherever the Plans, Specifications, Contract Documents, or the directions of the Project Manager are unclear as to what is permissible and/or fail to note the quality of any Work, that interpretation will be made by the Project Manager, which is in accordance with approved modern practice, to meet the particular requirements of the Contract.

GC - 13 - SAFEGUARDING MARKS - The Contractor shall safeguard all points, stakes, grade marks, monuments, and benchmarks made or established on the Work, bear the cost of re-establishing same if disturbed, or bear the entire expense of rectifying Work improperly installed due to not maintaining or protecting or for removing without authorization, such established points, stakes and marks. The Contractor shall safeguard all existing and known property corners, monuments and marks not related to the Work and, if required, shall bear

the cost of having them re-established by a licensed Professional surveyor registered in the State of Florida if disturbed or destroyed during the course of construction.

GC - 14 - RESTROOM FACILITIES - Contractor shall provide portable toilet facilities for employee's use at a location within the Work site to be determined by the City.

GC - 15 - PROGRESS MEETINGS - Weekly Status meetings will be conducted with representatives from the City and the Contractor. Contractor shall budget time to participate in such meetings. A well-run Project should result in short meetings.

GC - 16 - ISSUE RESOLUTION - Should Contractor become engaged in a dispute with a resident or a City employee, the Contractor shall report the situation to the Project Manager immediately. It shall be mandatory that the City participate in any dispute resolution. Failure of Contractor personnel to notify the City shall obligate Contractor to replace the offending employee immediately if requested by the City.

GC - 17 - CITY SECURITY-CONTRACTOR AND SUBCONTRACTOR EMPLOYEE INFORMATION - Prior to commencing work, Contractor shall provide to the City a list of all personnel and sub-contractors on site. The list will include the name, address, birth date and driver's license number for all personnel. All personnel and subcontractors on site will have on their person a company photo ID during all stages of the construction. Contractor shall provide standard required personal information per current City procedures.

GC - 18 - POST-CONSTRUCTION SURVEY - The Contractor shall provide as-built survey, sealed and signed by a registered surveyor in the State of Florida, as a condition of final payment.

GC – 19 - KEY PERSONNEL - Contractor shall provide as part of the Work Plan, resumes for all key project personnel providing supervision and project management functions. Resumes shall include work history and years of experience performing this type of work.

GC - 20 - EXISTING UTILITY SERVICE - All existing utility service shall be maintained with a minimum of interruption at the expense of the Contractor.

GC - 21 - JOB DESCRIPTION SIGNS – Contractor, at Contractor's expense, shall furnish, erect, and maintain suitable weatherproof signs on jobs over $100,000 containing the following information:

1. City Seal (in colors)
2. Project or Improvement Number
3. Job Description
4. Estimated Cost
5. Completion Date

Minimum size of sign shall be four feet high, eight feet wide and shall be suitably anchored. The entire sign shall be painted and present a pleasing appearance. Exact location of signs will be determined in the field. Two (2) signs will be required, one at each end of the job. All costs of this work shall be included in other parts of the work.

GC - 22 - FLORIDA EAST COAST RIGHT-OF-WAY - Whenever a City contractor is constructing within the Florida East Coast Railway Company's Right-of-Way, it will be

mandatory that the contractor carry bodily injury and property damage insurance in amounts satisfactory to the Florida East Coast Company. This insurance requirement shall be verified by the contractor with the Florida East Coast Company prior to commencing work, and maintained during the life of the Contract.

GC - 23 - ACCIDENTS - The Contractor shall provide such equipment and facilities as are necessary and/or required, in the case of accidents, for first aide services to be provided to a person who may be injured during the project duration. The Contractor shall also comply with the OSHA requirements as defined in the United States Labor Code 29 CFR 1926.50.

In addition, the Contractor must report immediately to the Project Manager every accident to persons or damage to property, and shall furnish in writing full information, including testimony of witnesses regarding any and all accidents.

GC - 24 - SAFETY PRECAUTIONS - Contractor must adhere to the applicable environmental protection guidelines for the duration of a project. If hazardous waste materials are used, detected or generated at any time, the Project Manager must be immediately notified of each and every occurrence. The Contractor shall comply with all codes, ordinances, rules, orders and other legal requirements of public authorities (including OSHA, EPA, DERM, the City, Broward County, State of Florida, and Florida Building Code), which bear on the performance of the Work.

The Contractor shall take the responsibility to ensure that all Work is performed using adequate safeguards, including but not limited to: proper safe rigging, safety nets, fencing, scaffolding, barricades, chain link fencing, railings, barricades, steel plates, safety lights, and ladders that are necessary for the protection of its employees, as well as the public and City employees. All riggings and scaffolding shall be constructed with good sound materials, of adequate dimensions for their intended use, and substantially braced, tied or secured to ensure absolute safety for those required to use it, as well as those in the vicinity. All riggings, scaffolding, platforms, equipment guards, trenching, shoring, ladders and similar actions or equipment shall be OSHA approved, as applicable, and in accordance with all Federal, State and local regulations.

GC - 25 - DUST PREVENTION - The Contractor shall, by means of a water spray, or temporary asphalt pavement, take all necessary precautions to prevent or abate a dust nuisance arising from dry weather or Work in an incomplete stage. All costs of this Work shall be included in the cost of other parts of the Work.

Should the Contractor fail to abate a dust nuisance the Project Manager may stop the Work until the issue is resolved to the City’s satisfaction.

GC - 26 - SITE CLEANUP AND RESTORATION – The Contractor shall remove all debris and unused or discarded materials from the work site daily. Contractor shall clean the work site to remove all directional drilling "Driller's Mud" materials. No "Driller's Mud" residue shall be allowed to remain in the soil or on the surface of the land or vegetation. All debris and drilling materials must be disposed of offsite at an approved location.

The Contractor shall promptly restore all areas disturbed that are outside the Project limits in equal or better condition at no additional cost to the City.

GC - 27 - COURTEOUS BEHAVIOR AND RESPECT FOR RESIDENTS AND PROPERTY – The Contractor and its employees, associates and sub-contractors shall maintain courteous behavior at all times and not engage in yelling, loud music, or other such activities. Contractor's employees shall not leave trash or other discarded items at the Work Site, especially on any private property. In the event complaints arise, Contractor shall immediately remove such offending employees from the project if requested to do so by the Project Manager. Contractor's employees shall not trespass on any private property unless necessary to complete the work but with prior permission from the owner.

Contractor shall notify and obtain permission from the residents 24 hours in advance when planning to work within the resident's property. In addition, Contractor shall notify the resident prior to entering their property to perform work or inspect/investigate the work site. Contractor shall not block residents' driveways unnecessarily. Contractor shall not park equipment on landscaped areas when the vehicle is not needed for the current construction activities. Contractor shall be responsible for repair and/or replacement of all damaged landscaping within 48 hours including repairing vehicle wheel impressions, irrigation systems, lighting systems, structures, or any other items of resident's property. Contractor shall not destroy, damage, remove, or otherwise negatively impact any landscaping within or outside the right-of-way without prior approval from the Project Manager.

GC - 28 - PLACING BARRICADES AND WARNING LIGHTS - The Contractor shall furnish and place, at Contractor's own expense, all barricades, warning lights, automatic blinker lights and such devices necessary to properly protect the work and vehicular and pedestrian traffic. Should the Contractor fail to erect or maintain such barricades, warning lights, etc., the Project Manager may, after 24 hours' notice to the Contractor, proceed to have such barricades and warning lights placed and maintained by City or other forces and all costs incurred thereof charged to the Contractor and may be retained by the City from any monies due, or to become due, to the Contractor.

GC - 29 - TRAFFIC CONTROL - The Contractor shall coordinate all Work and obtain, through the City's Transportation and Mobility Department, Broward County, Florida Department of Transportation, as applicable, any permits required to detour traffic or close any street before starting to work in the road

All traffic control devices, flashing lights, signs and barricades shall be maintained in working condition at all times and conform to Manual of Uniform Traffic Control Devices (MUTCD), latest edition.

GC - 30 - COORDINATION - The Contractor shall notify all utilities, transportation department, etc., in writing, with a copy to the Project Manager before construction is started and shall coordinate its Work with them. The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal, construction and rearrangement operations in order that services rendered by these parties will not be unnecessarily interrupted.

The Contractor shall arrange its Work and dispose of its materials so as to not interfere with the operation of other contractors engaged upon adjacent work, and to join its Work to that of others in a proper manner, and to perform its Work in the proper sequence in relation to that of other contractors as may be directed by the Project Manager.

Each Contractor shall be responsible for any damage done by it or its agents to the work performed by another contractor.

GC - 31 - WATER - Bulk water used for construction, flushing pipelines, and testing shall be obtained from fire hydrants. Contractor shall make payment for hydrant meter at Treasury Billing Office, 1st Floor, City Hall, 100 N. Andrews Avenue. With the paid receipt, contractor can pick up hydrant meter at the utility location office. No connection shall be made to a fire hydrant without a meter connected.

GC - 32 - PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES - Subject to Odebrecht Construction, Inc., v. Prasad, 876 F.Supp.2d 1305 (S.D. Fla. 2012), affirmed, Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation, 715 F.3d 1268 (11th Cir. 2013), with regard to the "Cuba Amendment," the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in Iran Terrorism Sectors List, created pursuant to Section 215.473, Florida Statutes (2024), as may be amended or revised, and that it does not have business operations in Cuba or Syria, as provided in Section 287.135, Florida Statutes (2024), as may be amended or revised. The Contractor certifies that it is not on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2024), as may be amended or revised, and that it is not engaged in a boycott of Israel. The City may terminate this Agreement at the City's option if the Contractor is found to have submitted a false certification as provided under subsection (5) of Section 287.135, Florida Statutes (2024), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List, or been placed on a list created pursuant to Section 215.473, Florida Statutes (2024), as may be amended or revised, relating to scrutinized active business operations in Iran, or been placed on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2024), as may be amended or revised, or is engaged in a boycott of Israel, or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2024), as may be amended or revised.

GC - 33 - USE OF FLORIDA LUMBER TIMBER AND OTHER FOREST PRODUCTS - In accordance with Florida Statute 255.20 (3), the City specifies that lumber, timber, and other forest products used for this Project shall be produced and manufactured in the State of Florida if such products are available and their price, fitness, and quality are equal. This requirement does not apply to plywood specified for monolithic concrete forms, if the structural or service requirements for timber for a particular job cannot be supplied by native species, or if the construction is financed in whole or in part from federal funds with the requirement that there be no restrictions as to species or place of manufacture.

The Bidder affirms by submitting a bid response to this solicitation that they will comply with section 255.20 (3) Florida Statutes.

GC - 34 - PUBLIC RECORDS/TRADE SECRETS/COPYRIGHT: The Proposer's response to the Solicitation is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("public Records Law"). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this Solicitation and the Contract to be executed for this Solicitation, subject to the provisions of Chapter 119.07 of the Florida Statutes.

Any language contained in the Proposer's response to the Solicitation purporting to require confidentiality of any portion of the Proposer's response to the Solicitation, except to the extent

that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the

Proposer claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the Solicitation constitutes a Trade Secret. The City's determination of whether an exemption applies shall be final, and the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agent, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as public records. In addition, the proposer agrees to defend, indemnify and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as exempt from disclosure or confidential. Proposals purporting to be subject to copyright protection in full or in part will be rejected. The proposer authorizes the City to publish, copy and reproduce any and all documents submitted to the City bearing copyright symbols or otherwise purporting to be subject to copyright protection.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

Telephone Number: **(954) 828-5002**

Mailing Address: **City Clerk's Office**
1 East Broward Boulevard, Suite 444
Fort Lauderdale, Florida 33301-1016

E-mail: **prrcontract@fortlauderdale.gov**

Contractor shall:

1. Keep and maintain public records required by the City in order to perform the service.

2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2023), as may be amended or revised, or as otherwise provided by law.

3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this Agreement if the Contractor does not transfer the records to the City.

4. Upon completion of the Agreement, transfer, at no cost, to the City, all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon

completion of this Agreement, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of this Agreement, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

GC – 35 - ANTI-HUMAN TRAFFICKING, KIDNAPPING, CUSTODY AND RELATED OFFENSES - Bidder, proposer, quoter, or any other respondent to any City solicitation/notice or serving as a City consultant, contractor, vendor or otherwise entering into any contract (including, without limitation, contract renewal, extension, amendment as applicable) with the City affirms and stipulates that it is not in violation of Section 787.06(13) of the 2024 Florida Statutes entitled "Kidnapping; Custody Offenses; Human Trafficking and Related Offenses." The entity (which includes any business entity however formed/ incorporated) intending to provide goods or services by submitting a response to a city solicitation further affirms to the City as a governmental entity defined in Section 287.138(1) of the 2024 Florida Statutes that it does not use coercion for labor or services as defined in Section 787.06 of the 2024 Florida Statutes.

GC- 36 E-Verify - In accordance with Section 448.095, Florida Statutes (2024), as may be amended or revised, the Contractor and its subcontractors shall register with and use the E-Verify system to electronically verify the employment eligibility of newly hired employees.

1. The Contractor shall require each of its subcontractors, if any, to provide the Contractor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. The Contractor shall maintain a copy of the subcontractor's affidavit for the duration of this Agreement and in accordance with the public records requirements of this Agreement.

2. The City, the Contractor, or any subcontractor who has a good faith belief that a person or entity with which it is contracting has knowingly violated Subsection 448.09(1), Florida Statutes (2024), as may be amended or revised, shall terminate the contract with the person or entity.

3. The City, upon good faith belief that a subcontractor knowingly violated the provisions of Subsection 448.095(5), Florida Statutes (2024), as may be amended or revised, but that the Contractor otherwise complied with Subsection 448.095(5), Florida Statutes (2024), as may be amended or revised, shall promptly notify Contractor and order the Contractor to immediately terminate the contract with the subcontractor, and the Contractor shall comply with such order.

4. A contract terminated under Subparagraph 448.095(5)(c)1. or 2., Florida Statutes (2024), as may be amended or revised, is not a breach of contract and may not be considered as such. If the City terminates this contract under Paragraph 448.095(5)(c), Florida Statutes (2024), as may be amended or revised, the Contractor may not be awarded a public contract for at least one year after the date on which the contract was terminated. The Contractor is liable for any additional costs incurred by the City as a result of termination of this Agreement.

5. Contractor shall include in each of its subcontracts, if any, the requirements set forth in this Section, including this subparagraph, requiring any and all subcontractors, as defined in Subsection 448.095(1)(e), Florida Statutes (2024), as may be amended or revised, to include all of the requirements of this Section in their subcontracts. Contractor shall be responsible for compliance by any and all subcontractors, as defined in Subsection 448.095(1)(e), Florida Statutes (2024), as may be amended or revised, with the requirements of Section 448.095, Florida Statutes (2024), as may be amended or revised.

****END OF SECTION 2****

SECTION 3
SPECIAL CONDITIONS

3.1 Definitions

Award – means the acceptance of a bid, offer or proposal by the proper authorized designee. The City Commission must approve all awards over the authority of the City Manager, with the exception of emergency purchases.

City – the City of Fort Lauderdale or the City Commission, a municipal corporation of the State of Florida.

City Commission – City Commission shall mean the governing and legislative body of the City.

Contract – This Agreement and all addenda, exhibits and amendments thereto between the City and the Design-Build Firm for this Project. Contract shall also mean the same as Agreement.

Design Build – Means a single contract with a Design-Build Firm for the design and construction of a City construction project.

Design Build Firm (DBF) – means a partnership, corporation, or other legal entity that is certified under Florida Statute 489.119 to engage in contracting through a certified or registered general contractor or a certified or registered building contractor as the qualifying agent or is certified under Florida Statute 471.023 to practice or to offer to practice engineering; certified under Florida Statute 481.219 to practice or to offer to practice architecture, or certified under Florida Statute 481.319 to practice or to offer to practice landscape architecture.

Design Criteria Package (DCP) DCP shall mean those certain conceptual plans and specifications and performance-oriented drawings or specifications of the Project, as prepared and sealed by the Design Criteria Professional, and in compliance with the requirements of Section 287.055, Florida Statutes.

Design Criteria Professional – means a firm which holds a current certificate or registration under Chapter 481, Florida Statutes, to practice architecture or landscape architecture or a firm which holds a current certificate as a registered engineer under Chapter 471, Florida Statutes, to practice engineering and who is employed by or under contract by the City to provide professional architect services, landscape architect services, or engineering services in connection with the preparation of the Design Criteria Package.

Guaranteed Maximum Price (GMP) – the mutually agreed upon contract price to be paid to the DBF for the work, with the DBF agreeing to complete the work without additional payment. The guaranteed maximum price is not subject to increase, except as expressly allowed by the City. Savings below the maximum guaranteed price are shared between owner and DBF, whereas the DBF assumes the responsibility for any overrun beyond the Guaranteed maximum price.

Negotiate – any form of that word means to conduct legitimate, arm's length discussion and conferences to reach an agreement on a term or price.

Notice to Proceed –. A written notice to Contractor authorizing the commencement of the activities identified in the notice or as described in the Contract Documents.

Professional Services – means those services within the scope of the practice of architecture, professional engineering, landscape architect, or registered surveying and mapping, as defined by the laws of the state, or those performed by any architect, professional engineer, landscape architect, or registered surveyor and mapper in connection with his or her professional employment or practice.

Project Manager – an authorized representative of the City assigned to the Project by the City, assigned to make necessary observations of materials furnished by DBF and of the Work performed by DBF as detailed.

Proposal – means the proposal or submission submitted by a Proposer. The terms "Proposal" and "Bid" are used interchangeably and have the same meaning.

Proposer – means one who submits a Proposal in response to a solicitation. The terms "Proposer" and "Bidder" are used interchangeably and have the same meaning.

Substantial Completion – the date(s) certified by the Project Manager that all conditions of the permits and regulatory agencies have been met for the City's intended use of the Project, and all construction has been performed in accordance with the Contract Documents so City can fully utilize, as opposed to partially utilize, the Project for its intended purpose.

Work – the completed construction required by the Contract Documents, as permitted, including all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction.

3.2 Responsiveness

In order to be considered responsive to the solicitation, the firm's response shall fully conform in all material respects to the solicitation and all of its requirements, including all form and substance.

3.3 Responsibility

In order to be considered responsible, DBF shall be fully capable of meeting all of the requirements of the solicitation and the subsequent contract; must possess the full capability, including financial and technical capacity, to perform as contractually required; and must fully document the ability to provide good faith performance.

3.4 Sub-Consultants

A Sub-Consultant is an individual or firm contracted by the DBF to assist in the performance of services required under this RFP. A Sub-Consultant shall be paid through DBF and not paid directly by the City. Sub-Consultants are permitted by the City in the performance of the services pursuant to the Agreement. DBF must clearly reflect in its

proposal, the major Sub-Consultant(s) to be utilized in the performance of required services. The City retains the right to accept or reject any Sub-Consultant proposed in the response of successful DBFs or prior to contract execution. Any and all liabilities regarding the use of a Sub-Consultant shall be borne solely by the successful DBF, and insurance for each Sub-Consultant must be maintained in good standing and approved by the City throughout the duration of the Contract. Neither successful DBF nor any of its Sub-Consultants is considered to be employees or agents of the City. Failure to list all Sub-Consultants and provide the required information may disqualify any proposed Sub-Consultant from performing work under this RFP.

DBFs shall include in their responses, the requested Sub-Consultant information and include all relevant information required of the DBF. In addition, within five (5) working days after the identification of the award to the successful DBF, the DBF shall provide a list confirming the Sub-Consultant(s) that the successful DBF intends to utilize in the Contract, if applicable. The list shall include, at a minimum, the name, and location of the place of business for each Sub-Consultant, the services Sub-Consultant will provide relative to any contract that may result from this RFP, Sub-Consultant's hourly rates or fees, any applicable licenses, insurance, references, ownership, and other information required of the DBF. No more than twenty percent (20%) of the team members selected for this Project can be substituted and any and all team and/or staff substitutions must be approved by the City in advance.

3.5 Contract

Time is of the essence for the DBF's performance of the Work.

The City will enter into a Not-To-Exceed (NTE) contract with the successful DBF for a Guaranteed Maximum Price (GMP) for the Work. The terms and conditions of this contract are fixed price and for a fixed period of time. The DBF submitted proposal is to be a NTE GMP proposal for completing the Scope of Work in the RFP. The DBF will provide a Schedule of Values to the City for its approval. The total of the Schedule of Values will be this NTE GMP contract price for the work.

The DBF shall not assign, transfer or sub-contract any work either in whole or in part, without prior written approval of the City. The submittal responses shall be valid until such time as City Commission awards a contract as a result of this RFP.

City reserves the right, where it may serve the City of Fort Lauderdale's best interest, to request additional information or clarification from proposers including, but not limited to, oral interviews as requested by the Evaluation Committee.

The City of Fort Lauderdale reserves the right to waive formalities in any proposal and further reserves the right to take any other action that may be necessary in the best interest of the City.

The City reserves the right to let other contracts in connection with this Project, provided it does not interfere with DBF's work or schedule. By submitting a proposal, each firm is confirming that the firm has not been placed on the convicted vendors list as described in Florida Statute §287.133 (2) (a).

3.6 Unauthorized Work

The successful DBF(s) shall not begin work until a Contract and a Notice to Proceed has been issued. DBF(s) agree and understand that a purchase order and/or task order shall be issued and provided to the DBF(s) following City Commission award.

3.7 Uncontrollable Circumstances ("Force Majeure")

The City and Contractor will be excused from the performance of their respective obligations under this agreement when and to the extent that their performance is delayed or prevented by any circumstances beyond their control including, fire, flood, explosion, strikes or other labor disputes, act of God or public emergency, war, riot, civil commotion, malicious damage, act or omission of any governmental authority, delay or failure or shortage of any type of transportation, equipment, or service from a public utility needed for their performance, provided that:

3.7.1 The non-performing party gives the other party prompt written notice describing the particulars of the Force Majeure including, but not limited to, the nature of the occurrence and its expected duration, and continues to furnish timely reports with respect thereto during the period of the Force Majeure.

3.7.2 The excuse of performance is of no greater scope and of no longer duration than is required by the Force Majeure.

3.7.3 No obligations of either party that arose before the Force Majeure causing the excuse of performance are excused as a result of the Force Majeure; and

3.7.4 The non-performing party uses its best efforts to remedy its inability to perform. Notwithstanding the above, performance shall not be excused under this Section for a period in excess of two (2) months, provided that in extenuating circumstances, the City may excuse performance for a longer term. Economic hardship of the Contractor will not constitute Force Majeure. The term of the agreement shall be extended by a period equal to that during which either party's performance is suspended under this Section.

3.8 News Releases/Publicity

News releases, publicity releases, or advertisements relating to this contract, or the tasks or projects associated with the project shall not be made without prior City approval

3.9 Proposal Bond

A certified check, cashier's check, bank officer's check or bid bond for FIVE percent (5%) of the amount bid, made payable to the City of Fort Lauderdale, Florida, shall accompany each proposal. See Special Conditions – Proposal Bond for detailed requirements regarding acceptable forms of security, submission methods, and surety qualifications.

Proposers can submit proposal bonds for projects **three (3)** different ways:

1) If bid bonds are not submitted via Surety 2000, Bidders may upload their original executed proposal bond on the City's online strategic sourcing platform to accompany their electronic proposal, and deliver the original, signed and sealed hard copy within **five (5)** business days after bid opening, with the company name, bid number and title clearly indicated. Proposal bond shall be written by a surety insurer authorized to do business in the State of Florida as surety, in accordance with Section 255.05, Florida

Statutes. An insufficient proposal bond surety shall automatically constitute a failure on the part of the proposer and shall be grounds for rejection of your bid.

2) Bidders can **hand deliver** their proposal bond in a sealed envelope to the Finance Department, Procurement Services Division, 101 North East 3rd Avenue, Suite 1650, Fort Lauderdale, Florida 33301-1016, before time of bid opening, with the company name, bid number and title clearly indicated on the envelope.

3) Bidders can **mail** their proposal bond to the Finance Department, Procurement Services Division, 101 North East 3rd Avenue, Suite 1650, Fort Lauderdale, Florida 33301-1016, before time of bid opening with the company name, bid number and title clearly indicated on the envelope. NOTE: Bond must be received in Procurement and time stamped before bid opening.

It will be the sole responsibility of the proposer to ensure that its proposal is submitted prior to the proposal opening date and time listed. **PAPER PROPOSAL SUBMITTALS WILL NOT BE ACCEPTED. PROPOSALS MUST BE SUBMITTED ELECTRONICALLY** via the City's online strategic sourcing platform.

The bond shall be retained by the City as liquidated damages in the event the proposer whose bid is accepted refuses to or fails to enter into a contract for the execution of the work solicited in this RFP.

Following the full execution of a contract for the work solicited in this RFP and the successful proposer's provision of good and sufficient bonds, in the event bid security was provided by check, the amount of the bid security accompanying the successful proposer's bid will be refunded to the successful proposer, or in the event bid security was provided by a bond, the bond accompanying the successful proposer's bid will be returned to the successful proposer. In the event the successful proposer fails to enter into, execute, and deliver a contract and furnish the required bonds within ten (10) days after the City provides notice to the successful proposer to deliver the executed contract and the required bonds, the bid bond shall immediately be payable to the City of Fort Lauderdale.

Additional insurance and bonds may be required for the construction phase of the project.

3.10 Certified Checks, Cashier's Checks and Bank Drafts

These **CANNOT** be submitted via the City's online strategic sourcing platform, nor are their images allowed to be uploaded and submitted with your electronic bid. These forms of securities, as well as hard copy bid bonds, must be received on or before the Invitation to Bid (ITB) opening date and time, at the Finance Department, Procurement Services Division 101 NE 3rd Avenue, Unit 1615, Fort Lauderdale, Florida 33301, with the bid number and title clearly indicated on the envelope.

3.11 Performance and Payment Bond (Surety Bond)

The DBF shall execute and record in the public records of Broward County, Florida, a payment and performance bond in an amount at least equal to the Contract Price with a surety insurer authorized to do business in the State of Florida as surety, ("Bond"), in accordance with Section 255.05, Florida Statutes (2024), as may be amended or revised, as security for the faithful performance and payment of all of the DBF's obligations under the Contract Documents.

The successful bidder shall furnish a performance and payment bond in compliance with Section 255.05, Florida Statutes (2023), written by a Corporate Surety company, holding a Certificate of Authority from the Secretary of the Treasury of the United States as acceptable sureties on federal bonds, in an amount equal to the total amount payable by the terms of the contract, executed and issued by a Resident Agent licensed by and having an office in the State of Florida, representing such Corporate Surety, conditioned for the due and faithful performance of the work, and providing in addition to all other conditions, that if the DBF, or his or its subcontractors, fail to duly pay for any labor, materials, or other supplies used or consumed by such Contractor, or his or its subcontractor or subcontractors, in performance of the work contracted to be done, the Surety will pay the same in the amount not exceeding the sum provided in such bonds, together with interest at the rate of fifteen percent (15%) per annum, and that they shall indemnify and hold harmless the City of Fort Lauderdale to the extent of any and all payments in connection with carrying out of the contract, which the City may be required to make under the law.

The DBF is required at all times to have a valid surety bond in force covering the work being performed. A failure to have such bond in force at any time shall constitute a default on the part of the DBF. A bond written by a surety, which becomes disqualified to do business in the State of Florida, shall automatically constitute a failure on the part of the DBF to meet the above requirements.

Such bond shall continue in effect for one (1) year after completion and acceptance of the work with liability equal to at least twenty-five percent (25%) of contract price, or an additional bond shall be conditioned that the DBF will correct any defective or faulty work or material which appear within one (1) year after completion of the contract, upon notification by the City, except in contracts which are concerned solely with demolition work, in which cases twenty-five percent (25%) liability will not be applicable.

3.12 Insurance Requirements

As a condition precedent to the effectiveness of this Agreement, during the term of this Agreement and during any renewal or extension term of this Agreement, Design-Build Firm shall, at its sole expense, provide insurance of such types and with such terms and limits as noted below. Providing proof of and maintaining adequate insurance coverage are material obligations of Design-Build Firm. Design-Build Firm shall provide the City a certificate of insurance evidencing such coverage. Design-Build Firm's insurance coverage shall be primary insurance for all applicable policies, in respect to the City's interests for this Agreement. The limits of coverage under each policy maintained by Design-Build Firm shall not be interpreted as limiting Design-Build Firm's liability and obligations under this Agreement. All insurance policies shall be through insurers authorized or eligible to write policies in the State of Florida and possess an A.M. Best rating of A-, VII or better, subject to approval by the City's Risk Manager.

The coverages, limits, and/or endorsements required herein protect the interests of the City, and these coverages, limits, and/or endorsements shall in no way be relied upon by Design-Build Firm for assessing the extent or determining appropriate types and limits of coverage to protect Design-Build Firm against any loss exposures, whether as a result of this Agreement or otherwise. The requirements contained herein, as well as the City's review or acknowledgement, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by Design-Build Firm under this Agreement.

The following insurance policies and coverages are required:

Professional Liability
Coverage must be afforded for Wrongful Acts in an amount not less than $5,000,000 each claim and $5,000,000 aggregate.

Design-Build Firm must keep the professional liability insurance in force until the third anniversary of expiration or early termination of this Agreement or the third anniversary of acceptance of work by the City, whichever is longer, which obligation shall survive expiration or early termination of this Agreement.

Commercial General Liability
Coverage must be afforded under a Commercial General Liability policy with limits not less than:

- $2,000,000 each occurrence and $2,000,000 aggregate for Bodily Injury, Property Damage, and Personal and Advertising Injury
- $2,000,000 each occurrence and $2,000,000 aggregate for Products and Completed Operations

Policy must include coverage for contractual liability and independent contractors.

The City, a Florida municipality, its officials, employees, and volunteers are to be included as an additional insured with a CG 20 26 04 13 Additional Insured – Designated Person or Organization Endorsement or similar endorsement providing equal or broader Additional Insured Coverage with respect to liability arising out of activities performed by or on behalf of Design-Build Firm. The coverage shall contain no special limitation on the scope of protection afforded to the City, its officials, employees, and volunteers.

Business Automobile Liability
Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than $1,000,000 combined single limit each accident.

If Design-Build Firm does not own vehicles, Design-Build Firm shall maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Crane and Rigging Liability
Coverage must be afforded for any crane operations under the Commercial General or Business Automobile Liability policy as necessary, in line with the limits of the associated policy.

Pollution and Remediation Legal Liability (Hazardous Materials)
For the purpose of this section, the term “hazardous materials” includes all materials and substances that are designated or defined as hazardous by Florida or federal law or by the rules or regulations of Florida or any federal agency. If work being performed involves hazardous materials, Design-Build Firm shall procure and maintain any or all of the following coverages (which will be specifically addressed upon review of exposure):

Contractors Pollution Liability Coverage
For sudden and gradual occurrences and in an amount not less than $1,000,000 per claim arising out of this Agreement, including but not limited to, all hazardous materials identified under the Agreement.

Property Coverage (Builder's Risk)
For buildings/structures under construction, coverage must be afforded in an amount not less than 100% of the total project cost, including soft costs, with a deductible of no more than $25,000 each claim. Coverage form shall include, but not be limited to:

- All Risk Coverage including Flood and Windstorm with no coinsurance clause
- Any separate Flood and/or Windstorm deductibles are subject to approval by the City
- Waiver of Occupancy Clause Endorsement, which will enable the City to occupy the facility under construction/renovation during the activity
- Storage and transport of materials, equipment, supplies of any kind whatsoever to be used on or incidental to the project
- Equipment Breakdown for cold testing of all mechanized, pressurized, or electrical equipment

This policy shall insure the interests of the owner, contractor, and subcontractors in the property against all risk of physical loss and damage and name the City as a loss payee. This insurance shall remain in effect until the work is completed and the property has been accepted by the City.

Workers' Compensation and Employer's Liability
Coverage must be afforded per Chapter 440, Florida Statutes. Any person or entity performing work for or on behalf of the City must provide Workers' Compensation insurance. Exceptions and exemptions will be allowed by the City's Risk Manager, if they are in accordance with Florida Statute. Design-Build Firms ineligible for a State exemption certificate agree that they are excluded from any benefits, from the City, afforded under Chapter 440, Florida Statutes.

Design-Build Firm waives, and Design-Build Firm shall ensure that Design-Build Firm's insurance carrier waives, all subrogation rights against the City, its officials, employees, and volunteers for all losses or damages. The City requires the policy to be endorsed with WC 00 03 13 Waiver of our Right to Recover from Others or equivalent.

Design-Build Firm must be in compliance with all applicable State and federal workers' compensation laws.

Insurance Certificate Requirements

a. Design-Build Firm shall provide the City with valid Certificates of Insurance (binders are unacceptable) no later than ten (10) days prior to the start of work contemplated in this Agreement.
b. Design-Build Firm shall provide to the City a Certificate of Insurance having a thirty (30) day notice of cancellation; ten (10) days' notice if cancellation is for nonpayment of premium.

c. In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of Design-Build Firm to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested, and addressed to the certificate holder.

d. In the event the Agreement term or any surviving obligation of Design-Build Firm following expiration or early termination of the Agreement goes beyond the expiration date of the insurance policy, Design-Build Firm shall provide the City with an updated Certificate of Insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The City reserves the right to suspend the Agreement until this requirement is met.

e. The Certificate of Insurance shall indicate whether coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the Certificate of Insurance must show a retroactive date, which shall be the effective date of the initial contract or prior.

f. The City shall be included as an Additional Insured on all liability policies, with the exception of Workers' Compensation and Professional Liability.

g. The City shall be granted a Waiver of Subrogation on Design-Build Firm's Workers' Compensation insurance policy.

h. The title of the Agreement, Bid/Contract number, or other identifying reference must be listed on the Certificate of Insurance.

The Certificate Holder should read as follows:
City of Fort Lauderdale
c/o Procurement Services Division
401 SE 21st Street
Fort Lauderdale, FL 33316

Design-Build Firm has the sole responsibility for all insurance premiums and shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, co-insurance penalty, or self-insured retention; including any loss not covered because of the application of such deductible, co-insurance penalty, self-insured retention, or coverage exclusion or limitation. Any costs for including the City as an Additional Insured shall be at Design-Build Firm's expense.

If Design-Build Firm's primary insurance policy/policies do not meet the minimum requirements as set forth in this Agreement, Design-Build Firm may provide evidence of an Umbrella/Excess insurance policy to comply with this requirement.

Design-Build Firm's insurance coverage shall be primary insurance in respect to the City's interests for this Agreement, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the City shall be non-contributory.

Any exclusion or provision in any insurance policy maintained by Design-Build Firm that excludes coverage required in this Agreement shall be deemed unacceptable and shall be considered breach of contract.

All required insurance policies must be maintained until the Agreement work has been accepted by the City, or until this Agreement is terminated, whichever is later. Any lapse

in coverage may be considered breach of contract. In addition, Design-Build Firm must provide to the City confirmation of coverage renewal via an updated certificate of insurance should any policies expire prior to the expiration of this Agreement. The City reserves the right to review, at any time, coverage forms and limits of Design-Build Firm's insurance policies.

Design-Build Firm shall provide notice of any and all claims, accidents, and any other occurrences associated with this Agreement to Design-Build Firm's insurance company or companies and the City's Risk Management office as soon as practical.

It is Design-Build Firm's responsibility to ensure that any and all of Design-Build Firm's independent contractors and subcontractors comply with these insurance requirements. All coverages for independent contractors and subcontractors shall be subject to all of the applicable requirements stated herein. Any and all deficiencies are the responsibility of Design-Build Firm. The City reserves the right to adjust insurance limits from time to time at its discretion with notice to Design-Build Firm.

NOTE: CITY PROJECT NUMBER, PROJECT NAME AND BID NUMBER MUST APPEAR ON EACH CERTIFICATE, AND THE CITY OF FORTLAUDERDALE MUST BE NAMED ON THE CERTIFICATE AS AN "ADDITIONAL INSURED" ON REQUIRED LIABILITY POLICIES.

A Sample Insurance Certificate shall be included with the proposal to demonstrate the firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the insurance companies' names for all required coverage, and the dollar amounts of the coverage.

3.13 Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees, and property. The Contractor shall comply with all laws, regulations, or ordinances relating to safety and health, and shall make special effort to detect hazardous conditions and shall take prompt action where loss control/safety measures should reasonably be expected.

The City may order work to be stopped if conditions exist that present immediate danger to persons or property. The Contractor acknowledges that such stoppage will not shift responsibility for any loss or damages from the Contractor to the City.

3.14 Invoices/Payments

A payment schedule based upon agreed upon deliverables may be developed with the awarded vendor.

The DBF shall submit a proposed schedule of values, after contract award, in a form acceptable to the City and will be required to be approved by the City before any design Work on this Project can commence. The proposed schedule of values shall be broken into two phases for the design and the construction.

During the design phase, the DBF may submit a request for payment monthly based upon percentage of completion of the final plans and specifications. Payment during the construction phase will be based upon percentage of work/inspections completed for each item in the approved schedule of values. DBF requisition for payment shall show a

complete breakdown of the Project components, and the amount due, together with such supporting evidence, as may be required by the Project Manager (PM).

The City agrees that it will pay the DBF per Florida Statutes 218.735. If, at any time during the contract, the City shall not approve or accept the DBF's work product, and an agreement cannot be reached between the City and the DBF to resolve the problem to the City's satisfaction, the City shall negotiate with the DBF on a payment for the work completed and usable to the City. This negotiated payment shall be based on the overall task or project breakdown, relative to the percentage of work completed.

Payment of invoices from the DBF shall be retained by the City per Florida Statute 255.078, until the Project has obtained Final Completion, receipt of as-built, and been accepted by the City.

3.15 Periodic Estimate for Partial Payment

After the Contractor has submitted a periodic estimate for partial payment, approved and certified by the Public Works Department, the City shall make payment in the manner provided in the Contract Documents and in accordance with Florida's Prompt Payment Act, Section 218, Florida Statutes.

3.16 Related Expenses/Travel Expenses

All costs including travel are to be included in your bid/proposal. The City will not accept any additional costs

3.17 Payment

The City shall make payment to the Contractor by check

3.18 Price Proposal

A total Price Proposal (proposed Contract Price) shall be submitted on the Price Proposal Form. The Price Schedule breakdown shall consist of a Not-To-Exceed, Guaranteed Maximum Price (GMP) amount. The Price Proposal shall be based upon and include any and all costs or expenses to be incurred by the DBF in implementing, fulfilling and completing all aspects of the Design-Build Project. The information must include, but is not limited to, the design, plans approval, permitting, construction and activation of the project in accordance with the requirements set forth in the City's Request for Proposals and the requirement of any and all agencies or organizations having jurisdiction for project review, permit approval or the design, construction, occupancy, activation, use or operation of the project, or use of the property on which the project is located.

The Price Proposal, in addition to all direct costs and expenses, shall include all other indirect costs and expenses including but not limited to, such costs as the Design-Builder's general, administrative and overhead costs, project management and supervisory costs, all fees, taxes, labor, direct and indirect payroll costs, insurance and bond costs, cost of equipment, materials, tools, transportation, and service fee (profit).

3.19 Bid Allowance/Reimbursable

Allowance for Permits: Payments will be made to the DBF based on the actual cost of permits upon submission of paid permit receipts. The City shall not pay for other costs related to obtaining or securing permits.

The amount indicated is intended to be sufficient to cover the entire project. If the City Permit fees exceed the allowance indicated, the City will reimburse the contractor the actual amount of City Permit Fees required for project completion.

Allowance Description	Amount
Maintenance of Traffic	$30,000.00
Permit fees	$10,000.00
TOTAL	**$40,000.00**

3.20 Contract Time

The Contractor recognizes that TIME IS OF THE ESSENCE. The Work shall commence within **fourteen (14)** calendar days of the date of the Notice to Proceed.

The Work shall be Substantially Completed within **seven hundred thirty (730)** calendar days after the date when the Contract Time commences to run as provided in the Notice to Proceed.

The Work shall be finally completed on the Final Completion Date and ready for final payment in accordance with this Agreement within **seven hundred sixty (760)** calendar days after the date when the Contract Time commences to run as provided in the Notice to Proceed.

3.21 City Project Manager

The Project Manager is hereby designated by the City as Caroline Yeakel, whose address is 290 NE 3rd Avenue, Fort Lauderdale, FL 33301, telephone number: (954) 828-3760, and email address is cyeakel@fortlauderdale.gov. The Project Manager will assume all duties and responsibilities and will have the rights and authorities assigned to the Project Manager in the Contract Documents in connection with completion of the work in accordance with this Agreement.

For information or questions concerning technical specifications, please utilize the Question/Answer platform provided by the City's online strategic sourcing platform at the City's online strategic sourcing platform. Questions of a material nature must be received prior to the cut-off date specified in the solicitation

3.22 Liquidated Damages

Upon failure of the DBF to substantially complete the entire Contract within the total specified period of time, plus approved time extension, DBF shall pay to the City the sum of **five hundred dollars ($500)** for each and every calendar day that the completion of the work is delayed beyond the time specified in this Agreement for completion.

The time frame for liquidated damages shall not commence and thus shall not be tolled until the Project Manager submits the punch list to the DBF. These amounts are not penalties but are liquidated damages to City for its inability to obtain full beneficial use of the Project. Liquidated damages are fixed and agreed upon between the parties, recognizing the impossibility of precisely ascertaining the amount of damages that will be sustained by City as consequence of such delay.

3.23 Public Entity Crimes

In accordance with the Public Crimes Act, Section 287.133, Florida Statutes (2023), as may be amended or revised, a person or affiliate who is a contractor, consultant or other provider, who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to the City, may not submit a bid on a contract with the City for the construction or repair of a public building or public work, may not submit bids on leases of real property to the City, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with the City, and may not transact any business with the City in excess of the threshold amount provided in Section 287.017, Florida Statutes (2023), as may be amended or revised, for category two purchases for a period of thirty-six (36) months from the date of being placed on the convicted vendor list. Violation of this section by Contractor shall result in cancellation of the City purchase and may result in Contractor debarment.

3.24 Subcontractors

3.24.1 If the Contractor proposes to use subcontractors in the course of providing these services to the City, this information shall be a part of the bid/proposal response. Such information shall be subject to review, acceptance, and approval of the City, prior to any contract award. The City reserves the right to approve or disapprove of any subcontractor candidate in its best interest and to require Contractor to replace subcontractor with one that meets City approval.

3.24.2 Contractor shall ensure that all of Contractor's subcontractors perform in accordance with the terms and conditions of this Contract. Contractor shall be fully responsible for all of Contractor's subcontractors' performance, and liable for any of Contractor's subcontractors' non-performance and all of Contractor's subcontractors' acts and omissions. Contractor shall defend, at Contractor's expense, counsel being subject to the City's approval or disapproval, and indemnify and hold harmless the City and the City's officers, employees, and agents from and against any claim, lawsuit, third-party action, or judgment, including any award of attorney fees and any award of costs, by or in favor of any Contractor's subcontractors for payment for work performed for the City.

3.24.3 Contractor shall require all its subcontractors to provide the required insurance coverage as well as any other coverage that the contractor may consider necessary, and any deficiency in the coverage or policy limits of said subcontractors will be the sole responsibility of the contractor.

3.25 Work Schedule

Monday – Friday 8:00 am – 5:00 pm. City Inspector hours are 8:00 a.m. to 4:30 p.m. Any inspection requested by the DBF outside those hours will be considered overtime to be paid by the DBF.

Inspection Overtime Cost: $100/hr.

3.26 Contract

The proposer to whom award is made shall execute a written contract to do the work and maintain the same in good repair until final acceptance by the proper authorities, and shall furnish good and sufficient bonds as specified within ten (10) days after receiving such contract for execution. If the proposer to whom the first award is made fails to enter into a contract as provided, the award may be annulled and the contract let to the next lowest

bidder who is reliable, responsible, and responsive in the opinion of the City, and that proposer shall fulfill every stipulation and obligation as if such proposer were the original party to whom award was made.

****END OF SECTION 3****

SECTION 4
SCOPE OF WORK

4.1 Project Objective

The City of Fort Lauderdale, Florida (City) has issued this Request for Proposal (RFP) to solicit competitive proposals from one single entity (“Firm” or “Proposer” or “Design-Build Firm (DFB)”), to provide design, permitting, construction, testing and start up the new Federal Courthouse Parking Garage for the City's Transportation and Mobility Department, in accordance with the terms, conditions, and specifications contained in this RFP.

The work to be accomplished under this contract includes, but is not limited to, the design and construction of a (5) Five – Story Pre-Cast Parking Garage with a parking capacity of no less than 284 spaces, compliance with all applicable building codes and permits requirements, including all other aspects of the Project to fulfill the intent of the project as described in the Design Criteria Package and all supporting documents.

4.2 Project Scope

The selected DBF shall perform the complete design, permitting, and construction of all aspects of the Project to fulfill the intent of the Project as described in this Design Criteria Package (DCP) and all supporting documents. Included in the Project is the acquisition of all tools, equipment, materials, and other supplies including but not limited to fuel, power, water, and communication devices required to complete the Project.

The selected DBF shall be responsible for all services required to deliver the Project in accordance with the Design Criteria Package (DCP) and the City’s objectives, inclusive of surveying; preparation and submittal of permit application packages; procurement of all construction permits not previously obtained by the City; construction phasing; dewatering; maintenance of traffic (MOT); and public involvement. In addition to design, permitting, and construction, the DBF shall also provide construction management, inspections, and construction certification. The terms and conditions of the resulting contract shall consist of this RFP, including the DCP and all associated exhibits and attachments, along with the DBF proposal as accepted by the City.

Additional to the designing, permitting, and construction of the Project, the DBF shall perform inspections, construction certification, construction management, public involvement, and all associated work described in the DCP or as determined necessary by the DBF and confirmed by the City to fulfill the Project’s intent. The terms and conditions of the contract shall consist of the RFP documents including the DCP with all exhibits and attachments in addition to the proposal accepted by the City.

The work also includes the performance of all labor, work, and other operations required to complete the Project. All work must be complete with all work, materials, and services not directly specified in the Contract Documents but necessary for the completion of the Project to fulfill the intent of the City performed and installed by the DBF at no additional cost to the City above what is agreed upon in the Contract Documents.

The DCP conveys the minimum requirements of the CITY regarding the design, construction, maintenance of traffic operations, management, and scheduling of the PROJECT including any scheduling and coordination with local, county, and state governments and regulating agencies necessary to obtain permits for construction

The proposed construction site has limited staging and parking space, which must be factored into the construction approach.

Project Location
This project is located at 1000 SE 3rd Avenue, in the City of Fort Lauderdale, Florida.

4.3 Project Requirements

The selected DBF must use effective project management practices while working on the Project. Included in project management is clear communication with the City and other parties involved in the Project, management of time and resources, and documentation of all services and communication. Contract administration and technical reviews of all work pertaining to the Project will be performed by the City.

4.3.1 Site Inventory and Evaluation of City's Criteria Confirmation

1. Site investigations, including but not limited to survey, subsurface utility investigations, geotechnical investigations, environmental engineering, to verify existing conditions if necessary.

2. Preliminary evaluation of proposed site use, staging and staff parking material selection, construction systems and equipment and provide recommendations on constructability, time, labor and scheduling factors related to project costs.

3. No inspection, failure to inspect, or waiver of inspection on the part of the City shall relieve the DBF of its duty to complete the Work as described in this RFP.

4. DBF agrees that the price specified on the Price Proposal Form is based on the DBF's examination of the site and that no claim for additional compensation shall be made if the conditions encountered differ from those anticipated by such examination.

4.3.2 Design and Construction Criteria

The selected DBF shall take a comprehensive and thorough technical approach to completing the design-build operation outlined for the Project, and the minimum requirements set forth in the DCP and technical aerial images of the construction site location requirement incorporated herein as Exhibit Appendix 7B of this Request for Proposal. Submitted technical proposals must convey that the DBF has a complete understanding of the Project, its intent, and City objectives. Additionally, the technical proposal shall address the following items:

1. Completion of construction documents for the Project which must have emergency contact information as required by the City.

2. Procurement of all required construction permits from local, state, and federal agencies including but not limited to the Florida Department of Transportation, Florida Department of Environmental Protection, South

Florida Water Management District, Broward County Environmental Protection and Growth Management Department, Broward County Traffic Engineering Division, Broward County Health Department, and the City of Fort Lauderdale. The DBF must develop permitting strategies and determine possible issues, testing requirements, and timing for the Project.

3. Identification quality control/quality assurance measures to be performed for the Project.

4. Production of signed and sealed record drawings following completion of construction of the Project.

4.3.3 Detailed Description

The technical proposal submitted by the DBF shall demonstrate a comprehension of the following design aspects:

1. Local subsurface conditions and associated geotechnical data.
2. Open cut excavation and backfilling method of installing pipe.
3. HDD method of installing pipe.
4. Connection of new pipe to existing, in-service utilities.
5. Landscaping and pavement restoration.
6. Maintenance of traffic operations.
7. Dewatering.
8. Erosion and Sediment Control.

4.3.4 Governing Regulations

Occupational Safety and Health Administration. These regulations and guidelines are to be followed by the selected DBF except where explicitly described in this document. The most recent editions of the following publications must be used for the completion of the Project:

1. Broward County Environmental Protection and Growth Management Department – A Consulting Engineer's Guide for a Wastewater Collection/Transmission System Construction License Application
2. Florida Building Code
3. South Florida Water Management District – Environmental Resource Permit Information Manual
4. OSHA Regulations for Construction – Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations
5. OSHA Standards – Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations
6. Federal Highway Administration - Manual on Uniform Traffic Control Devices

4.4 Services and Materials Provided by the City

A project manager will represent the City as the technical representative of the Project.

1. Review of submitted design for the Project.
2. Construction observations and inspections of the Project at will of the City.
3. Participation in the City's Tax Saver Program for the purchase of goods and supplies required for the completion of the Project.

4.5 Existing Underground Utility Information

There are existing underground utilities in the Project site. Limited information on the location of these utilities has been provided in Exhibit D and Exhibit E. The City does not assume responsibility for the accuracy of the provided existing underground utility documents or liability if the locations of these utilities differ from the documents provided. It is the responsibility of the DBF to confirm actual location of existing underground utilities.

4.6 CADD Standards

All submitted design drawings for the Project shall meet the standards set by the City in the "City of Fort Lauderdale Public Works Engineering & Architectural Department CADD Specifications for Project Drawings" (hereinafter referred to as City CADD Standards). The selected DBF will comply with the most recent edition of the City CADD Standards in place at the time of contract execution. Exhibit F includes a copy of the City CADD Standards

4.7 Utilities, Dewatering, Staging and Parking

The selected DBF will be required to pay for all utilities needed for the completion of the Project.

The selected DBF shall only perform dewatering activities after acquiring all applicable permits from regulating agencies with jurisdiction in the Project area. Any dewatering operations performed by the DBF must meet conditions of applicable permits. Any dewatering activities performed by the DBF without proper permits or without meeting permit conditions may result in punitive actions to the DBF by the City and Broward County.

The selected DBF will be responsible for the coordination of parking and staging area with the City prior to mobilization of equipment and crews into the area. Parking and staging areas must remain free of any form of refuse and the removal of any remaining refuse will be the responsibility of the selected DBF.

4.8 Project Meetings

The City shall require meetings throughout the Project which require the participation of the City, selected DBF, all subcontractors, all subconsultants, representatives of governmental agencies with jurisdiction in the Project area, and any others as requested by the City and/or DBF. All meetings shall be held at a central site that is convenient to all parties.

Following the written Notice to Proceed, the DBF shall coordinate with the City to hold a pre-construction meeting. All following meetings shall likewise be organized by the DBF upon instruction from the City. The DBF shall prepare meeting minutes.

4.9 Construction Duration

Time is of the essence for the DBF's performance of the Work. The selected DBF is expected to complete the Project as expeditiously as possible. At minimum, the selected DBF must adhere to the following proposed schedule as set by the City:

MILESTONE	CALENDAR DAYS FROM NOTICE TO PROCEED (COMPLETION DATE)
Assumed Notice to Proceed Date	TBD
Work shall commence	14 days
Substantial Completion of PROJECT	730 days
Final Completion of PROJECT	760 days

Within seven (7) days after notification of award and as a condition precedent to executing the Contract, prior to the start of any work, the DBF shall submit its preliminary construction schedule to the City for approval which shall be consistent with the Schedule in its Proposal. The Schedule shall be written in sufficient detail to show the chronological relationship of all major aspects of the project, including estimated starting and completion dates of various activities, design phase, procurement of materials, scheduling of equipment, and construction phase with a level of detail commensurate with the level of detail in the Proposal. The schedule is subject to approval by the City.

4.10 Permits

It is the responsibility of the DBF to apply for and obtain all permits as necessary to construct the Project.

****END OF SECTION 4****

SECTION 5
SUBMITTAL REQUIREMENTS

5.1 Instructions

5.1.1 The City uses the City's online strategic sourcing platform to administer the competitive solicitation process, including but not limited to soliciting responses, issuing addenda, posting results and issuing notification of an intended decision. There is no charge to register and download the RFP from the City's online strategic sourcing platform. Proposers are strongly encouraged to read the various vendor Guides and Tutorials available in the City's online strategic sourcing platform well in advance of their intention to submit a response to ensure familiarity with the use of the City's online strategic sourcing platform. The City shall not be responsible for a proposer's inability to submit a response by the end date and time for any reason, including issues arising from the use of the City's online strategic sourcing platform.

All proposals must be submitted electronically.

5.1.2 Careful attention must be given to all requested items contained in this RFP. Consultants are invited to submit responses in accordance with the requirements of this RFP. Please read entire solicitation before submitting a proposal. Consultants must provide a response to each requirement of the RFP. Responses should be prepared in a concise manner with an emphasis on completeness and clarity. Consultant's notes, exceptions, and comments may be rendered on an attachment, provided the same format of this RFP text is followed.

5.1.3 All information submitted by DBF shall be typewritten or provided as otherwise instructed to in the RFP. DBFs shall use and submit any applicable or required forms provided by the City and attach such to its response. Failure to use the forms may cause the response to be rejected and deemed non-responsive.

The proposer understands that the information contained in these proposal pages is to be relied upon by the City in awarding the proposed Agreement, and such information is warranted by the proposer to be true. The proposer agrees to furnish such additional information, prior to acceptance of any proposal, relating to the qualifications of the proposer, as may be required by the City

5.1.4 Responses shall be submitted by an authorized representative of the firm. Responses must be submitted in the business entity's name by the President, Partner, Officer or Representative authorized to contractually bind the business entity. Responses shall include an attachment evidencing that the individual submitting the response, does in fact have the required authority stated herein.

5.1.5 In the event of Contract award, all documentation produced as part of the Contract shall become the exclusive property of the City. The Proposer's response to the RFP is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("Public Records Law"). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this RFP and the Contract to be executed for this RFP, subject to the provisions of Chapter 119.07 of the Florida Statutes.

Any language contained in the Proposer's response to the RFP purporting to require confidentiality of any portion of the Proposer's response to the RFP, except to the extent that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the RFP constitutes a Trade Secret. The City's determination of whether an exemption applies shall be final, and the Proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agent, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as public records. In addition, the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as exempt from disclosure or confidential. Proposals purporting to be subject to copyright protection in full or in part will be rejected. The proposer authorizes the City to publish, copy, and reproduce any and all documents submitted to the City bearing copyright symbols or otherwise purporting to be subject to copyright protection.

EXCEPT FOR CLEARLY MARKED PORTIONS THAT ARE BONA FIDE TRADE SECRETS PURSUANT TO FLORIDA LAW, DO NOT MARK YOUR RESPONSE TO THE SOLICITATION AS PROPRIETARY OR CONFIDENTIAL. DO NOT MARK YOUR RESPONSE TO THE SOLICITATION OR ANY PART THEREOF AS COPYRIGHTED.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT: PRRCONTRACT@FORTLAUDERDALE.GOV, 954-828-5002, CITY CLERK'S OFFICE, 100 NORTH ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA 33301)

DBF shall:

1. Keep and maintain public records required by the City in order to perform the service.

2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2022), as may be amended or revised, or as otherwise provided by law.

3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the DBF does not transfer the records to the City.

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

5.1.6 Submittals

All technical and Price Proposals offers to this RFP, shall be submitted electronically via the City's online strategic sourcing platform and will be opened electronically via the City's online strategic sourcing platform at the date and time indicated on the solicitation. PAPER BID SUBMITTALS WILL NOT BE ACCEPTED. BIDS MUST BE SUBMITTED ELECTRONICALLY VIA the City's online strategic sourcing platform.

The DBF should concisely follow the format set out herein and provide all the information requested:

It is the sole responsibility of the Proposer to ensure their proposal is received on or before the date and time stated, in the specified number of copies and in the format stated herein.

5.2 Contents of Qualification Statement/Submittals:

The following information and documents are required to be provided with DBF response to this RFP. Failure to do so may deem your proposal non-responsive or non-responsible. The City deems certain documentation and information important in the determination of responsiveness/responsibility, and for the purpose of evaluating responses. Responses should seek to avoid information in excess of that requested, must be concise, and must specifically address the issues of this RFP. The following checklist is not inclusive of all the information that may be necessary to properly evaluate the response and meet the requirements of the scope of work and/or specifications. Additional documents and information should be provided as deemed appropriate by the Proposer in response to specific requirements stated herein or through the RFP.

5.2.1 Table of Contents

5.2.2 Proposal Contact Person Information

Indicate which firm/company is the Lead Design-Builder whose signature grants authority to bind submitter to the provisions of this RFP.

Identify the following:

- Legal name of proposer(s)
- Federal employee identification (FEIN) number
- Mailing address City State Zip
- Contact person's name
- Title
- Email address
- Phone number
- Fax number

Any firm/company qualifying as a minority entity to this RFP should also be identified in the same manner. If there are multiple firms proposed as one team, each firm must be identified.

5.2.3 Qualification of the Firm

5.2.3.1 Minimum Qualifications

The Proposer shall have the following Minimum Qualifications to be considered eligible to submit a proposal in response to this Solicitation. It is the responsibility of the Proposer to ensure and certify that it meets the Minimum Qualifications stated below.

A Proposer not meeting all of the following criteria may have its Proposal rejected.

- **Specific Experience Requirements**
  Successfully completed at least two (2) collaborative delivery (Design-Build) projects in the last ten (10) years with a contract value of at least $2,000,000.00 of similar Scope and scale.

- **Bonding Capacity**
  The Proposer shall provide evidence of bonding capacity, in the form of a letter from a surety or insurance company, on its letterhead stating that the Proposer is capable of obtaining separate performance and payment bonds to cover a minimum amount of $10,000,000.00.

- **Licenses or Certifications Requirements**
  The Proposer shall be licensed as a General Contractor in the State of Florida at the time of submittal of its RFP shall maintain licensure for the duration of the Design-Build Contract.

  The Proposer's Engineer shall be licensed as a Professional Engineer in the State of Florida and shall maintain licensure for the duration of the Design-Build Contract.

5.2.4 Business Structure

i. Provide a brief introduction narrative letter highlighting the qualifications of the firm in providing the professional services as it relates specifically to the Project;

ii. Corporations, Joint Ventures, LLC or Partnerships – submit a copy indicating when the corporation was organized as a legal entity in the State of Florida, corporation number;

iii. Any firm(s) involved in a joint venture in this Proposal will be evaluated individually. An executed copy of the joint venture agreement must be submitted with the proposal. Percentages of participation of fees must be clearly stated for each joint venture partner;

iv. Include copies of all active State of Florida professional licenses, including professional engineers, State of Florida certifications; State of Florida certified general contractors license with unlimited building classification, held by the Firm under Florida Law to provide the required services;

v. Names of Key Personnel and Role in this project;

vi. Name, title, name of firm, phone number, fax number, and email;

vii. Demonstrate your firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the Insurance Companies' names for both Professional Liability, General Liability, Automobile Liability, Worker's Compensation, and Professional Liability and/or Errors and Omissions, evidencing the dollar amounts of the coverage.

5.2.5 Firm's Workload

For the prime DBF, or in the case of a Joint Venture (JV), list all completed and active projects that DBF or JV has managed within the past five (5) years. In addition, list all projected projects and dollar value that DBF or JV will be working on in the near future.

Projected projects will be defined as a project(s) that DBF or JV has been awarded a contract, but the Notice to Proceed has not been issued. Identify any projects that DBF or JV is working on concurrently and dollar value of remaining work. Describe Vendor's approach in managing these projects. Were there or will there be any challenges for any of the listed projects? If so, describe how Vendor dealt with or will deal with the projects' challenges.

5.2.6 Joint Ventures

If applicant is a joint venture, provide a copy of the joint venture agreement that was filed with the State of Florida. All applicants must comply with Chapter 489 Florida Statutes, as well as the Florida Administrative Code **prior to the proposal submission.**

5.2.7 Financials

- Each page of the financial documents provided should be marked "Confidential" and submitted in a separate envelope;

- List total annual billings for each of the past three (3) calendar years;

- The DBF or JV, each JV member, will furnish annual audited financial reports for the three (3) most recent full financial years, prepared in accordance with Generally Accepted Accounting Principles (GAAP), and all relevant notes. Each page of the financial documents provided should be marked "Confidential". Quick Ratio (liquidity ratio that measures the level of the most liquid current assets available to cover current liabilities) with a minimum value of 1.0 is preferred. Complete balance sheets and income statements must be included. Data provided for parent or child entities related to the applicant firm in lieu of the applicant's data shall not be reviewed, and at the discretion of the City may be considered non-responsive.

5.2.8 Firm's Past Experience

Firms should submit any information they deem appropriate for evaluation of past performance with projects similar in nature to the one under consideration by the City.

- Title of example project;
- Location of example project;
- Client name/owner's representative name, address, phone number, and email;
- Date project started and completed or is anticipated to be completed; Point of contact name and organization which contracted the service who is very familiar with the project and the firm's performance and phone number and email;
- Brief description of Project relevance to this contract;
    - Original budget vs. Final cost
    - Principal elements and special features of the project.
    - Details of project value engineering; cost savings realized; innovative solutions; project time enhancement; value added efforts; etc.
    - Present status of project

5.2.9 Key Personnel

The DBF should provide a maximum of seven (7) resumes of the key staff to be assigned to perform the Work. The resumes provided shall identify the Project Manager, Design Manager, DBF or General Superintendent, Project Quality Control Manager, Scheduler/Project Controls Specialist, Project Health and Safety Manager, at a minimum. These Primary positions shall only serve in one (1) role.

NOTE: The Project Manager must be an employee of the DBF or JV submitting the Proposal and not a Subconsultant or not a Subcontractor. Persons whose resumes are submitted as a Team Member must actually perform the Work unless DBF/JV receives prior approval by the City Project Manager to use a backup Team Member.

Provide an organization chart for proposed Team Member key personnel staff, including subconsultants and subcontractors

5.2.10 Concerning Subconsultants, suppliers, and Others

The amount of work that is sublet by the DBF, including Joint Ventures, shall be limited by the condition that the DBF, or in the case of a Joint Ventures, shall with his own organization, perform at least **forty percent (40%)** of the total dollar amount of the Work to be performed under the Agreement.

5.2.11 Safety

Most recent Experience Modification Rate (EMR) (provided on letterhead from current insurance provider) not greater than 1.0; Five-year average OSHA Total Recordable Incident Rates (TRIR) of less than 3.4; Five-year average OSHA Days Away, Restricted or Transferred (DART) Rate of less than 2.1; and Five-year average OSHA Days Away from Work Case (DAWC) rate of less than 1.0.

5.2.12 Qualifications of the Team

The DBF must identify all design and construction disciplines and specialty consultants that the DBF intends to employ in the design and construction of this Project.

- Name and title of each proposed team member;
- Years' of experience;
- Area of responsibility;
- Firm name and location;
- Education – provide information on the highest relevant academic degree(s) received and areas of specialization;
- Current professional registration; license(s)
- Provide information on any other professional qualifications relating to this team member such as publications, organizational memberships, certifications, training, awards, and foreign language capabilities;

For each key personnel, a minimum of three (3) alternate delivery projects on which they held a key delivery role should be included. Resumes should clearly identify and describe the role of the Key Personnel in each project listed. Resumes shall also identify any specialty or technical process expertise. Resumes should not be more than two (2) pages each on 8.5" x 11" sized paper.

Sub-consultant(s)

DBF must clearly reflect in its Proposal any Sub-consultant including but not limited to the Project Manager, Design Manager, DBF or General Superintendent, Project Quality Control Manager, Scheduler/Project Controls Specialists, Project Health and Safety Manager (collectively, the "Team Members"), proposed to be utilized along with a summary of their background and qualifications, including but not limited to name of the sub-consultant, location of place of business, service(s) the sub-consultant will provide, license (if applicable), two (2) sub-consultant references, ownership, education, and experience. These primary positions shall only serve in one (1) role. The City retains the right to accept or reject any sub-consultant proposed.

5.2.13 Project Manager's Experience

Provide a comprehensive summary of the experience and qualifications of the individual(s) who will be selected to serve as the project managers overseeing the design and construction for the City. Individual(s) must have a minimum of five (5) years' experience in required discipline and have served as project manager on a minimum of three (3) previous occasions. Include their related work experience and qualification and copies of active licenses and certifications. Include the length of tenure with Firm.

All proposed team Project Managers must be committed for the duration of the Project and must have the City's approval prior to replacement.

5.2.14 Example Projects

- Illustrate proposed team member's qualifications preferably where multiple team members worked together in the past five (5) years on similar projects. including projects that involve design, permitting, and construction including:
    - Title and location of project
    - Year started and completed
    - Project owner, point of contact, point of contact phone number, and email
    - Initial cost of project and actual cost at completion
    - Brief description of project and relevance to this project.

- Provide organizational chart of proposed team:
    - Indicate names and titles of all team members and the firm they are

5.2.14 Project Methodology and Approach

- Provide a statement of the firm's understanding of the Project and methodology and approach to managing the Project. Include a plan for completing the specified work including ability to meet time and budget requirements;

- Provide a conceptual design for the proposed Project. Include design, construction, planning, coordination, scheduling, maintainability and any other areas that utilize new or time saving techniques to accomplish the work in a timely manner without sacrificing quality. Include the maintainability of the water main and force main;

- Describe approach to minimizing impact to surrounding neighbors, businesses, and travelling public;

- Describe approach for minimizing lane closures, lanes reductions, maintenance of traffic (MOT) plan, and reducing traffic impacts;

- Describe means and methods for expediting project schedule;

- Provide information on your firm's current workload and how this Project will fit into your workload;

- Describe available facilities, technological capabilities and other available resources you offer for the project.

5.2.15 References

The DBF shall have previous experience in the design, permitting, and construction aspects of the project as described in this RFP in the State of Florida within the last ten (10) years.

DBF shall submit proof of design, permitting, and construction experience for a minimum of three (3) projects of similar scope and scale (or larger), or any information they deem appropriate for evaluation of past performance with projects similar in scope and scale (or larger) to the one under consideration; and shall, for each project listed, including but not limited to:

- Client Name, address, contact person telephone, fax numbers, and email addresses.
- Project name and overall scope.
- Dates of construction.
- Description of work that was self-performed.
- Details of project value engineering; cost savings realized; innovative solutions; project time enhancement; value added efforts; etc.
- Total cost of the construction, estimated and actual.

The DBF shall be responsible for verifying reference contact name, phone number, email addresses, and contact place of employment, submitted as proof of project experience.

Note: Do not simply include City of Fort Lauderdale work or staff as references to demonstrate your capabilities. The Committee is interested in work experience and references other than the City as well.

Proposer shall mark any pages of the submittal it considers proprietary or confidential accordingly. Proposer shall state what proprietary or confidential governing law the Proposer is claiming such relief. Information will be treated as such by the City; provided, however, that the City cannot ensure that this information would not be subject to release pursuant to a public disclosure request. If a request for such information is received, the City will promptly notify the Proposer of such request and it shall be the Proposer's sole burden and responsibility to immediately seek and obtain such injunctive or other relief from the Courts and to immediately serve notice of the same upon the party requesting the public records.

5.2.16 Price Proposal Form

Proposer must submit the Price Proposal Form included in this RFP. In addition to submitting the required Price Proposal Form, the Proposer must include a

separate Schedule of Values for each phase or task of work. This Schedule of Values and Price Proposal form shall also be submitted in electronic Microsoft Excel format with detailed breakouts of pricing and supporting calculations and organizational structure. The price proposal shall be based upon and include any and all costs or expenses to be incurred by the DBF in implementing, fulfilling and completing all aspects of the design-build project. The price proposal, in addition to all direct costs and expenses, shall include all other indirect costs and expenses including but not limited to, such costs as the design-builder's general, administrative and overhead costs, project management and supervisory costs, all fees, changes and taxes, labor, direct and indirect payroll costs, insurance and bond costs, cost of equipment, materials, tools, transportation, and service fee (profit).

5.2.17 Contract Forms

All contract forms must be completed (with all blanks filled in)

a. Sample Insurance Certificate
Demonstrate your firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the Insurance Companies names for both Professional Liability and General Liability and the dollar amounts of the coverage

b. Prime DBF Identification

c. **Non-Collusion Statement**

d. Non-Discrimination Certification Form

e. E-Verify Affirmation Statement

f. Bid Proposal Certification

g. Affidavit of Compliance with Foreign Entity Laws

h. Drug-free Work Place Form

i. **References Form**

j. **Price Proposal Page**

5.3 Before awarding a contract, the City reserves the right to require that a firm submit such evidence of its qualifications as the City may deem necessary. Further, the City may consider any evidence of the financial, technical, and other qualifications and abilities of a firm or principals, including previous experiences of same with the City and performance evaluation for services, in making the award in the best interest of the City.

****END OF SECTION 5****

SECTION 6 EVALUATION AND SECECTION CRITERIA

6.1 Evaluation Criteria and Scoring (100 Percentage)

Design-Build Team's responses to this RFP will be evaluated and ranked by an RFP Evaluation Committee. Submittals shall be evaluated based upon the information and references contained in the proposals as submitted.

CRITERIA	PERCENTAGE
Qualifications of the Firm & the Team	30
Project Methodology & Approach	30
Price Proposal	30
References	10
TOTAL	**100**

6.2 Evaluation Procedure

Committee

Evaluation of the submittals will be conducted by an Evaluation Committee, consisting of a minimum of three (3) members of City Staff, or other persons selected by the City Manager or designee. All committee members must be present at scheduled evaluation meetings. Submittals shall be evaluated based upon the information and references contained in the Proposals as submitted. Any firm(s) involved in a joint venture in its Proposal will be evaluated individually, as each firm of the joint venture would have to stand on its own merits.

Scoring and Ranking

The City uses a mathematical formula to determine the scoring for each individual responsive and responsible firm based on the weighted criteria stated herein. Each evaluation committee member will rank each firm by criteria, giving their first ranked firm as number 1, the second ranked firm as number 2, and so on. The lowest final ranking score will determine the recommendation by the evaluation committee to the City Manager.

Clarification

During the evaluation process, the City has the right to require any clarification it needs in order to understand the DBF's view and approach to the project scope of the work. Any clarifications to the Proposal made before executing the contract will become part of the final DBF contract.

Negotiations

The City Manager or designee reserves the right to conduct contract negotiations with the selected responsible, responsive DBF. If successful, the DBF and City will enter into a contract for the work. All proposers are considered fully informed as to the intentions of the City regarding the timeframe to prepare and complete contract negotiations.

If the City is unable to negotiate a satisfactory design-build contract with the design-build firm considered to be the most qualified, negotiations with that design-build firm shall be formally terminated. Upon termination of said negotiations, negotiations shall then be undertaken with the second ranked firm, with this process being repeated until an agreement is reached which is then recommended and formally approved by the City Commission or until the short-list is exhausted in which case a new RFP may be undertaken.

The City may withdraw this RFP, reject qualifications or any portion thereof at any time prior to an award, and is not required to furnish a statement of the reason why a particular qualification was not deemed to be the most advantageous to the City.

Consult Design Criteria Professional

The City shall consult with the design criteria professional who prepared the package concerning evaluation of the proposals, approval of detail work and drawings for the project and compliance of project construction with the package.

Award

The City reserves the right to award a contract to that DBF which will best serve the interest of the City. The City reserves the right, based upon its deliberations and in its opinion, to accept or reject any or all submittals. The City also reserves the right to waive minor irregularities or variations of the submittal requirements and RFP process and any informality in any proposal and to reject any or all proposals. The City reserves the right to reduce or delete any of the proposal items.

Upon award of a Contract, in accordance with Florida Statutes, by the City Commission, the City Manager is authorized to execute the Contract on behalf of the City.

At time of award of contract, the City reserves the right to set a guaranteed maximum price limit that may be expended on this project. Contract quantities of any or all items may be increased, reduced, or eliminated to adjust the contract amount to coincide with the amount of work necessary or to bring the contract value to within the established limit.

Exceptions

Any proposer that objects to any element of the solicitation documents including but not limited to the RFP, DCP, drawings, construction time frame, sample agreement, general terms and conditions, etc. should state those objections in the submittal.

****END OF SECTION 6****

SECTION 7
APPENDIX ATTACHMENTS

Design Criteria Package (DCP) and plans
Site aerial images

****END OF SECTION 7****

SECTION 8
PRICE PROPOSAL FORM

RFP # 541/ PROJECT # P12687:

DESIGN-BUILD SERVICES FOR FEDERAL COURTHOUSE PARKING GARAGE

DESIGN

1. **Design Development** $_____
2. **Construction Administration** $_____
3. **Development Review Committee Meetings and Public Hearings** $_____

SUB-TOTAL DESIGN COSTS $_____

CONSTRUCTION

4. **Earthwork & Site Work** $_____

   This item needs to include the cost of Erosion Sediment Control, Site Clearing, Demolition, Excavation and Removal, Site Protection, Site Work, Stormwater Management, Utility Connections, Landscaping, Sidewalks, Ramps & Driveways.

5. **Garage Build** $_____

   This item needs to incorporate the methods of construction for the Foundation, Concrete Slab on Grade, Pre-Cast Structure, Retaining Walls, Miscellaneous Masonry, Miscellaneous Metals, HVAC, Finishes, Caulking/Sealants, Waterproofing, Communications, Alarms & Security, Plumbing, Electric, Stairs and Elevator enclosures, Tower Glazing and any and all other items included in the DPC Plans.

Additional requirements (if applicable)

Façade Upgrade $_____

PARC System $_____

Wayfinding $_____

Passenger Elevators	$_____
Fire Suppression System	**$**_____
Electric Vehicle Charging Stations (Make Ready)	**$**_____
Bonding & Insurance	**$**_____
Testing & Inspection	**$**_____
SUBTOTAL CONSTRUCTION COSTS	**$**_____

PERMIT AND MOT ALLOWANCE
(For both Design and Construction)

Maintenance of traffic	$ **30,000.00**
Permit fees	$ **10,000.00**
Total	**$40,000.00**

TOTAL PROPOSAL – Design, Construction, and Permit and MOT Allowance Costs (proposed "Contract Price"). Enter this figure in the Item Response Form, to indicate your total price.

_____
(AMOUNT IN WORDS)

$_____
(FIGURES)

1. The prices listed in the Price Proposal Form shall include the total cost to complete the Work including but not limited to materials, labor, equipment, profit, bonds, insurances, etc., as necessary to ensure proper execution of the design-build services and product requested by the City of Fort Lauderdale. Any pricing, quantities, costs or services that are not listed above, and are known to be required, must be added by the Proposer and listed on a separate sheet and included in the total.

2. I hereby certify that I am authorized to act on behalf of the firm, individual, partnership, corporation or association making this proposal and that all statements made in this document are true and correct to the best of my knowledge. I agree to hold this proposal open for a period of one hundred and eighty (120) days from the deadline for receipt of proposals.

3. I understand and agree to be bound by the conditions contained in the Request for Proposal and shall conform with all requirements of the Request for Proposal.

This proposal is submitted by:

Corporation Name:_____
(Please Print)

By:_____

City of Fort Lauderdale • Procurement Services Division
101 NE 3rd Avenue, Suite 1650 • Fort Lauderdale, Florida 33301
954-828-6099 • Fax 954-828-5576 • purchase@fortlauderdale.gov

ADDENDUM NO. 1

RFP No. 541
Title: Federal Courthouse Parking Garage

Issue Date: 10/16/2025

Purpose

This Addendum is issued to provide additional documents requested during the **Pre-Bid Conference held on October 16, 2025, at 10:00 a.m.**

1. Additional Documents

The following documents have been added to the solicitation in **INFOR** and are available for download:

- Written Design Narratives
- Geotechnical (Soils) Reports
- Exterior Façade Information

2. Clarification

Please note that responses provided verbally or by email are **not binding** unless they are formally issued in writing through the City's **INFOR** procurement platform.
It is the **Proposer's responsibility** to review all Addenda and submit any questions or requests for clarification **through INFOR only**.

All other terms, conditions, and specifications remain unchanged.

Prepared By: I Inessa Rubin
Title: Senior Procurement Specialist

Acknowledgment of Receipt

Company Name:
_____
(please print)

Bidder's Signature:
_____

Date: _____

City of Fort Lauderdale • Procurement Services Division
101 NE 3rd Ave, Unit 1650, Fort Lauderdale, Florida 33301
954-828-6099 • Fax 954-828-5576 • purchase@fortlauderdale.gov

ADDENDUM NO. 2

RFP No. 541
TITLE: Federal Courthouse Parking Garage

Issue Date: October 29,2025

This Addendum is issued to make the following changes to the solicitation:

1. The **opening date** has been extended to **November 26, 2025**.
2. The **Q&A period** has been extended to **November 19, 2025**.

All other terms, conditions, and specifications remain unchanged.

Inessa Rubin
Sr. Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____

City of Fort Lauderdale • Procurement Services Division
101 NE 3rd Ave, Unit 1650, Fort Lauderdale, Florida 33301
954-828-6099 • Fax 954-828-5576 • purchase@fortlauderdale.gov

ADDENDUM NO. 3

RFP No. 541
TITLE: Federal Courthouse Parking Garage

Issue Date: November 6,2025

This Addendum is issued to make the following changes to the solicitation:

1. An Excel version of the Price Proposal Form has been added under the solicitation attachments for convenience. Section 8 of the Solicitation (Price Proposal Form) remains the official and mandatory submission document. In the event of any discrepancy between Section 8 of the solicitation and the Excel version, the prices contained within the solicitation shall prevail.

All other terms, conditions, and specifications remain unchanged.

Inessa Rubin
Sr. Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____

City of Fort Lauderdale • Procurement Services
101 NE 3rd Ave, Unit 1650 • Fort Lauderdale, Florida 33301
Ph: 954-828-5933 • Fax 954-828-5576 • Email: purchase@fortlauderdale.gov

ADDENDUM NO. 4

RFP No. 541
TITLE: Federal Courthouse Parking Garage

ISSUED: November 19, 2025

This addendum is being issued to make the following change(s):

Words in ~~strikethrough~~ type are deletions from existing text. Words in **bold underlined** type are additions to existing text.

1. Changes to Section 1, Introduction, Item 1.7 – Concerning Sub-Contractors, Suppliers, and Others

1.7 Concerning sub-Contractors, Suppliers, and Others

The amount of work that is sublet by the Design Build Firm shall be limited by the condition that the Bidder shall, with his own organization, perform at least ~~**forty**~~ **five percent** (~~40~~ **5**%) of the total dollar amount of the Work to be performed under the Agreement. **The percentage of prime contractor participation refers only to construction activities performed directly by the prime contractor's own organization, including project management, site supervision, labor and equipment. The percentage of five percent (5%) does not include design, architectural or engineering services, nor does it need to include surveying/ testing/ commissioning.**

2. Changes to Section 3, Special Conditions, Item 3.12 – Insurance Requirements

Property Coverage (Builder's Risk)
For buildings/structures under construction, coverage must be afforded in an amount not less than 100% of the total project cost, including soft costs, with a deductible of no more than **five percent (5%)** ~~$25,000~~ per

each claim. **As the Owner of the Project, the City reserves the option to procure the Builder's Risk insurance for this Project.**

Coverage form shall include, but not be limited to:

- All Risk Coverage including Flood and Windstorm with no coinsurance clause
- Any separate Flood and/or Windstorm deductibles are subject to approval by the City
- Waiver of Occupancy Clause Endorsement, which will enable the City to occupy the facility under construction/renovation during the activity
- Storage and transport of materials, equipment, supplies of any kind whatsoever to be used on or incidental to the project
- Equipment Breakdown for cold testing of all mechanized, pressurized or electrical equipment

This policy shall insure the interests of the owner, contractor, and subcontractors in the property against all risk of physical loss and damage and name the City as a loss payee. This insurance shall remain in effect until the work is completed and the property has

3. Changes to Section 5, Submittal Requirements, Item 5.2.10 – Subconsultants, Suppliers, and Others

5.2.10 Concerning Subconsultants, suppliers, and Others

The amount of work that is sublet by the DBF, including Joint Ventures, shall be limited by the condition that the DBF, or in the case of a Joint Ventures, shall with his own organization, perform at least **five** ~~forty~~ percent (~~40~~ **5**%) of the total dollar amount of the Work to be performed under the Agreement**. The percentage of prime contractor participation refers only to construction activities performed directly by the prime contractor's own organization, including project management, site supervision, labor and equipment. The percentage of five percent (5%) does not include design, architectural or engineering services, nor does it need to include surveying/ testing/ commissioning.**

4. Changes to the Sample Design Build Agreement, Section 18.3 – Insurance Requirements

City of Fort Lauderdale • Procurement Services
101 NE 3rd Ave, Unit 1650 • Fort Lauderdale, Florida 33301
Ph: 954-828-5933 • Fax 954-828-5576 • Email: purchase@fortlauderdale.gov

Property Coverage (Builder's Risk)

For buildings/structures under construction, coverage must be afforded in an amount not less than 100% of the total project cost, including soft costs, with a deductible of no more than ~~$25,000~~ **five percent (5%)** each claim. Coverage form shall include, but not be limited to:

- All Risk Coverage including Flood and Windstorm with no coinsurance clause
- Any separate Flood and/or Windstorm deductibles are subject to approval by the City
- Waiver of Occupancy Clause Endorsement, which will enable the City to occupy the facility under construction/renovation during the activity
- Storage and transport of materials, equipment, supplies of any kind whatsoever to be used on or incidental to the project
- Equipment Breakdown for cold testing of all mechanized, pressurized or electrical equipment

This policy shall insure the interests of the owner, contractor, and subcontractors in the property against all risk of physical loss and damage and name the City as a loss payee. This insurance shall remain in effect until the work is completed and the property has been accepted by the City.

All other terms, conditions, and specifications remain unchanged.

Inessa Rubin
Sr. Procurement Specialist

Company Name:
_____
(please print)

Bidder's Signature:
_____

Date: _____

City of Fort Lauderdale • Procurement Services
101 NE 3rd Ave, Unit 1650 • Fort Lauderdale, Florida 33301
Ph: 954-828-5933 • Fax 954-828-5576 • Email: purchase@fortlauderdale.gov

City of Fort Lauderdale • Procurement Services Division
101 NE 3rd Ave, Unit 1650, Fort Lauderdale, Florida 33301
954-828-6099 • Fax 954-828-5576 • purchase@fortlauderdale.gov

ADDENDUM NO. 5

RFP No. 541
TITLE: Federal Courthouse Parking Garage

Issue Date: November 25,2025

This Addendum is issued to make the following changes to the solicitation:

1. The **opening date** is hereby extended to **Tuesday**, **December 2, 2025, at 2:00 PM**.

All other terms, conditions, and specifications remain unchanged.

Inessa Rubin
Sr. Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____

Executive Summary Report

Of

Event: 541-5 - Federal Courthouse Parking Garage

Buyer: INESSA RUBIN

Date Range: 10/10/2025 12:00:00 PM - 12/02/2025 02:00:00 PM

Suppliers Notified: 4

All Suppliers Responding: 3

Suppliers Responding

Supplier	Contact	Phone Number	E Mail	City	State Or Province	Total Bid Amount	Total Awarded	Response Attachment Exists
Gulf Building LLC	Giovanna Alessi	954-492-9191	gioa@gulfbuilding.com	Fort Lauderdale	FL	15,730,342.00	0.00	Yes
FINFROCK	Cara Strayer	4072952073	cstrayer@finfrock.com	Apopka	FL	11,829,598.32	0.00	Yes
WB Construction LLC	mike cento	618-795-0048	mcento@wbconstruction.us	Andalusia	AL	14,950,000.00	0.00	Yes

Event Lines And Responses

Item	Description	Unit of Measure	Quantity
DESIGN SERVICES PARKING GARAGE-	This item is for design development, construction administration, and DRC meetings and public hearings. Items 1-3 of the Price Proposal.	LS	1.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Gulf Building LLC	1.0000	LS	990,089.000	0.00
FINFROCK	1.0000	LS	678,600.000	0.00
WB Construction LLC	1.0000	LS	747,000.000	0.00

Item	Description	Unit of Measure	Quantity
CONSTRUCTION SERVICES-PARKING-	Construction of Garage, per the DCP. This item is to include Earthwork &Site Work and the construction of the garage. Items 4 &5 of the price proposal page.	LS	1.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Gulf Building LLC	1.0000	LS	11,254,910.000	0.00
FINFROCK	1.0000	LS	9,103,970.370	0.00
WB Construction LLC	1.0000	LS	14,163,000.000	0.00

Item	Description	Unit of Measure	Quantity
ADDITIONAL REQUIREMENTS-	This item includes items such as facade upgrade, PARC system, Wayfinding, Passenger elevators, fire suppression system, electric vehicle charging stations, bonding &insurance, and testing &inspections.	LS	1.0000

Responses

Supplier	Bid Quantity	Unit of Measure	Unit Price	Award Amount
Gulf Building LLC	1.0000	LS	3,485,343.000	0.00
FINFROCK	1.0000	LS	2,047,027.950	0.00
WB Construction LLC	1.0000	LS	40,000.000	0.00

Header Questions And Responses

QUESTION
Did you complete and attach the required forms?

Question Responses		
Supplier	Name	Answer
1771	Gulf Building LLC	Yes
2012	FINFROCK	Yes
5331	WB Construction LLC	Yes

QUESTION

Confirm your understanding that the attached Anti-Human Trafficking Affidavit will be required at the time of contract execution.

Question Responses		
Supplier	Name	Answer
1771	Gulf Building LLC	Yes
2012	FINFROCK	Yes
5331	WB Construction LLC	Yes

QUESTION

Did you list at least three reference companies with contact names and emails?

Question Responses		
Supplier	Name	Answer
1771	Gulf Building LLC	Yes
2012	FINFROCK	Yes
5331	WB Construction LLC	Yes

Q And A

Supplier	Question	Answer
West Construction, Inc.	What is the estimated or set budget for this project?	Estimated opinion of probable cost is $12,693,855.00.

continued...

Supplier	Question	Answer
Gulf Building LLC	There are two items labeled 5.2.14 in the response criteria. Please confirm whether both sections should retain the same number, or if we should renumber this and the subsequent sections for consistency.	The section number was repeated in error.
Gulf Building LLC	BOD Spec 12.7.1, 2.a. and 2.b., give conflicting directions on painting spandrels, columns, and beams. Please clarify which faces are to be painted.	All exposed surfaces are to be painted, including but not limited to columns, spandrels, and beams.
Gulf Building LLC	Please confirm if any prevailing wage or Davis-Bacon requirements apply to this project.	No, Davis-Bacon or prevailing wage requirements do not apply to this project.
Gulf Building LLC	RFP 5.2.14 asks for a 'conceptual design'. Since the DCP already includes garage drawings and the submittal is due in 3 weeks, please clarify what is expected.	Facade treatment concept that utilizes objectives outlined in the DCP narrative section 4, architecture, and complements the Federal Courthouse design. The included drawings are a basis of design, and it is the responsibility of the Design/Builder to submit their intended design solution that meets the submission requirements.
Gulf Building LLC	Please confirm that we are to provide pricing for only one of the three façade options outlined in the design criteria.	This will be part of the Design Build recommendations, the Design Criteria Package provides the material specs for the materials, but the design can be incorporated into Design Build.
Gulf Building LLC	Please clarify how we should indicate which façade option was used in our pricing on the bid form, as the form does not currently request this information.	The City prefers the material, as it has been the recommendation of the planning department. The design for the façade needs to include the pricing for the materials on the technical specifications provided on addendum A.
Gulf Building LLC	Is there a proposed Structural Foundation plan available?	Included within the DCP Appendix B “Concept Plans” — not a final foundation design. The selected DBF must develop full structural design under the DCP.
Gulf Building LLC	In what condition will the Courthouse Contractor be leaving the garage site?	Per DCP narrative, garage site is adjacent to courthouse parcel; no detailed turnover condition stated. Advise coordination with PM for confirmation.
Gulf Building LLC	Please confirm that the intended Contract type is a fixed lump sum and not a GMP.	Please see Section 3 – Special Conditions, Section 3.5. The intended contract type is a Not-To-Exceed (NTE) Guaranteed Maximum Price (GMP) contract.

Supplier	Question	Answer
Gulf Building LLC	What criteria will be used to score the 30 points for the price component?	The price component will be scored on a comparative basis. The proposer submitting the lowest total proposed price will be assigned a score of 1. The proposer with the second lowest proposed price will be assigned a score of 2, and the remaining proposers will be scored sequentially in ascending order, with the highest proposed price receiving the highest numerical score.
Gulf Building LLC	Please confirm that the Courthouse will be open/occupied before the start of Garage construction instead of after, per Section 1.2 of the Design Criteria.	Per DCP §1.2, courthouse will be operational before start of garage construction.
Gulf Building LLC	Section 1.2 of the Design Criteria states that the City has not approved the drawings & they are provided “for reference only”. Please confirm that we are to utilize these drawings to provide a price proposal.	Confirm: Yes, they are to be used as the basis for pricing and design intent reference.
Gulf Building LLC	How/where is the Garage’s sanitary sewer system intended to be tied into the City’s sewer main(s)?	Needs PM input. DCP notes City utility connections but doesn’t specify manhole location.
Gulf Building LLC	Please confirm that all glazing is to be spandrel glass per Section 1.3 of the Design Criteria.	Confirm per DCP §1.3 Architectural — yes, spandrel glass type as indicated.
Gulf Building LLC	Please confirm that all concrete reinforcement for the Project is to be epoxy-coated, per Section 5.2 of the Design Criteria.	Confirm per DCP §5.2 Structural Requirements — yes.
Gulf Building LLC	Is an architectural ceiling required in the level 5 elevator lobbies?	Architectural treatment of the level 5 lobby ceilings is not required. Ceilings can be painted concrete with ceiling mounted lighting.
Gulf Building LLC	If there is a conflict between the written Design Criteria narratives and the drawings, which takes precedence?	The written Design Criteria narratives shall govern. Please notify the City if any discrepancies are identified between the Design Criteria and the drawings.
Gulf Building LLC	Section 9 of the Design Criteria suggests that the fire protection system should consist of only a wet standpipe system; however, the drawings show a fully sprinklered building. Which is correct?	Since the addition of EV parking spaces per the direction of the City of Fort Lauderdale, the garage shall be sprinklered as shown on the Fire Protection drawings.
Gulf Building LLC	Is landscape an acceptable screening method for the Lift Station?	Yes (Suggested tall planting to surround the chainlink fence with an architecturally designed gate.)
Gulf Building LLC	Is spray-applied insulation required at the underside of the deck at the Electrical Room, Elevator Control Rooms, and at 5th-level elevator lobbies, per Section 12.5.2.C.1 of the Design Criteria?	DCP §12.5.2.C.1 confirms yes, at the areas listed.

Supplier	Question	Answer
Gulf Building LLC	Are wheel stops required within the garage?	City standard — typically no, per ADA-compliant curb stops only if noted; DCP silent. You can note “not specifically required unless shown.”
Gulf Building LLC	Are pipe guards required for exposed vertical piping within the garage?	Pipe guards (bollards or protective sleeves) are not specifically detailed in the Design Criteria Package (DCP). However, per standard City of Fort Lauderdale design and safety practices, vertical piping exposed to potential vehicle impact within the parking area should be protected in accordance with FBC Section 406.4.3 and typical parking garage standards. Therefore, the Design-Build Firm should include protective guards where piping or equipment is exposed to vehicular movement areas as part of their design and cost proposal.
Gulf Building LLC	Will access to the Courthouse “Service Courtyard” immediately west of the Garage be available during construction?	No. But with advance notice and coordination, if needed temporary access may be granted. (DBF will be required to acquire their own staging area for the construction of the garage, parking and storage of materials due the limited space of the site.)
Gulf Building LLC	The Price Proposal Form includes a line item for the PARC system; however, no system is shown on the drawings, and per Section 12.9 of the Design Criteria, this equipment is to be provided by the City. What is this line item to include?	he City doesn't have a preference for a particular system. Future EOR can make recommendation. Primarily the cost for infrastructure for PARC System installation.
Gulf Building LLC	Please elaborate on how the City intends to calculate the 40% of self-performed work requirement noted in the RFP, as the majority of the Contract Amount would include the design services and precast for the garage.	The 40% self-performed work requirement means that the Design-Build Firm (DBF) must perform, with its own forces and organization, at least forty percent (40%) of the total dollar amount of the Work under the Agreement.
FINFROCK	Section 5.2.9 limits submittals to seven (7) key staff resumes, while Section 5.2.12 requests additional team and subconsultant resumes. Please confirm if only seven total are allowed or if extras may be included.	Please see Section 2- General conditions-GC-19
FINFROCK	Sections 5.2.8, 5.2.9, 5.2.12, 5.2.13, and 5.2.14 request similar information on key personnel, qualifications, and projects. Should these be addressed separately or consolidated to avoid duplication?	Please review each section carefully and provide the requested information. To avoid duplication, you may consolidate responses as long as the documents are clearly labeled to correspond with the specific requirements of each section.

Supplier	Question	Answer
FINFROCK	Section 5.2.14 appears to end abruptly ("...Indicate names and titles of all team members and the firm they are..."). Can the City please confirm if there is missing content at the end of this section and, if so, provide the full text?	Confirmed; text cutoff is a formatting issue — no additional content intended.
Gulf Building LLC	Section 5.2.17 references Form B. Prime DBF Identification, which was not included in the Required Forms package. Please clarify whether this is a form that will be provided or what information is being requested in this section.	Form B – Prime DBF Identification was referenced in Section 5.2.17 -there is no separate form required beyond what is already included in the Required Forms Package. Proposers should instead provide, within their proposal narrative, the information identifying the Prime Design-Build Firm (DBF)—including the firm's legal name, address, contact information, license type/number, and key team members or subcontractors, as outlined in Section 5.2.17."
Gulf Building LLC	Will the City be providing a Proposal Bond Form or will an AIA bond form suffice?	Please see Section 3-11 of the Special Conditions.
Brasfield & Gorrie	During the pre-proposal meeting, discussion was had regarding the City's plan for expediting permits for this project. Please provide further details offerors may use for planning the overall proposed performance of the Design and Consruction work e	Efforts will be made with the Building Department and Planning Division to helo expedite the review process, since there is a need for the use of the garage as soon as possible.
Brasfield & Gorrie	Is this project planned to include any provisions for Owner Direct Purchase (ODP) or other tax exemption status(es)? If yes, please provide details.	An Owner-Direct Purchase (ODP) program will apply to this project. The Electric Vehicle (EV) Charging Stations and Parking Access and Revenue Control (PARC) System will be provided directly by the City/Owner.
Brasfield & Gorrie	Is this project subject to City permitting only, or are any County permits required? If County permits (or other non-city permits) are required please identify them by type.	City of Fort Lauderdale primary jurisdiction; County review only if specialized (e.g., Broward Environmental, Health Dept. if applicable).
Brasfield & Gorrie	The parking garage will be constructed on an extremely tight site. Is it correct to assume the only point of access to the site is off of S.E. 11th Street?	Yes — per site plan in Appendix B.
Brasfield & Gorrie	The parking garage will be constructed on an extremely tight site. What is the City expecting to receive from offerors regarding logistics plans to ensure no interference with directly neighboring property(ies) and nearby residential property(ies).	City expects narrative addressing staging, delivery coordination, and neighbor impacts.

Supplier	Question	Answer
Brasfield & Gorrie	The parking garage will be constructed on an extremely tight site. The US Courthouse is under construction now, when is it supposed to be completed, occupied and in use?	The courhouse building is set to be completed in March 2026. We have not been given the date for their move in.
Brasfield & Gorrie	What will be installed on the border between the US Courthouse site and the parking garage structure of the courthouse scope of work? Is there any requirement for the new parking garage to have solid elements or secure elements on any side?	The federal courthouse will have its own fence. The parking garage is will be open to public. There are no requirements for solid elements other than the façade.
Brasfield & Gorrie	It is understood that the property is owned by the federal government and will be leased to the city. Please confirm all inspections are by the city. Are there any federal acceptance requirements not indicated in the documents?	Confirm: City will perform inspections; no separate federal acceptance process noted.
Brasfield & Gorrie	The parking garage will be constructed on an extremely tight site. There is a lift station denoted at the south side of the property. Please confirm whether this area can or cannot be accessed during construction for logistics, staging, etc.	The lift station area cannot be used for staging. Access will be provided only during the enclosure of the lift station with Public Works coordination.
Brasfield & Gorrie	The US Courthouse included in the renderings appears to be not the design that is being constructed. The RFP indicates to provide a design complimentary to the courthouse. Please provide the most current concepts.	Most recent rendering from Couthouse is bein added to this RFP.
Brasfield & Gorrie	The RFP includes the 95% DCP. Contrary to Florida Statutes 287.055, the DCP is not "...sealed by a design criteria professional employed by or retained by the city" as indicated to be a requirement. Will there be a 100% DCP package? When?	City issued 95% DCP; final sealed DCP will be completed prior to NTP for design.
Brasfield & Gorrie	Per Florida Statutes 287.055, "the agency shall select in order of preference no fewer than 3 firms deemed to be the most highly qualified to perform the required services." Is the project awardable if less than 3 firms propose?	Yes. The project may be awarded even if less than 3 firms respond.
Brasfield & Gorrie	Please confirm the City will consider alternative design concepts and related offers that vary from the DCP provided in the RFP.	Confirmed, the City anticipates that some design changes may be necessary during the course of the project. Alternative design concepts that vary from the Design Concept Package (DCP) provided in the RFP will be considered for review and approval by the City.

Supplier	Question	Answer
Brasfield & Gorrie	The 40% self peform requirement (or $4.8 million of the City's $12m estimated cost) is unusually high and may preclude some qualified offerors from competing. Please consider removing the 40% requirement.	The City will not consider removing this requirement at this time.
Brasfield & Gorrie	1.10 labeled, Audit of Contractor’s (and Subcontractor's) Records, asserts full and open records requirements subject to audit. Please clarify if the intent of this section is a cost reimbursable type of contract vs a lump sum / fixed price.	Please clarify the question regarding the intent of Section 1.10 and its relationship to contract type, so the City can provide an accurate response.
Brasfield & Gorrie	Please clarify the intent of the statement on page 12 "the (city) project manager shall have full control and direction of the Work in all respects."	City retains authority over direction and acceptance, not day-to-day contractor control.
Brasfield & Gorrie	RFP Page 12 states "the contractor shall not sublet, any part of the Work without written consent of the (city) Project Manager. This implies the City intends to participate in subcontractor selection. Is this correct?	Subletting requires written consent; City review for transparency only, not direct participation in selection.
Brasfield & Gorrie	Notice to Proceed - please advise if there will be a single NTP for this project at the time of award or if the City anticipates separate NTP for (1) design, (2) early work packages, (3) full construction (or others as anticipated).	Anticipated single NTP; phased NTPs may be issued if determined necessary.
Brasfield & Gorrie	Please clarify whether the project manager, scheduler, design manager, and quality control manager are required to be onsite full time.	Must be available full-time during active construction; remote support acceptable during design phase.
Brasfield & Gorrie	The price form includes Development Review Committee Meetings and Public Hearings. Please identify the design build contractors scope of work to support these and the quantity of meetings.	Confirm: DBF to provide design support (presentations, exhibits, attendance). Quantity to be coordinated with City Planning; typical 2–3 meetings.
Brasfield & Gorrie	To clarify the previously asked question: The RFP and contract reference "GMP" and "audit" signifying the contract to be open book or similar type of reimbursable contract. If the contract will be lump sum, these terms should be changed accordingly.	Contract is Not-to-Exceed GMP (open-book), not lump-sum; wording remains accurate.
Gulf Building LLC	The Price Proposal Form includes one line item for Façade Upgrade, however there are 3 option is the dwgs for the façade upgrade. Please clarify the desired pricing for this line item.	All 3 options are using the same material, which is included in the RFP. Keynemaile Architectural Mesh is the preferred option. The design will be up to the new Design team

Supplier	Question	Answer
Gulf Building LLC	Please provide the contact information for the specific individual you worked with at Kaynemaile to develop the exterior façade options, as we've been unable to reach them for pricing.	Jeffrey Hentz Kaynemaile Architectural - USA Division Ph: 407.466.1320 www.kaynemaile.com
Gulf Building LLC	DCP 12.8.1, Item 5, calls for electric entrance and exit signs. Please futher clarify what is specifically expected for this requirement.	Electric entrance and exit signs for means of egress/ingress for pedestrians and vehicles.
Gulf Building LLC	Please clarify the number of future EV charging spots required.	We need the infrastructure for 4 EV Charging Stations.
Gulf Building LLC	As a follow-up, please confirm that we are required to use the specified manufacturer (Kaynemaile) and material (polycarbonate mesh) for the exterior façade, while selecting one of the three design options as our preferred solution.	Confirm: Yes, specified manufacturer and material per DCP §12.8.
Gulf Building LLC	Of the three façade options provided, is there one preferred by the City?	No. The material approved which is Keynemaile Architectural Mesh is the preferred method.
Gulf Building LLC	Has the City received pricing from Kaynemaile for the specified façade materials, and if so, can this information be shared with all potential bidders?	We have not received pricing from Kaynemaile
Gulf Building LLC	Per page 22 of 56 of the RFP, cost savings below the GMP will be shared between the Owner & DBF. What is the saving % split?	The specific percentage split of cost savings below the Guaranteed Maximum Price (GMP) has not been predetermined by the City. As stated in the RFP, any cost savings realized below the final accepted GMP will be shared between the City (Owner) and the Design-Build Firm (DBF); however, the proposed savings allocation methodology and percentage should be clearly described in the proposer's Cost Proposal for the City's review and potential negotiation prior to contract award. The City reserves the right to accept, modify, or negotiate the proposed split as part of the final contract terms.
Gulf Building LLC	Page 29 of 56 of the RFP requires the DBF to provide Builder's Risk coverage with a maximum $25K deductible. This is not possible for a windstorm policy claim. What is the desired windstorm deductible?	A 5% Named Windstorm deductible is acceptable for this Project. Any separate Flood and/or Windstorm deductibles remain subject to approval by the City's Risk Manager. Refer to addendum No. 4.

Supplier	Question	Answer
Gulf Building LLC	Who is responsible for payment of any deductible associated with a Builder's Risk claim?	The Design-Build Firm shall be responsible for payment of any deductible associated with a Builder's Risk claim.
Gulf Building LLC	Per Section 5.2.6 of the RFP, the included Price Proposal Form is to be provided in Excel format. Please provide the Excel file for the form.	"The Price Proposal Form is provided in Section 8 of the RFP. Proposers must complete this form and also prepare a separate detailed Schedule of Values in Microsoft Excel format. The Schedule of Values should provide breakouts by phase or task, showing supporting calculations and aligning with the totals listed on the Price Proposal Form. The City will not issue a separate Excel template for the Schedule of Values. Proposers may use their own format provided it includes all cost components required under Section 5.2.16."
Gulf Building LLC	Are the overhead high-voltage electrical lines running on the north side of SE 11th Street being relocated/removed as part of the Courthouse scope of work?	Yes and upcoming GC will need to help coordinate the relocation with FPL.
Gulf Building LLC	Are the overhead high-voltage electrical lines running on the north side of SE 11th Street being relocated/removed as part of the Courthouse scope of work?	Owner is currently working with FPL to relocate a conflicting pole, but the lines will remain as is.
Gulf Building LLC	Should the combined total of Event Line Responses 1–3 equal the amount entered on the "Total Proposal" line of the Price Proposal Form? If so, please clarify which line item should include the Permit and MOT Allowance.	Yes — the combined total of Event Line Responses 1–3 (Design) and the Construction section totals should equal the amount entered on the "Total Proposal" line. The Permit and MOT Allowance should not be added under any specific design or construction line item; it stands alone as its own allowance and is then included in the final Total Proposal (Contract Price) calculation.
Gulf Building LLC	Please clarify required elevator capacity and travel speed.	The standard elevator specification for this type of project is typically 200 feet per minute (fpm) with a maximum weight capacity of 2,500 pounds. However, the final elevator selection—including speed, capacity, and type—should be determined by the design engineer. It is the engineer's responsibility to evaluate the project requirements and select the elevator system that best aligns with their overall design intent and project operational needs.

Supplier	Question	Answer
Brasfield & Gorrie	•Section GC - 17 - CITY SECURITY-CONTRACTOR AND SUBCONTRACTOR EMPLOYEE INFORMATION. Given the nature of the work being a parking garage, will the City consider waiving this cumbersome security requirement?	No, the City will not consider waiving this requirement. All work performed within City property must comply with all applicable safety and security standards. During construction, the Contractor shall submit a Safety Plan to the Project Management (PM) Team for review and approval prior to commencement of work.
Gulf Building LLC	Dwg E100 FA Systems Notes state on #14 that the FACP shall be “Edwards EST-4”, Will Notifier or others be acceptable? The Design Narrative does not mention any specific Brand.	This option may be revised during final design. Therefore, alternative systems such as Notifier or other equivalent manufacturers may be considered acceptable, subject to approval during the final design phase.
Gulf Building LLC	What will be the actual existing grade of the garage site prior to the anticipated start of construction of the Garage?	The requested information is not currently available from GSA.
KVC Constructors	Confirm if the prime’s completion of two Design-Build projects with different design firms in the past ten (10) years, each ≥$2,000,000 and of similar scope and scale, satisfies the “collaborative delivery” experience requirement.	Confirmed
KVC Constructors	Confirm if an Owner-Direct Purchase (ODP) program will apply and identify any scopes or materials covered under it.	An Owner-Direct Purchase (ODP) program will apply to this project. The Electric Vehicle (EV) Charging Stations and Parking Access and Revenue Control (PARC) System will be provided directly by the City/Owner.
KVC Constructors	Clarify if Buy America or BABA requirements apply and specify which materials or systems must comply, if any.	The project is locally funded; Buy America and Build America, Buy America (BABA) requirements do not apply to this solicitation.
KVC Constructors	Confirm if the PARCS system is Design-Build furnished and installed by the GC or provided separately by the City.	The Electric Vehicle (EV) Charging Stations and Parking Access and Revenue Control (PARC) System will be provided directly by the City/Owner.
KVC Constructors	Provide the anticipated Notice to Proceed (NTP) date to validate the construction start.	The City’s current project schedule anticipates that design will be fully completed within three (3) months, and construction is expected to begin within fifteen (15) days following permit approval. These dates are preliminary estimates and may be adjusted as the project progresses. They represent the City’s best current projection based on available information.
KVC Constructors	Confirm if Extra Hazard II classification and a fire pump are required due to inclusion of EV-ready parking stalls.	Confirmed. Extra Hazard II classification and a fire pump are required due to inclusion of EV-ready parking stalls.

Supplier	Question	Answer
KVC Constructors	We respectfully request a 2-week extension to the current Nov 26 bid due date, as it falls the day before Thanksgiving and may limit subcontractor participation. We kindly request the due date to be the week of Dec 8th to support competitive pricing.	The City has received your request for a two-week extension of the bid due date. The request is under consideration.
Gulf Building LLC	The DCP states screens on the north, south and west facades, however the rendering appears to show screens on the east side. Which is correct?	The façade screens are to be installed on the three sides of the garage facing the street. The rear side of the garage will not require screening.
Gulf Building LLC	Please see attachment for follow up question.	•An Excel version of the Price Proposal Form has been added under the solicitation attachments (see Addendum No. 3). •The Permit and MOT Allowances are fixed amounts established by the City and must not be recalculated or modified by proposers.. •These allowances are pre-filled and locked in the Excel version of the Price Proposal Form. •They do not affect scoring or ranking
KVC Constructors	Please confirm whether the Owner has a preference for the location of the (4) EV Charging stations and if these are to be grouped in one location or distributed throughout the garage.	The City's preference is for the electrical vehicle chargers to be located on the first floor, grouped together and positioned as close as possible to the electrical room to maximize efficiency and minimize electrical infrastructure requirements.
KVC Constructors	If a fire pump is required, please confirm the preferred power source and type — electric or diesel — to allow for electrical and mechanical coordination.	Confirmed — a Fire Pump is required for this project. The design shall include a dedicated power connection and provide an option for a manual transfer switch to allow for alternate power source connection as needed.
Gulf Building LLC	1.Per previous question response the pricing will be ranked an a 1, 2, etc basis. Please explain how that will correspond to the 30 points that the price component is worth per the RFP scoring criteria.	The reference to "30 points" does not indicate a separate scoring category or numerical score. The figure 30 represents the weighted value assigned to the pricing criterion within the overall evaluation methodology.
Gulf Building LLC	Per the previous question response, the conceptual foundation plan was included in Appendix B. Since it is not included in the Appendix issued via the RFP, will it be issued via Addendum?	The conceptual foundation plan referenced in Appendix B is included within the "Appendix 7 – DCP Plans" file issued with the RFP (pages 7–73).

Supplier	Question	Answer
Gulf Building LLC	What will be the anticipated existing elevation of the garage site at the time the Design Build contract is awarded?	The entry elevation at the lot line has been established at approximately Elevation +3.5 feet NAVD, based on the GSA Courthouse Paving, Grading, and Drainage Plan. The base interior elevation is to be Elevation +4'-2" at ground level. The Design-Build Firm (DBF) shall coordinate final site grading and elevation requirements directly with the GSA and the City's project representative
Gulf Building LLC	The response to the previous question regarding the sanitary sewer tie-in was "needs PM input". What is the required tie-in point for the Sanitary Sewer?	The City has confirmed the presence of a 10-inch VCP gravity sewer main along SE 10th Court, which shall be used as the tie-in point for this project. As-built drawings are available and can be requested by contacting plan@fortlauderdale.gov
Gulf Building LLC	Please confirm that the Parc system is by Owner, as stated in Section 12.9 of the Design Criteria.	Confirmed — the PARC system is not required to be provided by the Contractor for this project.
Gulf Building LLC	How are we to access the West side of the garage during construction of the courthouse, since the service yard is not available?	Access to the west side of the garage will require advance coordination with the Federal Courthouse.
Gulf Building LLC	What "infrastructure" is required to be installed by the DBF for the EV charging stations?	Required Infrastructure to be installed by the DBF for the EV charging stations shall include a connection to the main electrical panel, conduits routed to the designated EV charging locations, and wiring sized and installed to support Level 2 EV charging stations.
Gulf Building LLC	Please provide the Excel file for the price proposal form included in the RFP.	An Excel version of the Price Proposal Form has been added under the solicitation attachments for convenience (see Addendum N 3 for details)
Gulf Building LLC	The Conceptual Civil Dwgs and Architectural Dwgs do not appear to agree on the grade/slope for the ground level of the garage vs. the street level. Which is correct?	Architectural Concept Drawings are to be followed for elevations and slopes. Elevations shown on the Civil Drawings are from the Site Survey information and do not convey base Ground Level elevation for the garage and or/ ramp sloping. Entry elevation at the lot line was established to be EL +3.5' from GSA's Courthouse Paving, Grading, and Drainage Plan. Base interior elevation is to be EL +4'-2" at ground level. DBF to coordinate with GSA.
FINFROCK	Are plans available for the adjacent Service Courtyard west of the proposed garage? If so, could they please be provided?	There are no plans available for the Federal Courthouse Service Courtyard located west of the proposed garage. Coordination regarding interface and access should be conducted with GSA during the design phase.

Supplier	Question	Answer
KVC Constructors	Confirm if the City's 40% self-performance requirement is intended to limit proposers to precast manufacturers who can self-perform the majority of work.	The City's original 40% self-performance requirement has been revised. The Design-Build Firm will be required to self-perform only five percent (5%) of the total dollar amount of the Work. The amount of work that is sublet by the Design Build Firm shall be limited by the condition that the Bidder shall, with his own organization, perform at least five percent forty percent (5%) of the total dollar amount of the Work to be performed under the Agreement. The percentage of prime contractor participation refers only to construction activities performed directly by the prime contractor's own organization, including project management, site supervision, labor and equipment. The percentage of 5% does not include design, architectural or engineering services, nor does it need to include surveying/ testing/ commissioning. This information will be utilized in the evaluation of the Proposer's Project Methodology & Approach. Refer to addendum No. 4.
KVC Constructors	Will the City consider general contractors who self-perform management & supervision but must subcontract licensed trades such as Concrete, Precast, MEP, FP, elevators, and roofing as compliant?	Yes. Design-Build Firms that self-perform project management and supervision while subcontracting licensed specialty trades (e.g., concrete, precast, MEP, fire protection, elevators, roofing) are considered compliant, provided all subcontractors are properly licensed and qualified.

Supplier	Question	Answer
KVC Constructors	We respectfully request the City to consider lowering the 40% self-performance requirement to promote fair competition and allow qualified Design-Build firms to participate.	The City's original 40% self-performance requirement has been revised. The Design-Build Firm will be required to self-perform only five percent (5%) of the total dollar amount of the Work. The amount of work that is sublet by the Design Build Firm shall be limited by the condition that the Bidder shall, with his own organization, perform at least five percent forty percent (5%) of the total dollar amount of the Work to be performed under the Agreement. The percentage of prime contractor participation refers only to construction activities performed directly by the prime contractor's own organization, including project management, site supervision, labor and equipment. The percentage of 5% does not include design, architectural or engineering services, nor does it need to include surveying/ testing/ commissioning. This information will be utilized in the evaluation of the Proposer's Project Methodology & Approach. Refer to addendum No. 4.
Gulf Building LLC	Section 4, 1.1 calls for a "pedestrian form" along SE 11th St and the Tarpon River waterway. Please clarify what is meant by a pedestrian form.	The City of Fort Lauderdale requests a pedestrian path connection extending from SE 11th Street to the Tarpon River waterway to provide enhanced pedestrian access along this corridor.
Gulf Building LLC	A previous response calls for facade screens on the sides of the garage facing the street; however, only one side of the garage faces the street. Please clarify.	Proposers shall include façade screening on three sides of the garage: West, East, and South elevations. The rear (North) elevation, facing the Tarpon River, does not require a façade. This aligns with the Design Criteria Package intent for architectural screening to enhance aesthetics and minimize light spillover.
Gulf Building LLC	In regard to the previous response about the façade locations, please confirm which side of the parking garage is considered the rear — the side facing the service courtyard or the side facing Tarpon River?	The rear (north) side of the parking garage faces the Tarpon River. The front (south) side faces SE 11th Street. The courtyard is to the west, and the east side faces the Nissan Parking Garage. Orientation shall follow the site layout provided in the Design Criteria Package.
Gulf Building LLC	Please elaborate on the definition of an "angled cap sky connection" requested in Section 4, 1.1.	The "angled cap sky connection" refers to an architecturally expressive sky bridge or roof feature located at the stair tower along SE 11th Street. It is intended as an aesthetic design element providing a visually dynamic connection to the stair enclosure, consistent with the architectural vision described in the DCP.

Supplier	Question	Answer
Gulf Building LLC	Since per previous response the existing grade of the site at the time of award of this contract will not be known, what existing elevation should proposers assume for earthwork calculations & pricing purposes?	For estimating purposes, proposers should assume an entry elevation of +3.5 feet NAVD and a base interior elevation of +4'-2" at ground level, consistent with the GSA Courthouse Paving, Grading, and Drainage Plan and the Geotechnical Study. Final grading shall be verified by the DBF through coordination with GSA.
KVC Constructors	As Design Build Firms may subcontract specialty trades, including precast, and this scope represents most of the project value, please clarify how the Design-Build Firm is expected to meet the 40% self-performance requirement.	The City's original 40% self-performance requirement has been revised. The Design-Build Firm will be required to self-perform only five percent (5%) of the total dollar amount of the Work. The amount of work that is sublet by the Design Build Firm shall be limited by the condition that the Bidder shall, with his own organization, perform at least five percent forty percent (5%) of the total dollar amount of the Work to be performed under the Agreement. The percentage of prime contractor participation refers only to construction activities performed directly by the prime contractor's own organization, including project management, site supervision, labor and equipment. The percentage of 5% does not include design, architectural or engineering services, nor does it need to include surveying/ testing/ commissioning. This information will be utilized in the evaluation of the Proposer's Project Methodology & Approach. Refer to addendum No. 4.
FINFROCK	Could you please provide As-Builts of the lift station directly south of the proposed garage?	The City does not have access to As-Built drawings for the lift station at this time. The Design-Build Firm shall coordinate with GSA and the City's Public Works/Utilities Division to obtain any available records or confirm field conditions.
Gulf Building LLC	Is there a roof structure proposed over the service yard?	No, a roof structure is not proposed over the service yard. The yard is to remain open to the sky as part of the site layout established in the Design Criteria Package.
Gulf Building LLC	Please provide the contact information for the FPL representative responsible for Garage and Courthouse projects.	The designated FPL representative for the Garage and Courthouse projects is: Shashayne Maxwell – FPL Project Representative Phone: 954-327-3194 Email: Shashayne.Maxwell@fpl.com

Supplier	Question	Answer
Gulf Building LLC	2. How are costs associated with the entire project, such as supervision, temp fencing & security, temporary facilities, trash removal, etc., to be distributed on the Price Proposal form?	Per Section 5.2.16, the Price Proposal must include all direct and indirect costs required to complete the project, including supervision, temporary facilities, fencing, security, trash removal, overhead, and profit. These costs should be distributed proportionally across the applicable line items in the Price Proposal Form and reflected in the supporting Schedule of Values.
Gulf Building LLC	Please confirm that the underside of the precast double tees should be painted.	The underside of the precast double tees is not required to be painted. The exposed concrete surface shall remain unpainted as part of the design intent and maintenance approach for this structure.
Gulf Building LLC	Please confirm that the DBF is responsible for hiring the garage Special Inspector	The Design-Build Firm is not responsible for hiring the garage Special Inspector. The City, as the project Owner, will retain CEI (Construction Engineering and Inspection) Services, which will include the required special inspections for this Project.
Gulf Building LLC	Is an emergency generator required for fire pump added via previous question response and will a reduction in parking spaces be allowed to accommodate space for the pump room and/or generator room?	An emergency generator is not required for the Project. However, the City would prefer that proposers consider including a diesel or natural gas–powered generator as part of their design. If included, the generator shall be located on the roof in a NEMA 3R, wind-rated, sound-attenuated, and missile-impact–tested enclosure. A reduction in parking spaces is not anticipated or required for the generator, as the preferred location is on the roof. Proposers may, however, propose layout adjustments if necessary, provided the minimum required number of spaces (284) is still achieved or exceeded.
Gulf Building LLC	Civil Design Narrative Section 3.2 states that the storm drainage system shall be tied into the existing Courthouse drainage system however the DCP drawings do not show any connection. What is the desired drainage design?	No connection to the existing Courthouse drainage system is proposed or required. The Project’s drainage requirements will be satisfied through the use of on-site drainage wells, which are adequate to accommodate the design stormwater volumes. The Design-Build Firm shall proceed based on this approach as shown in the Design Criteria Package.
Gulf Building LLC	Civil Design Narrative states that there shall be 3 Drainage wells however DCP drawing C-400 only appears to show 2. Which is correct?	The correct number of drainage wells is two, as shown on the latest Design Criteria Package drawings. The drawing sheet C-400 reflects the current and accurate design intent.

Supplier	Question	Answer
Gulf Building LLC	Since the DCP information appears to show the western side of the parking garage less than 3 feet from the courthouse/garage property line and service yard, is the west exterior façade of the garage to comply with FBC Table 705.8?	Yes. The west exterior façade of the parking garage is designed to comply with the fire-resistance and opening-protection requirements of FBC Table 705.8. Although portions of the garage's west side are located less than 3 feet from the courthouse/garage property line, compliance with Table 705.8 is achieved because: The next adjacent building façade is located well over 20 feet away, significantly exceeding the minimum separation distance at which increased allowances apply under FBC Chapter 7; and Both buildings are fire-sprinklered, which provides an allowable increase in unprotected openings and reduces the required wall rating per the exceptions in Table 705.8. Because the actual building-to-building separation greatly exceeds the critical distances in Table 705.8 and the structures are equipped with automatic sprinkler protection, the design meets the applicable code requirements for exterior wall fire-resistance and allowable openings along the west façade.
Sangen Consulting Inc	1. I noticed that the stairwell areas and the electrical room are not shown to be sprinklered. Are the protection areas confined to the parking areas only?	All fire-protection and life-safety requirements must be provided in accordance with the Florida Building Code and all other applicable codes and standards. The Design-Builder is responsible for evaluating every enclosed space—including stairwells, electrical rooms, and any non-parking ancillary areas—and providing sprinkler protection where required by code. While the DCP illustrates the conceptual arrangement of spaces, it does not relieve the Design-Builder of the obligation to perform a complete code analysis and to furnish all required fire-sprinkler coverage, fire-rated construction, and life-safety features necessary for a fully compliant design.

Supplier	Question	Answer
Sangen Consulting Inc	2. I didn’t notice any water flow information. Will this be made available?	No. Water flow test data will not be provided as part of the DCP. It is the responsibility of the Design-Builder to obtain current fire-flow information by coordinating directly with the General Services Administration (GSA) and/or the local water utility. The Design-Builder must request and secure the most recent hydrant flow test results and incorporate that information into the fire protection and water service design in accordance with all applicable codes and standards.
Sangen Consulting Inc	3.Note #3 on sheet FP100 includes NFPA 20 which is the Fire Pump Standard. Please confirm that a Fire Pump is not included in the scope of work?	The reference to NFPA 20 on sheet FP100 identifies the governing standard for fire pumps; however, the inclusion of this note does not indicate that a fire pump is automatically required for the project. A fire pump will only be required if the available City water supply cannot satisfy the pressure and flow demands established by NFPA 14 (standpipe systems) and NFPA 13 (sprinkler systems) for this facility. It is the Design-Builder’s responsibility to evaluate the actual water supply conditions, perform the necessary hydraulic calculations, and determine whether a fire pump is required to meet code-mandated performance criteria.
Sangen Consulting Inc	4.Note #10 on sheet FP100 lists the design as OH Group 2 at a .2 gpm for the remote 1,500 square feet of area. Will the Viking VK532 (listed on the FP100 drawing) Extended Coverage be acceptable for this design?	Extended Coverage (EC) sprinklers may be used on this project only if they are listed and approved for the specific hazard classification and design criteria required by the plans and the Florida Building Code. The Viking VK532 is an EC sprinkler; however, its use is acceptable only if its UL/FM listing supports an Ordinary Hazard Group 2 design at 0.20 gpm/sq ft over a 1,500 sq ft remote area, as indicated in Note #10 on sheet FP100. It is the Design-Builder’s responsibility to review the manufacturer’s technical data sheets and confirm that the VK532 can meet both the required density and design area for OH-2. If the VK532 listing does not permit this performance, then a standard coverage OH-2 sprinkler must be used instead.

continued...

Supplier	Question	Answer
Sangen Consulting Inc	5.Will power driven or drilled studs/inserts be acceptable for hanging the sprinkler pipe?	Pipe hangers and attachments to precast elements shall be supported using cast-in inserts or drilled and epoxy anchors that are specifically listed and approved for use with the applicable precast concrete unit and are capable of supporting the required design loads. Power-driven (powder-actuated or gas-actuated) anchors are not automatically acceptable. They may be used only when: The anchor is specifically listed by the manufacturer for use in precast concrete, overhead (sustained-tension) pipe support applications, and the applicable load demands; and Prior written approval is obtained from both the Structural Engineer of Record (SER) and the Authority Having Jurisdiction (AHJ). If power-driven anchors are proposed, the Design-Builder shall submit: Manufacturer’s listing/approval, ICC-ES report, or ETA documentation Allowable load capacities for the actual embedment depth and concrete type Complete installation instructions and corrosion-resistance requirements Proposed inspection and testing procedures Field pull tests as required by the manufacturer and/or SER All anchorage components and installation methods must comply with applicable sections of the Florida Building Code, NFPA 13, and the precast manufacturer’s requirements.

Supplier	Question	Answer
Sangen Consulting Inc	6.Who will determine if MIC (Mirco Biologically Influenced Corrosion) is present?	It is the Design-Builder's responsibility to evaluate site conditions and determine whether Microbiologically Influenced Corrosion (MIC) is present or anticipated in the proposed fire protection system. The Design-Builder must perform any testing, sampling, or water quality assessments necessary to make this determination and select materials, coatings, and system components that comply with NFPA 13 and industry best practices for environments susceptible to MIC.
Sangen Consulting Inc	7.Can we be provided with the "Owners" Standard Specifications?	The City does not maintain a separate set of "Owner's Standard Specifications" for this project. The Design-Builder shall rely on the Design Criteria Package (DCP), including the DCP Narrative, drawings, and technical requirements, as the governing basis of design. If additional project-specific requirements are needed, the Design-Builder shall coordinate directly with the City during design development. Any such requirements will be provided through the RFP, DCP, or subsequent addenda—not through a separate specification manual.

Supplier	Question	Answer
Sangen Consulting Inc	8.Is painting the piping considered to be corrosion protection?	Painting alone is not considered corrosion protection for fire sprinkler piping under NFPA and industry standards. While painting can provide a cosmetic finish or limited surface protection, it does not prevent internal corrosion, Microbiologically Influenced Corrosion (MIC), or long-term degradation of the piping system. Corrosion protection must be provided in accordance with NFPA 13, manufacturer requirements, and project-specific conditions. Depending on water quality and system type, appropriate corrosion protection measures may include: MIC-mitigation treatments Corrosion-resistant piping materials Approved coatings or linings Corrosion inhibitors Nitrogen inerting systems (where applicable) The Design-Builder is responsible for evaluating water conditions, determining corrosion risks (including MIC), and selecting materials and protection systems that comply with NFPA standards and ensure long-term system performance.

Supplier	Question	Answer
Sangen Consulting Inc	1.I noticed that the stairwell areas and the electrical room are not shown to be sprinklered. Are the protection areas confined to the parking areas only?	It is the responsibility of the Design-Build Firm to ensure full compliance with all applicable Building Code and Fire Protection requirements, including but not limited to the Florida Building Code, NFPA 13, NFPA 14, and any local amendments adopted by the City of Fort Lauderdale. The Design-Build Firm must evaluate all enclosed or conditioned spaces—such as stairwells, electrical rooms, mechanical rooms, and similar areas—and determine the appropriate fire protection measures based on code requirements. While the Design Criteria Package illustrates a baseline design intent for the garage, it does not relieve the Design-Build Firm of its duty to perform a complete code analysis and provide a compliant, fully coordinated fire protection system. Sprinkler protection must be provided wherever required by the applicable codes. If additional protection beyond what is shown in the DCP is required based on the DBF's code evaluation, the DBF is responsible for incorporating such measures into the final design and permitting documents.
Sangen Consulting Inc	Does this job have Davis Beacon Act for labor	This Project is not subject to the Davis-Bacon Act. The Project is funded and procured by the City of Fort Lauderdale, and no federal funding or federal contract authority is involved; therefore, federal prevailing wage requirements and certified payrolls do not apply.
WB Construction LLC	Please see the attachment.	The questions contained in the attachment were previously submitted individually and have already been addressed. Proposers shall rely on the responses already issued for those questions and incorporate them into their proposals accordingly.

continued...

Supplier	Question	Answer
Gulf Building LLC	Per previous responses, spray insulation is required at the elevator lobbies, and these spaces do not require finished ceilings. Please confirm that exposed insulation is acceptable.	Exposed spray-applied insulation is not acceptable. All required fire-resistive or thermal insulation at the elevator lobbies must be concealed behind an approved finish system in accordance with the Florida Building Code and the manufacturer's listing requirements. Although the elevator lobbies do not require finished ceilings, any insulation used to achieve the required fire-resistance rating or acoustic/thermal performance must be installed in a manner that preserves its fire-resistance rating, protection from physical damage, and any applicable UL/NRTL listing conditions. The Design-Builder is responsible for providing a complete, code-compliant enclosure that conceals the insulation and meets all life-safety and architectural requirements.
Gulf Building LLC	If FBC Tables 705.8 applies to this Project per the previous question, will it be acceptable to replace the spandrel panels on the N, E & S elevations with barrier cable to maintain an open garage design?	Barrier cables may be considered as an optional design feature for the parking garage; however, they cannot replace the required façade elements on the north, east, and south elevations. Per the Downtown Review Committee (DRC) requirements applicable to this site, these elevations must include the architectural façade treatment shown in the Design Criteria Package. This requirement is independent of the FBC Table 705.8 considerations regarding fire separation and openings. Therefore, while barrier cables may be incorporated where allowed, the architectural façade is mandatory on the N, E, and S elevations and must be provided as part of the final design.
Gulf Building LLC	Please confirm that the glazing for the top-level elevator lobbies is to be opaque spandrel glass per the previous RFI response.	The glazing at the top-level elevator lobbies shall be vision glass, not opaque spandrel glass. This requirement supersedes any prior assumptions regarding spandrel glass. The design must provide transparent glazing at these locations to meet the architectural intent and to maintain visibility and natural light as indicated in the Design Criteria Package.

DESMAN

City of Fort Lauderdale Federal Courthouse Garage Design Criteria Package

Appendices A, B, C, D

Draft DCP 95% – June 28, 2025

Design Criteria Professionals

DESMAN Inc.

Tim Tracy - Principal-In-Charge
Parking Planning
Chris Luz - Project Manager
John Judge - Structural Engineer

Brooks + Scarpa Architects

Jeff Hubert - Principal Landscape
Sustainability

Langan Engineering & Environmental Services

Vincent Yarina - Principle
Environmental Engineering
Vincent Yarina - Principle
Geotechnical Engineering

Wolfberg Alvarez & Partners

Marcel Morlote - Principal-In-Charge
Architectural Design
Rafael Labrada - Project Manager

Program Controls Inc

Dante Alvarez - Cost Estimation

Feller Engineering

Musa Yenni - Principle/ Owner
M.E.P.F.P. Engineering

Drawing List:

APPENDICES

Appendix A: Site Survey

Appendix B: Concept Plans

C-100 Cover Sheet
C-200 General Notes and Specifications
C-300 Site Plan
C-400 Grading and Drainage Plan
C-500 Utility Plan

A-1 Rendering Opt. 1
A-2 Rendering Opt. 2
A-3 Rendering Opt. 3
A-100 Site Plan
A-101 Grade, Second, Third Level Plan
A-102 Fourth & Fifth Level Plans
A-201 Building Elevations
A-202 Building Elevations
A-301 Building Sections
A-401 Stair No. 1 & 2 Plans

S-203 Typical Level Framing Plan

M-100 Index
M-201 Grade Level Mech Plan
M-204 Fourth Level Mech Plan
M-205 Grade, Second, Third Level Mech Plan
M-206 Mech Details & Schedules

E-100 Electrical Index, Notes & Details
E-101 Electrical Site Plan
E-201 Grade Level Enlarged Electrical Plan
E-202 Second Level Enlarged Electrical Plan
E-203 Third Level Enlarged Electrical Plan
E-204 Fourth Level Enlarged Electrical Plan
E-205 Fifth Level Enlarged Electrical Plan
E-301 Grade Level Enlarged Photometrics Plan
E-302 Second Level Enlarged Photometrics Plan
E-303 Third Level Enlarged Photometrics Plan
E-304 Fourth Level Enlarged Photometrics Plan
E-305 Fifth Level Enlarged Photometrics Plan
E-306 Grade Level Emergency Photometrics Plan
E-307 Second Level Emergency Photometrics Plan
E-308 Third Level Emergency Photometrics Plan
E-309 Fourth Level Emergency Photometrics Plan
E-310 Fifth Level Emergency Photometrics Plan
E-401 Enlarged Electrical Rooms
E-402 Details, Notes, Electrical & Tel. Risers
E-403 Radio Booster & F/A Riser Diagram
E-501 Electrical Panels
E-601 Electrical Details

P-100 Plumbing Index
P-201 Grade Level Plumbing Plan
P-202 Second Level Plumbing Plan
P-203 Third Level Plumbing Plan
P-204 Fourth Level Plumbing Plan
P-205 Fifth Level Plumbing Plan
P-301 Plumbing Isometric
P-401 Details, Notes

FP-100 Fire Protection Index
FP-201 Grade Level Fire Protection Plan
FP-202 Second Level Fire Protection Plan
FP-203 Third Level Fire Protection Plan
FP-204 Fourth Level Fire Protection Plan
FP-205 Fifth Level Fire Protection Plan

FA-201 Grade Level Enlarged Fire Alarm Plan
FA-202 Second Level Enlarged Fire Alarm Plan
FA-203 Third Level Enlarged Fire Alarm Plan
FA-204 Fourth Level Enlarged Fire Alarm Plan
FA-205 Fifth Level Enlarged Fire Alarm Plan
FA-206 Details, Notes

L0.01 Landscape Plan

Appendix C: Geotechnical Soils Report

Appendix D: Environmental Assessment Reports

City of Fort Lauderdale Federal Courthouse Garage Architectural & Engineering Design Criteria Package

APPENDIX A – Site Survey

NOTE: The undersigned and CRAVEN THOMPSON & ASSOCIATES, INC. make no representations or guarantees as to the information reflected hereon pertaining to easements, right-of-way, set back lines, reservations, agreements and other similar matters, and this instrument is not intended to reflect or set forth all such matters. Such information should be obtained and further, confirmed by others through appropriate title verification.
NOTE: Lands shown hereon were not abstracted for right-of-way and/or easements of record.

ALTA/NSPS LAND TITLE SURVEY

U.S. FEDERAL COURTHOUSE PARKING GARAGE - FORT LAUDERDALE

PORTION OF PARCEL "A", "REAMENDED PLAT OF BLOCK 3-LAUDERDALE", P.B. 49,PG. 39, B.C.R.

TI+A1:F18TLE MATRIX

ITEM#	DESCRIPTION	RECORDING	AFFECTS	PLOTTED	COMMENTS
	GENERAL EXCEPTIONS				
1-5	NOT A MATTER OF SURVEY	N/A	N/A	N/A	
ITEM#	DESCRIPTION	RECORDING	AFFECTS	PLOTTED	COMMENTS
	SPECIAL EXCEPTIONS EXCEPTIONS				
1	EASEMENTS, RESERVATIONS, RESTRICTIONS, COVENANTS, AND CONDITIONS SET FORTH ON THE PLAT OF THE TOWN OF FORT LAUDERDALE	P.B. B, PG. 40, M.D.C.R.	YES	NO	BLANKET IN NATURE
2	EASEMENTS, RESERVATIONS, RESTRICTIONS, COVENANTS, AND CONDITIONS SET FORTH ON THE PLAT OF THE PLAT OF FORT LAUDERDALE	P.B. 2, PG. 9, M.D.C.R.	YES	NO	BLANKET IN NATURE
3	EASEMENTS, RESERVATIONS, RESTRICTIONS, COVENANTS, AND CONDITIONS SET FORTH ON THE PLAT OF THE PLAT OF BLOCK 3, LAUDERDALE	P.B. 49, PG. 39, B.C.R.	NO	NO	BLANKET IN NATURE
4	ORDINANCE: CITY COMMISSION OF THE CITY OF FORT LAUDERDALE, FLORIDA TO THE PUBLIC, DATED JUNE 17TH, 1986, FILED AUGUST 4, 1986.	O.R.B. 13617, PG. 826, B.C.R.	NO	NO	BLANKET IN NATURE
5	ON-SITE ATTENDANT PARKING AGREEMENT: CITY OF FORT LAUDERDALE, A FLORIDA MUNICIPAL CORPORATION, BY AND THROUGH ITS ZONING ADMINISTRATOR AND FOUR JUST US, INC., A FLORIDA CORPORATION, DATED FEBRUARY 2, 2001, FILES MARCH 2, 2001.	O.R.B. 31333, PG. 190, B.C.R.	NO	YES	
6	RESOLUTION: CITY COMMISSION OF THE CITY OF FORT LAUDERDALE, FLORIDA TO THE PUBLIC, DATED AUGUST 16, 2022, FILED AUGUST 24, 2022.	INSTRUMENT NO. 118361123	NO	YES	
7	RESOLUTION: CITY COMMISSION OF THE CITY OF FORT LAUDERDALE, FLORIDA TO THE PUBLIC, DATED AUGUST 16, 2022, FILED AUGUST 24, 2022.	INSTRUMENT NO. 118361205	NO	YES	
8	ORDINANCE: CITY COMMISSION OF THE CITY OF FORT LAUDERDALE, FLORIDA TO THE PUBLIC, DATED SEPTEMBER 6, 2022, FILED SEPTEMBER 16, 2022..	INSTRUMENT NO. 118405863	NO	YES	
9	ORDINANCE: CITY COMMISSION OF THE CITY OF FORT LAUDERDALE, FLORIDA TO THE PUBLIC, DATED SEPTEMBER 5, 2023, FILED SEPTEMBER 14, 2023..	INSTRUMENT NO. 118405876	YES	YES	
10	ORDINANCE: CITY COMMISSION OF THE CITY OF FORT LAUDERDALE, FLORIDA TO THE PUBLIC, DATED SEPTEMBER 6, 2022, FILED SEPTEMBER 16, 2022..	INSTRUMENT NO. 119102285			
11	UNDERGROUND DUCT BANK EASEMENT: UNITED STATES OF AMERICA ACTING BY AND THROUGH THE UNITED STATES GENERAL SERVICES ADMINISTRATION, AND EXECUTIVE AGENCY OF THE UNITED STATES TO BELLSOUTH TELECOMMUNICATIONS, LLS D/B/A/ AT&T FLORIDA, A GEORGIA LIMITED LIABILITY COMPANY, DATED OCTOBER 20, 2023, FILED OCTOBER 23, 2023.	INSTRUMENT NO. 119182014	NO	YES	
12	SANITARY SEWER EASEMENT: UNITED STATES OF AMERICA ACTING BY AND THROUGH THE UNITED STATES GENERAL SERVICES ADMINISTRATION AND EXECUTIVE AGENCY OF THE	INSTRUMENT NO. 119797379	NO	YES	

SITE MAP/KEY MAP

SECTIONS 10, TOWNSHIP 50 SOUTH, RANGE 42 EAST

SURVEY NOTES:

1. THIS SURVEY MAP WAS PREPARED FOR THE EXCLUSIVE USE OF THE BRANSFIELD & GORRIE, LLC, HEREINAFTER REFERRED TO AS THE "CLIENT", FOR THE EXPRESS PURPOSES STATED HEREON AND/OR CONTAINED IN THE CONTRACT WITH THE CLIENT FOR THIS PROJECT. THE REUSE OF THIS SURVEY FOR PURPOSES OTHER THAN FOR WHICH IT WAS INTENDED, WITHOUT THE PROPER WRITTEN CONSENT BY THE CLIENT, WILL BE AT THE RE-USERS SOLE RISK AND WITHOUT LIABILITY TO THE CERTIFYING SURVEYOR. NOTHING SHOWN HEREON SHALL BE CONSTRUED TO GIVE RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE IT WAS CERTIFIED TO ORIGINALLY, SAID PARTY OR PARTIES BEING SPECIFIED HEREON
2. THIS IS A BOUNDARY, TOPOGRAPHIC AND SPECIFIC PURPOSE TREE SURVEY.
3. THE PURPOSE OF THIS BOUNDARY SURVEY WAS TO ESTABLISH HORIZONTAL AND VERTICAL CONTROL AND COLLECT ABOVE GROUND VISIBLE IMPROVEMENTS WITHIN THE SUBJECT PROPERTY AND ALONG THE RIGHTS-OF-WAYS AND DELINEATED HEREON. IMPROVEMENTS ARE INCLUDED, AS IS INFORMATION INSIDE OF THE STORM WATER AND SANITARY SEWER STRUCTURES AS SURVEYED AND IF ACCESSIBLE, SUCH AS THE FOLLOWING: INVERTS, WEIRS, PIPE SIZE, PIPE MATERIALS, AND BOTTOM OF STRUCTURES.
4. THIS SURVEY MEETS AND EXCEEDS THE HORIZONTAL AND VERTICAL ACCURACY REQUIREMENTS AS DEFINED IN CHAPTER 5J-17 OF THE FLORIDA ADMINISTRATIVE CODE PERTAINING TO THE STANDARDS AND PRACTICE OF FOR PROFESSIONAL SURVEYORS AND MAPPERS. THE ACCURACY OF MEASUREMENTS AND LINEAR CLOSURE FOUND HEREON EXCEED THAT OF 1 IN 10,000 FEET, PREMISED UPON THE EXPECTATION THAT THE USE OF THIS TYPE OF SURVEY AND MAP WILL BE FOR THOSE ACTIVITIES TYPICALLY CONDUCTED IN COMMERCIAL/HIGH RISK AREAS. THE ACCURACY OBTAINED BY MEASUREMENT AND CALCULATION OF A CLOSED GEOMETRIC FIGURE WAS FOUND TO EXCEED THIS REQUIREMENT.
4. THE TITLE INFORMATION SHOWN HEREON IS BASED ON A OPINION OF TITLE PREPARED BY PARAMOUNT TITLE SERVICES, INC. SEARCH NO: 24-805-17, DATE NOVEMBER 1ST, 2024, AND IS SUBJECT TO ALL DEFECTS, LIENS, ENCUMBRANCES, ADVERSE CLAIMS OR OTHER MATTERS, IF ANY, CREATED; APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE THEREOF.
5. THE HORIZONTAL CONTROL AND TOPOGRAPHIC MEASUREMENTS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2011 [NAD 83 (2011)] EXPRESSED IN U.S. SURVEY FEET OR FRACTIONS THEREOF, AND REFERENCED TO THE FLORIDA EAST ZONE (0901) OF THE STATE PLANE COORDINATE SYSTEM. THE DESIRED ACCURACY OF SURVEY CONTROL POINTS HAS BEEN ACHIEVED USING REDUNDANT FIELD MEASUREMENT PROCEDURES. THE ACCURACY OF THESE POSITIONS WAS VERIFIED BY TRAVERSE CLOSURE CALCULATIONS. THE SURVEY IS BASED ON ASSUMED LINE, BEARING N02°10'06"W ALONG THE CENTERLINE OF SOUTHEAST 3rd AVENUE (VALENTINE AVENUE).
6. THE PROPERTY SHOWN HEREON HAS THE FOLLOWING FLOOD ZONE DESIGNATION:

   a. NFIP COMMUNITY NAME & COMMUNITY NUMBER: CITY OF FORT LAUDERDALE 125105
   b. COUNTY NAME: BROWARD COUNTY
   c. STATE OF FLORIDA
   d. MAP/PANEL NUMBER: 12011C0557J
   e. FIRM INDEX DATE: 7/31/2024
   f. FIRM PANEL EFFECTIVE/REVISED DATE: 7/31/2024
   g. FLOOD ZONE: AH & AE
   h. BASE FLOOD ELEVATION: 6'

   THE FLOOD ZONE INFORMATION SHOWN HEREON IS BASED UPON THE CURRENT PUBLISHED FLOOD INSURANCE RATE MAP (FIRM) ON THE DATE THIS SURVEY WAS PREPARED. THE DATA CONTAINED IN THE FIRM MAP IS SUBJECT TO CHANGE WITHOUT NOTICE. THE FLOOD ZONE BOUNDARIES (WHEN SHOWN) ARE APPROXIMATE, BASED ON DIGITAL FIRM PANEL MAP IMAGE. FOR THE LATEST FLOOD ZONE INFORMATION CONSULT THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) OR YOUR LOCAL GOVERNMENTAL BUILDING DEPARTMENT.
7. THE FIELD MEASUREMENTS SHOWN HEREON WERE OBTAINED USING A SPATIAL MEASUREMENT SYSTEM MANUFACTURED BY TRIMBLE INC., SAID SYSTEM BEING COMPRISED OF THE FOLLOWING SURVEY INSTRUMENTS: "S SERIES" TOTAL STATION, "DINI" THIRD ORDER DIGITAL LEVEL, AND A "R10" GNSS RECEIVER. ALL RAW SURVEY DATA WAS DIGITALLY RECORDED IN THE FIELD USING "TRIMBLE ACCESS" OR THE "ONBOARD" INTERFACE SOFTWARE AND/OR RECORDED IN A SURVEY FIELD BOOK. ALL FIELD DATA HAS BEEN REVIEWED AND ADJUSTED BY CRAVEN THOMPSON AND ASSOCIATES OFFICE STAFF USING "TRIMBLE BUSINESS CENTER", "CIVIL 3D" AUTOCAD, OR SIMILAR POST-PROCESSING SOFTWARE APPLICATIONS.
8. THE BOUNDARY AND EASEMENT INFORMATION ON SHEET V-2 IS INTENDED TO BE DISPLAYED AT A SCALE OF 1" = 30'. THE TOPOGRAPHIC SURVEY ON SHEET V-3 IS INTENDED TO BE DISPLAYED AT A SCALE OF 1" = 30'. THE HORIZONTAL FEATURES SHOWN HEREON ARE PLOTTED TO WITHIN 1/30 OF THE MAP SCALE. HORIZONTAL FEATURE LOCATIONS ARE TO THE CENTER OF THE ASSOCIATED MAP SYMBOL. THESE SYMBOLS MAY BE ENLARGED FOR CLARITY, BUT MAY NOT REPRESENT THE ACTUAL SIZE OR SHAPE OF THE FEATURE THEY ARE INTENDED TO REPRESENT.
9. SECTIONAL INFORMATION AND RIGHT-OF-WAY LINES SHOWN HEREON ARE BASED ON THE RECORDED PLATS WITHIN THE PROJECT AREA AND FLORIDA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY MAPS AND PROJECT CONTROL NETWORKS. THE RESIDENTIAL RIGHTS-OF-WAY HAVE BEEN ADJUSTED TO MATCH A BEST FIT SCENARIO OF THE FOUND OCCUPATION SURVEY MONUMENTATION ALONG EACH ROADWAY IN RELATION TO THE RECORDED DOCUMENT.
10. ADDITIONS AND DELETIONS TO SURVEY MAPS AND REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE UNDERSIGNED. THIS DOCUMENT CONSISTS OF 3 SHEETS AND EACH SHEET SHALL NOT BE CONSIDERED FULL, VALID, AND COMPLETE UNLESS ATTACHED TO ALL OTHERS.
11. THE TREE TYPES AND CLASSIFICATION SHOWN HEREON ARE DETERMINED TO THE BEST OF OUR KNOWLEDGE, AS PROFESSIONALS INVOLVED IN THE PRACTICE OF SURVEY AND MAPPING. IF SO DESIRED, THE EXACT SPECIES SHOULD BE DETERMINED BY A LICENSED BOTANIST, DENDROLOGIST OR OTHER PROFESSIONAL WITH SUCH SPECIALIZED CAPACITY.
12. THIS SURVEY IS LIMITED TO THE LOCATION OF ABOVE GROUND IMPROVEMENTS ONLY. THE ELEVATIONS SHOWN HEREON ARE SOLELY FOR THE PURPOSE OF INDICATING THE GROUND ELEVATION ONLY AT THE POSITION SHOWN, AND IN NO WAY INDICATE ELEVATIONS AT ANY OTHER POINT OR TO DETERMINE SUBSURFACE CONDITIONS. UNDERGROUND UTILITIES, FOUNDATIONS, OR OTHER BURIED ENCROACHMENTS WERE NOT LOCATED IN CONJUNCTION WITH THIS SURVEY UNLESS OTHERWISE NOTED. MOREOVER, NO EXCAVATION WAS PERFORMED BY CRAVEN THOMPSON AND ASSOCIATES, INC. TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND IMPROVEMENTS, STRUCTURES, OR FOUNDATIONS.
13. THE RIGHT-OF-WAY LOCATION OF THE TARPON RIVER SHOWN HEREON IS "A BEST FIT" APPROXIMATION AND BASED SOLELY ON READILY AVAILABLE IN THE PUBLIC RECORD AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION OR OTHER PURPOSES REQUIRING HIGHER LEVELS OF ACCURACY.
14. THIS SURVEY WAS PERFORMED BY CRAVEN THOMPSON & ASSOCIATES UNDER CTA PROJECT NO. 22-0046-01-01 WITH THE FOLLOWING REFERENCED FIELD BOOK: 3192, PAGES 58-63.
15. ALL PLATS SHOWN HEREON REFER TO RECORDED PLATS IN BROWARD COUNTY PUBLIC RECORDS THAT WERE READILY AVAILABLE THROUGH https://officialrecords.broward.org/AcclaimWeb
16. THE ELEVATIONS SHOWN HEREON ARE RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND ARE BASED ON THE FOLLOWING DESCRIBED BENCHMARKS ESTABLISHED AS PART OF THE THE CITY OF FORT LAUDERDALE DESIGN IMPLEMENTATION BENCH MARK MAP PROGRAM PERFORMED IN 2018 BY CRAVEN THOMPSON AND ASSOCIATES FOR THE CITY OF FORT LAUDERDALE AS CLIENT. REFERENCE CRAVEN THOMPSON JOB# 18-0018-001:

    "SE458", EL.=11.57' SET ON THE WEST SIDE OF SE 3RD AVENUE AND 16' SOUTH OF THE CENTERLINE OF S.E. 11th STREET.

    "SE459" EL.=7.89' SET IN THE TOP OF CURB ON THE WEST SIDE OF S.E. 3RD AVENUE AND 81' SOUTH OF THE NORTH PROPERTY LINE EXTENDED AT ADDRESS #1051.

    **BOTH BENCHMARKS ARE "MAG" NAIL AND BRASS DISK STAMPED "FORT LAUDERDALE BM", AND ELEVATIONS ARE GIVEN IN U.S. SURVEY FEET OR FRACTIONS THEREOF.

LEGAL DESCRIPTION:

A PORTION OF PARCEL "A", "REAMENDED PLAT OF BLOCK 3 LAUDERDALE", ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 49, PAGE 39, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF SAID PARCEL "A";

THENCE NORTH 88°26'54" EAST ALONG THE SOUTH LINE OF SAID PARCEL "A", A DISTANCE OF 98.00 FEET TO THE POINT OF BEGINNING;

THENCE NORTH 01°29'34" WEST, A DISTANCE OF 256.13 FEET;

THENCE NORTH 88°26'54" EAST, A DISTANCE OF 111.89 FEET TO A POINT ON A LINE 10 FEET WEST OF AND MEASURED AT RIGHT ANGLES TO THE WEST LINE OF THE EAST 75 FEET OF SAID PARCEL "A";

THENCE SOUTH 01°29'50" EAST ALONG SAID PARCEL "A", A DISTANCE OF 226.13 FEET;

THENCE SOUTH 88°26'54" WEST, A DISTANCE OF 51.17 FEET;

THENCE SOUTH 01°29'34" EAST, A DISTANCE OF 30.00 FEET TO A POINT ON THE SOUTH LINE OF SAID PARCEL "A";

THENCE SOUTH 88°26'54" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 60.83 FEET BACK TO THE POINT OF BEGINNING.

SAID LANDS SITUATE, LYING AND BEING IN THE CITY OF FORT LAUDERDALE, BROWARD COUNTY, FLORIDA, AND CONTAINING 27,138.68 SQUARE FEET, (0.6230 ACRES), MORE OR LESS.

CONTROL LEGEND:

- Ⓟ IRON PIPE
- Ⓡ IRON ROD
- Ⓐ MAG NAIL & DISC

REFERENCES:

1. PLAT OF LAUDERDALE, PLAT BOOK 2, PAGE 9, M.D.C.R.
2. AMENDED PLAT OF BLOCK 3 – LAUDERDALE, PLAT BOOK 19, PAGE 36, B.C.R.
3. RE-AMENDED PLAT OF BLOCK 3 – LAUDERDALE, PLAT BOOK 49, PAGE 39, B.C.R.
4. McLAUGHLIN ENGINEERING COMPANY ALTA/NSPS LAND TITLE SURVEY, JOB NUMBER V-1108, 3368, 4092, & 5274, LAST REVISED DATE, AUGUST 27, 2020.
5. PARAMOUNT TITLE SERVICES, INC ABSTRACT OF TITLE, SEARCH NO. 24-805-17, DATED NOVEMBER 2024 AT 11:00 P.M.

CERTIFIED TO::

BRASFIELD & GORRIE, LLC

UNITED STATES OF AMERICA AND ITS ASSIGNS

SURVEYOR'S CERTIFICATE:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1-5, 6(a), 7(a), 7(b1)b2), 8, 9, 10,(a), 11, 13, 14, 16, 17, 18 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON: NOVEMBER 3RD, 2024.

DATE OF LAST FIELD WORK NOVEMBER 3RD, 2024.

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

SEE SHEET V-2 FOR BOUNDARY AND EASEMENTS

SEE SHEET V-3 FOR TOPOGRAPHIC MAP AND TREE TABLE.

RICHARD G. CRAWFORD JR., FOR THE FIRM
FLORIDA PROFESSIONAL LAND SURVEYOR AND MAPPER NO. 5371
CRAVEN THOMPSON & ASSOCIATES, INC.
LICENSED BUSINESS NUMBER #271

DATE:	11/3/2024
SCALE:	1"=60'
DRAWN BY:	RGC
CHECKED BY:	RP
FIELDBOOK:	3192,3196
PAGE(S):	3218,3269

BY:	DATE:	DESCRIPTION:

CRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
TEL.: (954) 739-6400 FAX: (954) 739-6409
FLORIDA LICENSED ENGINEERING, SURVEYING, & MAPPING BUSINESS No. 271
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114

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U.S. FEDERAL COURTHOUSE
PARKING GARAGE LEASE AREA
FORT LAUDERDALE, FLORIDA

PREPARED FOR:
BRANSFIELD & GORRIE, LLC

ALTA/NSPS LAND TITLE SURVEY

SEAL

PROJECT NO.
22-0016-001-02

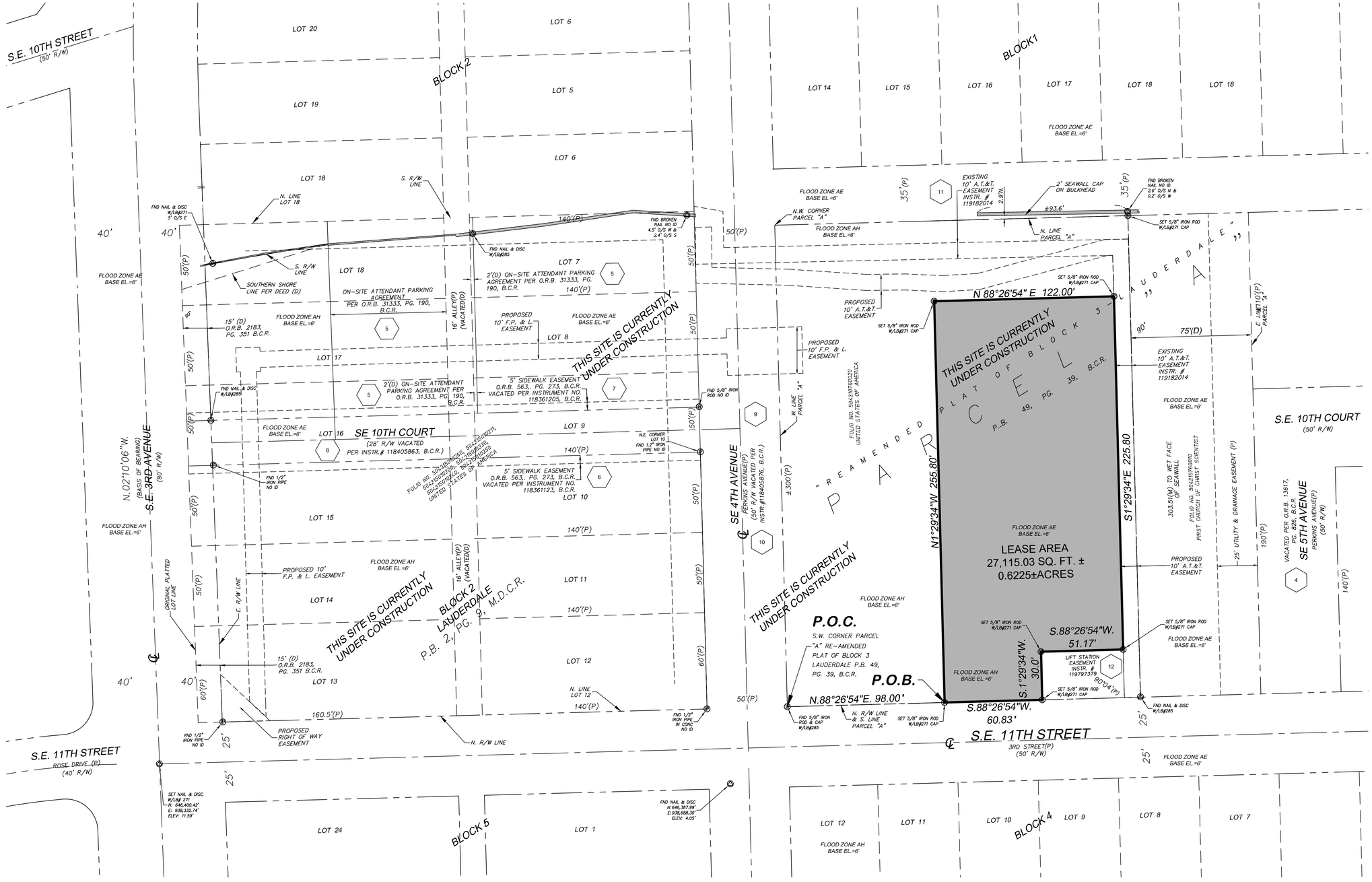
COVER

SHEET 1 OF 3

\\craffs02\Survey_Projects\Projects\2022\22-0016-001-01 US COURTHOUSE FORT LAUDERDALE\Drawings\22-0016_PARKING_GARAGE_ALTA-NSPS.dwg [COVER] Nov 21, 2024 1:11pm RCRAWFORD

NOTE: The undersigned and CRAVEN THOMPSON & ASSOCIATES, INC. make no representations or guarantees as to the information reflected hereon pertaining to easements, right-of-way, set back lines, reservations, agreements and other similar matters, and this instrument is not intended to reflect or set forth all such matters. Such information should be obtained and further, confirmed by others through appropriate title verification.
NOTE: Lands shown hereon were not abstracted for right-of-way and/or easements of record.

ALTA/NSPS LAND TITLE SURVEY
U.S. FEDERAL COURTHOUSE PARKING GARAGE-FORT LAUDERDALE
PORTION OF PARCEL "A", "REAMENDED PLAT OF BLOCK 3-LAUDERDALE", P.B. 49, PG. 39, B.C.R.



SEE SHEET V-1 FOR SURVEYOR'S NOTES, ABBREVIATION LEGEND AND PROJECT DATA.

SEE SHEETS V-3 FOR SITE LOCATIONS AND LEGEND

0 30' 60'
GRAPHIC SCALE IN FEET

CONTROL LEGEND:

- (P) IRON PIPE
- (R) IRON ROD
- (A) MAG NAIL & DISC

ABBREVIATION LEGEND:

ASPH.	ASPHALT
B.H.	BUD HEIGHT
B.O.S.	BOTTOM OF STRUCTURE
B.C.R.	BROWARD COUNTY RECORDS
C.B.	CATCH BASIN
C.I.	CURB INLET
C.L.F.	CHAIN-LINK FENCE
CONC.	CONCRETE
C.M.P.	CORRUGATED METAL PIPE
(D)	PER DEED
D.C.R.	DADE COUNTY RECORDS
EL.	ELEVATION
FND.	FOUND
H.P.E.	HIGH DENSITY POLYETHYLENE
I.A.	INVERT ELEVATION
L.B.	LICENSED BUSINESS
(M)	MEASURE PER FIELD TRAVERSE
M.D.C.E.	MIAMI-DADE COUNTY RECORDS
M.H.	MANHOLE
O.R.B.	OFFICIAL RECORDS BOOK
P.B.	PLAT BOOK
(P)	PER PLAT
PG.	PAGE
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
P.V.A.	POLYVINYL CHLORIDE
R.C.P.	REINFORCED CONCRETE PIPE
R.E.	RIM ELEVATION
R/W	RIGHT-OF-WAY
SAN.	SANITARY
STL.	STEEL
STM.	STORM
TYP.	TYPICAL
FZ	FLOOD ZONE BOUNDARY
1	SCHEDULE B-II TITLE EXCEPTION NUMBER
A.T.&T.	AMERICAN TELEPHONE & TELEGRAPH COMPANY
MH	MAN HOLE

DATE:	11/3/2024
SCALE:	1"=30'
DRAWN BY:	RGC
CHECKED BY:	RP
FIELDBOOK:	3192,3196
PAGE(S):	3218,3269

BY:	DATE:	DESCRIPTION:

CRAVEN • THOMPSON AND ASSOCIATES, INC.
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3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
FAX: (954) 739-6409 TEL.: (954) 739-6400
FLORIDA LICENSED ENGINEERING, SURVEYING, & MAPPING BUSINESS No. 271
FLORIDA LICENSED LANDSCAPE ARCHITECTURE BUSINESS No. C000114

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U.S. FEDERAL COURTHOUSE
PARKING GARAGE LEASE AREA
FORT LAUDERDALE, FLORIDA

PREPARED FOR:
BRANSFIELD & GORRIE, LLC

ALTA/NSPS LAND TITLE SURVEY

SEAL

PROJECT NO.
22-0016-001-02

V-2
SHEET 2 OF 3

\\ctsfile02\Survey_Projects\Projects\2022\22-0016-001-01 US COURTHOUSE FORT LAUDERDALE\Drawings\22-0016_PARKING_GARAGE_ALTA-NSPS.dwg [V-2] Nov 21, 2024 1:12pm RCRAWFORD

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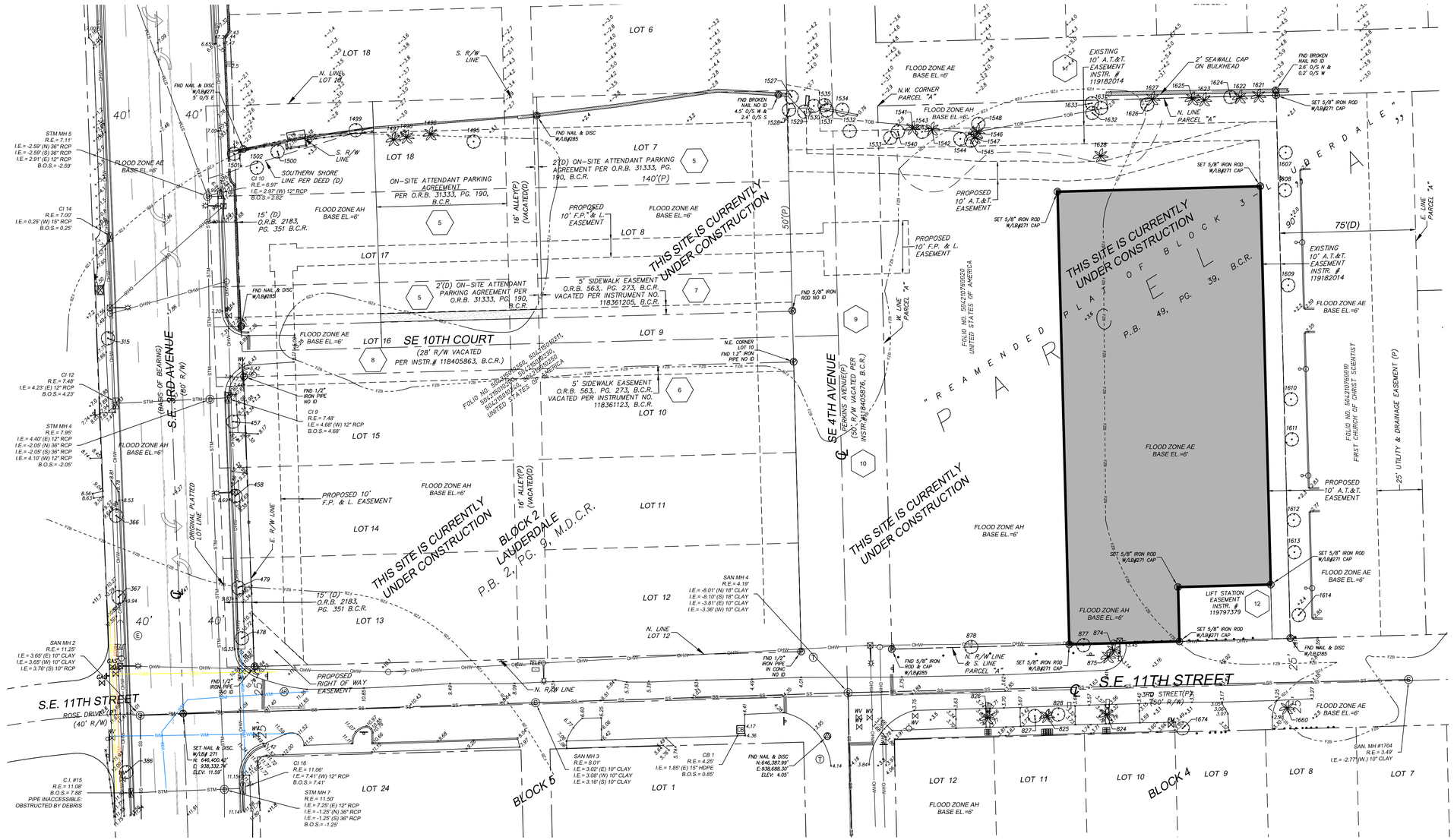
NOTE: Lands shown hereon were not abstracted for right-of-way and/or easements of record.

SKETCH OF SURVEY
BOUNDARY & TOPOGRAPHIC SURVEY
U.S. FEDERAL COURTHOUSE - FORT LAUDERDALE



TREE NUMBER	SIZE & TYPE
315	22" OAK
366	22" OAK
367	16" OAK
386	18" OAK
457	30" OAK
458	36" OAK
478	24" OAK
479	20" OAK
824	8" CHRISTMAS PALM BH=16'
825	8" CHRISTMAS PALM BH=22'
826	7" CHRISTMAS PALM BH=18'
827	6" SILVER BUTTONWOOD
828	6" SILVER BUTTONWOOD
874	14" SABAL PALM BH=20'
875	18" SABAL PALM BH=15'
877	18" GUMBO LIMBO
878	20" BLACK OLIVE

TREE NUMBER	SIZE & TYPE
1495	14" GUMBO LIMBO
1496	4" ALEXANDER PALM BH=30'
1497	4" ALEXANDER PALM BH=30'
1498	12" SABAL PALM BH=24'
1499	8" SEA GRAPE
1500	16" SCHEFFLERA
1501	48" SEA GRAPE
1502	8" SHADE TREE
1527	4" SHADE TREE
1528	4" SHADE TREE
1529	4" SHADE TREE
1530	4" SHADE TREE
1531	4" SHADE TREE
1532	4" SHADE TREE
1533	4" SHADE TREE
1534	8" MANGROVE
1535	8" MANGROVE

TREE NUMBER	SIZE & TYPE
1540	12" SHADE TREE
1541	18" SABAL PALM BH=8'
1542	16" SABAL PALM BH=4'
1543	6" SHADE TREE
1544	6" SHADE TREE
1545	6" SEA GRAPE
1546	14" SABAL PALM BH=10'
1547	14" SABAL PALM BH=10'
1548	6" SEA GRAPE
1607	10" MADAGASCAR OLIVE
1608	14" GUMBO LIMBO
1609	9" GUMBO LIMBO
1610	9" GUMBO LIMBO
1611	9" GUMBO LIMBO
1612	9" GUMBO LIMBO
1613	9" GUMBO LIMBO
1614	9" SHADE TREE

TREE NUMBER	SIZE & TYPE
1621	16" SABAL PALM BH=16'
1622	16" SABAL PALM BH=15'
1623	16" SABAL PALM BH=12'
1624	6" BLACK OLIVE
1625	8" COCONUT PALM BH=1(
1626	8" SHADE TREE
1627	14" SABAL PALM BH=18'
1628	10" SABAL PALM BH=30'
1631	14" SHADE TREE
1632	10" SEA GRAPE
1633	12" SHADE TREE
1660	8" FOX TAIL PALM BH=20'
1674	24" CARROTWOOD

SEE SHEET V–1 FOR SURVEYOR'S NOTES, ABBREVIATION LEGEND AND PROJECT DATA.

SEE SHEET V–2 FOR BOUNDARY AND EASEMENT DATA.

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

SYMBOL/LINETYPE LEGEND:

AIR RELEASE VALVE MANHOLE
ANCHOR
CATV CABLE / FIBER OPTIC PEDESTAL
CATCH BASIN
CLEAN OUT
CONCRETE LIGHT POLE
CONCRETE POWER POLE
CONCRETE TELEPHONE POLE
CURB INLET
DECORATIVE LIGHT POLE
ELECTRICAL / CABLE PULL BOX
ELECTRICAL MANHOLE
ELECTRICAL METER
FIBER OPTIC PEDESTAL / PULLBOX
FIRE HYDRANT
MAILBOX
METAL POST / PIPE
METAL POWER / TELEPHONE POLE
PALM TREE
PARK BENCH
PEDESTRIAN SIGNAL
SANITARY MANHOLE
SHADE TREE
SIAMESE VALVE
SIGN (BUS STOP)
SIGN (DOUBLE POST)
SIGN (SINGLE POST)
STORM MANHOLE
TELEPHONE MANHOLE
TELEPHONE PULL BOX
TRAFFIC CONTROL / CABINET
TRAFFIC POLE
TRAFFIC PULL BOX
TRANSFORMER PAD
UTILITY VAULT
WATER METER
WOOD LIGHT POLE
WOOD POST
WOOD POWER / TELEPHONE POLE
ALUMINUM FENCE
CHAIN LINK FENCE
SS GRAVITY MAIN
STM STORM LINE
VINYL / WOOD FENCE
NON–VEHICULAR ACCESS

ABBREVIATION LEGEND:

ASPH.	ASPHALT
B.H.	BUD HEIGHT
B.O.S.	BOTTOM OF STRUCTURE
B.C.R.	BROWARD COUNTY RECORDS
C.B.	CATCH BASIN
C.I.	CURB INLET
C.L.F.	CHAIN–LINK FENCE
CONC.	CONCRETE
C.M.P.	CORRUGATED METAL PIPE
(D)	PER DEED
D.C.R.	DADE COUNTY RECORDS
EL.	ELEVATION
FND.	FOUND
H.,P.E.	HIGH DENSITY POLYETHYLENE
I.A.	INVERT ELEVATION
L.B.	LICENSED BUSINESS
(M)	MEASURE PER FIELD TRAVERSE
M.D.C.E.	MIAMI–DADE COUNTY RECORDS
M.H.	MANHOLE
O.R.B.	OFFICIAL RECORDS BOOK
P.B.	PLAT BOOK
(P)	PER PLAT
P.C.	PAGE
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
P.V.A.	POLYVINYL CHLORIDE
R.C.P.	REINFORCED CONCRETE PIPE
R.E.	RIM ELEVATION
R/W	RIGHT–OF–WAY
SAN.	SANITARY
STL.	STEEL
STM.	STORM
TYP.	TYPICAL
FZB	FLOOD ZONE BOUNDARY
1	SCHEDULE B–II TITLE EXCEPTION NUMBER

CONTROL LEGEND:

P IRON PIPE
R IRON ROD
MAG NAIL & DISC

DATE:	8/16/2023
SCALE:	1"=30'
DRAWN BY:	RGC
CHECKED BY:	RP
FIELDBOOK:	3192
PAGE(S):	58-63

DESCRIPTION:	BY:	DATE:

CRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
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U.S. FEDERAL COURTHOUSE
PARKING GARAGE LEASE AREA
FORT LAUDERDALE, FLORIDA

PREPARED FOR:
BRANSFIELD & GORRIE, LLC

ALTA/NSPS LAND TITLE SURVEY

SEAL

PROJECT NO.
22-0016-001

V-3
SHEET 3 OF 3

\\craft02\Survey_Projects\Projects\2022\22-0016-001-01 US COURTHOUSE FORT LAUDERDALE\Drawings\22-0016_PARKING_GARAGE_ALTA-NSPS.dwg [V-3] Nov 21, 2024 1:13pm RCRAWFORD

City of Fort Lauderdale Federal Courthouse Garage Architectural & Engineering Design Criteria Package

APPENDIX B – Concept Plan

FEDERAL COURTHOUSE GARAGE

320 SE 10TH CT
FORT LAUDERDALE, FLORIDA 33316

SECTION 10, TOWNSHIP 50S, RANGE 42E
PROPERTY ID: 504210760020

INDEX OF SHEETS
CIVIL SHEETS BY LANGAN

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LOCATION SKETCH

100 0 50 100
SCALE: 1" = 100'

LEGAL DESCRIPTION

A PORTION OF PARCEL "A", REAMENDED PLAT OF BLOCK 3 LAUDERDALE, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 49, PAGE 39, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, MORE FULLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID PARCEL "A"; THENCE NORTH 90°00'00" WEST, ON THE SOUTH LINE OF SAID PARCEL "A", A DISTANCE OF 85.00 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING NORTH 90°00'00" WEST, ON SAID SOUTH LINE, A DISTANCE OF 51.17 FEET; THENCE NORTH 00°04'00" EAST, A DISTANCE OF 30.00 FEET; THENCE NORTH 90°00'00" EAST, A DISTANCE OF 51.17 FEET; THENCE SOUTH 00°04'00" WEST, A DISTANCE OF 30.00 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE, LYING AND BEING IN THE CITY OF FORT LAUDERDALE, BROWARD COUNTY, FLORIDA AND CONTAINING 1,535 SQUARE FEET OR 0.0352 ACRES MORE OR LESS.

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Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked.

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Date	Description	No.

Revisions

Signature Date

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Project
FEDERAL COURTHOUSE GARAGE
FORT LAUDERDALE
BROWARD COUNTY FLORIDA

Drawing Title
COVER SHEET

Project No.	Drawing No.
330130301	C-100
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GENERAL NOTES AND SPECIFICATIONS

GENERAL SITE NOTES:

1. THESE PLANS REPRESENT THE OVERALL SITE WORK IMPROVEMENTS REQUIRED FOR PROJECT CONSTRUCTION. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITE WORK CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER MAKES NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY AVAILABLE INFORMATION WHICH WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS AND RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL MAKE ADDITIONAL TOPOGRAPHIC SURVEYS HE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
3. THE CONTRACTOR SHALL, WHEN THEY DEEM NECESSARY, PROVIDE WRITTEN REQUESTS FOR INTERPRETATION (RFIS) TO THE OWNER AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITE WORK ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF TWO WORK DAYS OR ADDITIONAL REASONABLE TIME FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE WORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
4. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO CONSTRUCTION. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO CONSTRUCTION.
5. THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL DRAINAGE AND UTILITY STRUCTURES AND MANUFACTURED PRODUCTS TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WITH CONSTRUCTION.
7. CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL MAINTENANCE OF TRAFFIC MEASURES (INCLUDING DESIGN AND PERMITTING) AS REQUIRED BY THE LOCAL, COUNTY, OR STATE AGENCY HAVING JURISDICTION.
8. THE CONTRACTOR IS REQUIRED TO KEEP DETAILED RECORDS OF THE CONSTRUCTION COMPLETED. SPECIFICALLY, ALL UNDERGROUND STRUCTURES, DRAINAGE, WATER, SANITARY, GAS, ELECTRIC, COMMUNICATIONS PIPING, CONDUIT OR APPURTENANCES AND ACCESSORIES AND ALL ABOVE GROUND FEATURES INCLUDING, BUT NOT LIMITED TO, FIRE HYDRANTS, WATER VALVES, DRAINAGE AND SEWER CLEANOUTS, LIGHT POLES AND SIGNS SHALL BE RECORDED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE THAT THE WORK IS PERFORMED. ELEVATIONS OF TOP OF WATER PIPING SHALL BE RECORDED AT ALL BENDS, TEES, AND AT ALL STORM DRAINAGE AND SANITARY SEWER CROSSINGS. SANITARY SEWER TOP OR BOTTOM OF PIPE ELEVATIONS SHALL BE RECORDED AT ALL CROSSINGS WITH WATER AND STORM DRAINAGE PIPING. FINISHED GRADE ELEVATIONS AT ALL WATER VALVES, FIRE HYDRANTS, SANITARY MANHOLES, DRAINAGE STRUCTURES AND CLEANOUT LOCATIONS WILL BE RECORDED. CURB AND PAVEMENT FINISHED GRADE ELEVATIONS AT ALL HIGH AN LOW POINTS, ALONG SWALES, CENTERLINES OF ROADS OR DRIVE AISLES, AND IN PARKING AREAS, SHALL BE RECORDED. AS-BUILT SURVEYS OF THESE ITEMS SHALL BE PROVIDED TO THE ENGINEER OF RECORD WITHIN 30 DAYS OF CONSTRUCTION COMPLETION AND PRIOR TO FINAL PAYMENT BY THE OWNER. THE ENGINEER OF RECORD RESERVES THE RIGHT TO REVIEW THE AS-BUILT SURVEYS AND REQUIRE THE COMPLETED WORK CORRECTED, WHERE DEFICIENCIES WITH RESPECT TO THE CONSTRUCTION DRAWINGS AND THE LOCAL, COUNTY AND STATE STANDARDS ARE NOT ADHERED TO BY THE CONTRACTORS WORK.
9. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.

PAVING, GRADING, AND DRAINAGE NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE UTILITY COMPANIES AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
3. STORM DRAINAGE PIPING TO UTILIZE WATER TIGHT JOINTS.
4. SEE DETAIL SHEETS FOR ALL PROPOSED STRUCTURE DETAILS.
5. ALL STORM SEWERS AND STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION STANDARDS OF ROADWAY CONSTRUCTION DETAILS.
6. MINIMUM DEPTH OF COVER FOR ALL STORM SEWER PIPE IS SEVEN (7") INCHES MEASURED FROM BOTTOM OF BASE, UNLESS SHOWN OTHERWISE.
7. EXCAVATED MATERIAL CONTAINING CONCRETE ROCK OR STONE GREATER THAN SIX (6") INCHES IN LARGEST DIMENSION IS UNACCEPTABLE FOR FILL WITHIN THE PROPOSED BUILDING AND PAVING AREA.
8. ALL SITEWORK AND EARTHWORK OPERATIONS CONDUCTED ON THE SITE TO BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY THE OWNER'S GEOTECHNICAL ENGINEER RECOMMENDATIONS IN THE GEOTECNNICAL REPORT THAT EXCEED THE INFORMATION IN THIS DRAWING SET SHALL TAKE PRECEDENCE.
9. COMPACTION CRITERIA FOR FILL PLACED IN THE FOLLOWING AREAS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM PERCENTAGE OF MAXIMUM MODIFIED PROCTOR DRY DENSITY AS DETERMINED BY ASTM D-1557 USED ON REPRESENTATIVE SOIL SAMPLES, UNLESS MORE STRINGENT CRITERIA GIVEN ELSEWHERE:
10. ALL FILL SHALL BE PLACED AT A MOISTURE CONTENT WITHIN THREE PERCENT OF ITS MODIFIED PROCTOR (ASTM D 1557) DETERMINED OPTIMUM MOISTURE IN LEVEL LIFTS WHOSE THICKNESS DOES NOT EXCEED 12 INCHES. EACH LIFT SHOULD BE THOROUGHLY AND UNIFORMLY COMPACTED TO 95 PERCENT OF THE ASTM D 1557 MAXIMUM DRY DENSITY. SUBGRADES RECEIVING FILL SHOULD BE DENSIFIED TO AN EQUIVALENT RELATIVE COMPACTION.
11. PAVEMENT: CRUSHED AGGREGATE FOR THE BASE COURSE SHOULD MEET THE REQUIREMENTS OF SECTIONS 911 OR 913A OF THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION." THE BASE MATERIALS SHOULD HAVE A LIMEROCK BEARING RATIO (LBR) OF AT LEAST 100 AND BE COMPACTED TO NOT LESS THAN 98 PERCENT OF THE AASHTO T-180 MAXIMUM DRY DENSITY. SUBBASE MATERIALS SHOULD BE DENSIFIED TO AN EQUIVALENT RELATIVE COMPACTION. SUBGRADE SOILS RECEIVING FLEXIBLE PAVING SHOULD BE UNIFORMLY COMPACTED TO 98 PERCENT OF THE AASHTO T-180 MAXIMUM DRY DENSITY.
12. PROTECT SUBGRADE FROM EXCESSIVE WHEEL LOADING DURING CONSTRUCTION, INCLUDING CONCRETE TRUCKS AND DUMP TRUCKS.
13. REMOVE AREAS OF FINISHED SUBGRADE FOUND TO HAVE INSUFFICIENT COMPACTION DENSITY TO A DEPTH NECESSARY AND REPLACE IN A MANNER THAT WILL COMPLY WITH COMPACTION REQUIREMENTS BY USE OF MATERIAL EQUAL TO OR BETTER THAN BEST SUBGRADE MATERIAL ON SITE. SURFACE OF SUBGRADE AFTER COMPACTION SHALL BE HARD, UNIFORM, SMOOTH, STABLE AND TRUE TO GRADE AND CROSS-SECTION.
14. GRADE ALL AREAS WHERE FINISH GRADE ELEVATIONS OR CONTOURS ARE INDICATED ON DRAWINGS, OTHER THAN PAVED AREAS AND BUILDINGS, INCLUDING EXCAVATED AREAS, FILLED AND TRANSITION AREAS, AND LANDSCAPED AREAS. GRADED AREAS SHALL BE UNIFORM AND SMOOTH, FREE FROM ROCK, DEBRIS, OR IRREGULAR SURFACE CHANGES. FINISHED SUBGRADE SURFACE SHALL NOT BE MORE THAN 0.10 FEET ABOVE OR BELOW ESTABLISHED FINISHED SUBGRADE ELEVATIONS, AND ALL GROUND SURFACES SHALL VARY UNIFORMLY BETWEEN INDICATED ELEVATIONS. FINISH DITCHES SHALL BE GRADED TO ALLOW FOR PROPER DRAINAGE WITHOUT PONDING AND IN A MANNER THAT WILL MINIMIZE EROSION POTENTIAL.
15. BUILDING AREA SUBGRADE PAD SHALL BE THAT PORTION OF THE SITE DIRECTLY BENEATH AND TEN FEET (10') BEYOND THE BUILDING AND APPURTENANCES INCLUDING THE LIMITS OF ANY FUTURE BUILDING EXPANSION AREAS AS SHOWN ON THE SITE/CIVIL DRAWINGS OR AS SPECIFIED IN THE GEOTECHNICAL REPORT.
16. TRENCH DEPTH REQUIREMENTS MEASURED FROM FINISHED GRADE OR PAVED SURFACE SHALL MEET THE FOLLOWING REQUIREMENTS OR APPLICABLE CODES AND ORDINANCES:
    A. WATER MAINS: 30 INCHES TO TOP OF PIPE BARREL
    B. SANITARY SEWER: ELEVATIONS AND GRADES AS INDICATED ON DRAWINGS.
    C. STORM SEWER: DEPTHS, ELEVATIONS, AND GRADES AS SHOWN ON DRAWINGS.
    D. ELECTRICAL CONDUITS: 24 INCHES MINIMUM TO TOP OF CONDUIT OR AS REQUIRED BY NEC 300-5, NEC 710-36 CODES, OR THE LOCAL UTILITY COMPANY REQUIREMENTS, WHICHEVER IS DEEPER.
    E. TV CONDUITS: 18 INCHES MINIMUM TO TOP OF CONDUIT OR AS REQUIRED BY THE LOCAL UTILITY COMPANY, WHICHEVER IS DEEPER.
    F. TELEPHONE CONDUITS: 18 INCHES MINIMUM TO TOP OF CONDUIT OR AS REQUIRED BY THE LOCAL UTILITY COMPANY, WHICHEVER IS DEEPER.
    G. GAS MAINS AND SERVICE: 30 INCHES MINIMUM TO TOP OF PIPE, OR AS REQUIRED BY THE LOCAL UTILITY COMPANY, WHICHEVER IS DEEPER.
17. ALL CONCRETE, UNLESS OTHERWISE NOTED OR SPECIFIED BY REGULATORY AUTHORITIES, SHALL BE 3000 PSI.
18. FINISHED GRADE ELEVATIONS SHALL NOT DEVIATE FROM THE PROPOSED ELEVATIONS SHOWN ON THE GRADING AND DRAINAGE PLANS BY MORE THAN 0.10 FEET.
19. DESIGN REQUIRES ALL MANHOLE LIFT HOLES AND GRADE ADJUSTMENT RINGS BE SEALED WITH NON-SHRINKING MORTAR. ALL INLET AND OUTLET PIPES MUST BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATER TIGHT CONNECTION OR ANOTHER WATER TIGHT CONNECTION ARRANGEMENT THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL.
20. ALL MANHOLE INSPECTION AND TESTING FOR WATERTIGHTNESS OR DAMAGE PRIOR TO PLACING INTO SERVICE ARE SPECIFIED BY CITY INSPECTOR. ALL AIR TESTING, IF SPECIFIED FOR CONCRETE SEWER MANHOLES, CONFORMS TO THE TEST PROCEDURES DESCRIBED IN ASTM C-1244.

I. APPLICABLE CODES:

A. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT, BROWARD COUNTY, AND ALL OTHER APPLICABLE LOCAL, STATE AND NATIONAL CODES.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER AND IN STRICT COMPLIANCE WITH ALL THE REQUIREMENTS OF THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 OR LATEST EDITION, AND ALL STATE AND LOCAL SAFETY AND HEALTH REGULATIONS.

C. ALL ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988, (N.A.V.D.), UNLESS OTHERWISE NOTED.

D. EXISTING TOPOGRAPHIC AND CADASTRAL INFORMATION SHOWN ON THESE DRAWINGS ARE BASED THE BOUNDARY AND TOPOGRAPHY SURVEY PROVIDED BY PULICE LAND SURVEYORS, INC. DATED 02/21/17

II. PRECONSTRUCTION RESPONSIBILITIES:

A. THE INFORMATION PROVIDED IN THESE PLANS IS TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT ANY INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AND UPON WHICH THEIR BIDS WILL BE BASED.

B. UPON THE RECEIPT OF THE "NOTICE TO PROCEED", THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD AND ARRANGE A PRECONSTRUCTION CONFERENCE TO INCLUDE ALL INVOLVED GOVERNMENTAL AGENCIES, UTILITY OWNERS, THE OWNER AND THE ENGINEER OF RECORD.

C. THE CONTRACTOR SHALL CONTACT "SUNSHINE ONE-CALL OF FLORIDA" BY CALLING 1-800-432-4770 AT LEAST 48 HOURS PRIOR TO COMMENCING ANY EXCAVATION OR CONSTRUCTION IN ORDER TO PROVIDE FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES ON-SITE AND OFF-SITE.

D. THE CONTRACTORS SHALL COORDINATE WITH UTILITIES TO ARRANGE FOR RELOCATION AND TEMPORARY SUPPORT OF UTILITY FEATURES, ETC. AS NECESSARY TO COMPLETE THE WORK, IF APPLICABLE.

E. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES ON THIS PROJECT.

F. THE CONTRACTOR SHALL SECURE ALL UTILITY EASEMENTS (IF REQUIRED) TO BE SECURED PRIOR TO CONSTRUCTION.

G. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AS SHOWN ON THE DRAWINGS WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE AT THE TIME PLANS WERE PREPARED BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC., WITHIN THE PROJECT AREA WHICH WERE INSTALLED AND CONSTRUCTED AFTER THE PREPARATION OF THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE FACILITIES SHOWN OR FOR ANY FACILITIES NOT SHOWN. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING FACILITIES, STRUCTURES AND OTHER FEATURES (WHETHER SHOWN ON THE PLANS OR NOT) AFFECTING THE WORK.

H. IF, UPON EXCAVATION, EXISTING CONDITIONS ARE FOUND TO BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD SO THAT APPROPRIATE MEASURES CAN BE TAKEN TO RESOLVE THE PROBLEM.

I. ALL ROAD CROSSINGS ARE OPEN CUT UNLESS OTHERWISE NOTED ON THE DRAWINGS.

III. INSPECTION AND TESTING:

A. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AS WELL AS ANY OTHER GOVERNMENTAL AGENCIES HAVING JURISDICTION AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

B. THE CONTRACTOR SHALL GIVE THE ENGINEER OF RECORD AT LEAST 48 HOURS ADVANCE NOTICE OF, AND THE ENGINEER OF RECORD MUST BE PRESENT TO WITNESS, THE FOLLOWING:
1. PRESSURE TESTING OF THE WATER DISTRIBUTION SYSTEM.
2. EXFILTRATION TEST OF THE SANITARY SEWAGE SYSTEM.
3. FINAL INSPECTION OF THE WATER, SEWER, PAVING, GRADING AND DRAINAGE.

C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL APPLICABLE REGULATORY AGENCIES FOR INSPECTION REQUIREMENTS.

IV. SHOP DRAWINGS:

A. PRIOR TO THEIR CONSTRUCTION OR INSTALLATION, SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD FOR THE FOLLOWING ITEMS: WATER MAIN FITTINGS, VALVES, PIPES, CATCH BASIN, STORM MANHOLES AND ALL OTHER DRAINAGE STRUCTURES, DRAINAGE PIPE, BALLAST ROCK, EXFILTRATION TRENCH FILTER FABRIC, AND TRAFFIC PAINT. IN ADDITION, SOME CITIES, COUNTIES, STATE AND/OR NATIONAL REGULATORY AGENCIES REQUIRE THEIR OWN INDIVIDUAL REVIEW AND APPROVAL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL OTHER AGENCY SHOP DRAWING APPROVALS IF REQUIRED.

V. TEMPORARY FACILITIES:

A. TEMPORARY FACILITIES:
1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES, AND ELECTRICITY, DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE ACCESS ENTRANCE TO COMMERCIAL PROPERTIES AT ALL TIMES, IF APPLICABLE.
3. THE CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION, IF APPLICABLE.

B. TRAFFIC REGULATION:
1. THE CONTRACTOR SHALL PROVIDE ALL WARNING SIGNALS, SIGNS, LIGHTS AND FLAGPERSONS AS NECESSARY FOR THE MAINTENANCE OF TRAFFIC WITHIN PUBLIC RIGHT-OF-WAYS IN ACCORDANCE WITH THE M.U.T.C.D. AND BROWARD COUNTY ENGINEERING AND PUBLIC WORKS DEPARTMENT.
2. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
3. NO TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESS PERMISSION FROM BROWARD COUNTY ENGINEERING AND PUBLIC WORKS DEPARTMENT.

VI. PROJECT CLOSE-OUT

I. CLEANING UP:
1. DURING CONSTRUCTION, THE PROJECT SITE AND ALL ADJACENT AREAS SHALL BE MAINTAINED IN A NEAT AND CLEAN MANNER, AND UPON FINAL CLEAN-UP, THE PROJECT SITE SHALL BE LEFT CLEAR OF ALL SURPLUS MATERIAL OR TRASH. THE PAVED AREAS SHALL BE SWEPT BROOM CLEAN.
2. THE CONTRACTOR SHALL RESTORE OR REPLACE, WHEN AND AS DIRECTED, ANY PUBLIC OR PRIVATE PROPERTY DAMAGED BY HIS WORK. EQUIPMENT AND/OR EMPLOYEES TO A CONDITION AT LEAST EQUAL TO THAT EXISTING IMMEDIATELY PRIOR TO THE BEGINNING OF OPERATIONS.
3. THE CONTRACTOR SHALL REPLACE ALL PAVING, STABILIZED EARTH, CURBS, DRIVEWAYS, SIDEWALKS, FENCES, MAILBOXES, SIGNS AND ANY OTHER IMPROVEMENTS REMOVED DURING CONSTRUCTION WITH THE SAME TYPE OF MATERIAL AND TO THE CONDITION WHICH EXISTED PRIOR TO THE BEGINNING OF OPERATIONS.
4. WHERE MATERIAL OR DEBRIS HAVE WASHED OR FLOWED INTO, OR HAVE BEEN PLACED IN WATER COURSES, DITCHES, DRAINS, CATCH BASINS, OR ELSEWHERE AS A RESULT OF THE CONTRACTOR'S OPERATIONS, SUCH MATERIAL OR DEBRIS SHALL BE REMOVED AND SATISFACTORILY DISPOSED OF DURING THE PROGRESS OF THE WORK, AND THE AREA KEPT IN A CLEAN AND NEAT CONDITION.

B. ALL PROPERTY MONUMENTS OR PERMANENT REFERENCES, REMOVED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED BY A STATE OF FLORIDA REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

C. PROJECT RECORD DOCUMENTS:
1. DURING THE DAILY PROGRESS OF THE JOB, THE CONTRACTOR SHALL RECORD ON HIS SET OF CONSTRUCTION DRAWINGS THE EXACT LOCATION, LENGTH AND ELEVATION OF ANY FACILITY NOT BUILT EXACTLY ACCORDING TO PLANS.
2. UPON COMPLETION OF DRAINAGE IMPROVEMENTS AND LIMEROCK BASE CONSTRUCTION (AND BEFORE PLACING ASPHALT PAVEMENT OR CONCRETE PAVEMENT) THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD "AS-BUILT" PLANS FOR THESE IMPROVEMENTS, SHOWING THE LOCATIONS AND PERTINENT GRADES OF ALL DRAINAGE INSTALLATIONS AND THE FINISHED ROCK GRADES OF THE ROAD CROWN AND EDGES OF PAVEMENT AT 25 FEET INTERVALS.
3. UPON COMPLETION OF CONSTRUCTION, AND PRIOR TO FINAL PAYMENT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD ONE COMPLETE SET OF ALL "AS-BUILT" CONTRACT DRAWINGS. THESE DRAWINGS SHALL BE MARKED TO SHOW "AS-BUILT" CONSTRUCTION CHANGES AND DIMENSIONS, LOCATIONS AND ELEVATIONS OF ALL IMPROVEMENTS.
4. ALL "AS-BUILT" INFORMATION SHALL BE CERTIFIED BY A FLORIDA REGISTERED LAND SURVEYOR.

VII. EARTHWORK AND COMPACTION

A. EARTHWORK AND COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH BROWARD COUNTY ENGINEERING AND PUBLIC WORKS DEPARTMENT STANDARDS.

VII. PAVING

A. GENERAL:
1. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF LIMEROCK BASE.
2. ALL EXISTING PAVEMENT, CUT OR DAMAGED BY CONSTRUCTION SHALL BE PROPERLY RESTORED AT THE CONTRACTOR'S EXPENSE.
3. ALL ROAD CROSSINGS ARE OPEN CUT UNLESS OTHERWISE NOTED ON THE DRAWINGS.
4. WHERE ANY PROPOSED PAVEMENT IS TO BE CONNECTED TO EXISTING PAVEMENT, THE EXISTING EDGE OF PAVEMENT SHALL BE SAW CUT.
5. PAVEMENT REPAIRS SHALL BE AS PER BROWARD COUNTY ENGINEERING AND PUBLIC WORKS DEPARTMENT STANDARDS.

B. MATERIALS AND INSTALLATION:
1. ALL WORKS CONFORM TO THE APPLICABLE BROWARD COUNTY ENGINEERING AND PUBLIC WORKS DEPARTMENT STANDARDS.
2. STREET NAME SIGNS SHALL BE ERECTED PER BROWARD COUNTY ENGINEERING AND PUBLIC WORKS DEPARTMENT STANDARDS.

IX. TESTING:

1. DENISTY TESTS SHALL BE TAKEN BY AN INDEPENDENT TESTING LABORATORY, CERTIFIED BY THE STATE OF FLORIDA. RESULTS OF DENSITY TESTS SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA AND PROVIDED TO THE ENGINEER OF RECORD FOR REVIEW.

Date	Description	No.
Revisions		

Signature Date

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BROWARD COUNTY FLORIDA

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GENERAL NOTES AND SPECIFICATIONS

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Project No. 330130301

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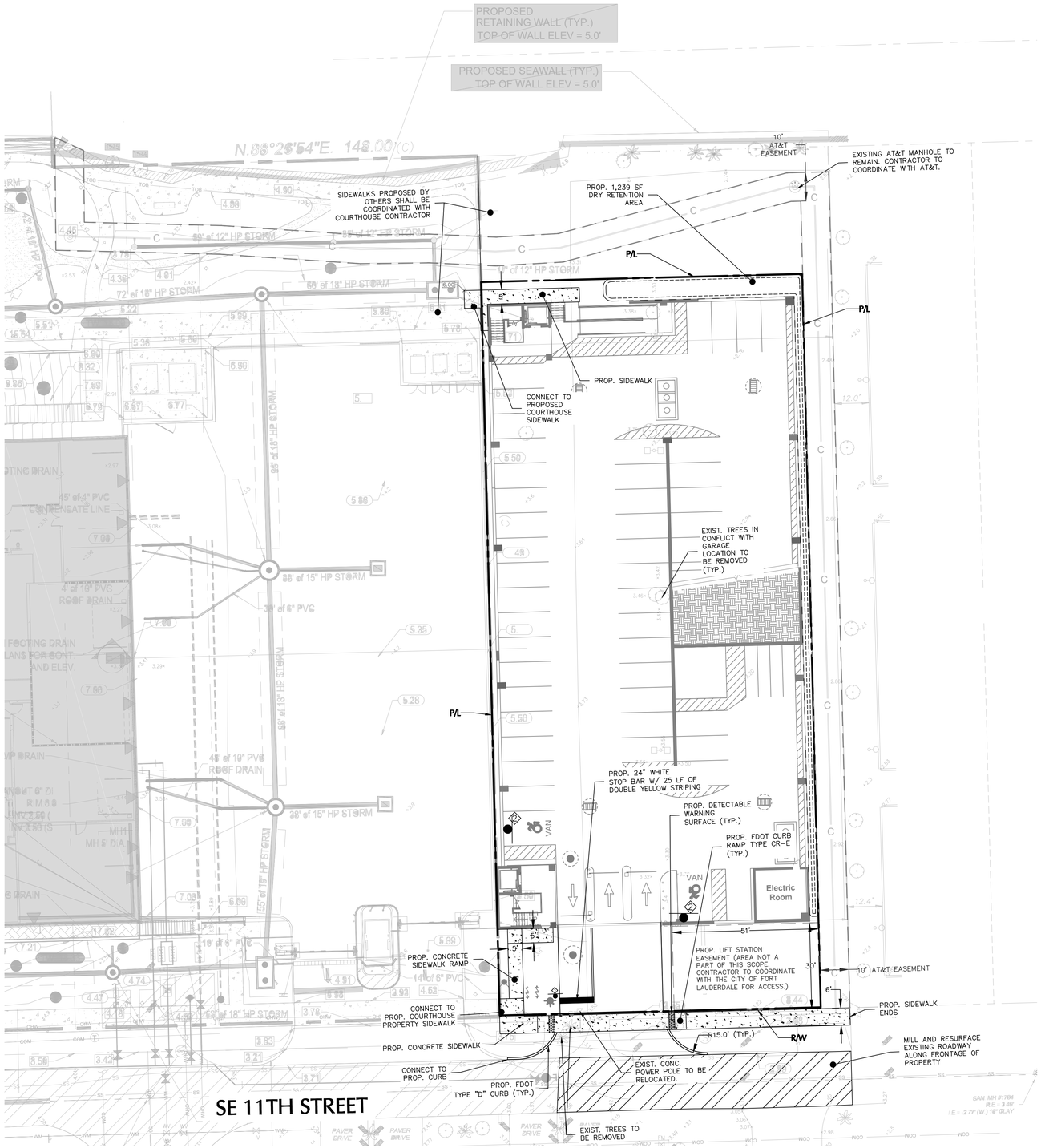

SIGN LEGEND

- R1-1 (STOP SIGN)
- R7-8 (ACCESSIBLE PARKING ONLY)

NOTES:

1. ALL ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988, (N.A.V.D.), UNLESS OTHERWISE NOTED.
2. EXISTING TOPOGRAPHIC AND CADASTRAL INFORMATION SHOWN ON THESE DRAWINGS ARE BASED ON THE ALTA/NSPS LAND TITLE SURVEY PROVIDED BY MCLAUGHLIN ENGINEERING COMPANY DATED 02/03/23.
3. EXISTING INFORMATION REFERENCED ON THIS PLAN IS BASED ON APPROXIMATE LOCATIONS OF EXISTING FEATURES. MINOR INCONSISTENCIES MAY ARISE. CONTRACTOR TO CONDUCT THEIR OWN SPECIFIC SURVEY FOR THE SITE.
4. SITE IS CURRENTLY UNDER CONSTRUCTION.
5. THIS IS A SCHEMATIC PLAN, NOT FOR CONSTRUCTION.
6. THE UNDERLAIN PLAN IS REFERENCED FROM THE APPROVED COURTHOUSE PAVING, GRADING, AND DRAINAGE PLAN PROVIDED BY CRAVEN THOMPSON AND ASSOCIATES, INC. SIGNED AND DATED OCT. 10TH, 2023.
7. REFER TO ARCHITECTURAL PLANS FOR GARAGE DETAILS

20 0 5 10 20
SCALE: 1" = 20'

Date	Description	No.

Revisions

Signature Date

MICHAEL CARR
PROFESSIONAL ENGINEER FL Lic. No. 72424

LANGAN
Langan Engineering and Environmental Services, LLC.
110 East Broward Boulevard, Suite 1500
Fort Lauderdale, FL 33301
T: 954.320.2100 F: 954.320.2101 www.langan.com
FL CERTIFICATE OF AUTHORIZATION NO. 00006601/LB8172/LB8198

Project
FEDERAL COURTHOUSE GARAGE
FORT LAUDERDALE
BROWARD COUNTY FLORIDA

Drawing Title
SITE PLAN

Project No.	Drawing No.
330130301	C-300
Date: JUNE 2025	
Drawn By: EWM	
Checked By: CL	

LANGAN
Project No. 330130301

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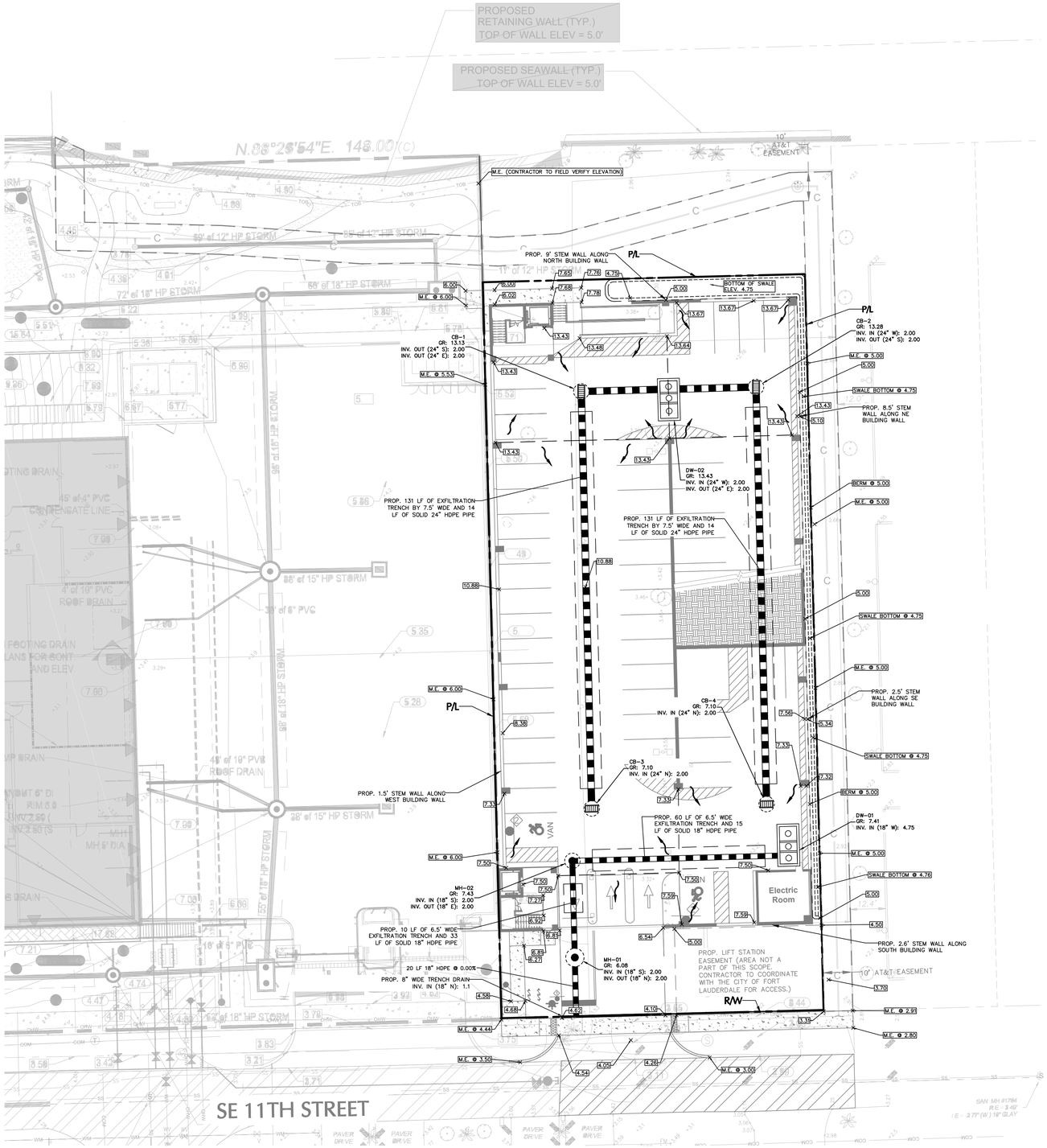
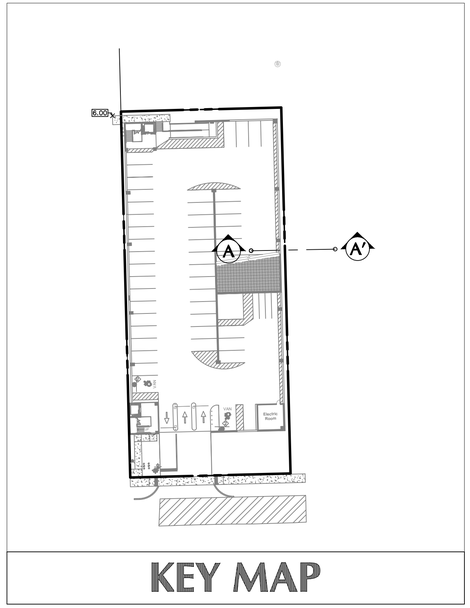
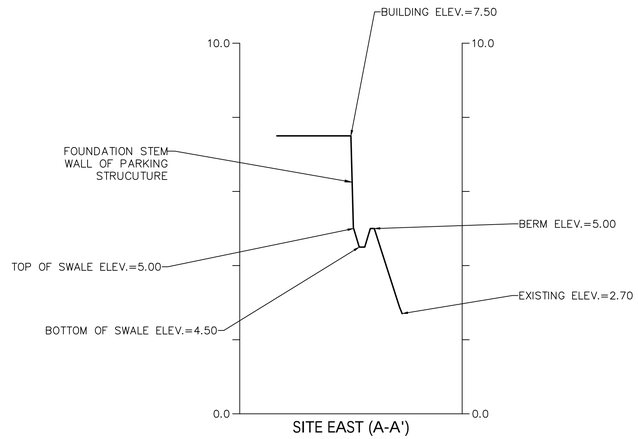




KEY MAP

50 0 25 50
SCALE: 1" = 50'



SITE EAST (A-A')

NOTES:

1. ALL ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988, (N.A.V.D.), UNLESS OTHERWISE NOTED.
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4. SITE IS CURRENTLY UNDER CONSTRUCTION.
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6. THE UNDERLAIN PLAN IS REFERENCED FROM THE APPROVED COURTHOUSE PAVING, GRADING, AND DRAINAGE PLAN PROVIDED BY CRAVEN THOMPSON AND ASSOCIATES, INC SIGNED AND DATED OCT. 10TH, 2023.
7. ADJUST ELEVATIONS OF EXISTING AT&T MANHOLES AS REQUIRED.

20 0 5 10 20
SCALE: 1" = 20'

Date	Description	No.

Revisions

Signature Date

MICHAEL CARR
PROFESSIONAL ENGINEER FL Lic. No. 72424

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Project

FEDERAL COURTHOUSE GARAGE

FORT LAUDERDALE
BROWARD COUNTY FLORIDA

Drawing Title

GRADING AND DRAINAGE PLAN

Project No.	Drawing No.
330130301	C-400
Date: JUNE 2025	
Drawn By: EWM	
Checked By: CL	

LANGAN

Project No. 330130301

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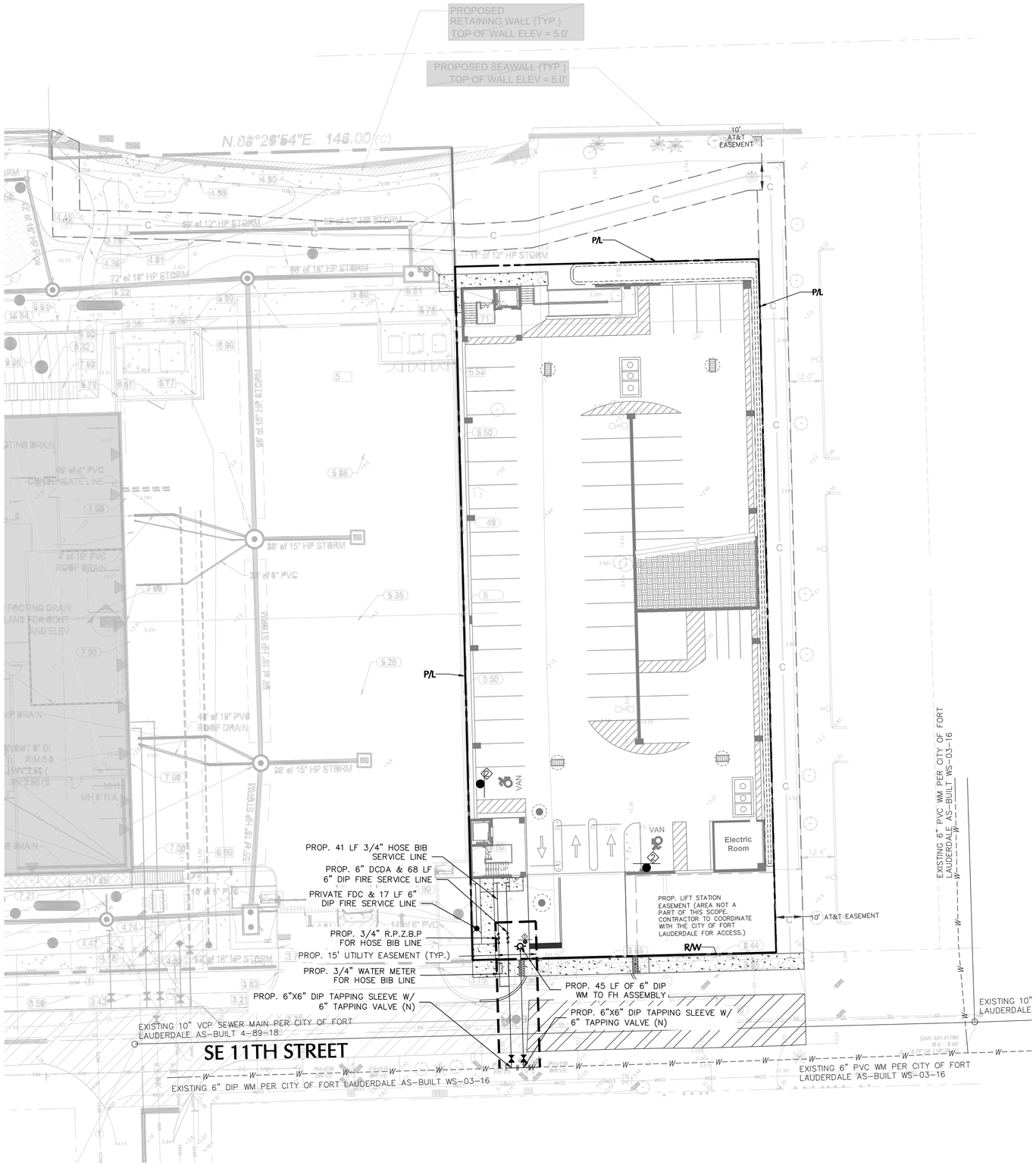

NOTES:

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4. SITE IS CURRENTLY UNDER CONSTRUCTION.
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6. THE UNDERLAIN PLAN IS REFERENCED FROM THE APPROVED COURTHOUSE PAVING, GRADING, AND DRAINAGE PLAN PROVIDED BY CRAVEN THOMPSON AND ASSOCIATES, INC. SIGNED AND DATED OCT. 10TH, 2023.

20 0 5 10 20
SCALE: 1" = 20'

Date	Description	No.

Revisions

Signature Date

MICHAEL CARR
PROFESSIONAL ENGINEER FL Lic. No. 72424

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Project
FEDERAL COURTHOUSE GARAGE
FORT LAUDERDALE
BROWARD COUNTY FLORIDA

Drawing Title
UTILITY PLAN

Project No.	Drawing No.
330130301	C-500
Date: JUNE 2025	
Drawn By: EWM	
Checked By: CL	

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Project No. 330130301

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
RENDERINGS - OPTION 01

DRAWING NO:
A1

SCALE:

DATE: JUNE. 2025

PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A

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1 WEST 39th STREET NEW YORK, N.Y. 10001 TEL: 212.486.3300 FAX: 212.779.1614

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
RENDERINGS - OPTION 02

DRAWING NO:
A2

SCALE:

DATE: JUNE. 2025

PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
RENDERINGS - OPTION 03

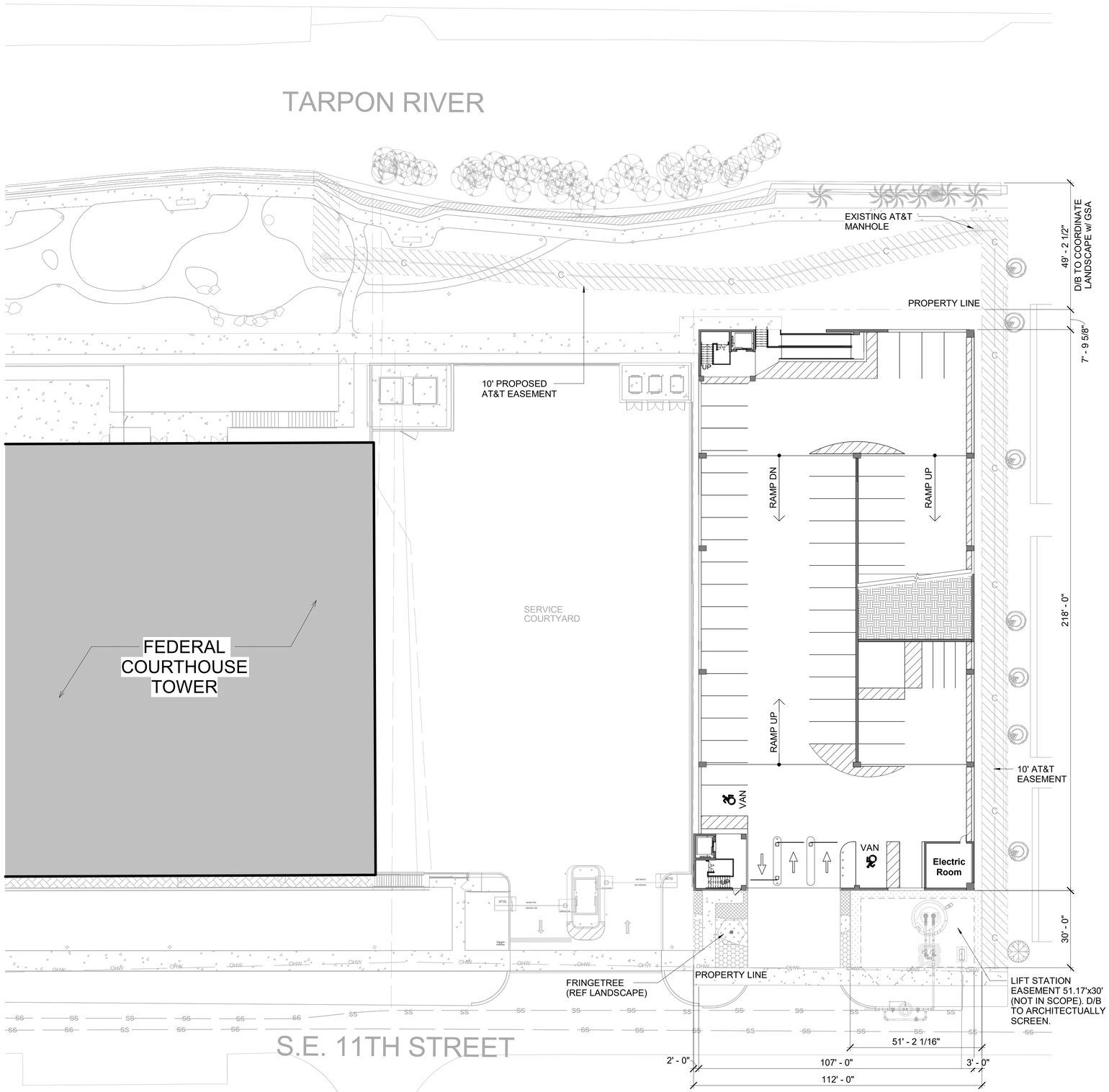
DRAWING NO:
A3

SCALE:

DATE: JUNE. 2025

PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A



1 A100 SITE PLAN
SCALE: 1" = 20'-0"

NORTH

BUILDING DATA

ZONING SUMMARY: RMM-25 RESIDENTIAL MULTYFAMILY MID RISE / MEDIUM HIGH DESNITY DISTRICT

ULDR Sec 47-5.36 (OTHER USES)

	REQUIRED	PROVIDED (PROPERTY PARCEL)	PROVIDED (LOT LEASE LINE)
MAX DENSITY FLOOR AREA RATIO (FAR)	N/A	3.19	4.31
MIN LOT SIZE / SITE AREA	10,000 SQ FT.	36,600 SQ FT.	27,115 SQ FT.
MAX STRUCTURE HEIGHT	55 FT.	50 FT. (5 FLOORS)	
MAX STRUCTURE LENGTH	200 FT.	218 FT.	
MIN LOT WIDTH	100 FT.	122 FT.	112 FT.
FRONT SETBACK	25 FT.	30 FT.	
SIDE SETBACK	20 FT.	13 FT. EAST / 2 FT. WEST	3 FT. EAST / 2 FT. WEST
REAR SETBACK	20 FT.	57'-10" FT.	7'-10" FT.
BUILDING FOOTPRINT / LOT COVERAGE	N/A	23,370 SQ FT. (64%)	23,370 SQ FT. (86%)
GROSS FLOOR AREA (NON-RESIDENTIAL)	N/A	116,850 SQ FT.	
LANDSCAPE AREA	35%	10,308 SQ FT. (28%)	2,668 SQ FT. (10%)
OPEN SPACE AREA	N/A	11,387 SQ FT. (31%)	3,747 SQ FT. (14%)
VEHICULAR USE AREA (VUA)	N/A	1,076 SQ FT. (3%)	1,076 SQ FT. (4%)

PARKING SUMMARY			
LEVEL	CARS	ADA	TOTAL
GRADE	36	2 (Van)	38
SECOND	59	2	61
THIRD	59	2	61
FOURTH	62	0	62
FIFTH	62	0	62
TOTAL	278	6	284
SCOOTER/ MOTORCYCLE: 4			
Added half level increases car count to 308 spaces. Added full level increase car count to 345 spaces.			

LANDSCAPE NOTES:

1. LANDSCAPE TO BE CONTINUOUS TRANSITION FROM THE NEW FEDERAL COURTHOUSE DESIGN.
2. D/B TO COORDINATE PEDESTRIAN CONNECTION FROM 11TH STREET AND TARPON RIVER.
3. D/B TO COORDINATE THE ARCHITECTURAL SCREENING OF THE LIFT STATION ON 11TH STREEET.
4. D/B TO COORDINATE LANDSCAPING FROM THE LOT LEASE LINE TO THE TARPON RIVER WITH GSA.

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FEDERAL COURTHOUSE PARKING GARAGE
FORT LAUDERDALE FLORIDA

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: SITE PLAN

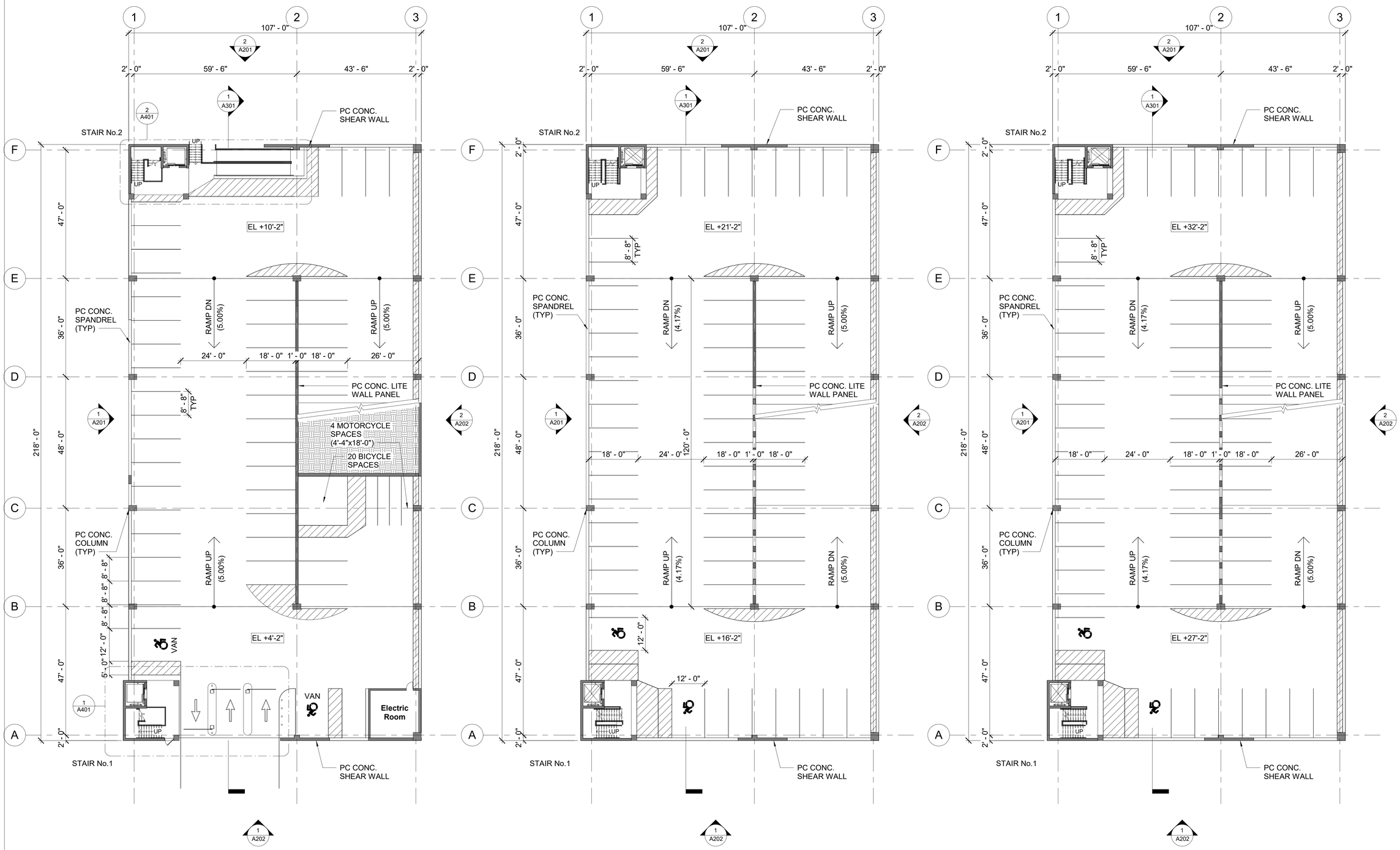
DRAWING NO: A100

SCALE: As indicated

DATE: AUGUST 2025

PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A



1 A101 GRADE LEVEL
SCALE: 1/16" = 1'-0"

2 A101 SECOND LEVEL
SCALE: 1/16" = 1'-0"

3 A101 THIRD LEVEL
SCALE: 1/16" = 1'-0"

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REVISION/ISSUE

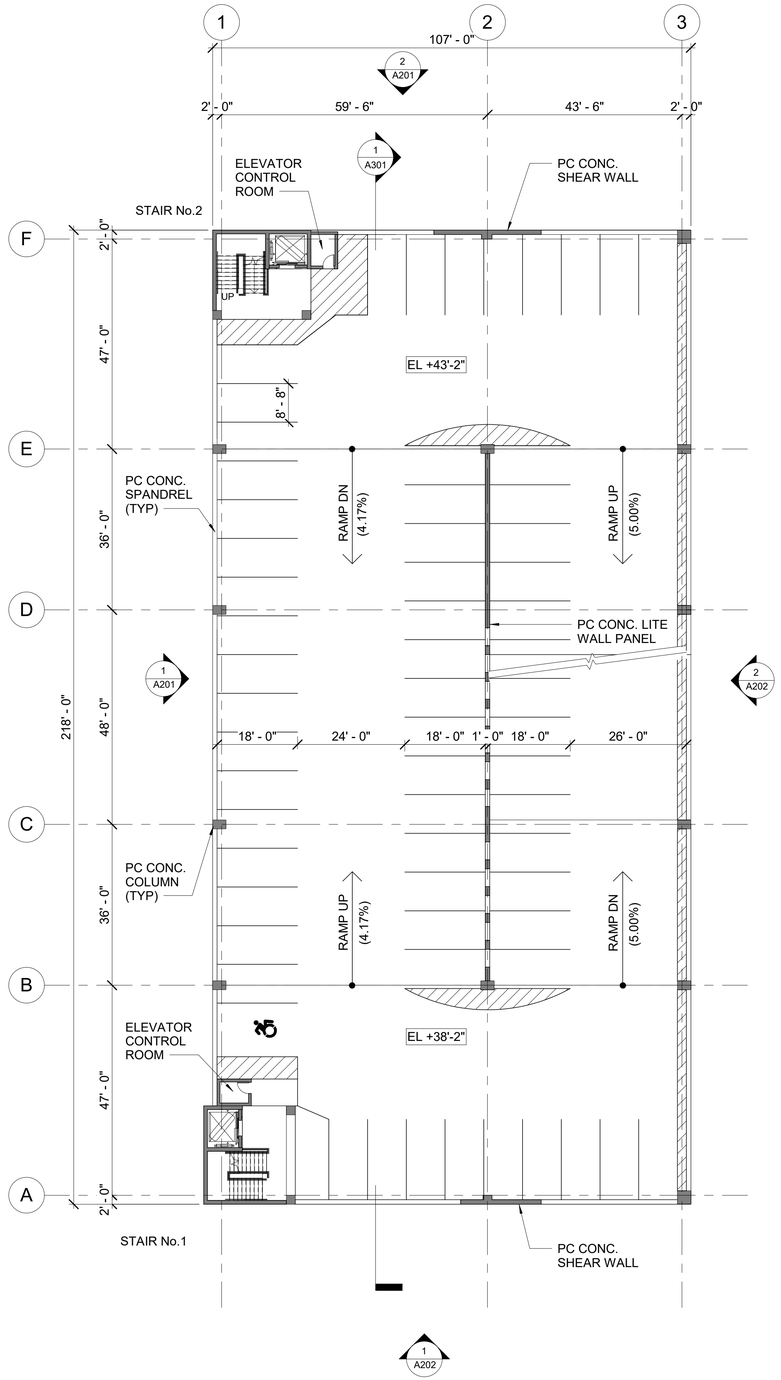
NO.	DESCRIPTION	DATE

DRAWING TITLE:
GRADE, SECOND, THIRD LEVEL PLAN

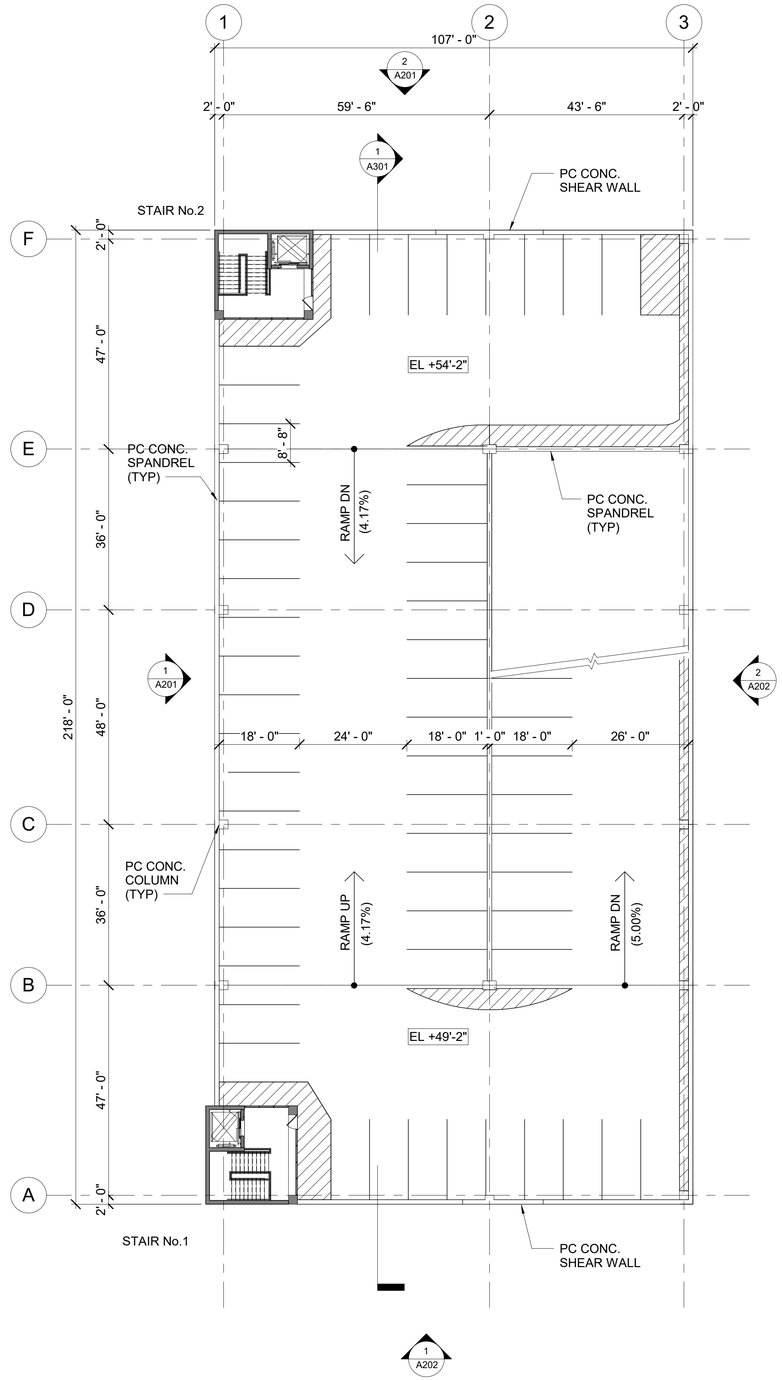
DRAWING NO:
A101

SCALE: 1/16" = 1'-0"
DATE: JUNE 2025
PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A



1 A102 FOURTH LEVEL SCALE: 1/16" = 1'-0"



2 A102 FIFTH LEVEL SCALE: 1/16" = 1'-0"

NORTH

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
FOURTH & FIFTH LEVEL PLAN

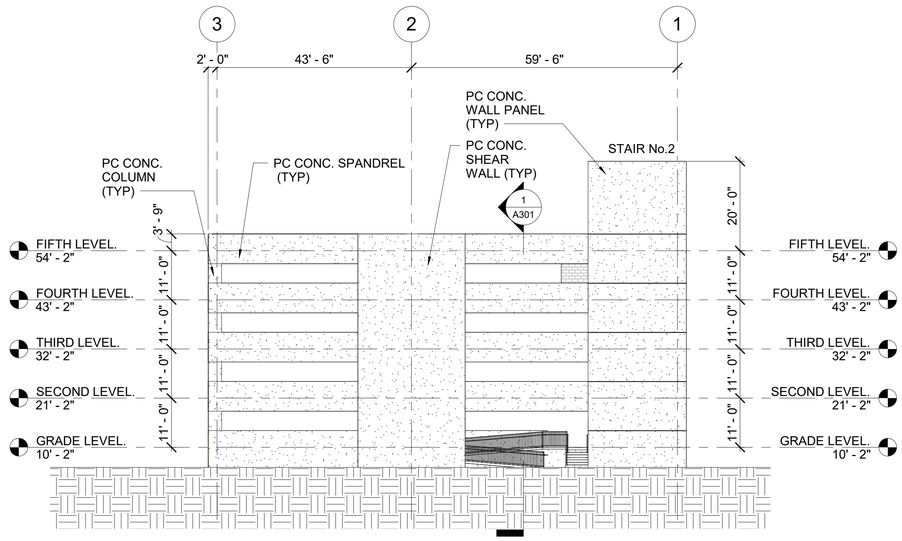
DRAWING NO:
A102

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

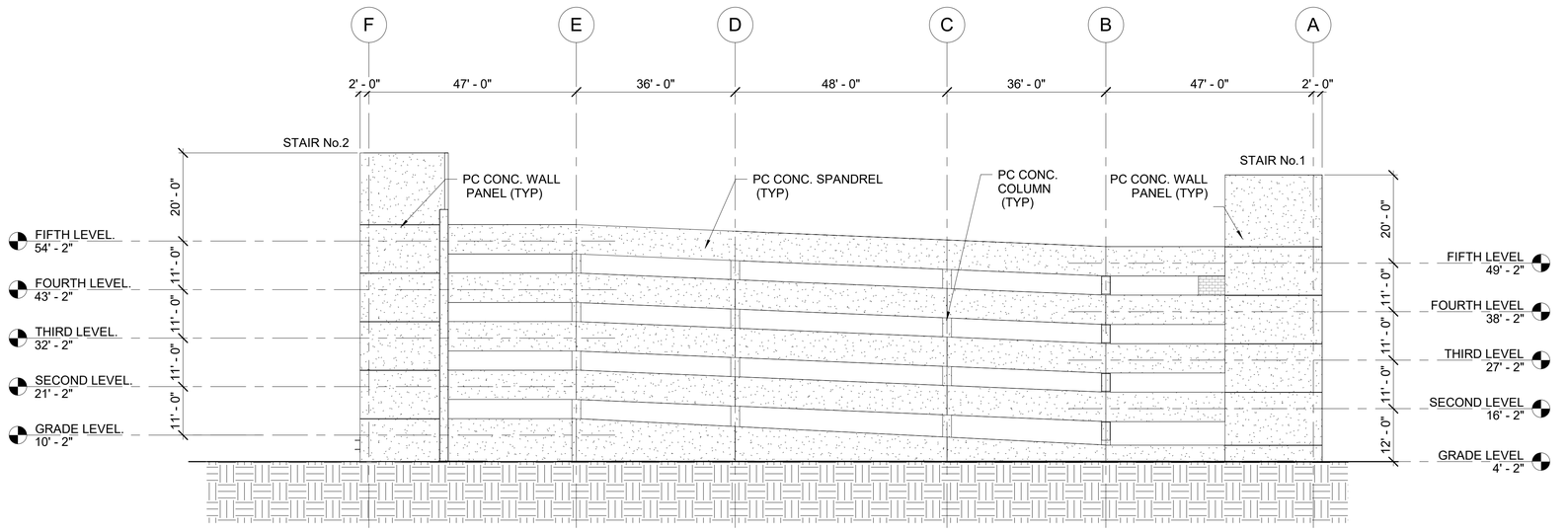
DATE: JUNE 2025

PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A



2 A201 PRECAST NORTH ELEVATION
SCALE: 1/16" = 1'-0"



1 A201 PRECAST WEST ELEVATION
SCALE: 1/16" = 1'-0"

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REVISION/ISSUE

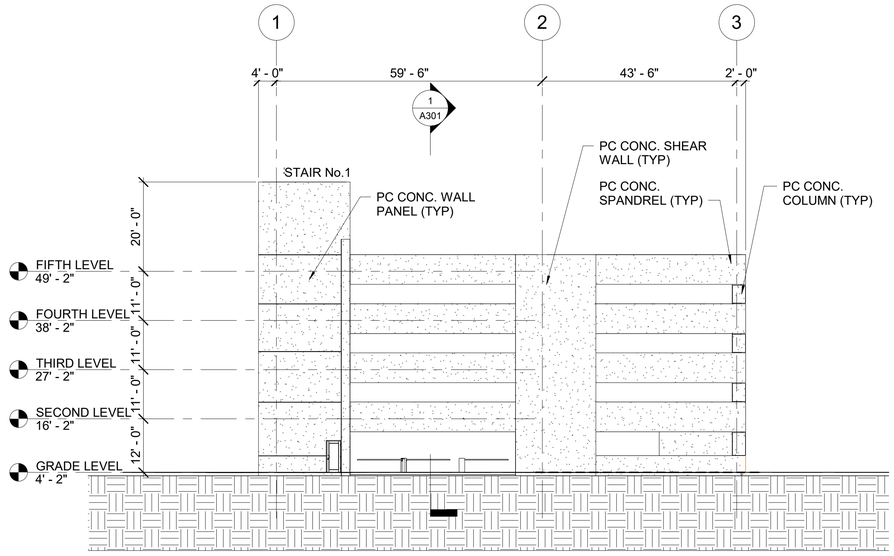
No.	DESCRIPTION	DATE

DRAWING TITLE:
BUILDING ELEVATIONS

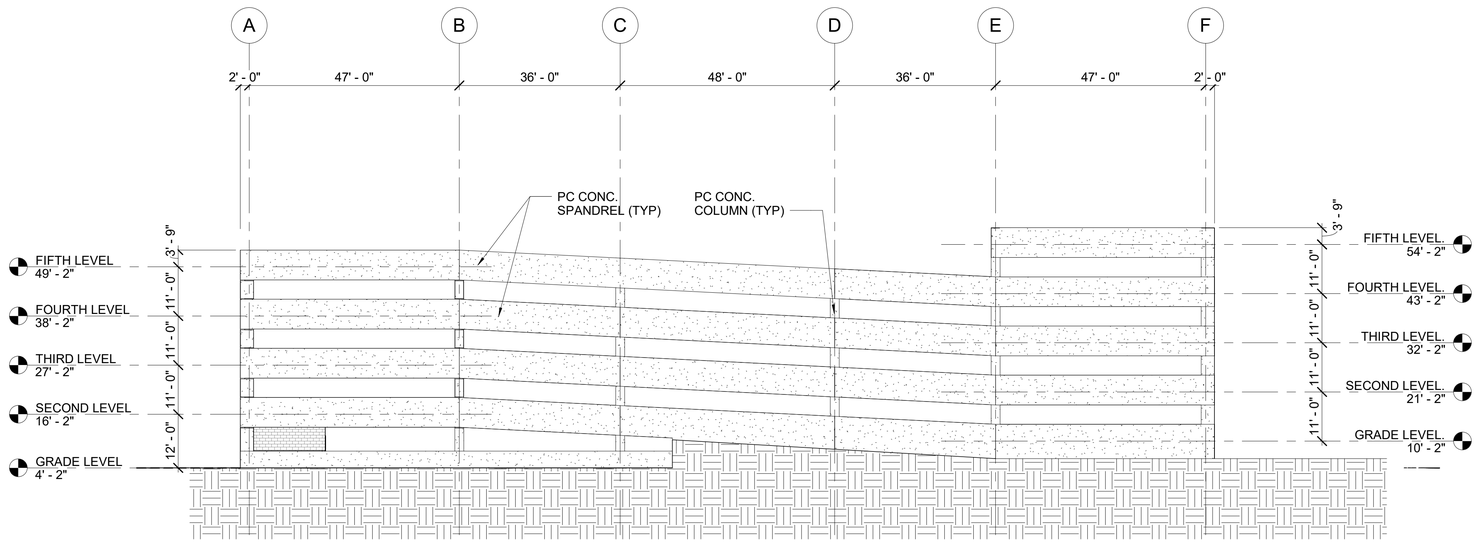
DRAWING NO:
A201

SCALE: 1/16" = 1'-0"
DATE: JUNE 2025
PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A



1 A202 PRECAST SOUTH ELEVATION
SCALE: 1/16" = 1'-0"



2 A202 PRECAST EAST ELEVATION
SCALE: 1/16" = 1'-0"

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REVISION/ISSUE

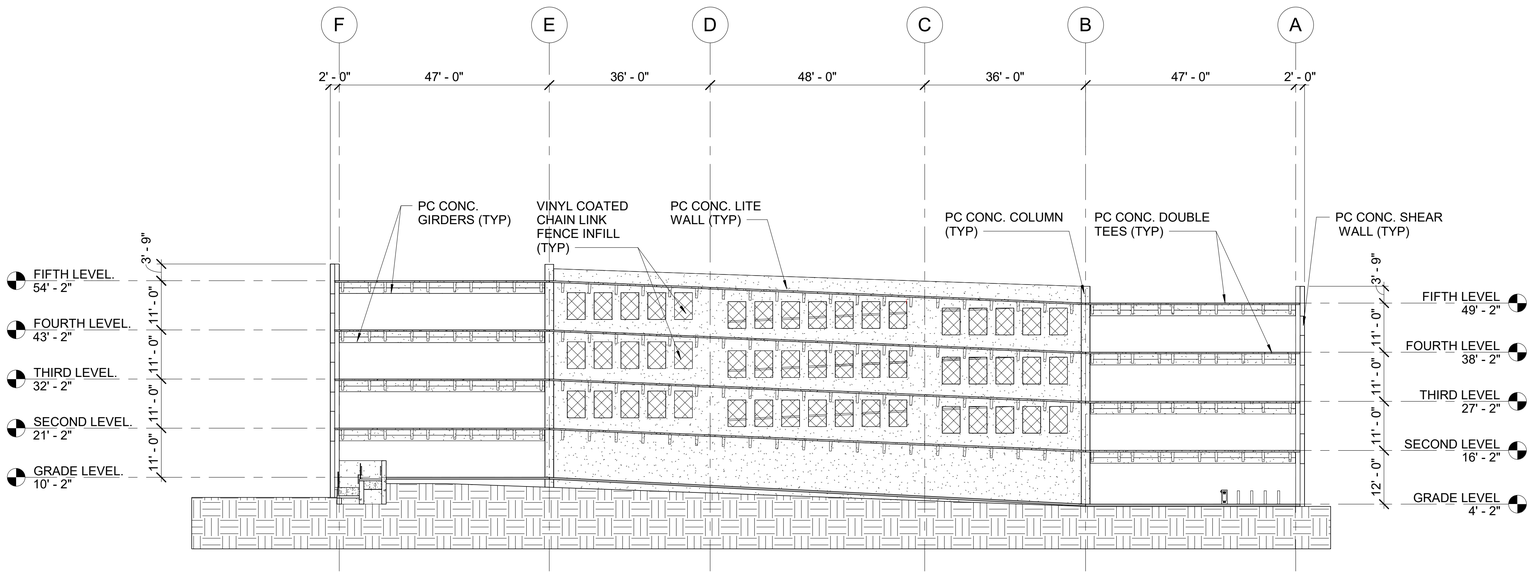
No.	DESCRIPTION	DATE

DRAWING TITLE:
BUILDING ELEVATIONS

DRAWING NO:
A202

SCALE: 1/16" = 1'-0"
DATE: JUNE 2025
PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A



1 / A301 BUILDING SECTION 1
SCALE: 1/16" = 1'-0"

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FEDERAL COURTHOUSE PARKING GARAGE

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
BUILDING SECTIONS

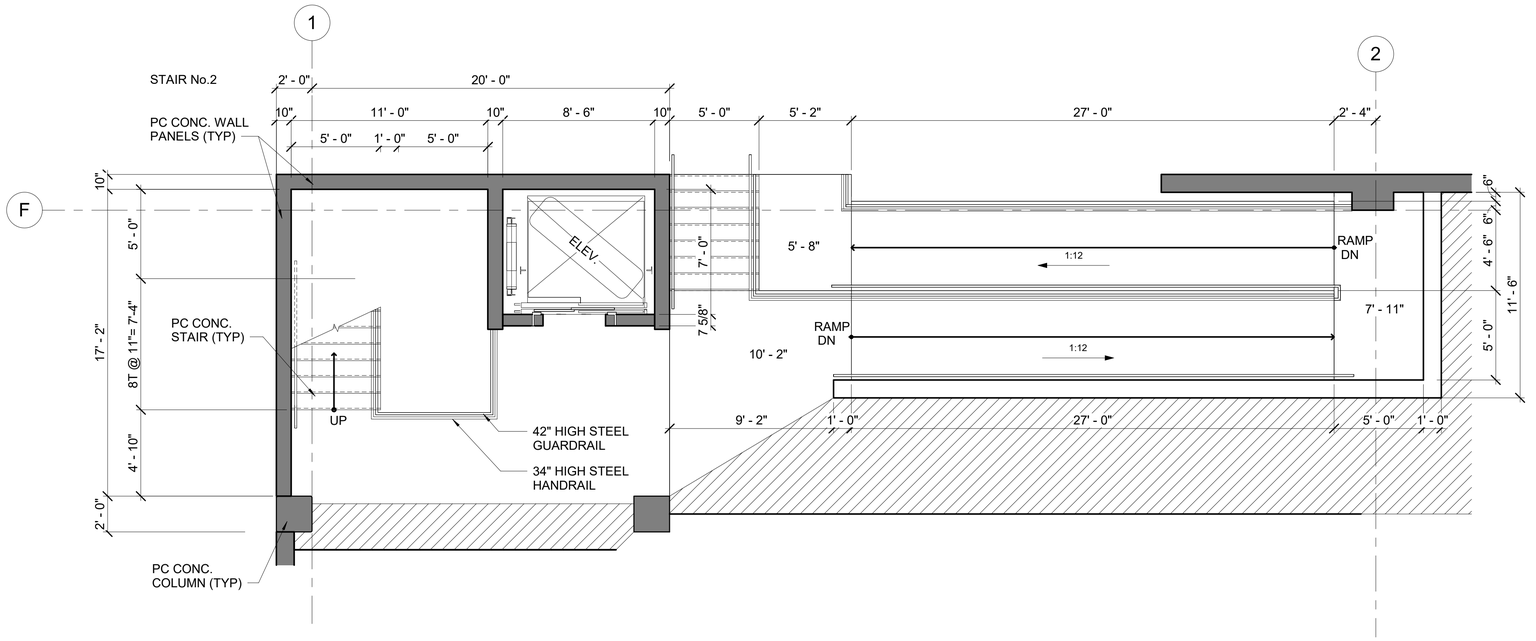
DRAWING NO:
A301

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

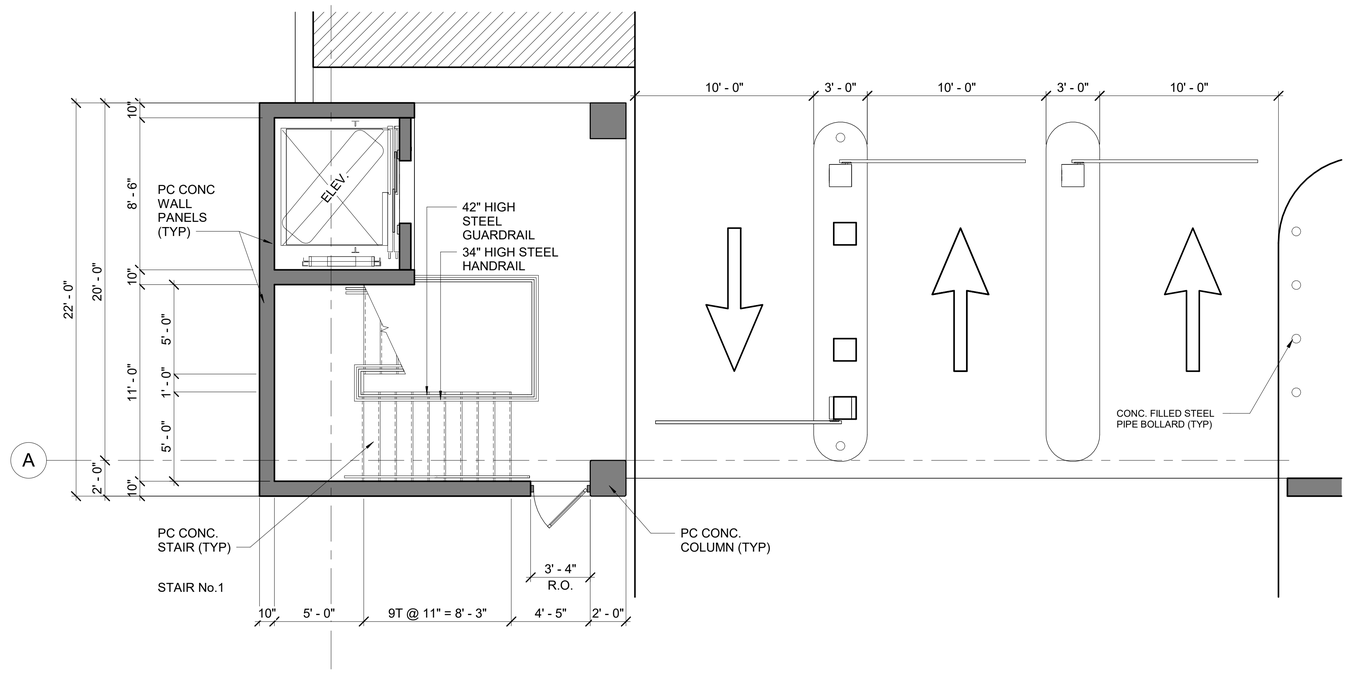
DATE: JUNE 2025

PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A



2 A401 STAIR/ ELEVATOR No.2 GRADE LEVEL PLANS
SCALE: 1/4" = 1'-0"



1 A401 STAIR/ ELEVATOR No.1 GRADE LEVEL PLAN
SCALE: 1/4" = 1'-0"

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REVISION/ISSUE

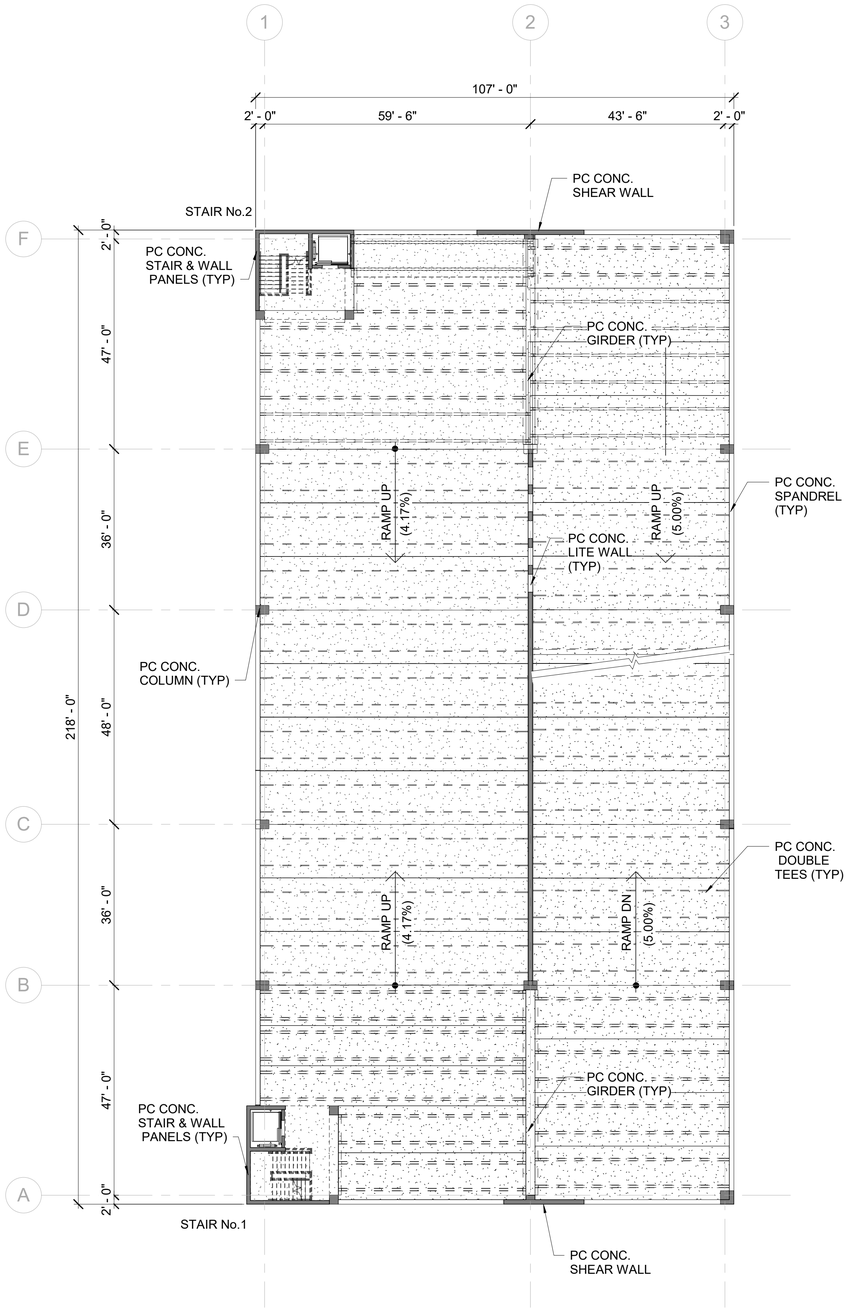
No.	DESCRIPTION	DATE

DRAWING TITLE:
STAIR No.1 & 2 PLANS

DRAWING NO:
A401

SCALE: 1/4" = 1'-0"
DATE: JUNE 2025
PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A



1 S203 FOURTH LEVEL
SCALE: 1/16" = 1'-0"

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
TYPICAL LEVEL FRAMING PLAN

DRAWING NO:
S203

SCALE: 1/16" = 1'-0"
DATE: JUNE 2025
PROJECT NO:11-23117-1

DES.	DRWN.	CHK'D.
N/A	JLK	N/A

ABBREVIATIONS

ABV	ABOVE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFR	ABOVE FINISHED ROOF
AHU	AIR HANDLING UNIT
BDD	BACK DRAFT DAMPER
BG	BOTTOM GRILLE
BTU	BRITISH THERMAL UNIT
CAC	CORRIDOR AIR CONDITIONING
CBBD	COUNTERBALANCED BACK DRAFT DAMPER
CF	CIRCULATING FAN
CFD	CEILING FIRE DAMPER
CFM	CUBIC FEET PER MINUTE
CO	CARBON MONOXIDE
CR	CONDENSER RISER
CWP	CONDENSER WATER PUMP
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
DB	DRY BULB
DN	DOWN
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EPF	ELEVATOR PRESSURIZATION FAN
ES	EQUAL SPLIT
EWT	ENTERING WATER TEMPERATURE
F/SD	FIRE SMOKE DAMPER
FD	FUSIBLE LINK FIRE DAMPER W/ DUCT ACCESS DOOR
FLR.	FLOOR
FLA	FULL LOAD AMPS
GEF	GARAGE EXHAUST FANS
GPM	GALLONS PER MINUTE
HP	HORSE POWER
HP-XX	HEAT PUMP DESIGNATION
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LRA	LOCK ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTU PER HOUR
MD	MOTORIZED DAMPER
MIN	MINIMUM
MO (WO)	MASONRY OPENING (WALL OPENING)
MVD	MANUAL VOLUME DAMPER, OPPOSED BLADE TYPE DUCT SIZE PERMITTING
NC	NORMALLY CLOSED
NIC	NOT IN THIS CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
O/A, OA	OUTSIDE AIR
OAU	OUTSIDE AIR UNIT
OBD	OPPOSED BLADE DAMPER
PAC	PTAC AIR HANDLER
PCU	PTAC CONDENSING UNIT
PSI (G)	POUNDS PER SQUARE INCH (GAUGE)
R/A	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
S/A	SUPPLY AIR
SD	SMOKE DAMPER
SE	SMOKE EXHAUST
SEF	SMOKE EXHAUST FAN
SPF	STAIRWAY PRESSURIZATION FAN
SP	STATIC PRESSURE
TEF	TOILET EXHAUST FAN
TER	TOILET EXHAUST RISER
TRG	TRANSFER GRILLE
UON	UNLESS OTHERWISE NOTED
VD	VOLUME DAMPER
WB	WET BULB
WMS	WIRE MESH SCREEN
300 CFM	300 CUBIC FEET OF AIR PER MINUTE

NOTE:
ALL SYMBOLS MAY NOT NECESSARILY APPLY TO THESE PLANS

DUCTWORK LEGEND:

- SUPPLY DUCT UP
- SUPPLY DUCT DOWN
- RETURN OR EXHAUST DUCT UP
- RETURN OR EXHAUST DUCT DOWN
- SLOPING RISE IN DUCTWORK
- SLOPING DROP IN DUCTWORK
- ACCESS DOOR IN DUCT
- DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE
- ROUND DUCT DIAMETER SIZE
- ACOUSTIC LINING IN DUCT (SIZE NOTED INDICATES INSIDE DIMENSIONS)
- FLEXIBLE CONNECTION
- VOLUME DAMPER
- AUTOMATIC LOUVER DAMPER
- FUSIBLE LINK FIRE DAMPER W/ ACCESS DOOR
- ELBOW WITH TURNING VANES
- DUCT SPLIT
- BRANCH TAKEOFF WITH VOLUME DAMPER
- RADIUS ELBOW
- SLOT DIFFUSER
- RECTANGULAR DUCT CAPPED & SEALED W/ VOLUME DAMPER
- NEW DUCTWORK
- CEILING DIFFUSER
- RETURN OR EXHAUST REGISTER OR GRILLE
- TRANSFER GRILLE ON BOTH SIDES OF PARTITION WALL
- FLEXIBLE DUCT
- WALL OPENING IN WALL ABOVE HUNG CEILING (SIZE)
- SUPPLY REGISTER
- RETURN REGISTER OR GRILLE
- SMOKE DAMPER
- FIRE DAMPER
- AUTOMATIC COMBINATION FIRE SMOKE DAMPER WITH AIRFOIL BLADES AND OBD. RUSKIN FSD-60.
- MANUAL VOLUME DAMPER
- NORMALLY OPEN MOTORIZED DAMPER
- NORMALLY CLOSED MOTORIZED DAMPER
- DUCTWORK STATIC PRESSURE SENSOR
- BACK DRAFT DAMPER
- COUNTER BALANCED BACK DRAFT DAMPER
- THERMOSTAT OR TEMP. SENSOR SEE CONTROL DIAGRAMS
- SMOKE DETECTOR
- HUMIDISTAT
- STATIC PRESSURE SENSOR
- OUTSIDE AIR RISER
- SMOKE EXHAUST RISER
- CONDENSER WATER RISERS
- HORZ. HEAT PUMP UNIT WITH MANUFACTURER RECOMMENDED ACCESS CLEARANCE. DUCT DISCHARGE LOCATION MAY VARY.

NOTE:
ALL SYMBOLS MAY NOT NECESSARILY APPLY TO THESE PLANS

PIPING LEGEND:

- BTU FLOW METER
- CHWS/R CHILLED WATER SUPPLY/RETURN
- CWS/R CONDENSER WATER SUPPLY/RETURN
- CW DOMESTIC COLD WATER MAKE-UP
- ARROW INDICATES DIRECTION OF FLOW
- PITCH PIPE DOWN IN DIRECTION OF ARROW
- D DRAIN LINE
- V VENT LINE
- UNION
- CAPPED PIPE W/ SHUT-OFF VALVE
- DIRT POCKET
- "Y" TYPE STRAINER W/ BLOW-OFF VALVE
- ELBOW TURNED UP
- ELBOW TURNED DOWN
- GATE VALVE (SHUT OFF)
- GLOBE VALVE
- CHECK VALVE
- AUTOMATIC THREE WAY CONTROL VALVE
- AUTOMATIC TWO WAY CONTROL VALVE
- LUBRICATED PLUG VALVE
- LOCKSHIELD GLOBE VALVE
- SOLENOID VALVE
- BUTTERFLY VALVE
- BUTTERFLY AUTOMATIC CONTROL VALVE
- THERMOMETER
- PIPE SENSOR WELL (THERMOMETER)
- PRESSURE GAUGE & COCK
- BALANCING VALVE WITH METERING PORTS
- VIBRATION ISOLATOR
- REDUCER
- ECCENTRIC REDUCER
- FLOW
- BALL VALVE & FLOW CONTROL VALVE

BUILDING CALCULATIONS ARE BASED ON THE FOLLOWING CRITERIA

WALL INSULATION	U=0.15
ROOF INSULATION	U=0.05
GLASS, TINTED (S.C.)	0.47
GLASS U VALUE	0.86
SLAB OVER UNCONDITIONED SPACE	R=5

A. INDOOR DESIGN: SUMMER 72 DDB/50% RH, WINTER 70 DDB.
B. OUTDOOR DESIGN: SUMMER 91 DDB/79 DWB, WINTER 44 DDB.
C. BUILDING ENVELOPE CONDITIONS:

GENERAL NOTES:

1. IN GENERAL, PLANS AND DIAGRAMS ARE SCHEMATIC ONLY AND SHOULD NOT BE SCALED. THE MECHANICAL CONTRACTOR SHALL VERIFY BUILDING CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATION AND/OR INSTALLATION OF EQUIPMENT OR MATERIAL. MECHANICAL CONTRACTOR SHALL NOTIFY ARCHITECT AND ENGINEER IN WRITING OF ANY DISCREPANCIES.
2. ALL MECHANICAL SYSTEMS ARE TO BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE NFPA STANDARDS, ANSI STANDARDS, THE LOCAL BUILDING CODE, NOISE & HEIGHT ORDINANCES, PLANS AND SPECIFICATIONS.
3. IT IS THE INTENT OF THE PLANS AND GENERAL NOTES TO PROVIDE A COMPLETE AND OPERATING INSTALLATION INCLUDING ALL NECESSARY ITEMS REQUIRED, EVEN THOUGH ITEMS ARE NOT INDICATED ON THE DRAWINGS OR IN THE NOTES. WORK CONSIDERED NECESSARY FOR THE COMPLETION OF THE WORK IN PROPER MANNER NOT SHOWN ON THE PLANS OR NOTES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER IN WRITING PRIOR TO BIDS OTHERWISE WORK SHALL NOT BE ADDITIONALLY CHARGED AFTER BID IS AWARDED.
4. ALL MATERIALS SHALL BE NEW AND ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, FLA. ENERGY CODE, PRODUCT APPROVAL, RULES AND ORDINANCES, ANY DAMAGED EQUIPMENT SHALL BE REPLACED OR RESTORED TO ORIGINAL CONDITION.
5. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, ACCESS PANELS, CONTROL SYSTEMS, DEVICES, PERMITS AND SERVICES NECESSARY FOR FURNISHING AND INSTALLING OF A COMPLETE SERVICEABLE MECHANICAL SYSTEM.
6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL TRADES INSTALLATION SCHEDULES. FIXED WORK SUCH AS DUCTWORK AND PLUMBING SHALL BE INSTALLED PRIOR TO ANY TRADE WORK THAT CAN BE EASILY RELOCATED OR OFFSET SUCH AS ELECTRICAL CONDUITS AND SMALL WATER LINES. THE CONTRACTOR SHALL VISIT SITE AND VERIFY ALL CLEARANCES BEFORE FABRICATION OF DUCTWORK. PROVIDE OFFSETS AND CHANGES IN DUCT SIZES TO MEET FIELD CONDITIONS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS OF EQUIVALENT SIZE SHALL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.
7. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSTALLATION INSPECTIONS, FEES, AND PERMITS REQUIRED FOR CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, ACCESS PANELS, CONTROLS, AND DEVICES, AND SERVICES NECESSARY FOR FURNISHING AND INSTALLING A COMPLETE OPERATIONAL MECHANICAL SYSTEM. ALL MATERIAL AND EQUIPMENT SHALL BE NEW.
8. SHOP DWG. SUBMITTALS: PRIOR TO FABRICATION OR DELIVERY OF ANY MATERIAL OR EQUIPMENT TO THE JOB SITE, SUBMIT 4 INDEXED COPIES OF EQUIPMENT AND MATERIAL TO BE USED. SUBMIT ITEMS AT ONE TIME IN A NEAT AND ORDERLY MANNER WITHIN THE NUMBER OF DAYS AS DIRECTED BY THE ARCHITECT. REVIEW OF EQUIPMENT AND MATERIAL SUBMITTAL SHALL IN NO WAY RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO COMPLY WITH PLANS, SPECIFICATIONS, AND LOCAL CODES. SUBMIT THE FOLLOWING ITEMS FOR APPROVAL OR REVIEW: AIR CONDITIONING UNITS, AIR DEVICES, FANS, TOWERS, PUMPS, CONTROLS, FIRE DAMPERS, VOLUME DAMPERS, FITTING.
9. PROVIDE TWO SETS OF SUBMITTALS, & OPERATION AND MAINTENANCE MANUALS TO THE OWNER PRIOR TO CERTIFICATION OF OCCUPANCY IN A BOUND AND INDEXED BOOK FOR THE OWNER.
10. GUARANTEE FOR ONE YEAR AFTER ACCEPTANCE BY THE OWNER, ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP TO BE FREE FROM DEFECT. PROVIDE FIVE YEAR AIR CONDITIONER COMPRESSOR WARRANTY.
11. CONTRACTOR SHALL PROVIDE ALL SUPPLEMANTARY STEEL REQUIRED TO SUSPEND MECHANICAL EQUIPMENT AND MECHANICAL WORK.
12. ALL CUTTING, PATCHING, STRUCTURAL STEEL. WEATHERPROOFING, PAINTING, AND WALL OPENINGS SHALL BE BY THE GENERAL CONTRACTOR. ALL AIR DEVICES, PIPING, ETC. SHALL BE PAINTED TO MATCH SURROUNDING COLOR AS REQUIRED BY THE ARCHITECT. PAINT BARE EXTERIOR MECHANICAL PIPING AND EQUIPMENT WITH EPOXY ENAMEL.
13. ALL LOUVERS, GRILLES, PIPING, ETC. SHALL BE PAINTED TO MATCH SURRONDING COLOR AND TEXTURES AS REQUIRED BY ARCHITECT. VERIFY COLOR AND TEXTURE WITH ARCHITECT. CLEAN, SAND, PRIME & PAINT ALL EXPOSED MECHANICAL EQUIPMENT WITH BENJAMIN MOORE EPOXY ENAMEL 182 AND REQUIRED PRIMER AS RECOMMENDED BY MANUFACTURER (RTU AND EXH./SUP. FANS SHALL BE FACTORY PAINTED IF CALLED OUT FOR ON SCHEDULES.).
14. ALL OPENINGS IN BUILDING STRUCTURE, FOR DUCTWORK, PIPING, ETC. TO BE 1/2" LARGER (ON ALL SIDES) THAN THE OUTSIDE DIMENSIONS AS REQUIRED FOR FIRE STOPPING. FILL VOIDS WITH FIRE RETARDANT SILICONE FOAM (I.E. CHASE-FOAM CTC PR-855 BY CHASE TECHNOLOGY CORP.), VSG THERMOFIRER SAFING SYSTEM OR 3M-FIREPROOFING PRODUCTS OR EQUAL.
15. ALL STORAGE ROOMS, ELECTRIC RMS, TOILETS, ETC., WILL HAVE UNDERCUT DOORS TO PROVIDE VENTILATION REQUIRED WHEN DOOR OR TRANSFER GRILLES ARE NOT SHOWN.
16. NO COMBUSTIBLE MATERIALS ARE ALLOWED IN RETURN AIR PLENUMS OR ABOVE CEILINGS USED FOR RETURN AIR OR ENCLOSED PARKING GARAGES.
17. HVAC CONTRACTOR WILL WARRANTY COMPRESSORS FOR FIVE YEARS AND ALL MECHANICAL SYSTEMS, DUCTWORK, THERMOSTATS, VAV BOXES, AND ALL OTHER EQUIPMENT, PARTS AND LABOR UNDER THESE DRAWINGS AND SPECIFICATIONS FOR A PERIOD OF ONE (1) YEAR AFTER C.O. OF BUILDING. ANY REPAIRS REQUIRING SYSTEM SHUT DOWN WILL BE DONE DURING NON OPERATIONAL PERIODS.
18. VERIFY VOLTAGE WITH ELECTRICAL CONTRACTOR BEFORE ORDERING ANY EQUIPMENT. CONTRACTOR IS RESPONSIBLE FOR ANY ADDED ELECTRICAL COSTS WHICH MAY RESULT FROM SUBSTITUTED EQUIPMENT. PROVIDE SINGLE POINT ELECTRICAL CONNECTIONS FOR ALL HVAC EQUIPMENT UNLESS OTHERWISE SPECIFIED. PROVIDE TRANSFORMERS AS REQUIRED TO OPERATE FIRESTATS, THERMOSTATS, INDOOR AND OUTDOOR UNITS, AND ANY OTHER EQUIPMENT SHOWN ON THE MECHANICAL DRAWINGS.
19. IDENTIFY ALL EQUIPMENT WITH 4" STENCILED LETTERS.
20. MAINTAIN A COMPLETE SET OF MECHANICAL PRINTS FOR INDICATING ALL CHANGES. USE COLORED PENCIL TO MAKE CHANGES AT THE TIME OF EXECUTION. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS TO THE ENGINEER. CHANGES FROM THE CONTRACT DOCUMENTS REQUIRED FOR A CERTIFICATE OF OCCUPANCY NOT APPROVED BY THE ARCHITECT AND ENGINEER IN WRITING SHALL BE REVIEWED BY THE ENGINEER AT THE CONTRACTORS EXPENSE. DELIVER THE SET TO THE ARCHITECT PRIOR TO ISSUANCE OF FINAL PAYMENT.
21. COORDINATE EXACT LOCATION OF SUPPLY AIR DIFFUSERS AND RETURN AIR GRILLES WITH ARCHITECTURAL CEILING PLANS.
23. FILTERS:
    A. PROVIDE MIN. OF TWO SETS OF TEMPORARY FIBERGLASS FILTERS OF THE SAME THICKNESS AS FINAL FILTERS FOR USE DURING CONSTRUCTION.
    B. PROVIDE MIN. OF TWO SETS OF FINAL FILTERS.
24. PROVIDE A MIN. OF 3' CLEARANCE IN FRONT OF ALL 120-240 VOLT PANELS AND 4' CLEARANCE IN FRONT OF ANY 480 VOLT PANEL.
25. INDOOR AIR QUALITY PRECAUTIONS:
    A THE CONTRACTOR SHALL ALLOW FOR NECESSARY VENTILATION DURING CONSTRUCTION TO AVOID INDOOR AIR POLLUTION.
    B. THE CONTRACTOR SHALL PREPARE WRITTEN DIRECTION BY WHICH THE BUILDING OWNER OR ITS REPRESENTATIVE WILL BE ABLE TO OPERATE THE VENTILATION SYSTEMS AT ITS OPTIMAL LEVEL.
26. BUILDING HVAC CALCULATIONS ARE BASED ON THE FOLLOWING CONDITIONS:
    A. INDOOR DESIGN: SUMMER 75' DB/50% RH, WINTER 72' DB.
    B. OUTDOOR DESIGN: SUMMER 93/78' DB/79' WB, WINTER 35' DB.
27. PROVIDE THERMOSTAT CONTROL OF ALL UNIT INTEGRATED TO THE BUILDING CENTRAL CONTROL PANEL.
28. PROVIDE FLEXIBLE DUCT CONNECTORS, RATED AS REQUIRED, TO ALL FANS, A/C UNITS, OR MECHANICAL EQUIPMENT.
29. PROVIDE TESTING BALANCE REPORT.

PROJECT IS DESIGNED IN COMPLIANCE WITH FBC 2023 - MECHANICAL

HVAC DESIGN REQUIRES:	YES	NO
DUCT SMOKE DETECTOR	X	–
FIRE DAMPER(S)	–	X
SMOKE DAMPER(S)	–	X
FIRE RATED ENCLOSURE	–	X
FIRE RATED ROOF/FLOOR CEILING ASSEMBLY	–	X
FIRE STOPPING	X	–
SMOKE CONTROL	X	–

IN ACCORDANCE WITH FLORIDA BUILDING CODE 2020

MINIMUM THICKNESS OF DUCTS PENETRATING MULTIPLE SMOKE ZONES

IN ACCORDANCE WITH FBC

DUCT SIZE (GREATEST DIMENSION)	MINIMUM THICKNESS (U.S. GAGE)
UP TO 8"	No. 24 (.024 in.)
>8" TO 18"	No. 22 (.030 in.)
>18" TO 30"	No. 20 (.036 in.)
>30"	No. 18 (.047 in.)

MECHANICAL INDEX
NTS

Job # 24024 **Federal Courthouse Parking**
Updated Feller Engineering
6/12/2025 **Mechanical Drawing Log**

SHEET NUMBER		PERMIT SET 06-XX-2025
M-100	MECHANICAL INDEX	•
M-201	MECHANICAL PLAN GRADE LVL	•
M-204	MECHANICAL PLAN LVL 4	•
M-205	MECHANICALPLAN LVL 5	•
M-206	SCHEDULES AND DETAILS	•

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FEDERAL COURTHOUSE PARKING GARAGE
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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: MECHANICAL INDEX

DRAWING NO: M100

SCALE:

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
AB	CD	EK

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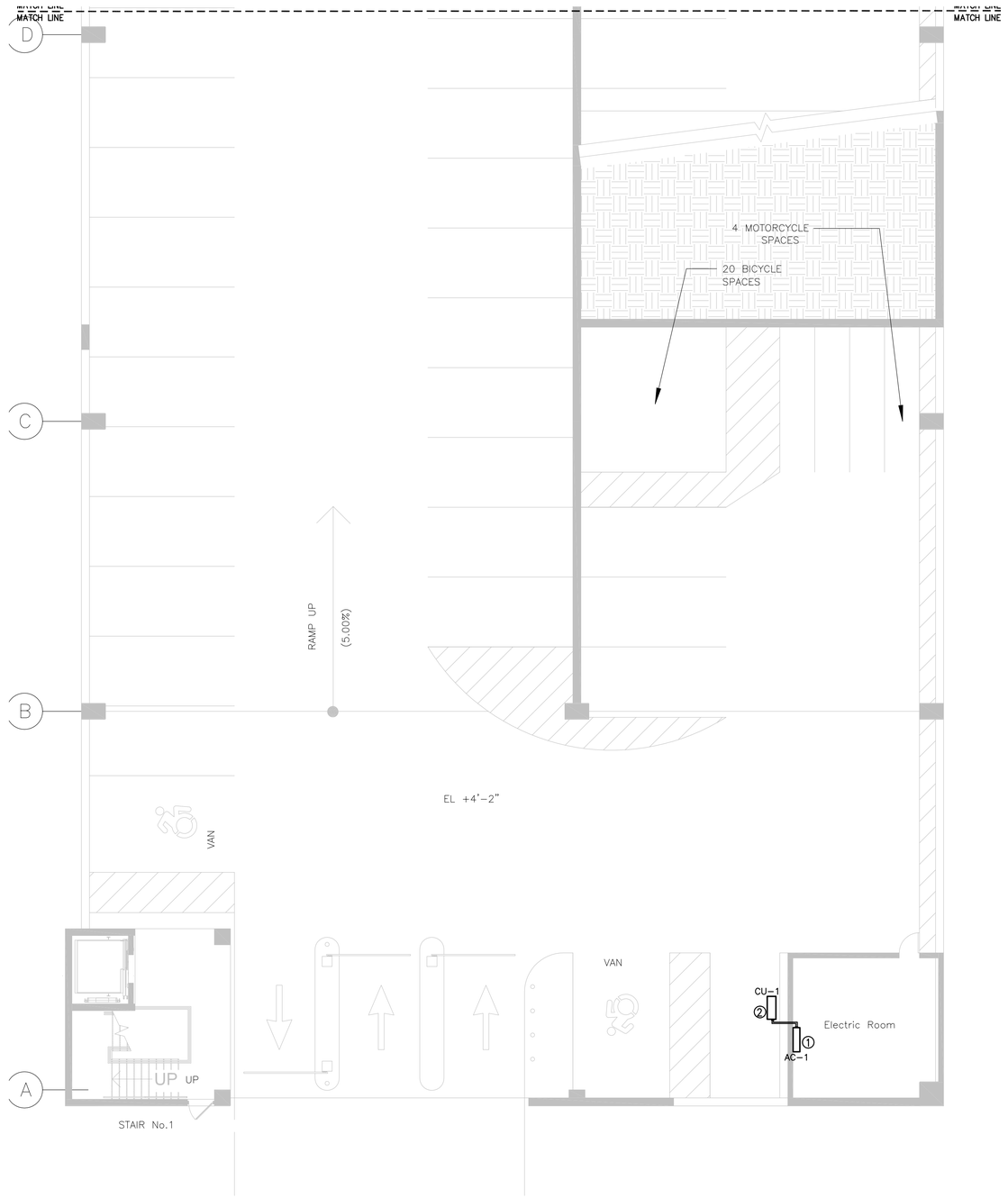

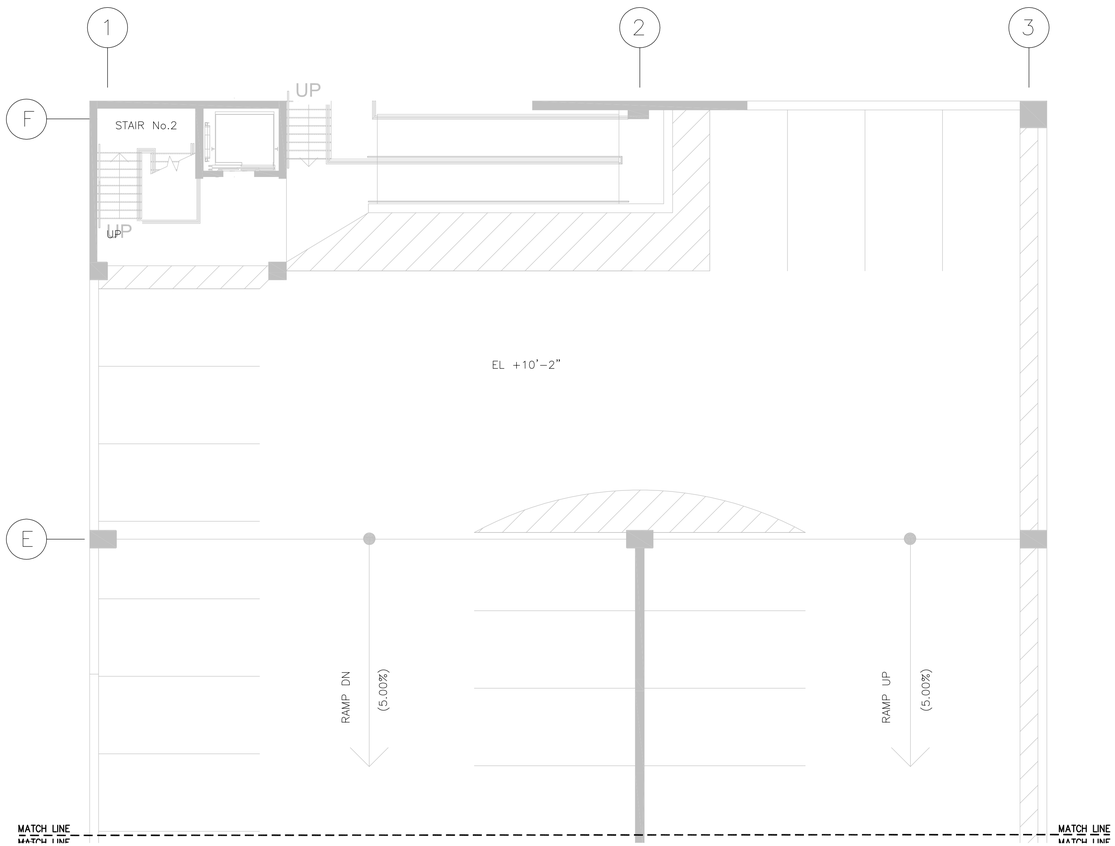

KEY NOTES:

① NEW AC UNIT. REFER TO THE SCHEDULES FOR DETAILS. CONNECT ELECTRICAL AS REQUIRED. PROVIDE CONDENSATE CONNECTIONS. INTER LOCK THE THERMOSTAT WITH THE AC UNIT. THE LOCATION OF UNIT SHALL BE CORDINATED AS PER FIELD CONDITIONS.

② NEW CONDENSING UNIT SUPPORTED FROM THE WALL. CONNECT THE ELECTRICAL AS REQUIRED. PROVIDE REFRIGERANT PIPING CONNECTIONS AS REQUIRED. FIELD VERIFY THE EXISTING CONDITIONS AND ROUTE THE PIPING.

GRADE LEVEL ENLARGED MECHANICAL PLAN

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

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REVISION/ISSUE		

No.	DESCRIPTION	DATE

DRAWING TITLE: GRADE, LEVEL MECHANICAL PLAN

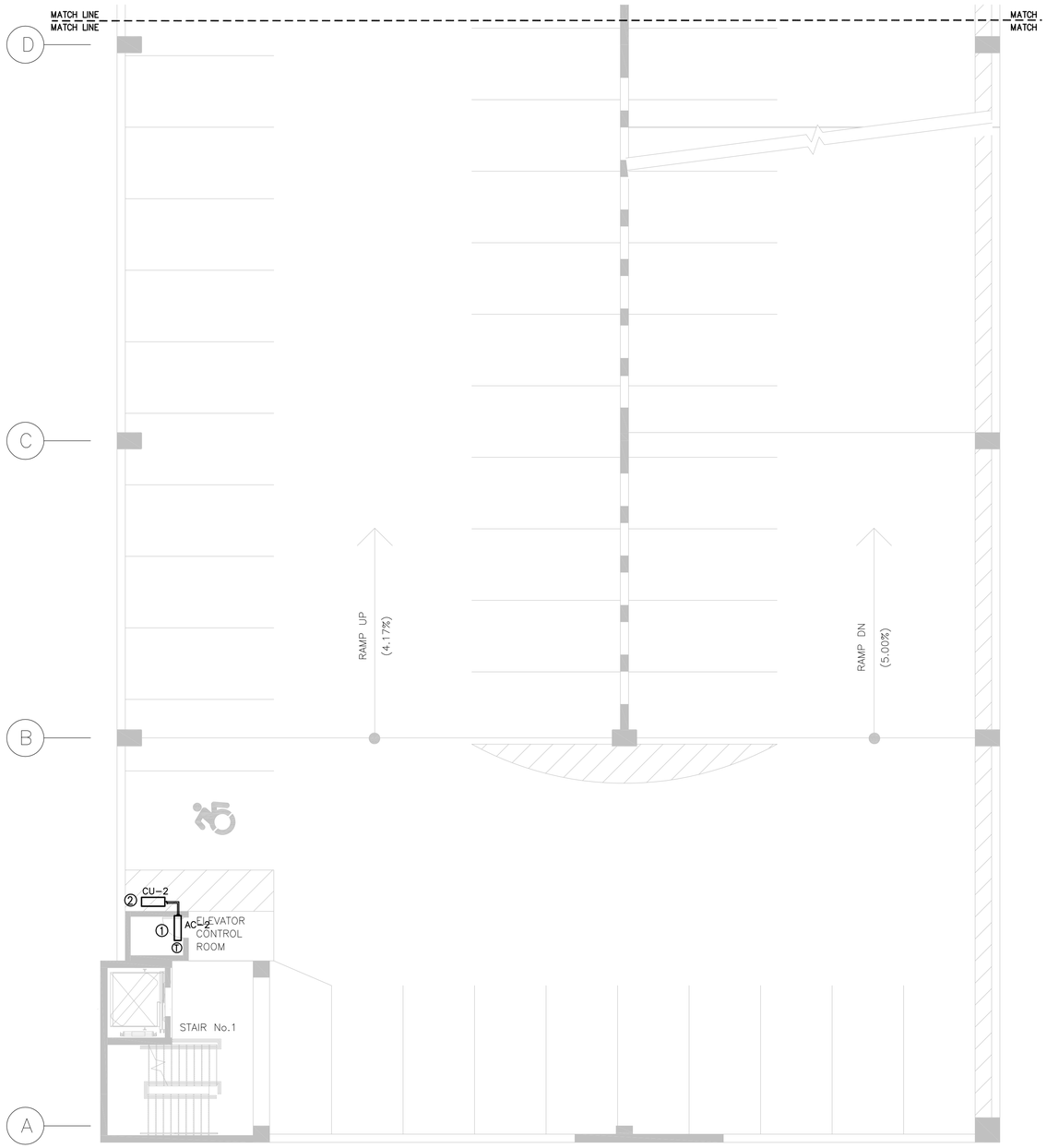
DRAWING NO: M201

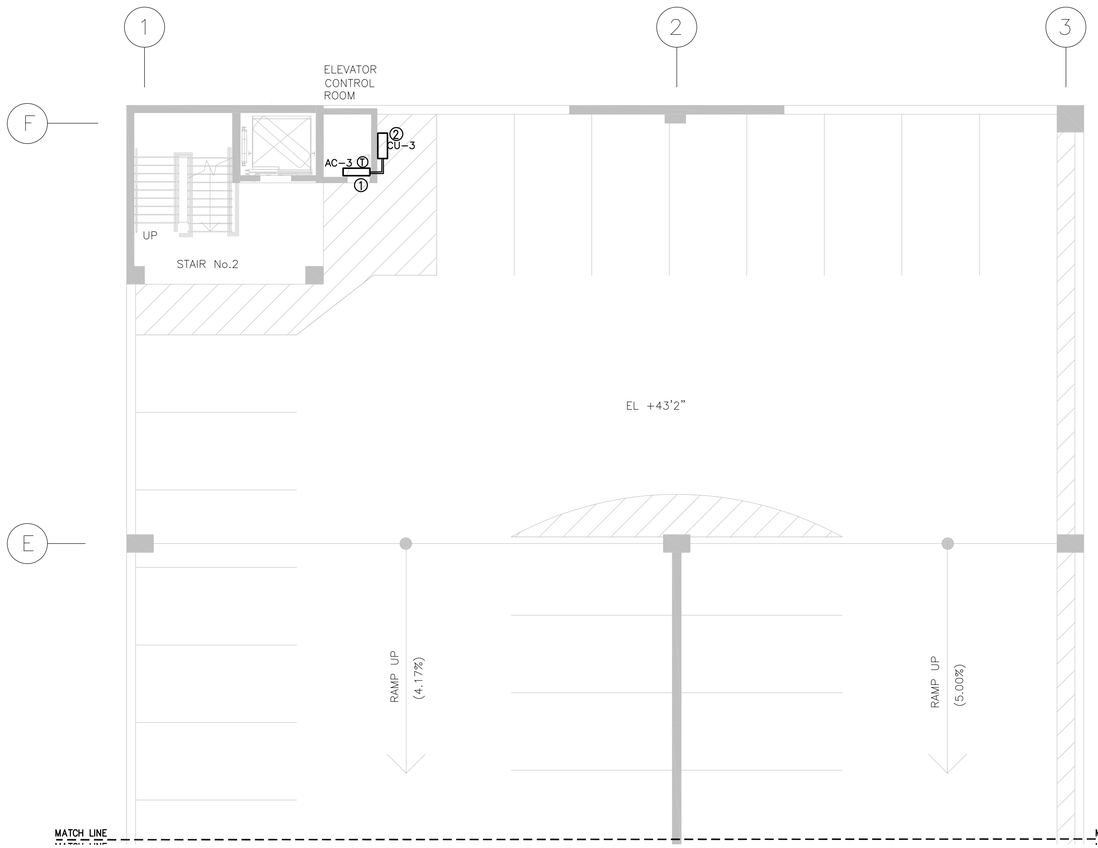
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





KEY NOTES:

① NEW AC UNIT. REFER TO THE SCHEDULES FOR DETAILS. CONNECT ELECTRICAL AS REQUIRED. PROVIDE CONDENSATE CONNECTIONS. INTER LOCK THE THERMOSTAT WITH THE AC UNIT. THE LOCATION OF UNIT SHALL BE CORDINATED AS PER FIELD CONDITIONS.

② NEW CONDENSING UNIT SUPPORTED FROM THE WALL. CONNECT THE ELECTRICAL AS REQUIRED. PROVIDE REFRIGERANT PIPING CONNECTIONS AS REQUIRED. FIELD VERIFY THE EXISTING CONDITIONS AND ROUTE THE PIPING.

FOURTH LEVEL MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

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No.	DESCRIPTION	DATE

DRAWING TITLE:
FOURTH LEVEL MECHANICAL PLAN

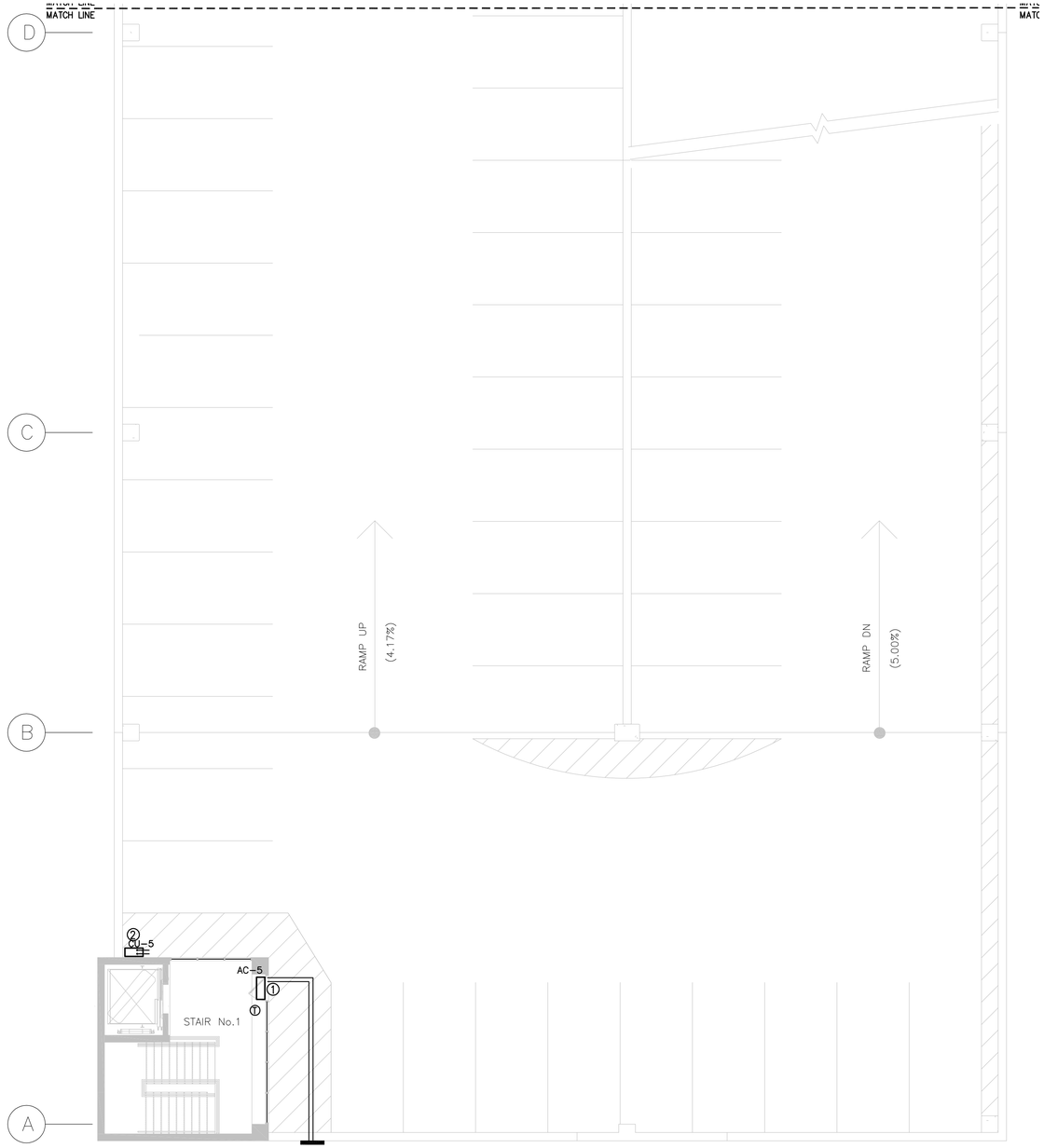
DRAWING NO:
M204

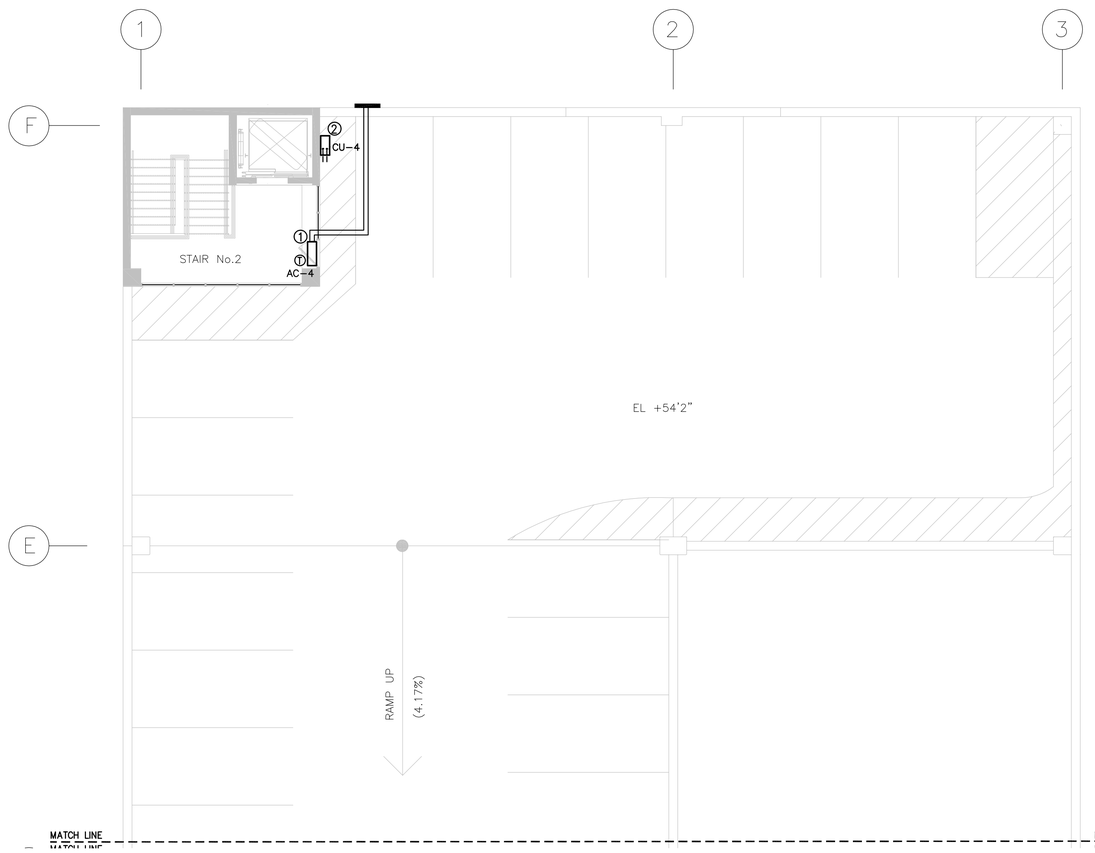
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





KEY NOTES:

① NEW AC UNIT. REFER TO THE SCHEDULES FOR DETAILS. CONNECT ELECTRICAL AS REQUIRED. PROVIDE CONDENSATE CONNECTIONS. INTER LOCK THE THERMOSTAT WITH THE AC UNIT. THE LOCATION OF UNIT SHALL BE CORDINATED AS PER FIELD CONDITIONS.

② NEW CONDENSING UNIT SUPPORTED FROM THE WALL. CONNECT THE ELECTRICAL AS REQUIRED. PROVIDE REFRIGERANT PIPING CONNECTIONS AS REQUIRED. FIELD VERIFY THE EXISTING CONDITIONS AND ROUTE THE PIPING.

FIFTH LEVEL MECHANICAL PLAN

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

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REVISION/ISSUE		

No.	DESCRIPTION	DATE

DRAWING TITLE: GRADE, SECOND, THIRD LEVEL MECHANICAL PLAN

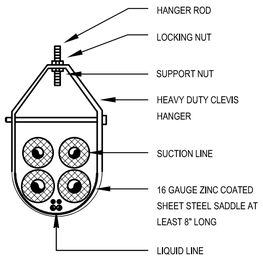
DRAWING NO: M205

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

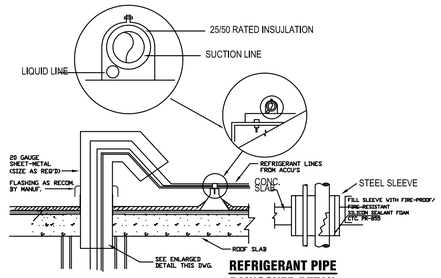
DATE:

PROJECT NO: 11-23117-1

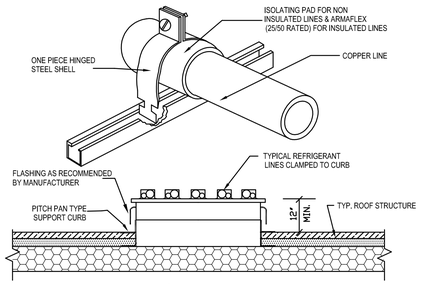
DES.	DRWN.	CHK'D.
TB	JS	EK



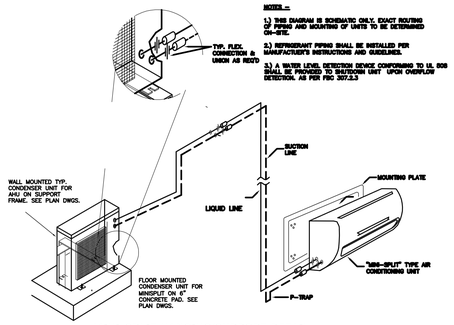
REFRIGERANT LINES HANGER SUPPORT DETAIL
N.T.S.



REFRIGERANT PIPE RAINCOVER DETAIL
N.T.S.



REFRIGERANT LINE SUPPORT DETAIL
N.T.S.



MINI-SPLIT HANGING/SUPPORT DETAIL
N.T.S.

AHU INFORMATION / CU INFORMATION

TAG	MANUFACTURER	MODEL	NOMINAL TONS	VOLTAGE	CFM	MCA	TOTAL MBH	VOLTAGE	MCA	MOP	UNIT CONFIGURATION	REMARKS	CONDENSING UNIT	MODEL NUMBER
AC-1,2,3	MITSIBISHI	MSZ-HM18NA-U1	1.5	208-230/1/60	625	-	18.0	208-230/1/60	14	20	SUPPORTED FROM WALL		CU-1,2,3	MUZ-HM18NA-U1
AC-4,5	DAIKIN	FTX12AXVJU	1	208-230/1/60	300		12.0	208-230/1/60	8.7	20	SUPPORTED FROM WALL	--	CU-4,5	RX12AXVJU

MECHANICAL SCHEDULES
NTS

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: MECHANICAL INDEX

DRAWING NO: M206

SCALE:

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
AB	CD	EK

ELECTRICAL SYMBOL LEGEND

(NOT ALL SYMBOLS APPLY)

- LED LIGHT FIXTURE
- DOWN LIGHT
- LED STRIP
- EXIT LIGHT
- EMERGENCY BATTERY PACK
- DUPLEX RECPT – 20 AMP (18" A.F.F.)
- SPECIAL PURPOSE RECEPTACLE(18" A.F.F.)
- DUPLEX RECEPT FLUSH FLOOR MOUNTED WITH BRASS COVER-20 AMP FOR GRADE LEVEL WIREMOLD 'WALKER' CATALOG #(880CSI box, 817B flange, 828R plate) & ABOVE GRADE (880CSI box, 828R duplex plate)
- DUPLEX GFI RECEPT MOUNTED ABOVE COUNTER – 20 AMP
- DUPLEX GFI RECEPT – 20 AMP
- S SINGLE POLE SWITCH – 20 AMP (48" A.F.F.)
- S_3 THREE WAY SWITCH – 20 AMP (48" A.F.F.)
- S_D DIMMER SWITCH 2000 WATTS 48" A.F.F.)
- WALL MOUNTED OCCUPANCY SENSOR (LINE VOLTAGE) COOPER CONTROLS OSW-DT SERIES. 800 WATT MAX FOR 120V; 1200 WATT FOR 277V. (48"A.F.F.)
- CEILING MOUNTED OCCUPANCY SENSOR (LINE VOLTAGE) COOPER CONTROL OMC-DT SERIES. 800 WATT MAX FOR 120V; 1200 WATT FOR 277V.
- CEILING MOUNTED OCCUPANCY SENSOR (LOW VOLTAGE-WITH REMOTE POWER PACK) CM-PDT-120/277. POWER PACKS ALLOW FOR FULL 20AMP CAPABILITY. MAY USE (3) REMOTE POWER PACKS ON SINGLE SENSOR.
- JUNCTION BOX
- WALL JUNCTION BOX
- ELECTRICAL PANELBOARD
- MOTOR
- FUSIBLE DISCONNECT SWITCH
- T TRANSFORMER
- GROUNDING ELECTRODE & CONDUCTOR SYSTEM
- TV TELEVISION OUTLET (18" A.F.F.)
- TELEPHONE OUTLET (18" A.F.F.)
- DATA/TELEPHONE OUTLET (18" A.F.F.)
- F_F FIREMEN'S PHONE JACK
- S_D SMOKE DETECTOR (PHOTOELECTRIC TYPE)
- H_D HEAT DETECTOR
- D DUCT SMOKE DETECTOR
- MD MOTORIZED DAMPER
- H FIRE ALARM HORN WITH FLASHING STROBE LIGHT 80" TO BOTTOM (WP)
- F FIRE ALARM PULL STATION (48" A.F.F.) (WP)
- L FIRE ALARM FLASHING STROBE LIGHT 80" TO BOTTOM (WP)
- FLOW SWITCH
- TEMPER SWITCH
- H FIRE ALARM HORN

FIRE ALARM SYSTEM NOTES:

1. ALL EQUIPMENT TO BE U.L. LISTED FOR FIRE SERVICE AND SHALL BE COMPATIBLE WITH THE SYSTEM BEING USED.
2. ALL WIRING AND CONDUIT TO CONFORM TO N.F.P.A. 70 AND N.E.C. 760. WIRING SHALL BE SOLID COPPER OR STRANDED COPPER WITH A MAX. OF 7 STRANDS FOR SIZES 16 AND 18 AWG. STRANDED COPPER WITH A MAX. OF 19 STRANDS FOR SIZES 14 AND LARGER PER N.E.C. 760 AND N.F.P.A. 70.
3. ALL FIRE STOP PENETRATIONS SHALL BE MADE WITH APPROVED (NEC) ELECTRICAL TUBING.
4. ALL FIRE STOP PENETRATIONS SHALL BE SEALED WITH A U.L. APPROVED FIRE STOP MATERIAL. (SEE FIRE STOP DETAIL)
5. COLOR CODING MAY NOT APPLY TO EXISTING WIRE. (LABEL EXISTING WIRE ACCORDINGLY)
6. ROUTING OF THE FIRE ALARM SYSTEM CONDUIT IS DIAGRAMMATIC, VERIFY EXACT LOCATIONS PRIOR TO STARTING WORK.
7. ALL STROBE LIGHTS SHALL ACTIVATE UPON INITIATION OF THE GENERAL ALARM.
8. MANUAL STATIONS TO BE INSTALLED AT 48" INCHES A.F.F.
9. SMOKE DETECTORS TO BE INSTALLED AS PER N.F.P.A. 72. WALL MOUNTED SMOKE DETECTORS SHALL BE MOUNTED 4" INCHES MIN. FROM CEILING WITH 12" INCHES MAX. FROM CEILING.
10. THE FIRE ALARM PANEL MUST HAVE AN EARTH GROUND CONNECTION AS PER MANUFACTURERS RECOMMENDATIONS, AND ARTICLE 760 OF THE NATIONAL ELECTRICAL CODE, MINIMUM WIRE SIZE IS 14 AWG FOR GROUND CONNECTION. (NOTE PANEL NEUTRAL OR CONDUIT GROUND IS NOT ACCEPTABLE).
11. A GENERAL ALARM SHALL BE ANNUNCIATED UPON ACTIVATION OF ANY PULL STATION, FLOW SWITCH, DETECTION DEVICE. A TROUBLE SIGNAL SHALL BE ANNUNCIATED UPON ANY TAMPER SWITCH ACTIVATION OR FAILURE OR REMOVAL OF ANY DETECTION OR MANUAL DEVICE.
12. FIRE ALARM PANEL SHALL BE LISTED FOR CENTRAL STATION SERVICE PER NFPA 72, 2020, SECT. 4–3.
13. FIRE ALARM SYSTEM SHALL BE U.L. CERTIFIED.
14. FIRE ALARM SYSTEM CONTROL SHALL BE EDWARDS MANUFACTERER EST–4 MULTIPLEX ADDRESSABLE SYSTEM WITH THE CAPABILITY TO MONITOR BDA,ELEVATOR RECALL FIRE SPRINKLER SUPERVISION & COMMUNICATION TO CENTRAL STATION.
15. TWO TELEPHONE LINES SHALL BE PROVIDED TO THE FIRE CONTROL COMMUNICATOR. ONE SHALL BE DEDICATED.
16. PROVIDE CERTIFICATE OF COMPLETION AT THE FINAL INSPECTION OF THE FIRE ALARM SYSTEM.
17. FIRE ALARM CIRCUITS AND DEVICES SHALL BE CLASS "B", STYLE "C".
18. SECURITY LOCK SYSTEM BY OTHERS SHALL BE TIED INTO FIRE ALARM SYSTEM. EMERGENCY EXITS SHALL UNLOCK UPON RECEIPT OF ANY FIRE SIGNAL OR LOSS OF PRIMARY POWER.
19. HVAC DUCT SMOKE DETECTORS SHALL BE CONNECTED TO THE FIRE ALARM CONTROL PANEL AND SHALL ACTIVATE A SUPERVISORY SIGNAL ONLY.

ELECTRICAL NOTES

(THIS PROJECT HAS BEEN DESIGNED USING THE 2020 EDDITION OF THE NEC. & 2023 8th EDDITION OF FBC.)

1. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL EQUIPMENT CONFIRM WITH OWNERS REPRESENTATIVE.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE AND SHALL COMPLY WITH ALL LOCAL RULES AND ORDINANCES.
3. MINIMUM WIRE SIZE SHALL BE #12 A.W.G., EXCLUDING CONTROL WIRING. UNLESS OTHERWISE NOTED ALL CONDUCTORS SHALL BE COPPER WITH THHN OR THWN INSULATION.
4. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS. CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
5. DISCONNECT SWITCHES SHALL BE H.P. RATED, HEAVY DUTY, QUICK–MADE, QUICK–BREAK ENCLOSURES AS REQUIRED BY EXPOSURE.
6. MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC, WITH OVERLOAD RELAYS IN EACH HOT LEG.
7. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL RE–QUIREMENTS NECCESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
8. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE LATEST EDITION OF THE N.E.C.
9. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
10. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE, AND ACCEPTED BY ENGINEER/ARCHITECT.
11. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGESS OF CONSTRUCTION.
12. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FROM A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.
13. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
14. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
15. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS, AND TESTING.
16. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES.
17. FURNISH AND INSTALL DISCONNECT SWITCHES AND WIRING FOR AIR CONDITIONING SYSTEM AS PER MANUFACTURERS RECOMMENDATIONS. CONTROLS ARE TO BE SUPPLIED BY AIR CONDITIONING CONTRACTOR AND CONNECTED BY ELECTRICAL CONTRACTOR.
18. ALL RACEWAYS UNDERGROUND SHALL BE A MINIMUM OF 3/4" CONDUIT.
19. ALL CIRCUIT BREAKERS, TWO AND THREE POLE, TO BE COMMON TRIP. NO TIE HANDLES, OR TANDENS WILL BE ACCEPTED.
20. ALL FUSES, UNLESS NOTED ON DRAWING, SHALL BE CURRENT LIMITING FUSES (C.L.) RATED FOR 200,000 A.I.C.

GENERAL SYMBOL NOTES:

CONTRACTOR TO VERIFY MOUNTED HEIGHT OF ALL DEVICES WITH INTERIOR DESIGNER & ARCHITECT PRIOR TO INSTALLATION.

H FIRE ALARM HORN

Job # 24024 **Federal Courthouse Parking**

Updated **6/12/2025**

Feller Engineering

Electrical-Fire Alarm drawing log

SHEET NUMBER		PERMIT SET 06-XX-2025		
E100	ELECTRICAL INDEX , NOTES & SYMBOLS	•		
E101	SITE PLAN	•		
E201	GRADE LEVEL ENLARGED ELECTRICAL PLAN	•		
E202	SECOND LEVEL ENLARGED ELECTRICAL PLAN	•		
E203	THIRD LEVEL ENLARGED ELECTRICAL PLAN	•		
E204	FOURTH LEVEL ELECTRICAL PLAN	•		
E205	FIFTH LEVEL ELECTRICAL PLAN	•		
E301	GRADE LEVEL ENLARGED PHOTOMETRICS	•		
E302	SECOND LEVEL ENLARGED PHOTOMETRICS	•		
E303	THIRD LEVEL ENLARGED PHOTOMETRICS	•		
E304	FOURTH LEVEL PHOTOMETRICS	•		
E305	FIFTH LEVEL PHOTOMETRICS	•		
E306	GRADE LEVEL ENLARGED EM PHOTOMETRICS	•		
E307	2ND LEVEL ENLARGED EM PHOTOMETRICS	•		
E308	THIRD LEVEL ENLARGED EM PHOTOMETRICS	•		
E309	FOURTH LEVEL EM PHOTOMETRICS	•		
E310	FIFTH LEVEL EM PHOTOMETRICS	•		
E401	ENLARGED ELECTRICA L ROOMS	•		
E402	ELECTRICAL / TELEPHONE RISER DIAGRAM	•		
E403	BDA/FIRE ALARM RISER DIAGRAM	•		
E501	PANEL SCHEDULES	•		
E601	ELECTRICAL DETAILS	•		
E901	BUILDING SIGN ELECTERICAL DRAWING	•		
FA201	GRADE LEVEL ENLARGED FIRE ALARM PLAN	•		
FA202	SECOND LEVEL ENLARGED FIRE ALARM PLAN	•		
FA203	THIRD LEVEL ENLARGED FIRE ALARM PLAN	•		
FA204	FOURTH LEVEL ENLARGED FIRE ALARM PLAN	•		
FA205	FIFTH LEVEL ENLARGED FIRE ALARM PLAN	•		
FA206	FIRE ALARM PLAN SYMBOL LEGEND	•		

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	LAMPS		VOLTS	INPUT WATTS	MOUNTING	REMARKS
			Qty	Type				
G	BEGHELLI	BS101LED-ECO-4-HT-HO-WT40-120-277-OS	1	LED	120/277	55	AS REQUIRED	GARAGE LUMINAIRE W/INTEGRAL SENSOR PROGRAMMED FOR CODE COMPLIANCE
GE	BEGHELLI	BS101LED-ECO-4-SA-HO-WT40-120-277-OS	1	LED	120/277	55	AS REQUIRED	GARAGE LUMINAIRE W/INTEGRAL SENSOR PROGRAMMED FOR CODE COMPLIANCE W/INTEGRAL BATTERY
GD	BEGHELLI	BS101LED-ECO-4-HT-HO-WT40-120-277-OS	1	LED	120/277	55	AS REQUIRED	GARAGE LUMINAIRE W/INTEGRAL SENSOR PROGRAMMED FOR CODE COMPLIANCE/DAYLIGHT HARVESTING
GDE	BEGHELLI	BS101LED-ECO-4-SA-HO-WT40-120-277-OS	1	LED	120/277	55	AS REQUIRED	GARAGE LUMINAIRE W/INTEGRAL SENSOR PROGRAMMED FOR CODE COMPLIANCE/DAYLIGHT HARVESTING W/INTEGRAL BATTERY
O	POINT LIGHTING	POL-21007-1-F-R-34B-D2	1	LED	120/277	10	AS REQUIRED	OBSTRUCTION LIGHT
P	BEGHELLI	BS101LED-ECO-4-HT-HO-WT40-120-277-OS	1	LED	120/277	55	AS REQUIRED	ELEVATOR PIT LUMINAIRE
S	BEGHELLI	BS101LED-ECO-4-HT-HO-WT40-120-277-OS	1	LED	120/277	55	AS REQUIRED	STAIRWAY LUMINAIRE W/OCCUPANCY SENSOR
SE	BEGHELLI	BS101LED-ECO-4-SA-HO-WT40-120-277-0S	1	LED	120/277	55	AS REQUIRED	STAIRWAY LUMINAIRE W/OCCUPANCY SENSOR W/INTEGRAL BATTERY
W	SIGNIFY	GWM-A06-740-T3M-UNV-FINISH	1	LED	120/277	17	WALL	EXTERIOR WALL LUMINAIRE
SA	SIGNIFY	(TWIN)ECF-L-80L-1A-NW-G2-AR-5W-UNV-FINISH	1	LED	120/277	530	POLE	TWIN ROOF POLE PARKING ASSEMBLY-20' ROUND TAPERED ALUMINUM POLE
SB	SSL LIGHRING	LZWET-4-UNV-840-44L-3060-LD-CA3-18	1	LED	120/277	44	WALL	EXTERIOR WALL SIGN LUMINAIRE
X	BEGHELLI	PX-A-R-SA	1	LED	120/277	3	UNIVERSAL	EXIT SIGN

ELECTRICAL INDEX , NOTES & SYMBOLS
NTS

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DESMAN

FEDERAL COURTHOUSE PARKING GARAGE
FORT LAUDERDALE FLORIDA

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
ELECTRICAL INDEX , NOTES & SYMBOLS

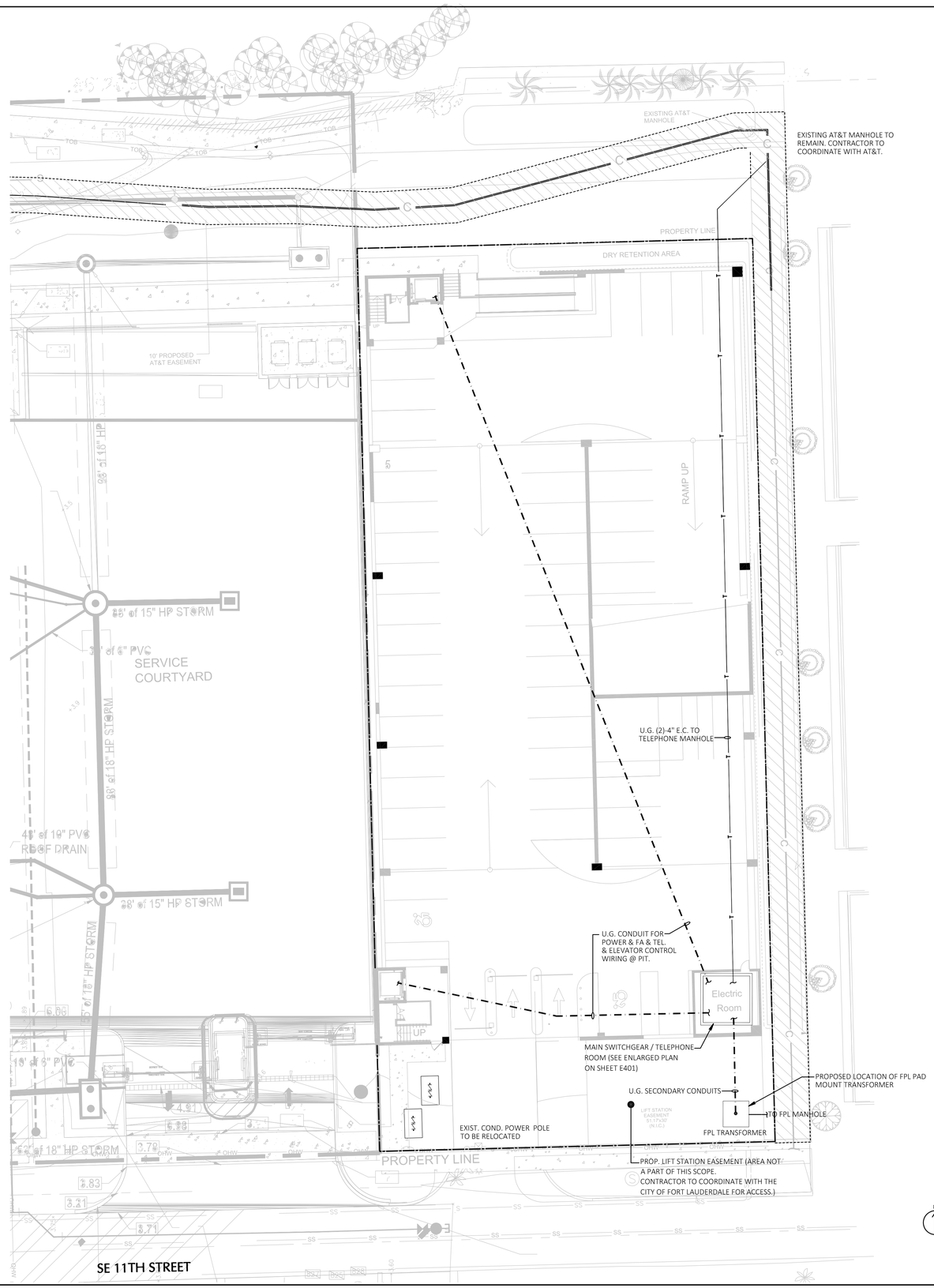
DRAWING NO:
E100

SCALE:

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
AB	CD	EK



ELECTRICAL SITE PLAN
SCALE: 1/16" = 1'-0"

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No.	DESCRIPTION	DATE

DRAWING TITLE:
ELECTRICAL SITE PLAN

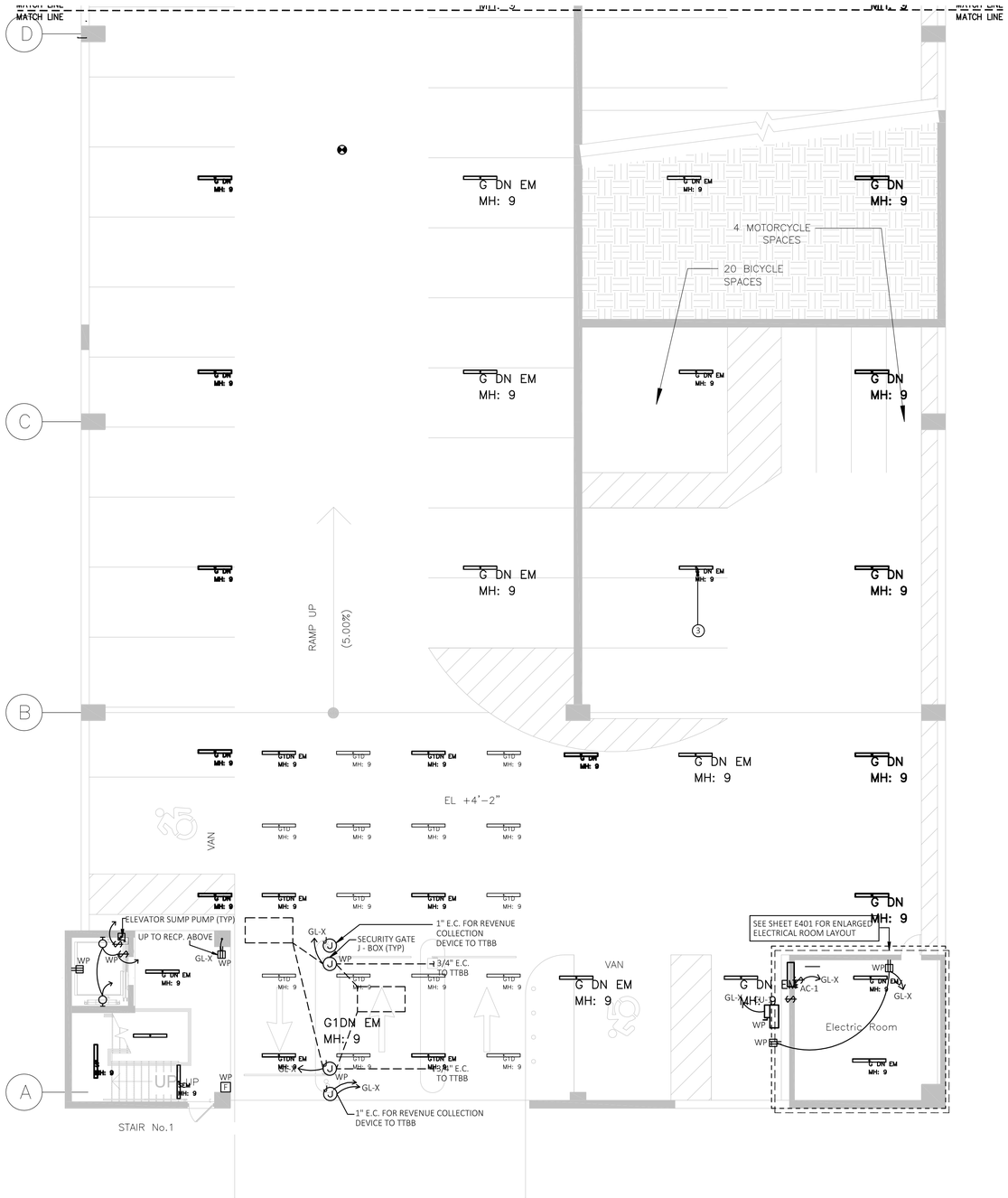
DRAWING NO:
E101

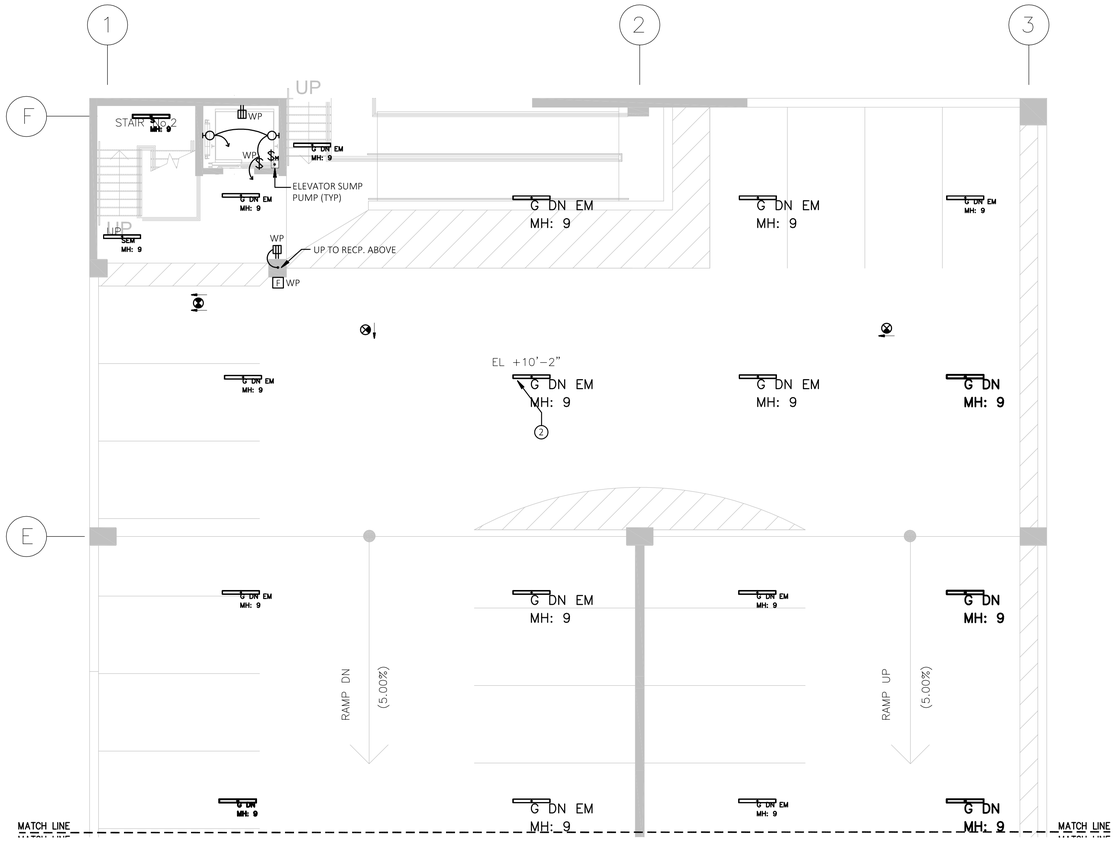
SCALE: 1/16" = 1'-0"

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
TB	JS	EK





GENERAL NOTES:

1. ALL GARAGE LIGHTING FIXTURES TO CONTAIN INTEGRAL OCCUPANCY SENSORS AT THE INTERIOR FIXTURES AND OCCUPANCY SENSORS AND DAY LIGHT SENSORS AT THE PERIMETER AS PER 8TH EDITION OF THE 2023 FBC -ENERGY CONVERSATION.
2. CONNECT BATTERY INVERTER IN ALL EMERGENCY FIXTURES AHEAD OF NORMAL POWER CIRCUIT
3. FIXTURES LABELED AS 'EM' ARE TO CONTAIN 90 MINUTE BATTERY INVERTER

GRADE LEVEL ENLARGED ELECTRICAL PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE: GRADE LEVEL ENLARGED ELECTRICAL PLAN

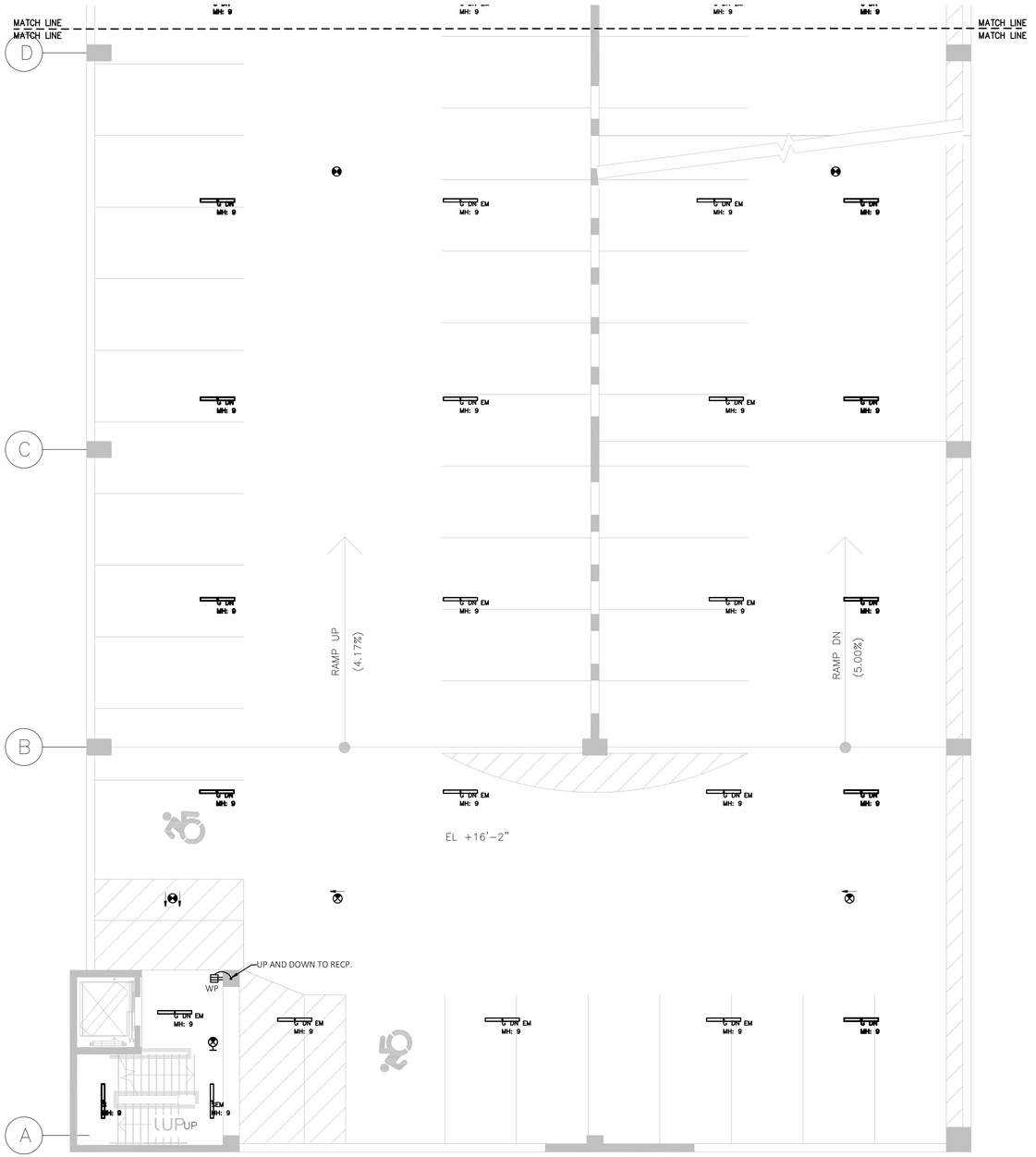
DRAWING NO: E201

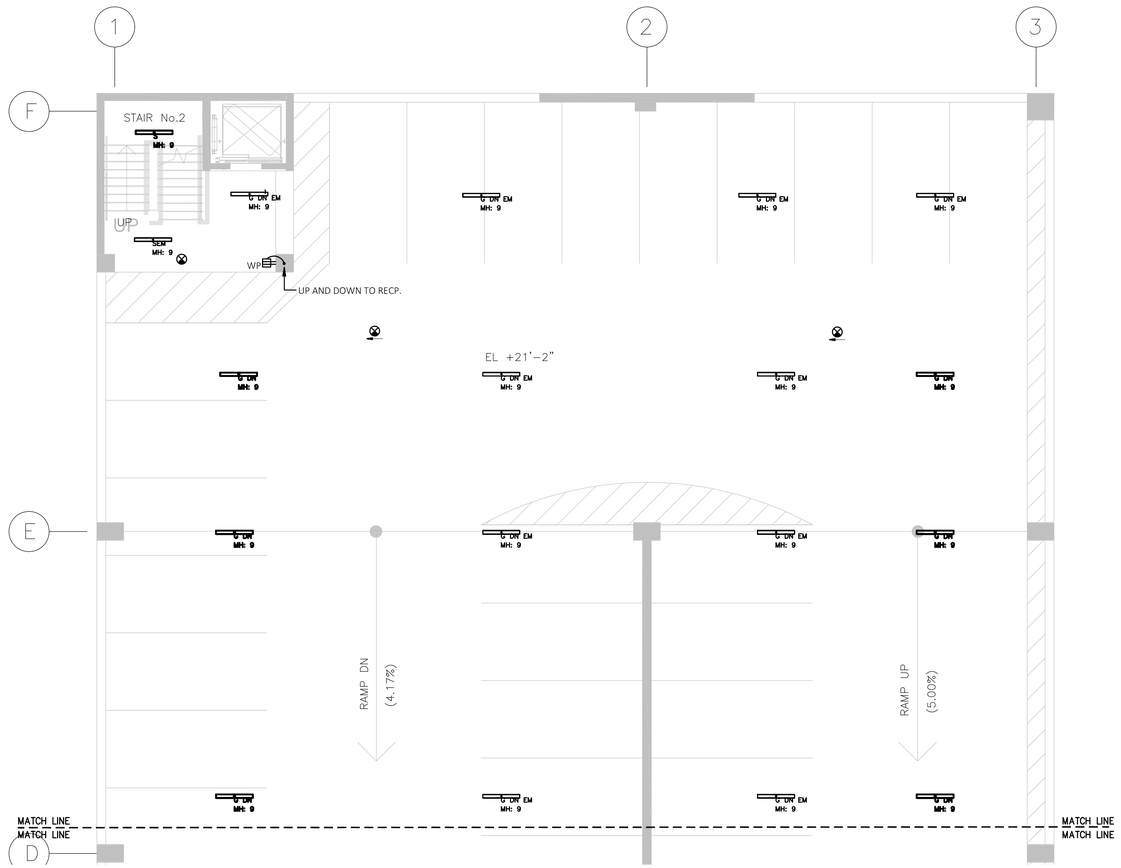
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





SECOND LEVEL ENLARGED ELECTRICAL PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE: SECOND LEVEL ENLARGED ELECTRICAL PLAN

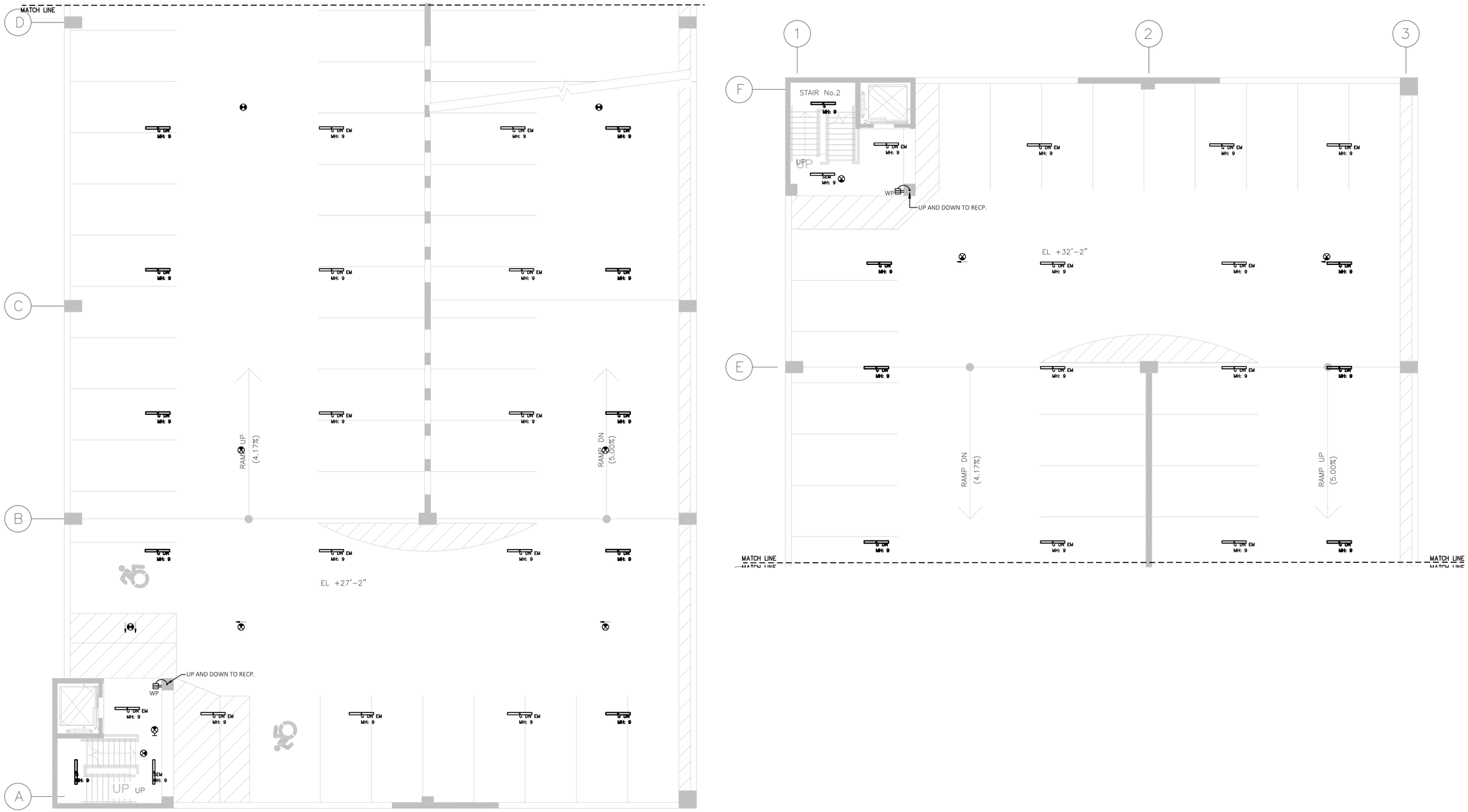
DRAWING NO: E202

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK



THIRD LEVEL ENLARGED ELECTRICAL PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE: THIRD LEVEL ENLARGED ELECTRICAL PLAN

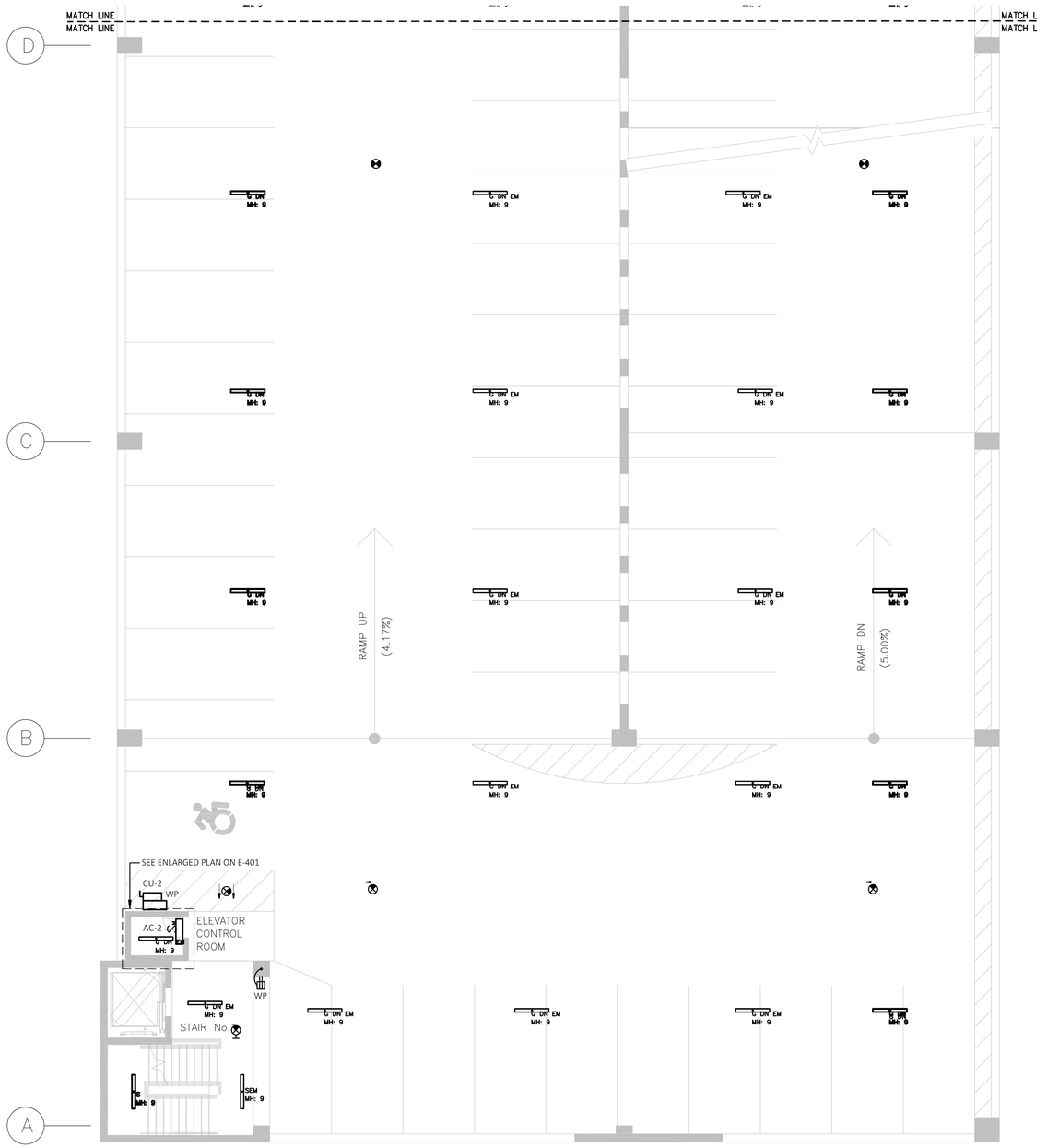
DRAWING NO: E203

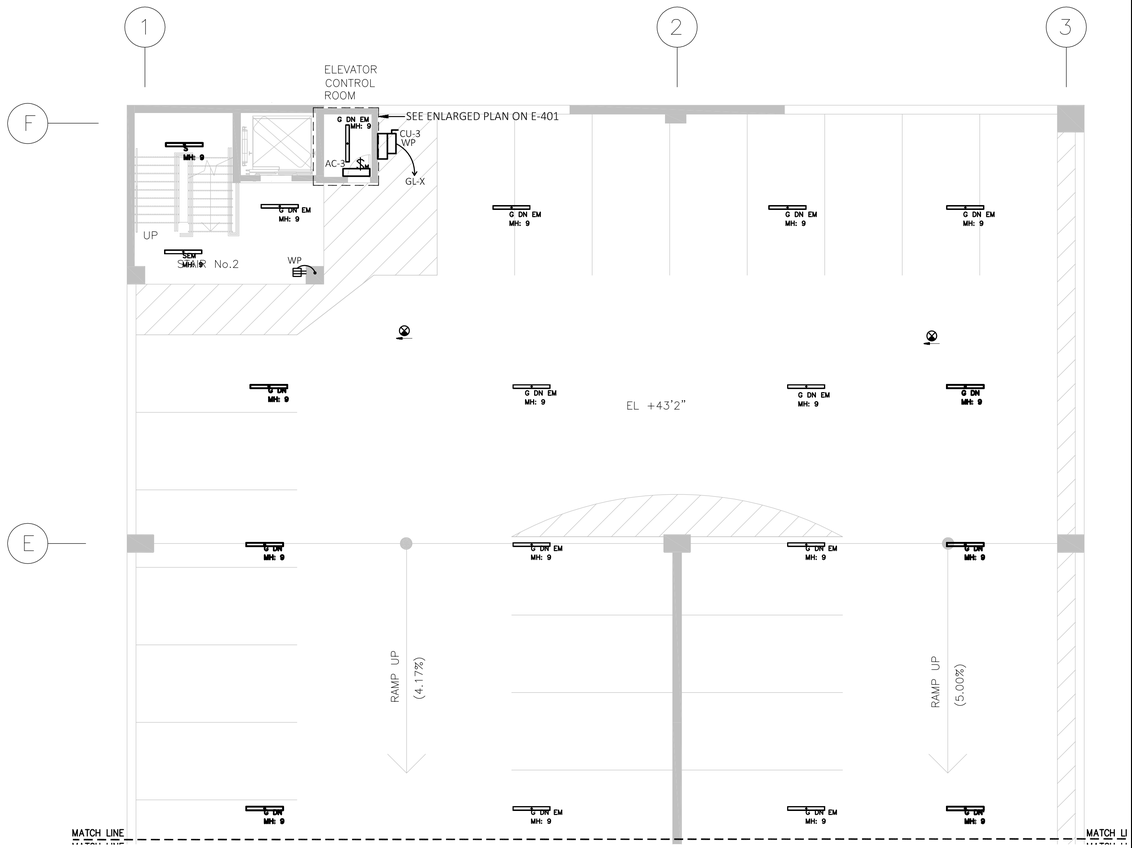
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
TB	JS	EK





FOURTH LEVEL ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

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No.	DESCRIPTION	DATE

DRAWING TITLE: FOURTH, LEVEL ELECTRICAL PLAN

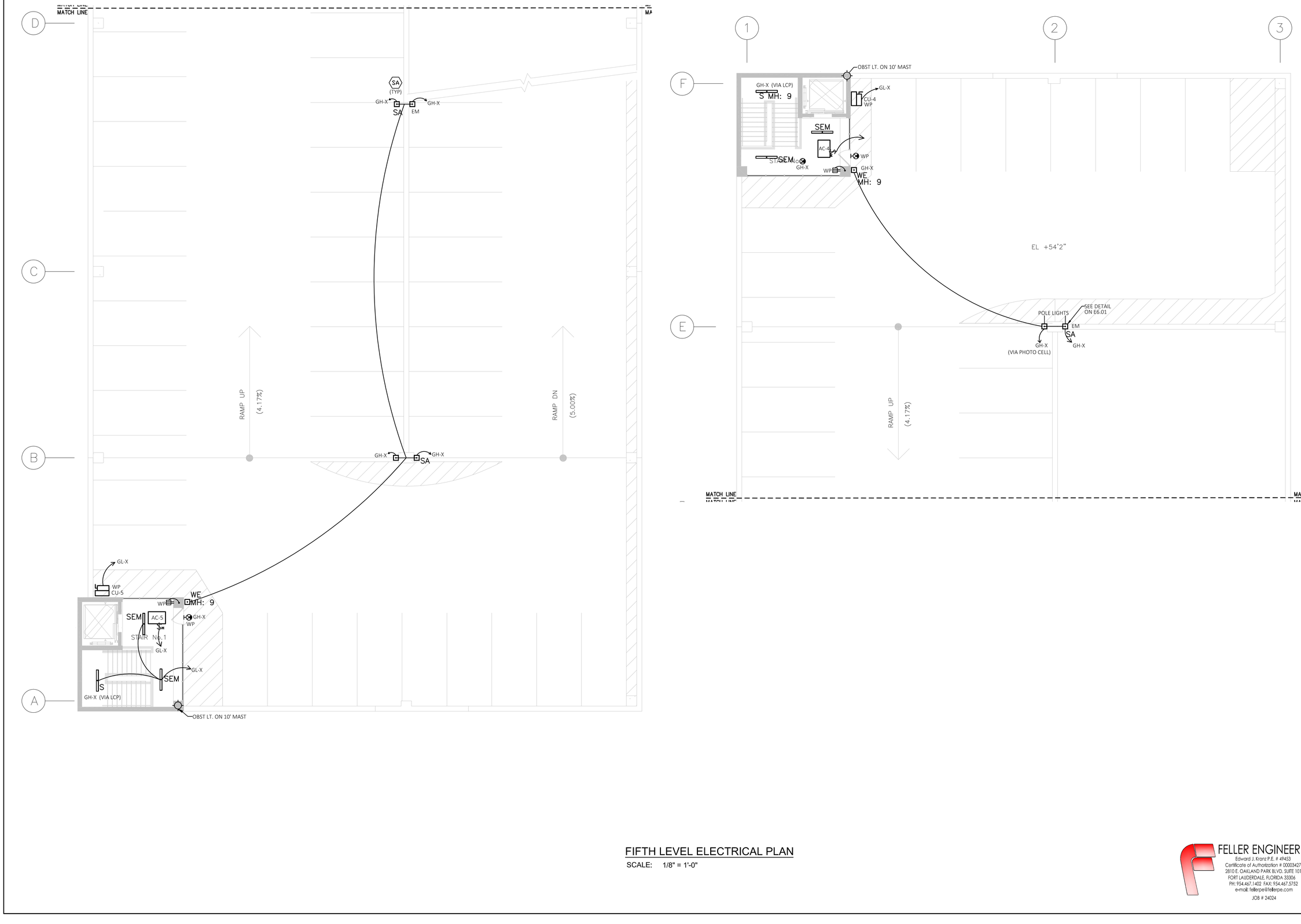
DRAWING NO: E204

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

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
TB	JS	EK



FIFTH LEVEL ELECTRICAL PLAN

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

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REVISION/ISSUE		

No.	DESCRIPTION	DATE

DRAWING TITLE: FIFTH, LEVEL ELECTRICAL PLAN

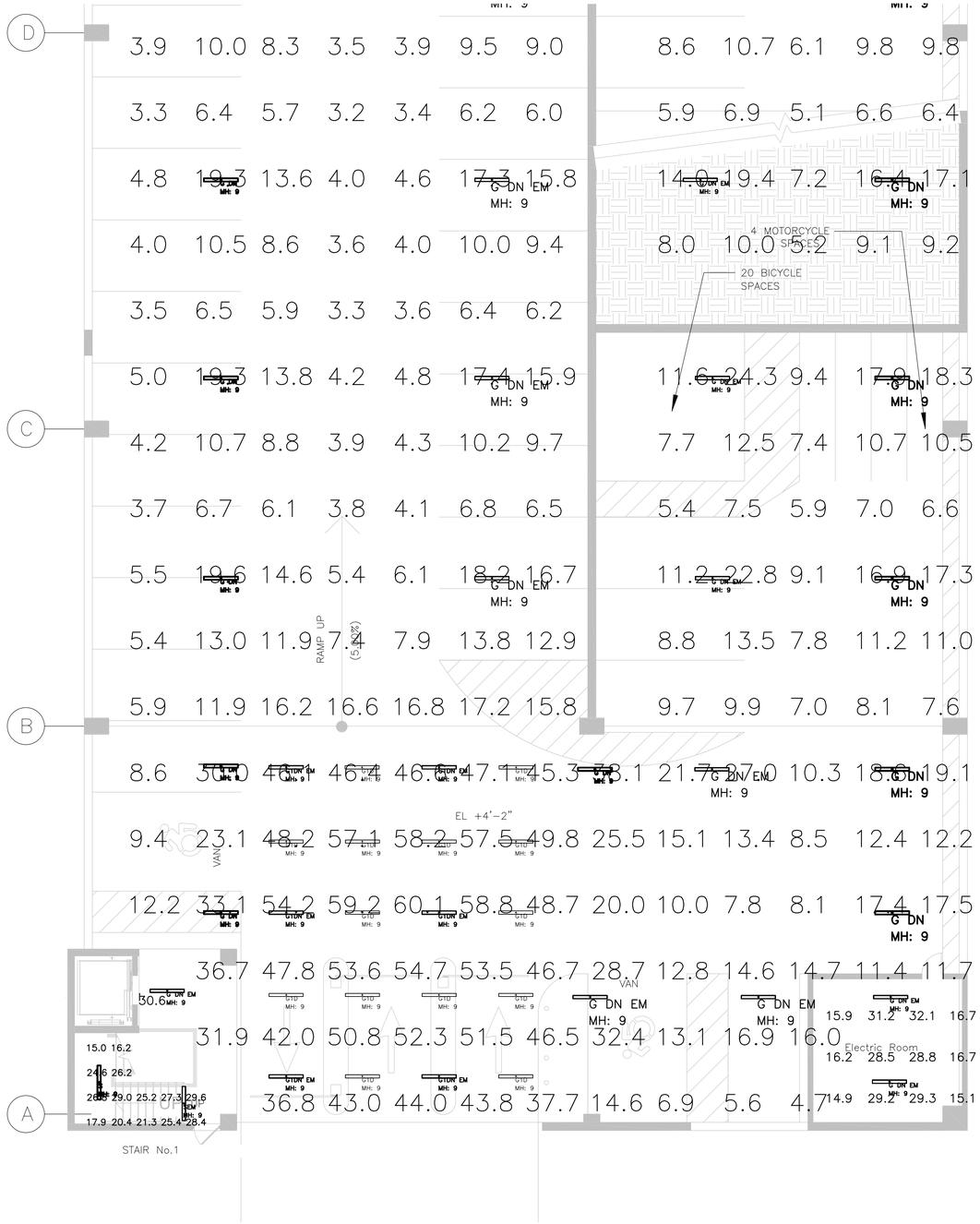
DRAWING NO: E205

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

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
TB	JS	EK



Luminaire Schedule FTL FEDERAL COURTHOUSE PG GND REV3							
Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	S	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	15	G DN	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	825
	25	G DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	1375
	6	G1DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	330
	14	G1D	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	770

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
ELETRIC RM_Floor	Fc	22.88	32.1	14.9	1.54	2.15
ELEVATOR SILL NW	Fc	21.80	21.8	21.8	1.00	1.00
ELEVATOR SILL SW	Fc	30.60	30.6	30.6	1.00	1.00
STAIR 1	Fc	23.81	29.6	15.0	1.59	1.97
STAIR NW	Fc	22.97	25.4	21.0	1.09	1.21
STAIR NW (OPEN)	Fc	25.43	28.7	20.2	1.26	1.42
ENTRANCE SOUTH	Fc	50.55	60.1	36.8	1.37	1.63
STALL & DRIVE PATH	Fc	9.79	27.0	3.2	3.06	8.44

GRADE LEVEL ENLARGED PHOTOMETRICS PLAN

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

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
GRADE LEVEL ENLARGED PHOTOMETRICS PLAN

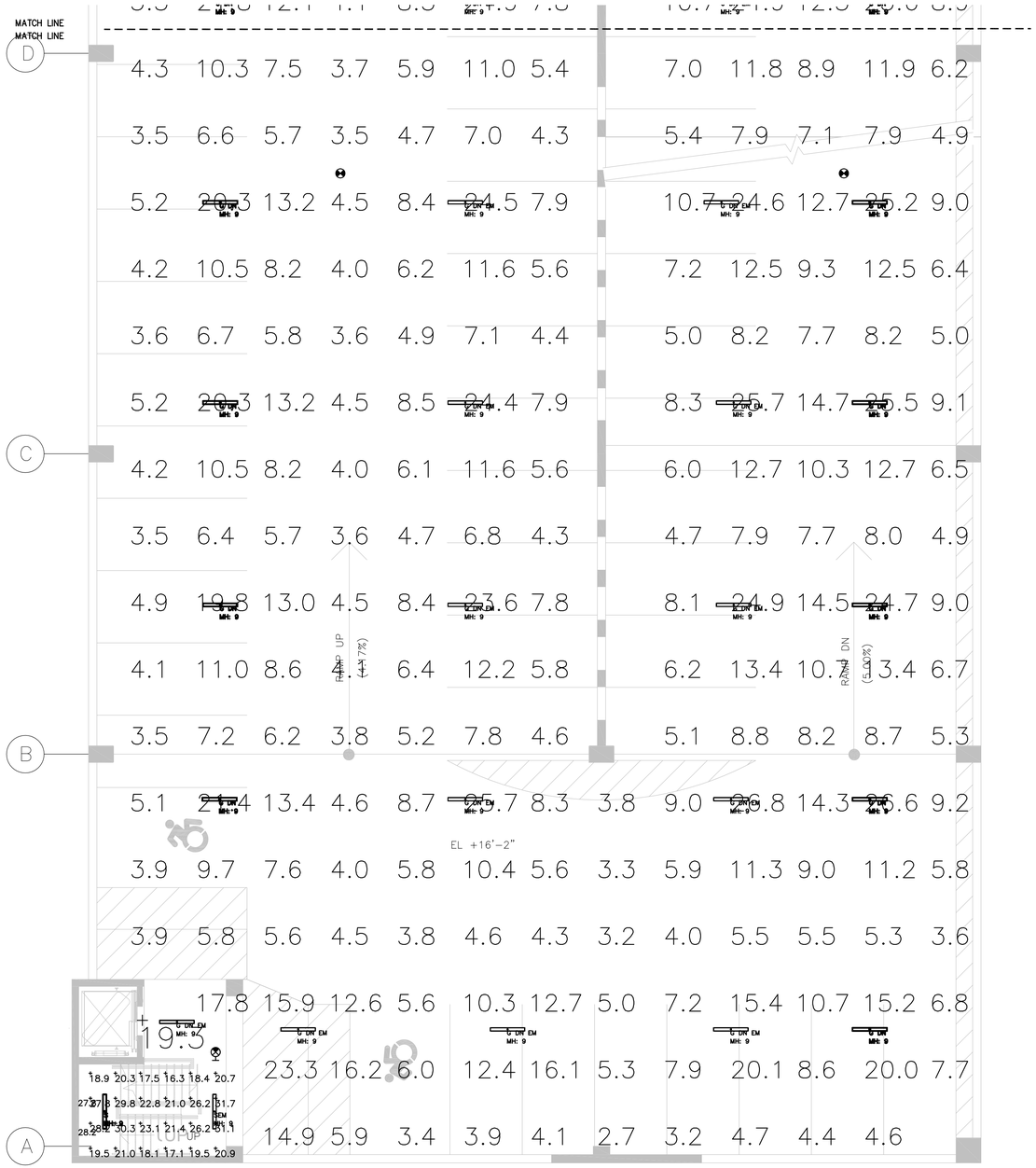
DRAWING NO:
E301

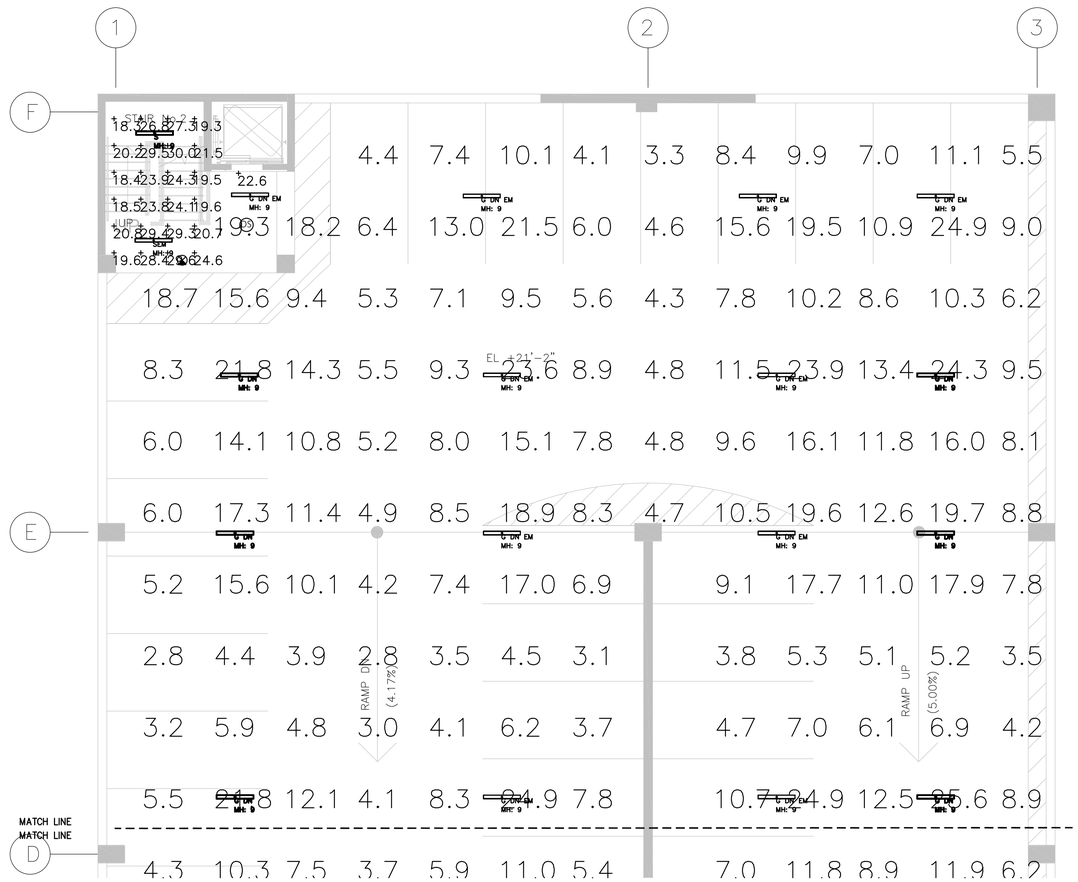
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





Luminaire Schedule FTL FEDERAL COURTHOUSE PG 2ND-3RD REV2

Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	S	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	15	G DN	BEGHELLI		N.A.	0.900	55	825
	22	G DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	1210

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
ELEV SILL 1	Fc	19.30	19.3	19.3	1.00	1.00
ELEV SILL 2	Fc	22.60	22.6	22.6	1.00	1.00
PG 2ND & 3RD_Floor	Fc	9.38	26.8	2.7	3.47	9.93
STAIR 1_Floor	Fc	22.83	31.7	16.3	1.40	1.94
STAIR 2	Fc	23.64	30.0	18.3	1.29	1.64

SECOND LEVEL ENLARGED PHOTOMETRICS PLAN

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

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FEDERAL COURTHOUSE PARKING GARAGE

FORT LAUDERDALE FLORIDA

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: SECOND LEVEL ENLARGED PHOTOMETRICS PLAN

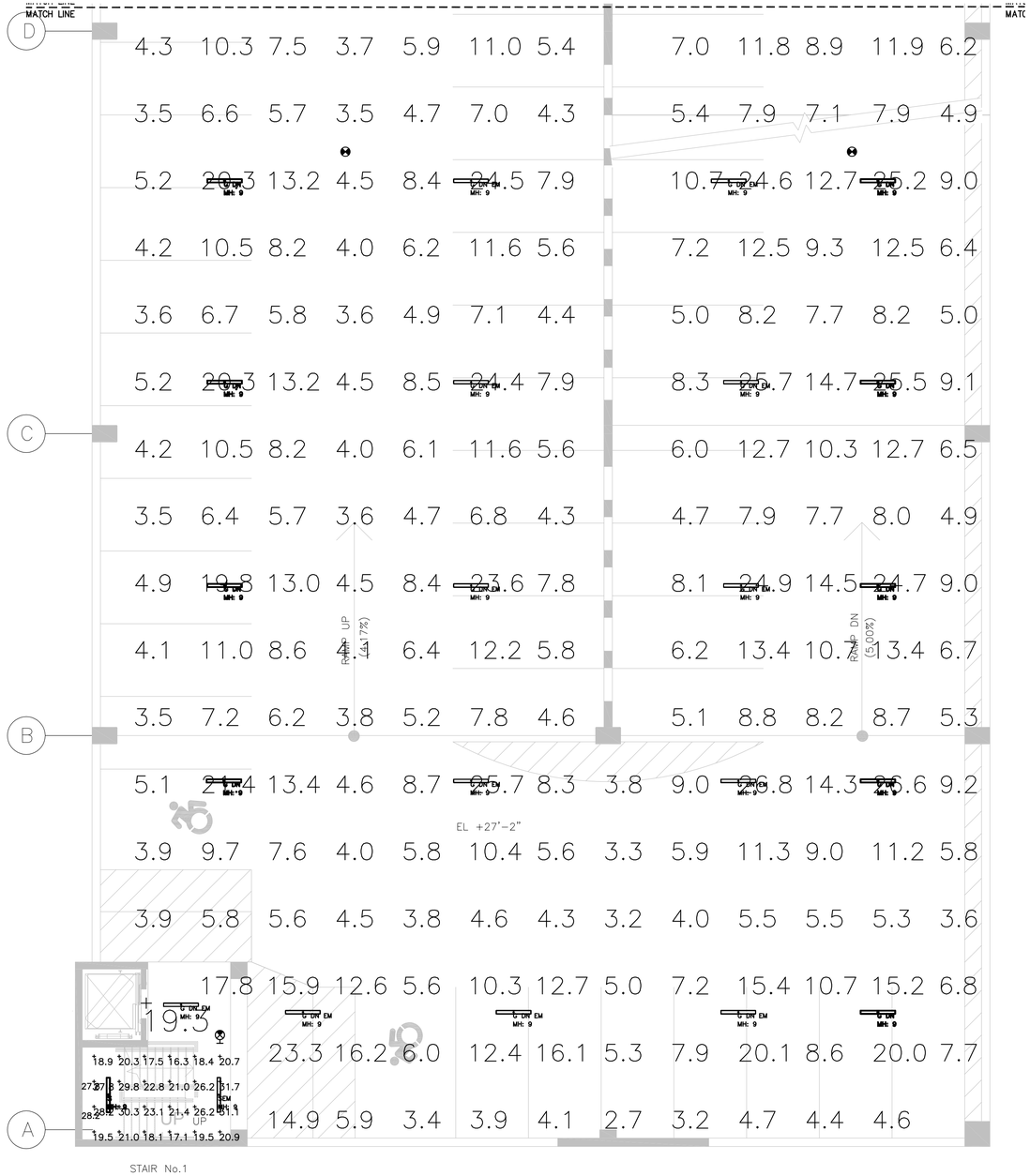
DRAWING NO: E302

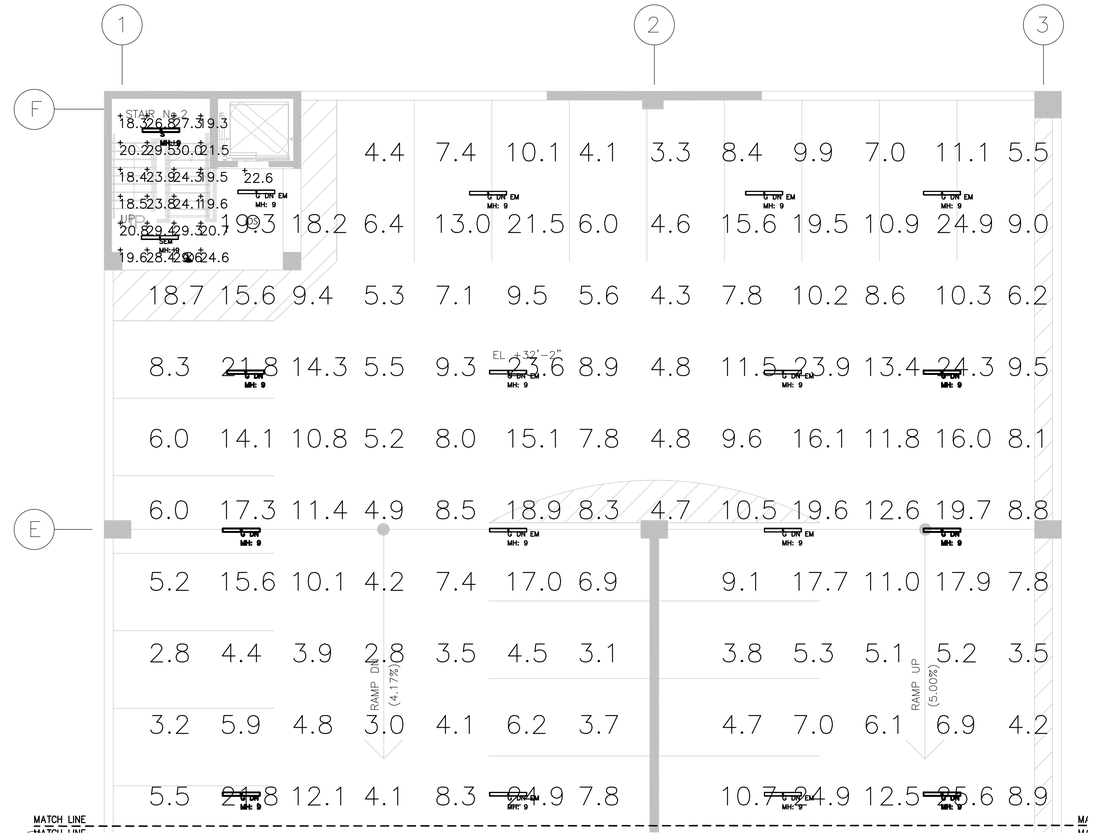
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





Luminaire Schedule FTL FEDERAL COURTHOUSE PG 2ND-3RD REV2

Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	S	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	15	G DN	BEGHELLI		N.A.	0.900	55	825
	22	G DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	1210

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
ELEV SILL 1	Fc	19.30	19.3	19.3	1.00	1.00
ELEV SILL 2	Fc	22.60	22.6	22.6	1.00	1.00
PG 2ND & 3RD_Floor	Fc	9.38	26.8	2.7	3.47	9.93
STAIR 1_Floor	Fc	22.83	31.7	16.3	1.40	1.94
STAIR 2	Fc	23.64	30.0	18.3	1.29	1.64

THIRD LEVEL ENLARGED PHOTOMETRICS PLAN

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

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: THIRD LEVEL ENLARGED PHOTOMETRICS PLAN

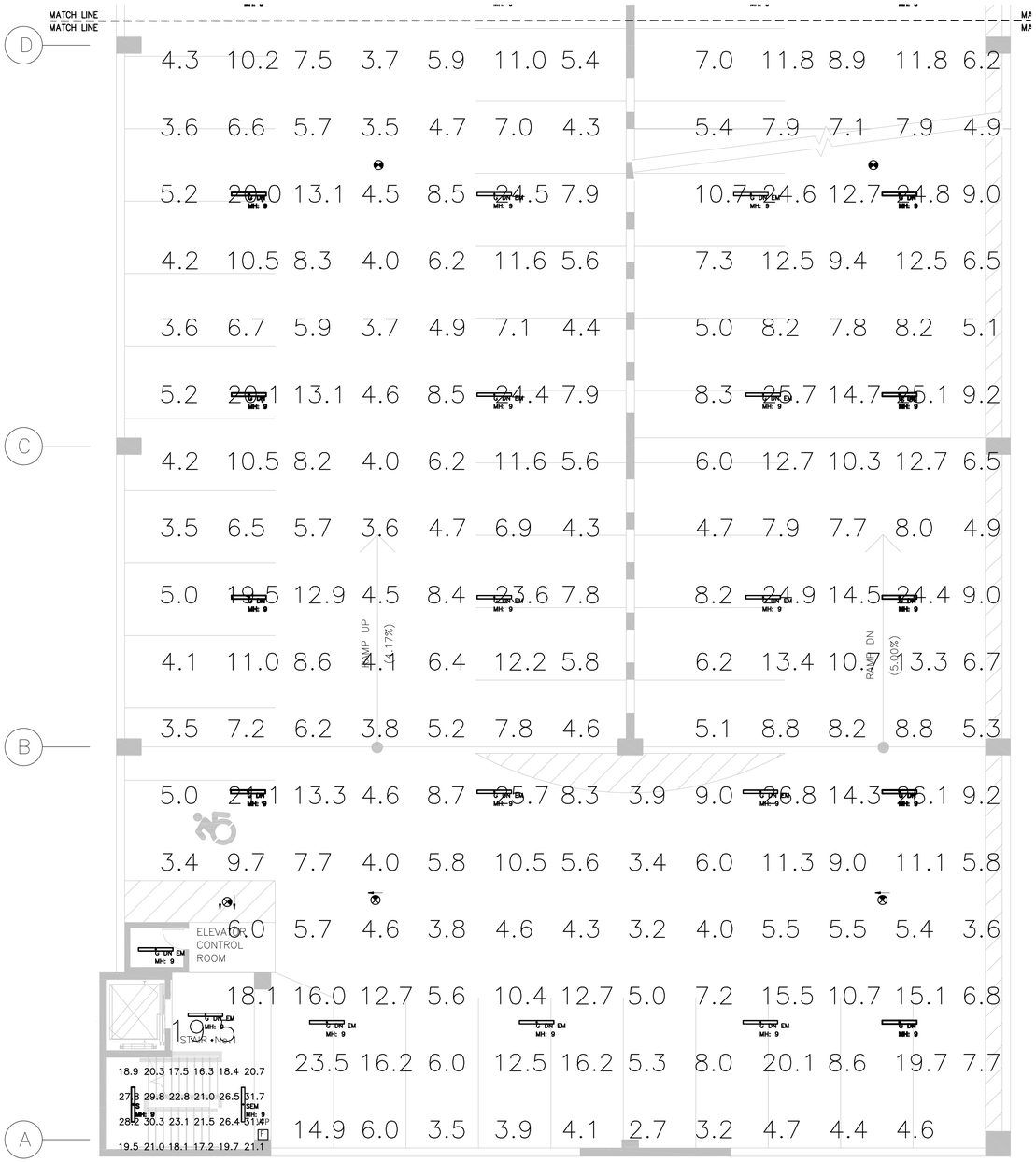
DRAWING NO: E303

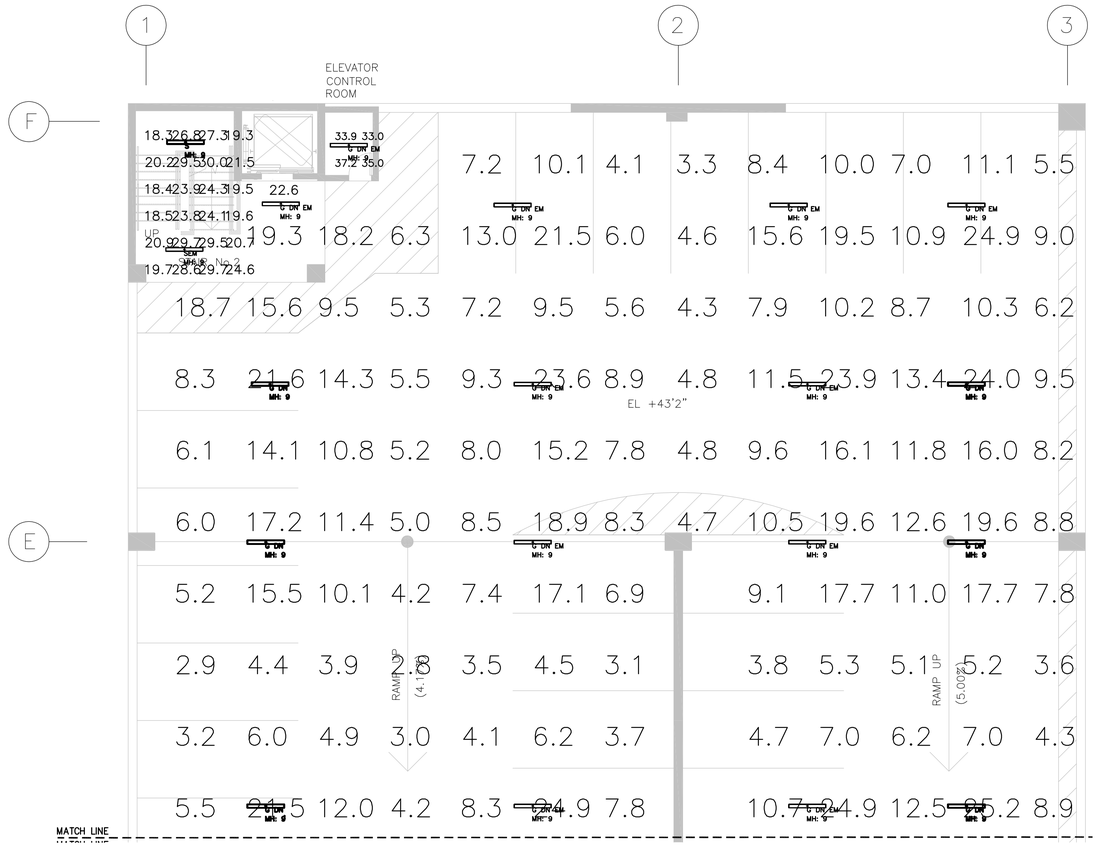
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





Luminaire Schedule FTL FEDERAL COURTHOUSE PG 4TH REV2

Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	S	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	15	G DN	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V	N.A.	0.900	55	825
	24	G DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	1320

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
CONTROL RM_Floor	Fc	34.78	37.2	33.0	1.05	1.13
ELEV SILL 1	Fc	19.50	19.5	19.5	1.00	1.00
ELEV SILL 2	Fc	22.60	22.6	22.6	1.00	1.00
PG 2ND & 3RD_Floor	Fc	9.41	26.8	2.7	3.49	9.93
STAIR 1_Floor	Fc	22.88	31.7	16.3	1.40	1.94
STAIR 2	Fc	23.68	30.0	18.3	1.29	1.64

FOURTH LEVEL PHOTOMETRICS PLAN
SCALE: 1/8" = 1'-0"

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: FOURTH LEVEL PHOTOMETRICS PLAN

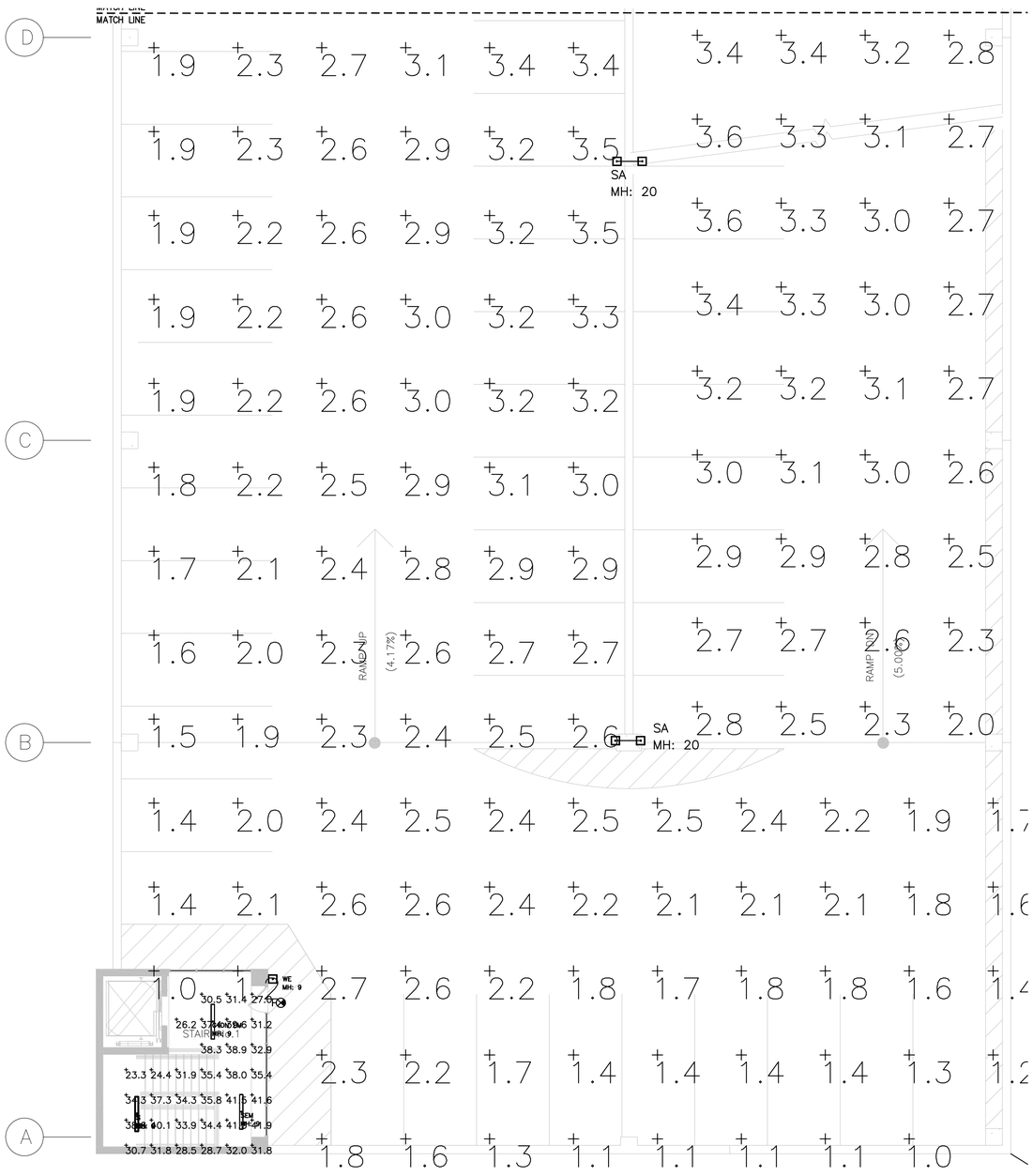
DRAWING NO: E304

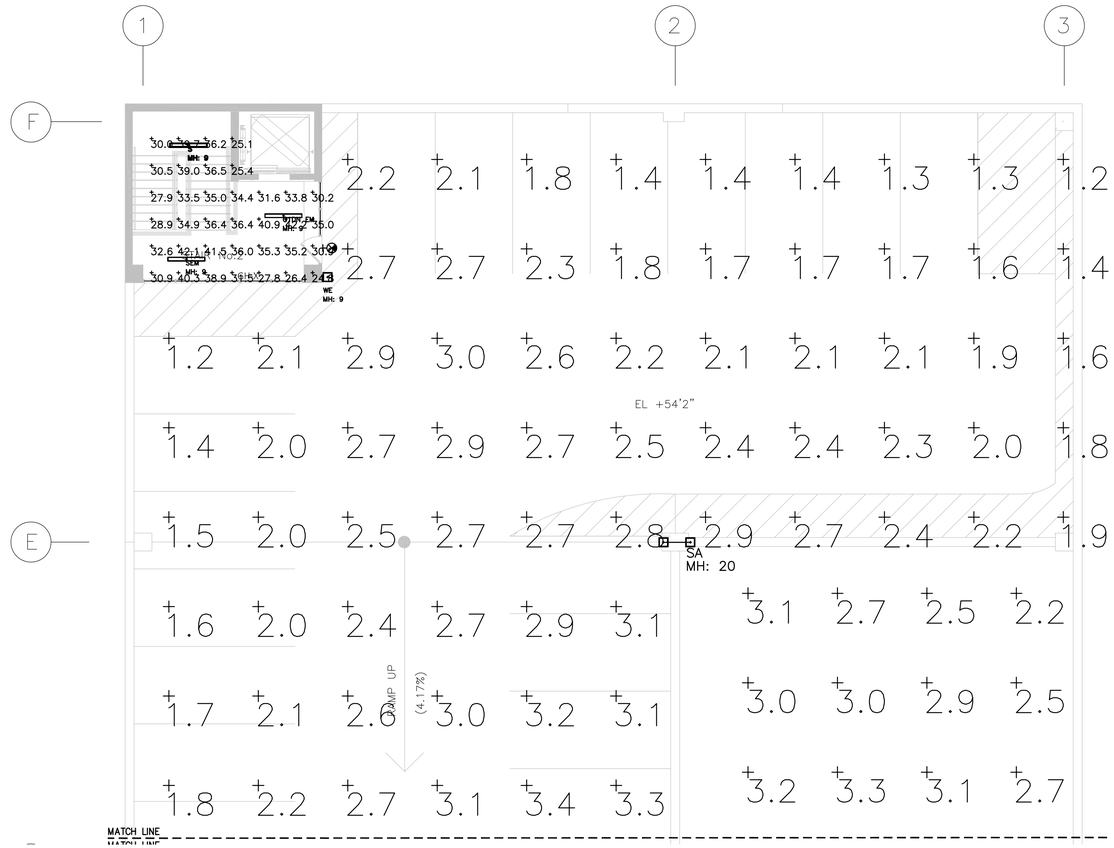
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





Luminaire Schedule FTL FEDERAL COURTHOUSE PG 5TH REV2

Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	G1DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	2	S	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	3	SA	SIGNIFY GARDCO	ECF-L-96L-800-NW-G2-5W TWIN	N.A.	0.900	237.6698	713.009
	2	WE	GARDCO	GWS-A02-830-T2M	N.A.	0.900	16.89	33.78

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING_Planar	Fc	2.2	3.5	1.0	2.2	3.5
RAMP_Planar	Fc	2.9	3.6	2.0	1.5	1.8
STAIR 1_Floor_1	Fc	34.1	41.9	23.3	1.5	1.8
STAIR 2_Floor_1	Fc	33.8	42.2	24.8	1.4	1.7

FIFTH LEVEL PHOTOMETRICS PLAN
SCALE: 1/8" = 1'-0"

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: FIFTH, LEVEL PHOTOMETRICS PLAN

DRAWING NO: E305

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK

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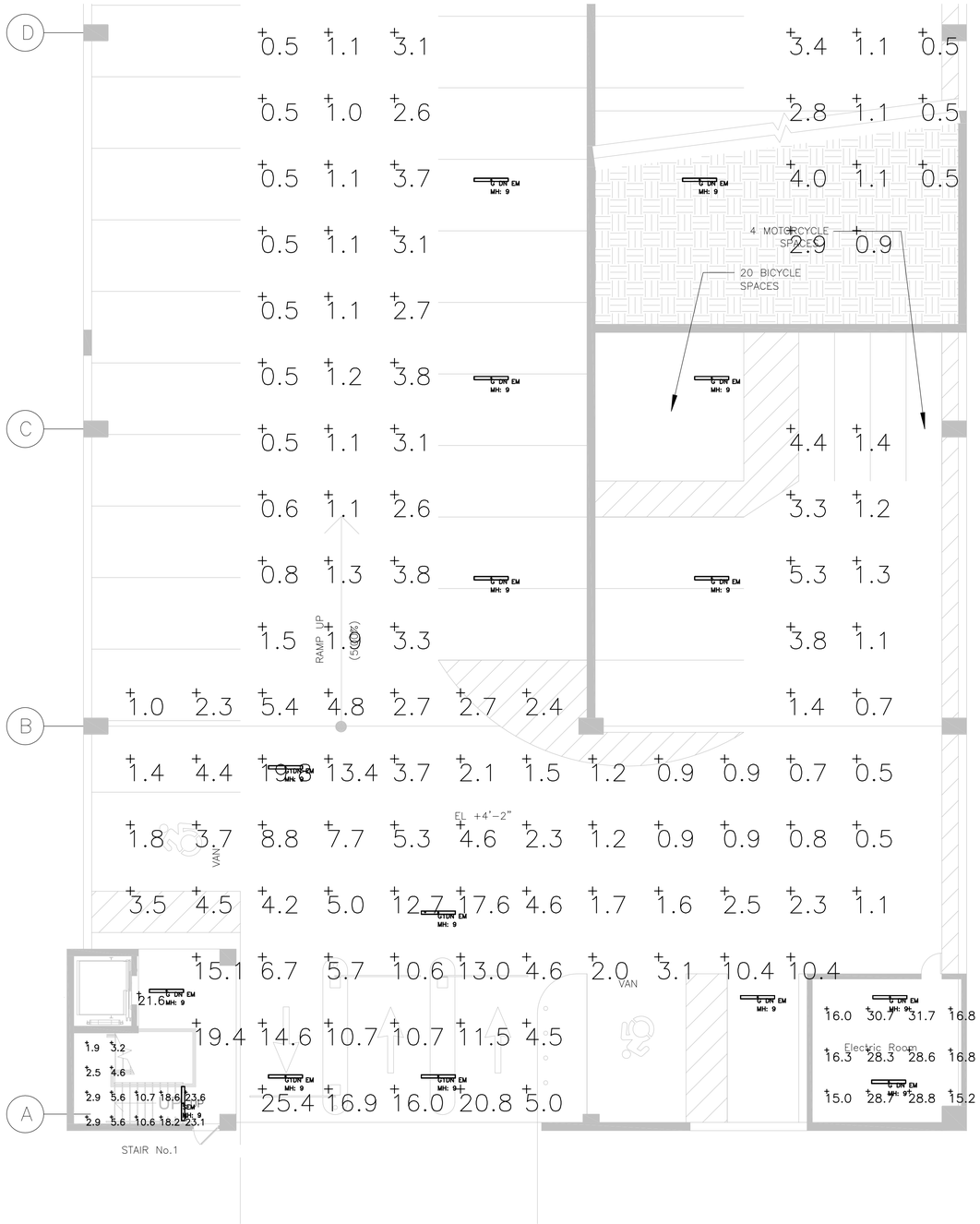
JOB # 24024



Luminaire Schedule FTL FEDERAL COURTHOUSE PG GND EM REV3							
Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	22	G DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	1210
	4	G1DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	220

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
ELETRIC RM_Floor	Fc	22.74	31.7	15.0	1.52	2.11
ELEVATOR SILL NW	Fc	21.10	21.1	21.1	1.00	1.00
ELEVATOR SILL SW	Fc	21.60	21.6	21.6	1.00	1.00
STAIR 1	Fc	9.57	23.6	1.9	5.04	12.42
STAIR NW	Fc	6.97	13.4	3.4	2.05	3.94
STAIR NW (OPEN)	Fc	24.70	27.7	19.7	1.25	1.41
ENTRANCE SOUTH	Fc	11.15	25.4	2.1	5.31	12.10
STALL & DRIVE PATH	Fc	4.16	19.4	0.5	8.32	38.80

GRADE LEVEL ENLARGED EMERGENCY PHOTOMETRICS PLAN

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

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
GRADE LEVEL EMERGENCY PHOTOMETRICS PLAN

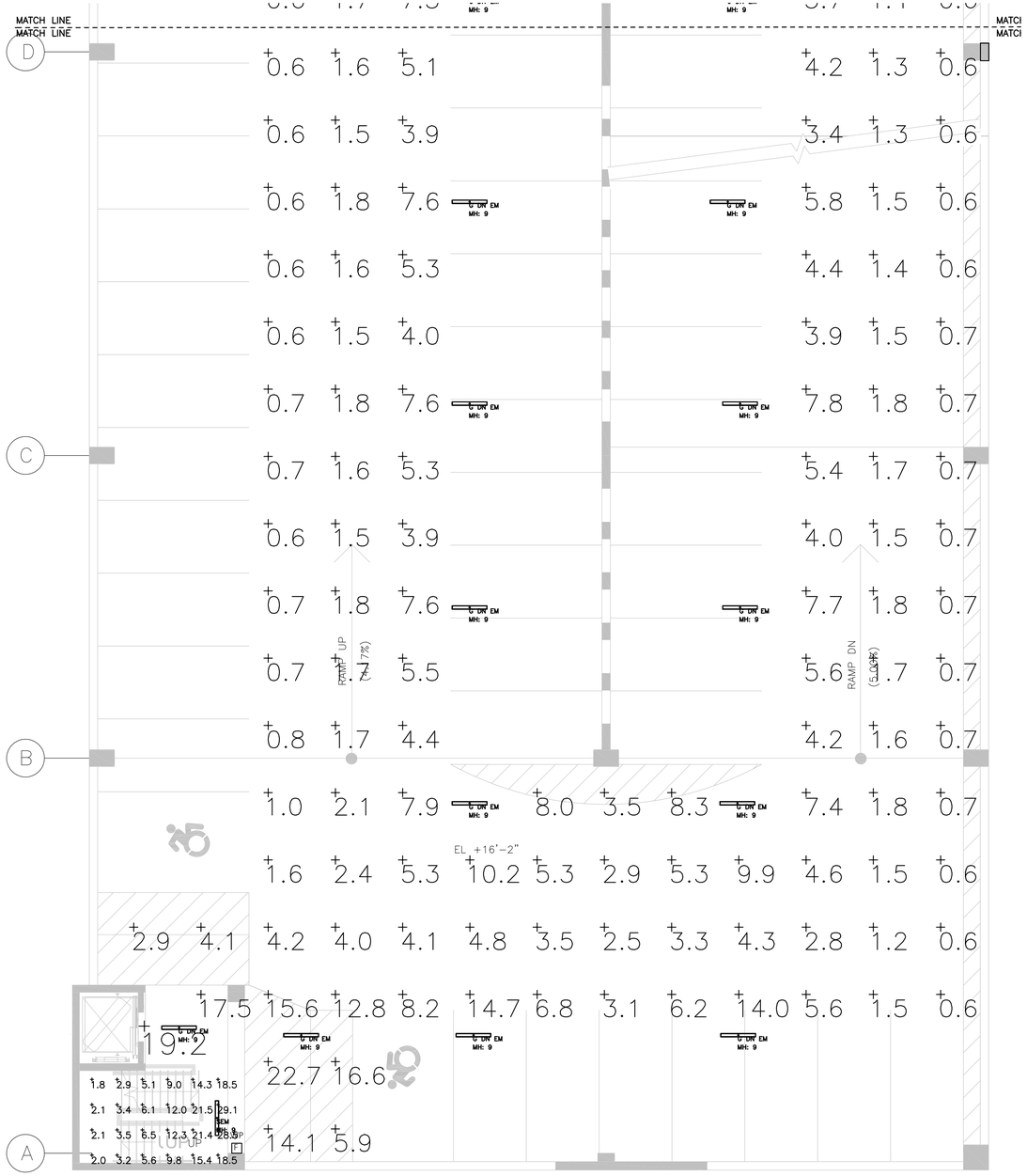
DRAWING NO:
E306

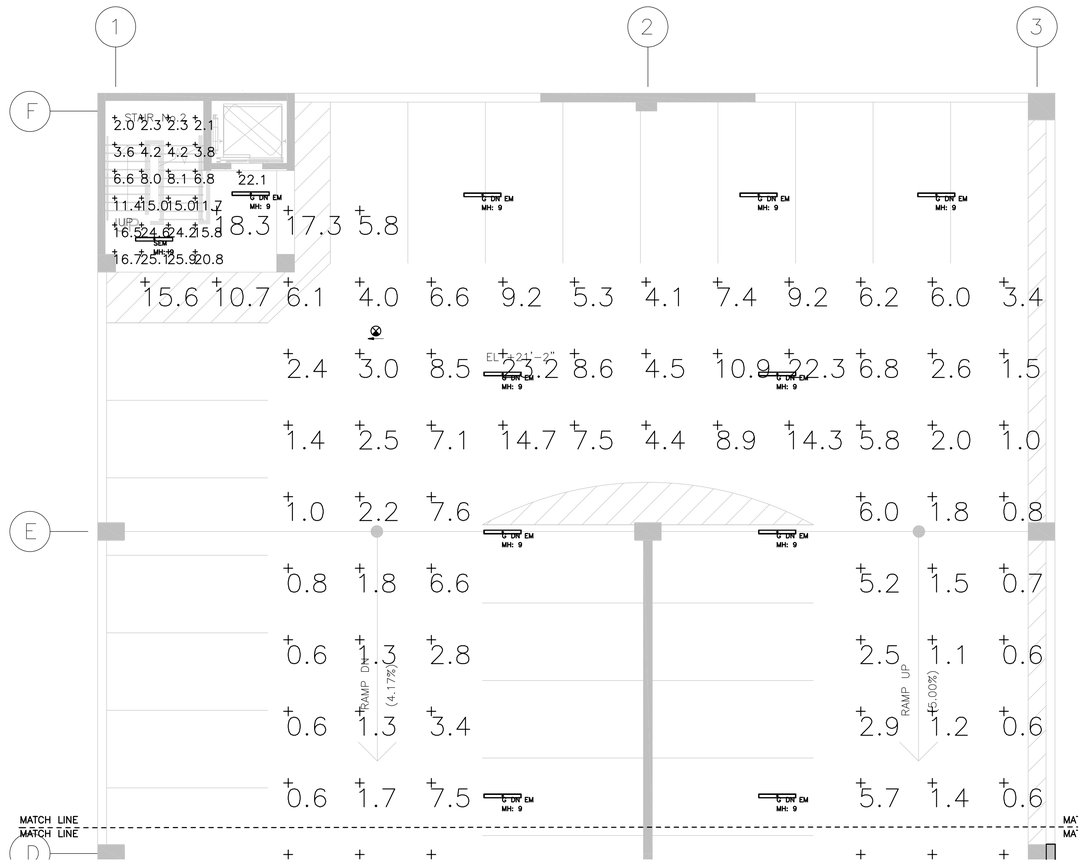
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





Luminaire Schedule FTL FEDERAL COURTHOUSE PG 2ND-3RD REV2 EM								
Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	22	G DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	1210

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
ELEV SILL 1	Fc	19.20	19.2	19.2	1.00	1.00
ELEV SILL 2	Fc	22.10	22.1	22.1	1.00	1.00
PG 2ND & 3RD_Floor	Fc	4.57	23.2	0.6	7.62	38.67
STAIR 1_Floor	Fc	10.61	29.1	1.8	5.89	16.17
STAIR 2	Fc	11.53	25.9	2.0	5.77	12.95

SECOND LEVEL ENLARGED EMERGENCY PHOTOMETRICS PLAN

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

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: SECOND LEVEL EMERGENCY PHOTOMETRICS PLAN

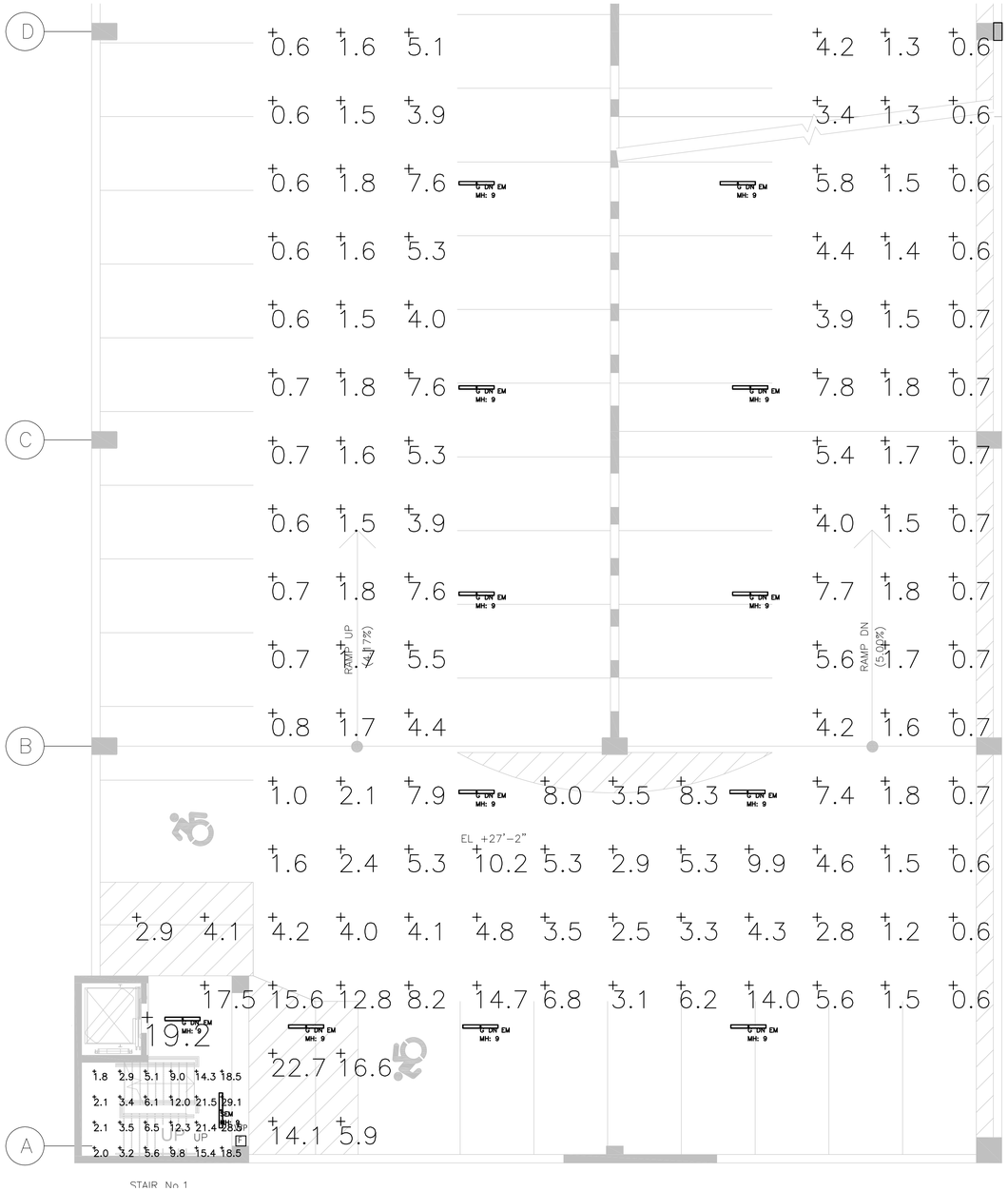
DRAWING NO: E307

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK



Luminaire Schedule FTL FEDERAL COURTHOUSE PG 2ND-3RD REV2 EM								
Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	22	G DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	1210

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
ELEV SILL 1	Fc	19.20	19.2	19.2	1.00	1.00
ELEV SILL 2	Fc	22.10	22.1	22.1	1.00	1.00
PG 2ND & 3RD_Floor	Fc	4.57	23.2	0.6	7.62	38.67
STAIR 1_Floor	Fc	10.61	29.1	1.8	5.89	16.17
STAIR 2	Fc	11.53	25.9	2.0	5.77	12.95

THIRD LEVEL ENLARGED EMERGENCY PHOTOMETRICS PLAN
SCALE: 1/8" = 1'-0"

FELLER ENGINEERING
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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
THIRD LEVEL EMERGENCY PHOTOMETRICS PLAN

DRAWING NO:
E308

SCALE: 1/8" = 1'-0"
DATE:
PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK

Luminaire Schedule FTL FEDERAL COURTHOUSE PG 4TH REV2 EM

Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_N.A.	N.A.	0.900	55	110
	24	G DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_N.A.	N.A.	0.900	55	1320

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
ELEV CONRTOL RM_Floor	Fc	34.13	35.8	32.9	1.04	1.09
ELEV SILL 1	Fc	19.40	19.4	19.4	1.00	1.00
ELEV SILL 2	Fc	22.10	22.1	22.1	1.00	1.00
PG 2ND & 3RD_Floor	Fc	4.59	23.3	0.6	7.65	38.83
STAIR 1_Floor	Fc	10.65	29.1	1.8	5.92	16.17
STAIR 2	Fc	11.55	25.9	2.0	5.78	12.95

FOURTH LEVEL EMERGENCY PHOTOMETRICS PLAN
SCALE: 1/8" = 1'-0"

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: FOURTH LEVEL EMERGENCY PHOTOMETRICS PLAN

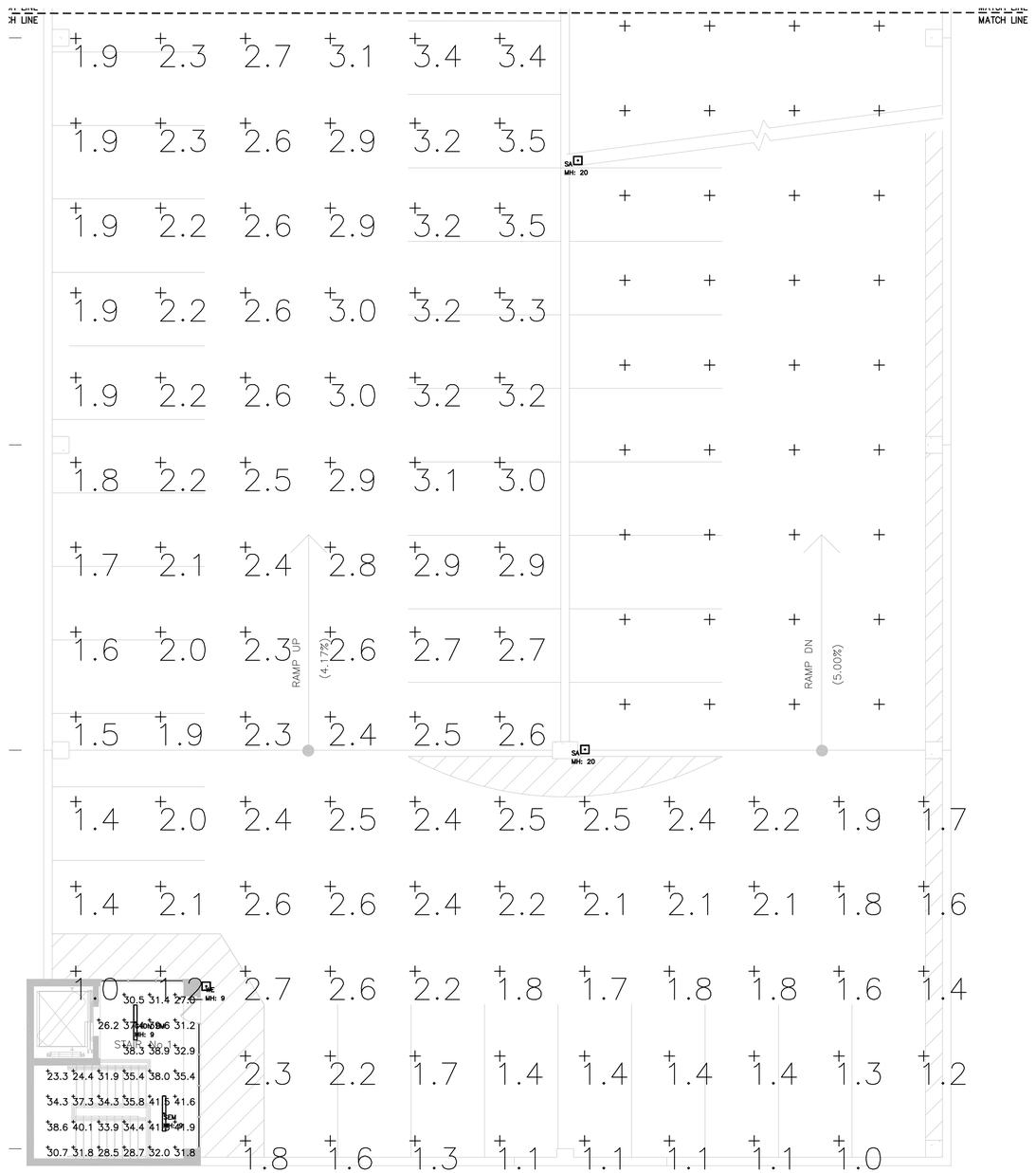
DRAWING NO: E309

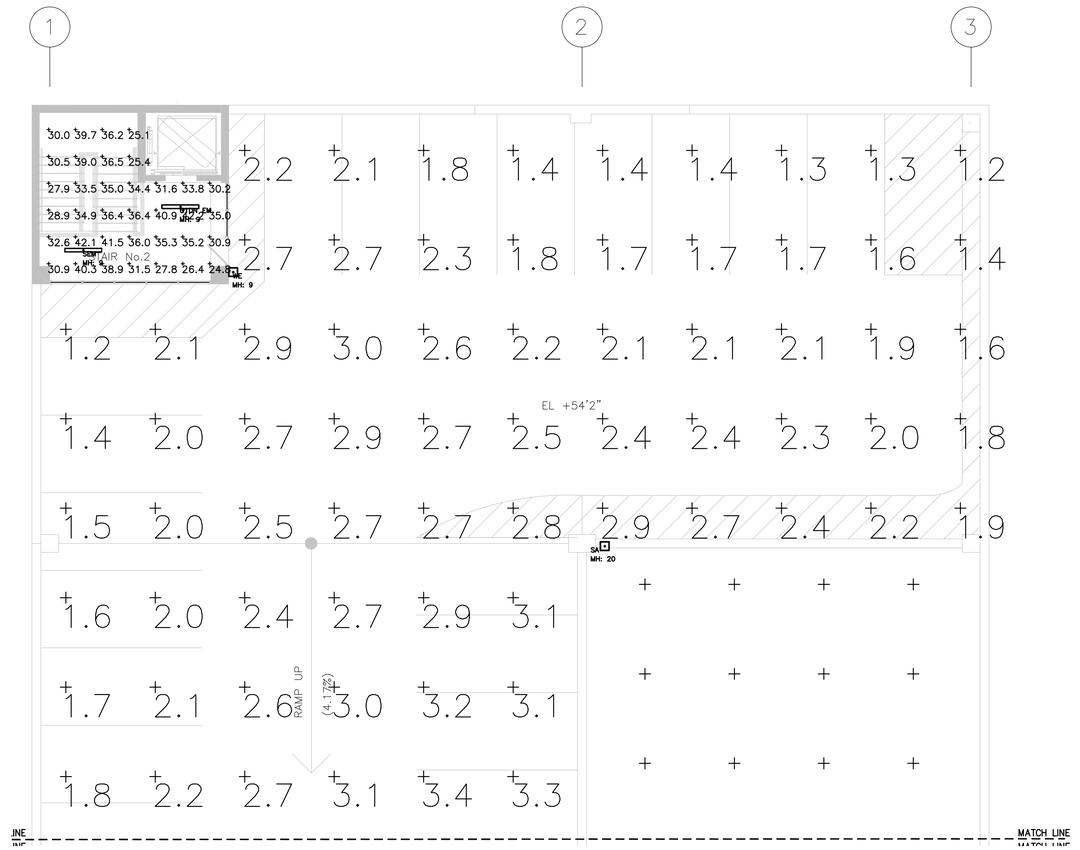
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





Luminaire Schedule FTL FEDERAL COURTHOUSE PG 5TH REV2

Symbol	Qty	Label	[MANUFAC]	Description	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	2	G1DN EM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	2	SEM	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	2	S	BEGHELLI	BS101ECOLED4HTHOWT35120V-277V_	N.A.	0.900	55	110
	3	SA	SIGNIFY GARDCO	ECF-L-96L-800-NW-G2-5W TWIN	N.A.	0.900	237.6698	713.009
	2	WE	GARDCO	GWS-A02-830-T2M	N.A.	0.900	16.89	33.78

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING_Planar	Fc	2.2	3.5	1.0	2.2	3.5
RAMP_Planar	Fc	2.9	3.6	2.0	1.5	1.8
STAIR 1_Floor_1	Fc	34.1	41.9	23.3	1.5	1.8
STAIR 2_Floor_1	Fc	33.8	42.2	24.8	1.4	1.7

FIFTH LEVEL EMERGENCY PHOTOMETRICS PLAN

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

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FEDERAL COURTHOUSE PARKING GARAGE

FORT LAUDERDALE FLORIDA

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: FIFTH LEVEL EMERGENCY PHOTOMETRICS PLAN

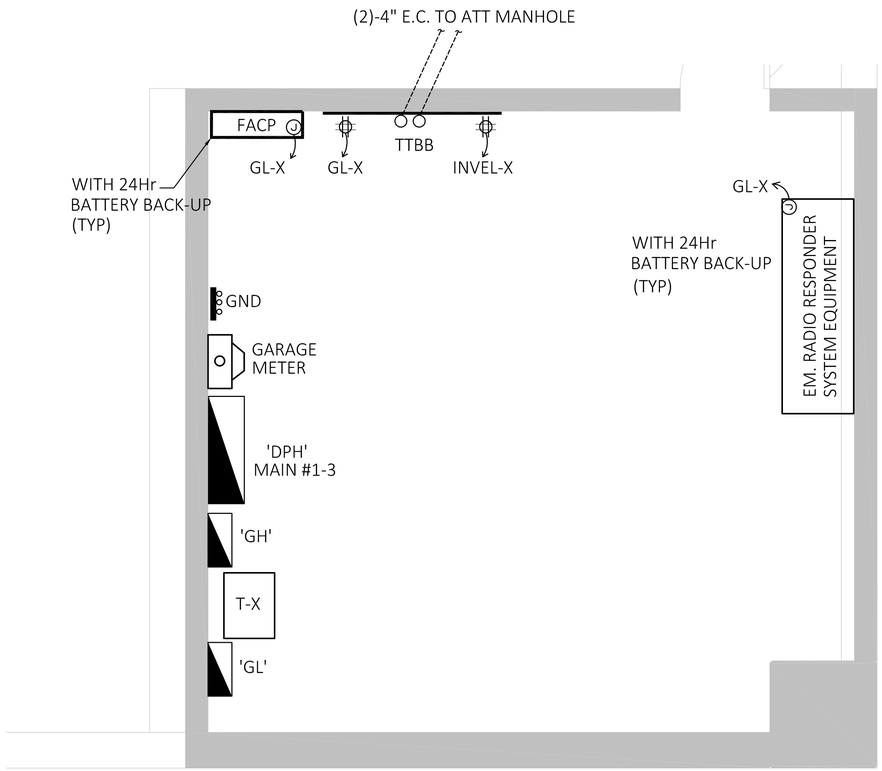
DRAWING NO: E310

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

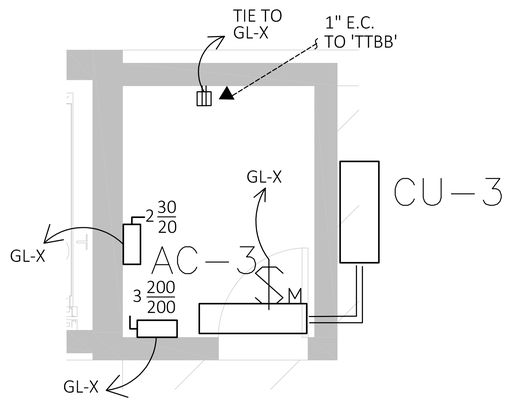
DATE:

PROJECT NO: 11-23117-1

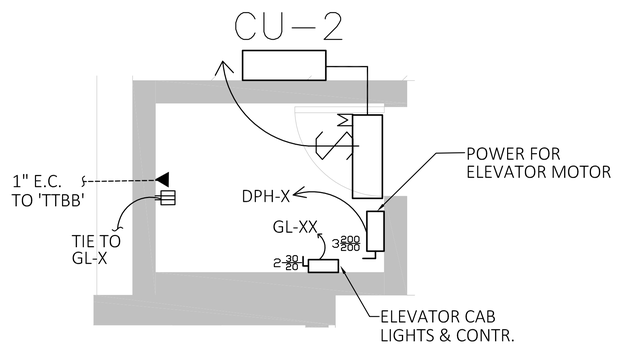
DES.	DRWN.	CHK'D.
TB	JS	EK



GARAGE MAIN ELECTRICAL ROOM
1/2"-1'-0"



NORTH ELEVATOR CONTROL ROOM–ELECTRICAL PLAN
1/2"-1'-0"



SOUTH ELEVATOR CONTROL ROOM–ELECTRICAL PLAN
1/2"-1'-0"

ENLARGED ELECTRICAL ROOMS
1/2"=1'-0"

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
ENLARGED ELECTRICAL ROOMS

DRAWING NO:
E401

SCALE:

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
AB	CD	EK

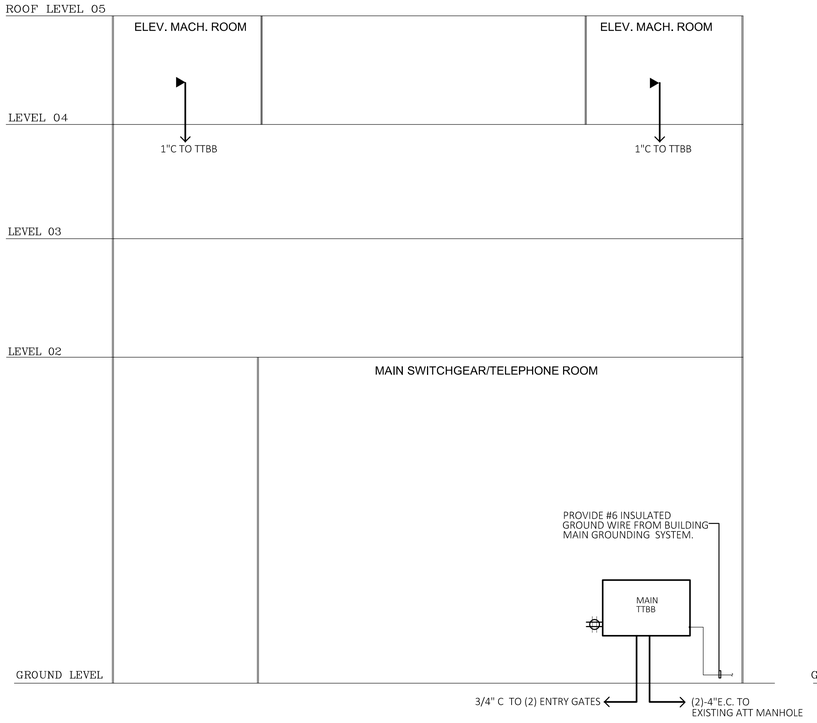
TRANSFORMER SCHEDULE				
SYMBOL	**KVA**	**PRIMARY FEEDER**	**SECONDARY FEEDER**	**GND**
T-15	15	3#10, 1#12 (G) IN 3/4"C	4#6, 1#8 (G) IN 1"C	#8
T-30	30	3#8, 1#8 (G) IN 1"C	4#3, 1#8 (G) IN 1 1/4"C	#8

ALL TRANSFORMERS ARE 480 VOLT TO 120/208 VOLT
3Ø, 4 WIRE. 150° C. RISE RATED

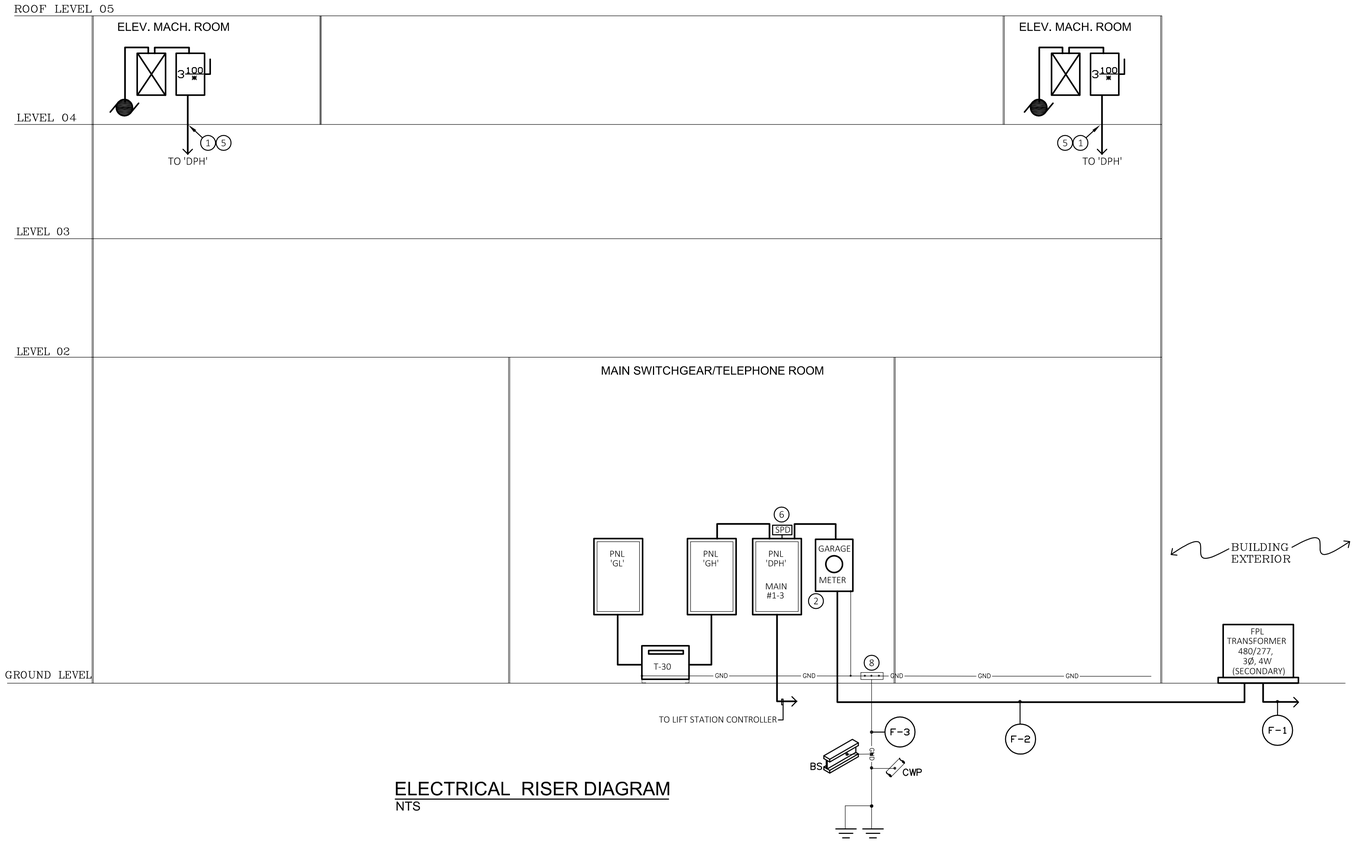
FEEDER SCHEDULE	
SYMBOL	WIRE AND CONDUIT
F-1	(4)-6" & (2)-2" PVC CONDUITS TO FPL TRANSFORMER @ THE PROPERTY LINE
F-2	(2) SETS OF (4) # 250 KCMIL (AL) IN 2 1/2"C.
F-3	1-#3/0 TO (3) - 5/8" X 10' CU CLAD GRD RODS, METAL WATER PIPE & FOOTER STEEL
F-4	NOT USED

GARAGE LOAD SUMMARY 3 PHASE/ 4 WIRE 277/480 VOLTS			
DESIGNATION	LOAD (KVA)	LOAD (AMPS)	PROTECTION PROVIDED
'DPH' MAIN#1-5	200	240	REFER TO PNL SCHEDULES
TOTAL LOAD	200	240	400 AMP

DRAWING KEYNOTES:	
1	PROVIDE CABLE SUPPORTS AS PER DETAIL (SEE SHEET E6.01)
2	GARAGE METER
3	GROUND BAR (SEE DETAIL ON SHEET E601)
4	NOT USED
5	PROVIDE FIRE SAFING AS PER DETAILS (TYP)
6	PROVIDE SURGE SUPPRESION PROTECTIVE DEVICE FOR ALL MAINS
7	NOT USED
8	PROVIDE #3/0 COPPER GROUND WIRE TO (3) 5/8" 10FT COPPER CLAD GROUND RODS LOCATED 10FT APART AND CONNECT TO 1/4"X24" MAIN GROUND BAR IN MAIN SWITCHGEAR ROOM, TO COPPER COLD WATER PIPE AND TO BUILDING STEEL.



TELEPHONE RISERS
NTS



ELECTRICAL RISER DIAGRAM
NTS

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REVISION/ISSUE		
No.	DESCRIPTION	DATE

DRAWING TITLE:
ELECTRICAL & TELEPHONE RISER DIAGRAM

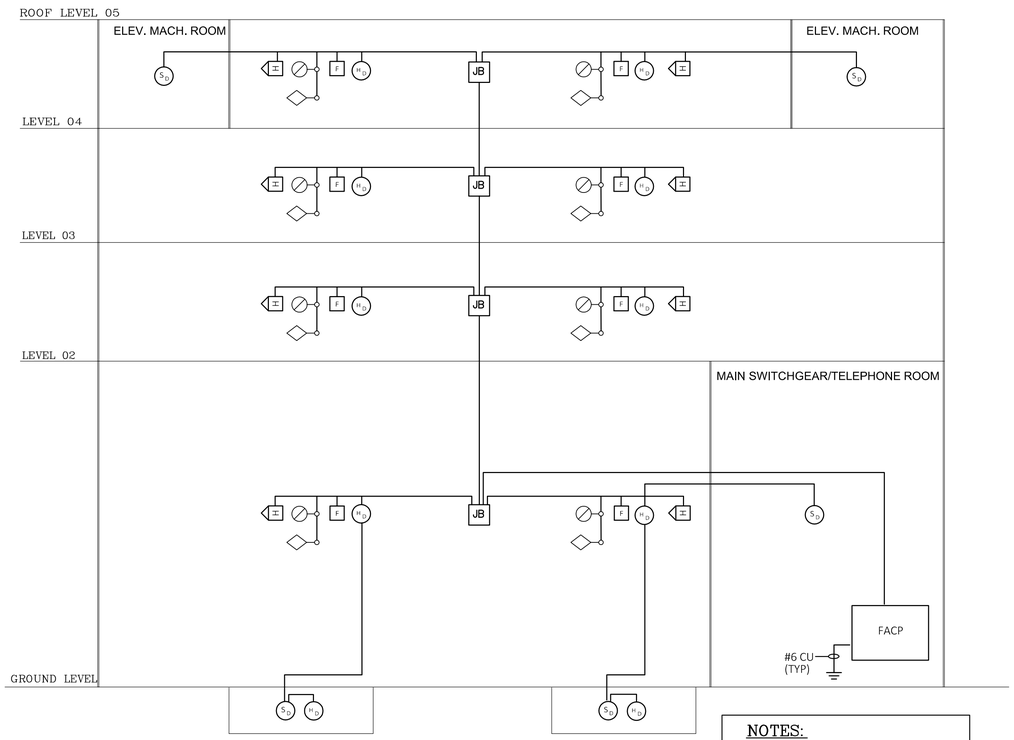
DRAWING NO:
E402

SCALE:

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
AB	CD	EK

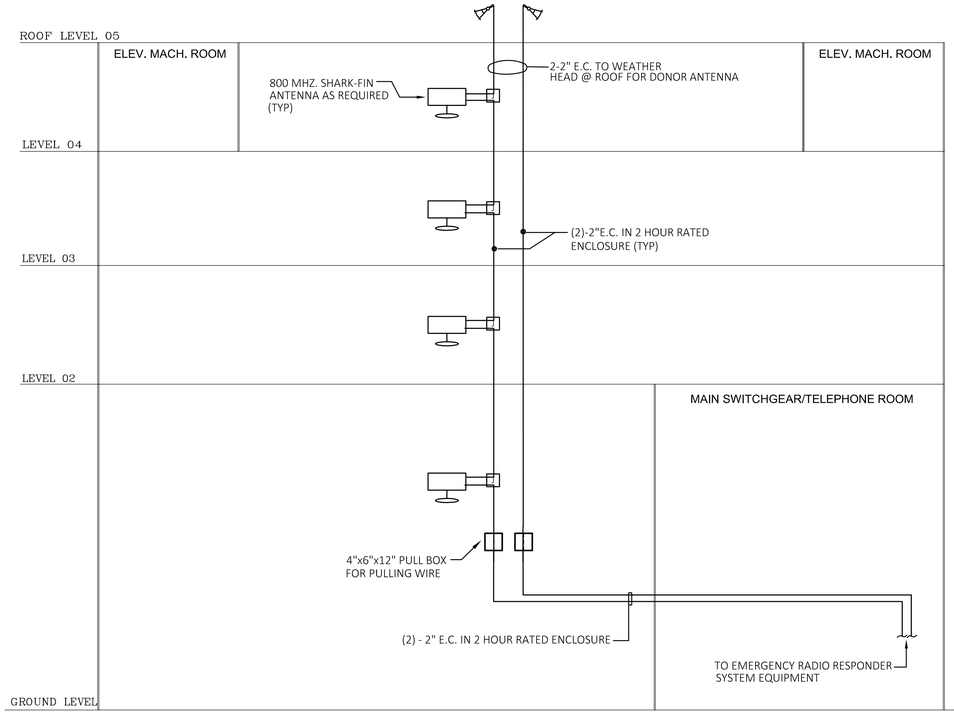


(REFER TO FLOOR PLANS FOR EXACT QUANTITY)

FIRE ALARM RISER
N.T.S.

NOTES:

1. FIRE/SMOKE DAMPERS SHALL BE TIED TO BLDG. FA SYSTEM.
2. CONTRACTOR SHALL SUBMIT FIRE ALARM SHOP DRAWINGS FOR REVIEW.
3. FIRE ALARM SYSTEM SHALL BE INSTALLED AS PER NFPA 72.



EMERGENCY RADIO SIGNAL BOOSTER SYSTEM RISER DIAGRAM
N.T.S.

THIS SYSTEM IS REQUIRED ONLY IF THE SIGNAL STRENGTH MEASURED IN THE COMPLETED STRUCTURE IS NOT ACCEPTABLE TO THE CITY OF FT. LAUDERDALE RADIO DEPARTMENT.

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
RADIO BOOSTER & F/A RISER DIAGRAM

DRAWING NO:
E403

SCALE:

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
AB	CD	EK

PANEL "GL"

MOUNTING: SURFACE
SHORT CIRCUIT RATING: 22K AIC
POLES: 30
FED FROM PANEL: 'GH' VIA TRANS

VOLT: 208/120V,3Ø,4W
MAIN BUS AMPS: 225 A
MAIN BREAKER AMPS: 100 A/3P M.C.B.
MANUFACTURER/TYPE: GE/ABB/SIEMENS/SQD

CKT	LOAD SERVED	POLE	TRIP	WIRE	COND	NO DEM. LOAD	DEM. LOAD	DEM. LOAD	NO DEM. LOAD	COND	WIRE	TRIP	POLE	LOAD SERVED	CKT
1	AHU-1	2	20	10	1/2"	400			2,330	1/2"	10	20	2	ACCU-1	2
3															4
5	AHU-2	2	20	10	1/2"	400			2,330	1/2"	10	20	2	ACCU-2	6
7															8
9	AHU-3	2	20	10	1/2"	400			2,300	1/2"	10	20	2	ACCU-3	10
11															12
13	AHU-4	2	20	10	1/2"	400			2,330	1/2"	10	20	2	ACCU-4	14
15															16
17	AHU-5	2	20	10	1/2"	400			2,330	1/2"	10	20	2	ACCU-5	18
19															20
21	GARAGE RECP.	1	20	10	1/2"	1,000			360	1/2"	10	30	1	ELEV. PIT RECP.	22
23	GARAGE RECP.	1	20	10	1/2"	1,000			360	1/2"	10	30	1	ELEV. PIT RECP.	24
25	TELEPHONE EQUIPM.	1	20	10	1/2"	360			360	1/2"	10	30	1	MACHIN RM. RECP.	26
27	FACP	1	20	10	1/2"	500			360	1/2"	10	30	1	MACHIN RM. RECP.	28
29	BDA EQUIPM.	1	20	10	1/2"	500			1,000	1/2"	10	20	1	GATE CONTROL	30
31	SPACE								1,000	1/2"	10	20	1	GATE CONTROL	32
33	SPACE								500	1/2"	10	20	1	ELEV. CAB. LTS & CONTR.	34
35	SPACE								500	1/2"	10	20	1	ELEV. CAB. LTS & CONTR.	36
37	SPACE								500	1/2"	10	20	1	OBSTRUCTION LTG.	38 (1)
39	SPACE													SPARE	40
41	SPACE													SPARE	42
						5,360	0	0	16,560						

TOTAL CONNECTED LOAD = 21,920 VA
TOTAL CONNECTED AMPS = 61 AMPS

Note: (1) VIA PHOTO CELL

MAIN DISTRIBUTION PANEL "DPH"

MOUNTING: SURFACE
SHORT CIRCUIT RATING: 65K
FED FROM PANEL: FPL TRANSFORMER

VOLTS: 480/277V, 3Ø, 4W
MAIN BUS AMPS: 400 A
MAIN BREAKER AMPS: AS NOTED
MANUFACTURER/TYPE: GE/ABB/SIEMENS/SQD

		LOAD	LOAD	PROTECTION				WIRE				CONDUIT	
CKT	EQUIPMENT PROTECTED	KVA	AMP	POLE	FRAME	C.B.	AIC	#SETS	WPS	SIZE	GRD	(TRADE)	REMARKS
1	PANEL 'GH'	35	42.2	3	225	225	65K						MAIN #1
2	GARAGE ELEVATOR (30HP)	33	40.0	3	100	80	65K						MAIN #2 (1)
3	GARAGE ELEVATOR (30HP)	33	40.0	3	100	80	65K						MAIN #3 (1)
6	SPD		0.0	3	30	30	65K						

TOTAL DEMAND LOAD = 101 KVA
DEMAND AMPS = 121 AMPS

Note: (1) CKT BREAKER WITH SHUNT TRIP

PANEL "GH"

MOUNTING: SURFACE
SHORT CIRCUIT RATING: 22K AIC
POLES: 24
FED FROM PANEL: 'DPH'

VOLT: 480/277V,3Ø,4W
MAIN BUS AMPS: 225 A
MAIN BREAKER AMPS: MLO
MANUFACTURER/TYPE: GE/ABB/SIEMENS/SQD

	CKT	LOAD SERVED	POLE	TRIP	WIRE	COND	NO DEM. LOAD	DEM. LOAD	DEM. LOAD	NO DEM. LOAD	COND	WIRE	TRIP	POLE	LOAD SERVED	CKT	
(2)	1	GARAGE EM.LIGHTING	1	20	10	1/2"		1,500	1,500		1/2"	10	20	1	GARAGE LTG. LVLEL 1	2	(1)(2)
(2)	3	GARAGE EM.LIGHTING	1	20	10	1/2"		1,500	1,500		1/2"	10	20	1	GARAGE LTG. LVLEL 2	4	(1)(2)
(2)	5	GARAGE EM.LIGHTING	1	20	10	1/2"		1,500	1,500		1/2"	10	20	1	GARAGE LTG. LVLEL 3	6	(1)(2)
(2)	7	GARAGE EM.LIGHTING	1	20	10	1/2"		1,500	1,500		1/2"	10	20	1	GARAGE LTG. LVLEL 4	8	(1)(2)
(2)	9	GARAGE EM.LIGHTING	1	20	10	1/2"		800	800		1/2"	10	20	1	GARAGE LTG. LVLEL 5	10	(1)(2)
(3)	11	BUILDING SIGN	1	20	10	1/2"	400								SPACE	12	
	13	SPACE													SPACE	14	
	15	SPACE													SPACE	16	
	17	SPACE													SPACE	18	
	19	SPACE														20	
	21	SPACE								21,500	3/4"	8	45	3	PNL 'GL' VIA TRANS	22	
	23	SPACE														24	
							400	6,800	6,800	21,500							

Note: (1) VIA DAY LIGHTING SENSOR CONTROL
(2) VIA 'LCP'
(3)) VIA PHOTOCELL

TOTAL CONNECTED LOAD @ 1.25% = 35,500 VA
TOTAL CONNECTED AMPS = 43 AMPS

ELECTRICAL PANELS
NTS

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: ELECTRICAL PANELS

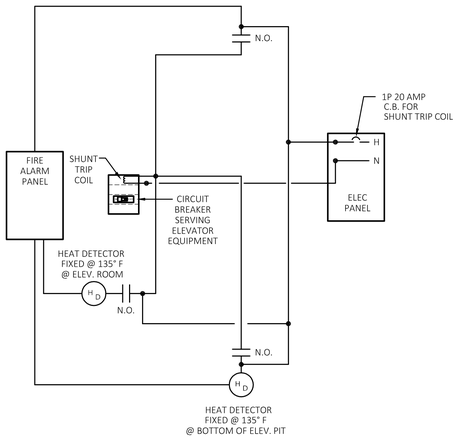
DRAWING NO: E501

SCALE:

DATE:

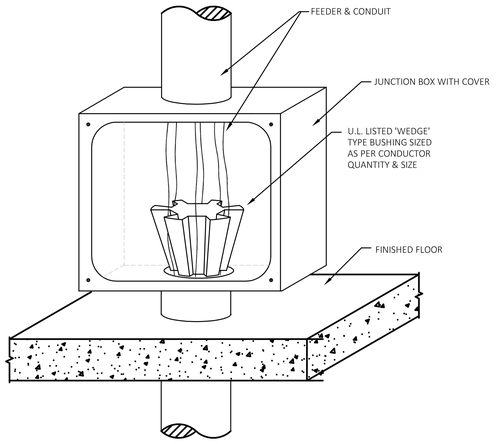
PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
AB	CD	EK



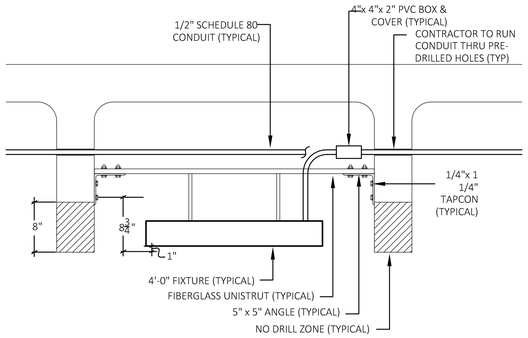
ELEVATOR SHUNT TRIP WIRING DIAGRAM

N.T.S.



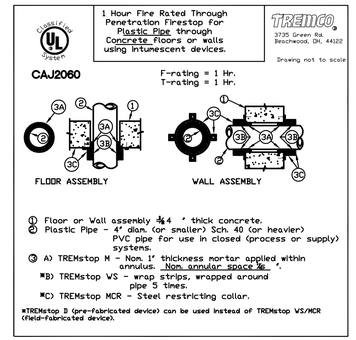
CABLE SUPPORT DETAIL

NTS



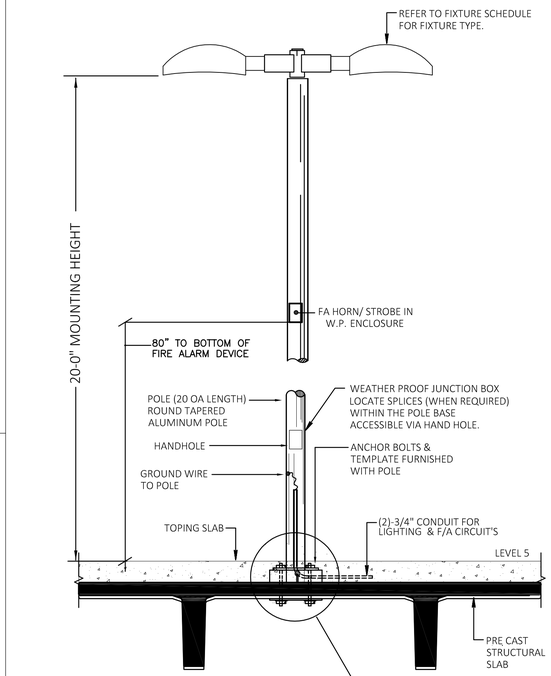
TYPICAL GARAGE LIGHTING FIXTURE MOUNTING DETAIL

N.T.S



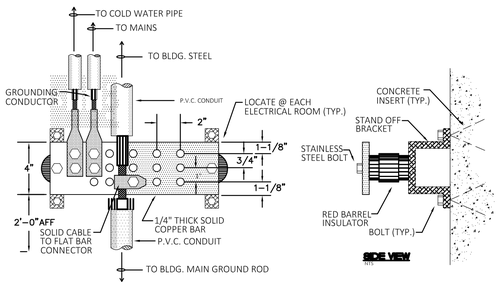
FIRE SAFEING DETAIL

N.T.S.



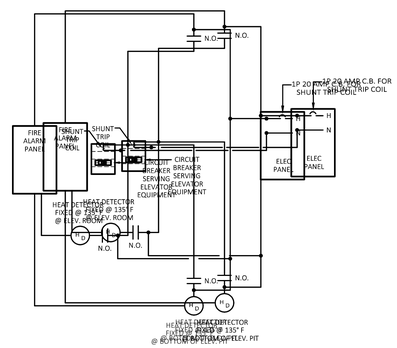
POLE BASE DETAIL

N.T.S.



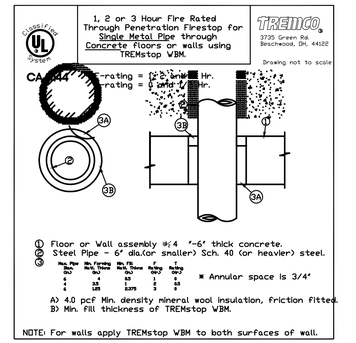
MAIN GROUND BAR DETAIL

NTS



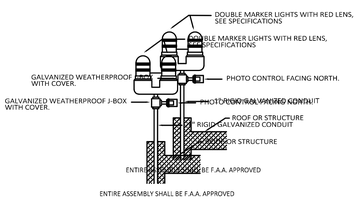
ELEVATOR SHUNT TRIP WIRING DIAGRAM

N.T.S.



FIRE SAFEING DETAIL

N.T.S.



AIRCRAFT WARNING LIGHT MOUNTING DETAIL

N.T.S.

ELECTRICAL DETAILS

NTS

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: ELECTRICAL DETAILS

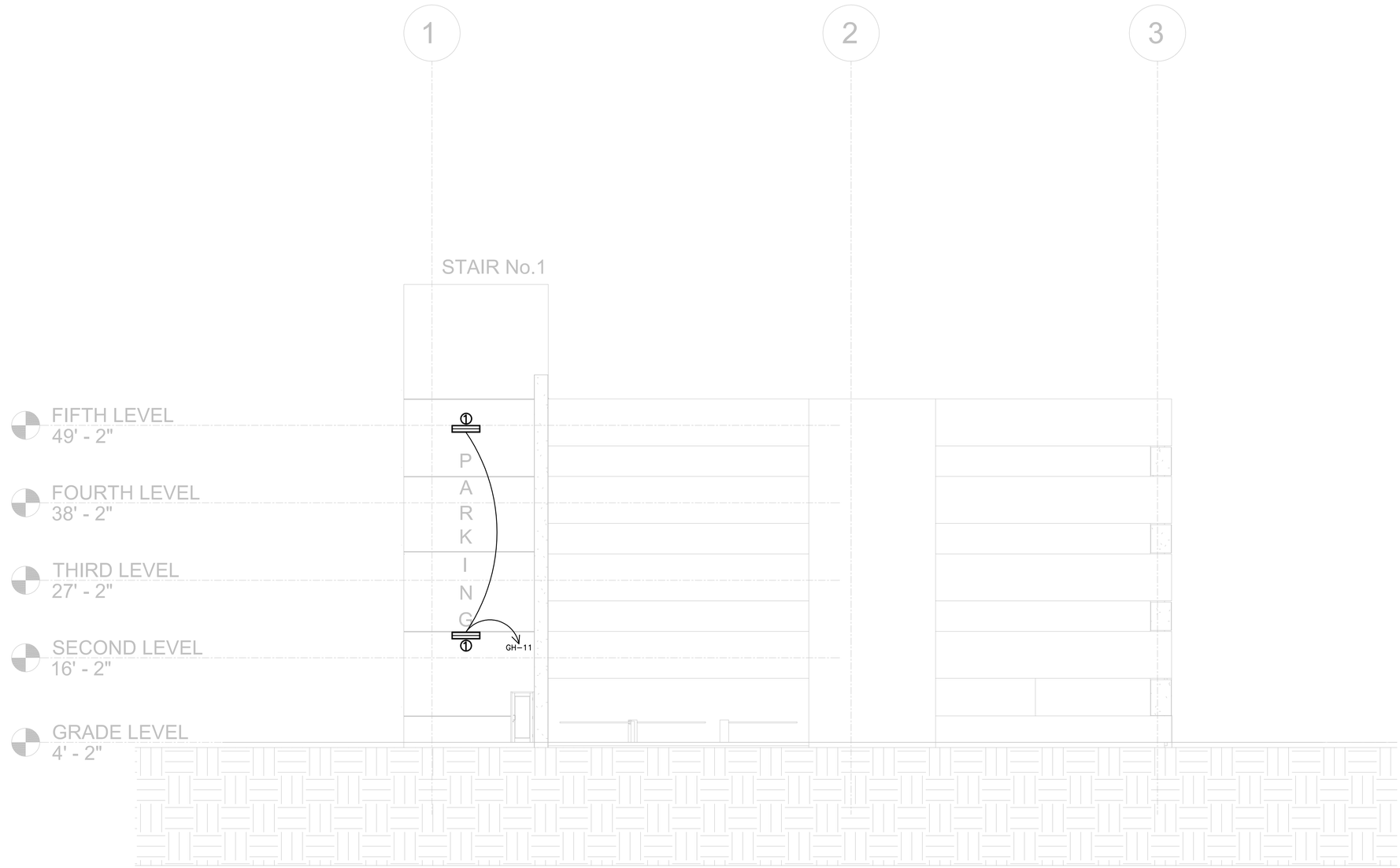
DRAWING NO: E601

SCALE:

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
AB	CD	EK



KEY NOTE:

① FURNISH & INSTALL SURFACE MOUNT LIGHT FIXTURE TO ILLUMINATE BUILDING SIGN

SOUTH ELEVATION ELECTRICAL PLAN

SCALE 1/8" = 1'-0"

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REVISION/ISSUE		

No.	DESCRIPTION	DATE

DRAWING TITLE:
DETAILS
NOTES

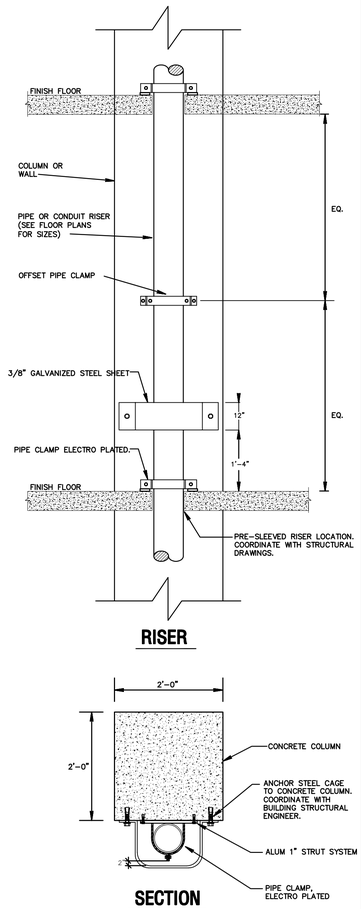
DRAWING NO:
E701

SCALE:

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
AB	CD	EK



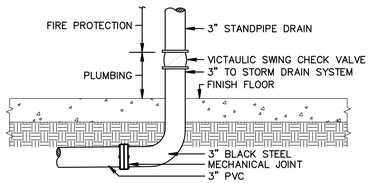
RISER

SECTION

FLOOR PENETRATION AND SUPPORT INSTALLATION DETAIL

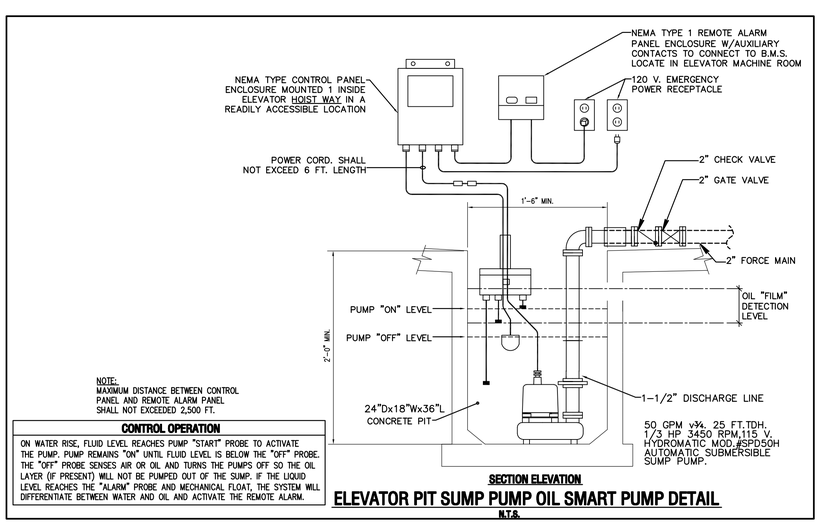
NTS

THIS DETAILS APPLIES TO ALL VERTICAL PIPING THROUGH OUT THE GARAGE



FIRE STANDPIPE DRAIN TO STORM DETAIL

N.T.S.



NOTE:
MAXIMUM DISTANCE BETWEEN CONTROL PANEL AND REMOTE ALARM PANEL SHALL NOT EXCEEDED 2,500 FT.

CONTROL OPERATION

ON WATER RISE, FLUID LEVEL REACHES PUMP "START" PROBE TO ACTIVATE THE PUMP. PUMP REMAINS "ON" UNTIL FLUID LEVEL IS BELOW THE "OFF" PROBE. THE "OFF" PROBE SENSES AIR OR OIL AND TURNS THE PUMPS OFF SO THE OIL LAYER (IF PRESENT) WILL NOT BE PUMPED OUT OF THE SUMP. IF THE LIQUID LEVEL REACHES THE "ALARM" PROBE AND MECHANICAL FLOAT, THE SYSTEM WILL DIFFERENTIATE BETWEEN WATER AND OIL AND ACTIVATE THE REMOTE ALARM.

SECTION ELEVATION

ELEVATOR PIT SUMP PUMP OIL SMART PUMP DETAIL

N.T.S.

PLUMBING SYMBOLS & ABBREVIATIONS

	HOT WATER PIPE	HW
	COLD WATER PIPE	CW
		HWR
	WATER HAMMER ARRESTOR	WHA
	CHECK VALVE	CV
	HOSE BIBB W/ VACUUM BREAKER & SHUT-OFF VALVE	HB
	GATE VALVE (SHUT-OFF VALVE)	
SD	STORM DRAINAGE PIPE	SD
SAN	SANITARY PIPE	SAN
CD	CONDENSATE PIPE	CD
	VENT PIPE	
P&T	PRESSURE RELIEF	P&T
	FLOOR DRAIN	FD
	PLANTER DRAIN	PD
	DECK DRAIN	DD
	OVER FLOW DRAIN	OFD
	FUNNEL FLOOR DRAIN	FFD
	HOSE BIBB	HB
	ABOVE FINISH FLOOR	A.F.F.
	BELOW FINISH FLOOR	B.F.F.
	FLOOR CLEANOUT	FCO
	CLEANOUT TO GRADE	CTG
	FIXTURE UNITS	FU
	RAIN WATER LEADER	RWL

NOTE:
NOT ALL SYMBOLS & ABBREVIATIONS APPLY TO THIS JOB.

Job # 24024 **Federal Courthouse Parking**

Updated: 6/12/2025 — Feller Engineering — **Plumbing Drawing Log**

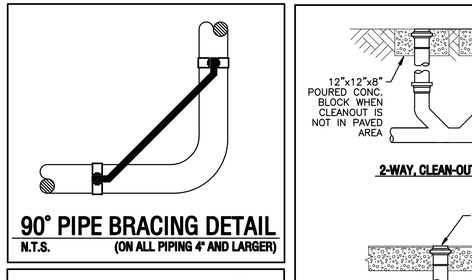
SHEET NUMBER		PERMIT SET 06-XX-2025			
P100	PLUMBING INDEX, DETAILS & GENERAL NOTES	•			
P200	PLUMBING SITE PLAN	•			
P201	GRADE LEVEL PLUMBING PLAN	•			
P202	SECOND LEVEL PLUMBING PLAN	•			
P203	THIRD LEVEL PLUMBING PLAN	•			
P204	FORTH LEVEL PLUMBING PLAN	•			
P205	FIFTH LEVEL PLUMBING PLAN	•			
P301	PLUMBING ISOMETRICS	•			
P401	PLUMBING DETAILS	•			

PLUMBING GENERAL NOTES:

1. ALL WORKMANSHIP AND MATERIAL SHALL BE IN STRICT ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE FLORIDA BUILDING CODE, EIGHT EDITION (2023) (FBC) WITH LOCAL AMENDMENTS, AND THESE PLANS AND SPECIFICATIONS.
2. CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
3. ALL MATERIAL SHALL BE NEW.
4. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE.
5. ALL EXCAVATION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
6. REQUIRED INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF WORK.
7. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTION & TESTS.
8. DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
9. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. REPORT ANY DISCREPANCY TO ENGINEER/ ARCHITECT PRIOR TO BEGINNING CONSTRUCTION.
10. VERIFY LOCATION, SIZE, INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCIES.
11. WATER PIPING SHALL BE TYPE "L" COPPER . JOINTS & FITTING MAY BE COMBINATION OF SOLDERED, GROOVED MECHANICAL AND PRESSURE-SEAL JOINTS.
12. SOIL, WASTE, AND STORM DRAIN PIPING SHALL BE SCH 40 PVC (SOLID CORE) IN GARAGE, AND BELOW GRADE. VENT PIPING TO BE SCH 40 PVC (SOLID CORE).
13. AIR CONDITIONING CONDENSATE DRAIN PIPING SHALL BE SCH 40 PVC.
14. DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL IN PIPING AND EQUIPMENT CONNECTIONS.
    AS PER LEED REQUIREMENTS ALL SHUT OFF VALVES TO WASHING MACHINE REQUIRES A 90 DEGREE TURN TO SHUT OFF WATER SUPPLY.
    INSTALL ARMORED BRAIDED RENFORCED HOSES TO ALL WATER FIXTURES OR APPLIANCES.
15. ALL HANGERS AND RODS IN GARAGE AREAS TO BE HOT DIPPED GALVANIZED STEEL.

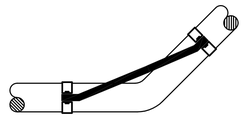
15A. ALL HANGERS FOR COPPER PIPES TO BE COPPER PLATED.
15B. PROVIDE ISOLATOR PADS ON ALL WATER PIPING HANGERS.

16. ALL FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE PROPERLY PROTECTED FROM FIRE, SMOKE AND WATER PENETRATION BY FILLING VOIDS BETWEEN PIPE & WALL/FLOOR SLEEVES WITH U.L. APPROVED FIRE/SMOKE/WATER SEALANT.
17. CONTRACTOR SHALL GUARANTEE ALL MATERIALS & WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
18. NO WATER, SANITARY OR DRAINAGE PIPING PERMITTED IN ELECTRICAL OR ELEVATOR EQUIPMENT ROOMS.; WATER STUBBED THRU FOR ELECTRICAL GROUND & SPRINKLER HEAD AND PIPE WITH CONTROL VALVE AS APPROVED BY LOCAL BUILDING AND FIRE DEPARTMENTS.
19. DRAINS SHALL BE (ZURN) OR EQUAL : GARAGE DRAIN (COVERED): ZURN #Z541-EA , GARAGE DRAIN (OPEN TO SKY-UNCOVERED): ZURN Z610-EA TRENCH DRAIN (WALKWAYS): ZURN Z886-HPDE TRENCH DRAIN (GARAGE ENTRANCE): ZURN Z882-HPDE FUNNEL FLOOR DRAIN: ZURN ZN415-7E-P ELEVATOR THRESHOLD DRAIN: ZURN Z899 FLOOR CLEANOUT: ZURN ZN1400-821 OR EQUAL.
20. ALL STORM DRAINAGE AND SANITARY PIPING 4" AND LARGER WITH OFFSETS GREATER THAN 45° SHALL HAVE SWAY BRACING AT DIRECTION CHANGES.
21. ALL HANGERS AND RODS EXPOSED IN GARAGE AREAS SHALL BE HOT DIPPED ZINC. COATED. ALL METALLIC PIPING IN GARAGE AREAS SHALL PAINTED WITH 2 COATS OF RUST RESISTANT PAINT.
22. CONTRACTOR SHALL KEEP A SET OF AS BUILTS DWG. ON THE JOB SITE AT ALL TIMES AND DELIVER A SET OF UP TO DATE AS-BUILTS TO THE ENGINEER & OWNER AT THE COMPLETION OF THE PROJECT.



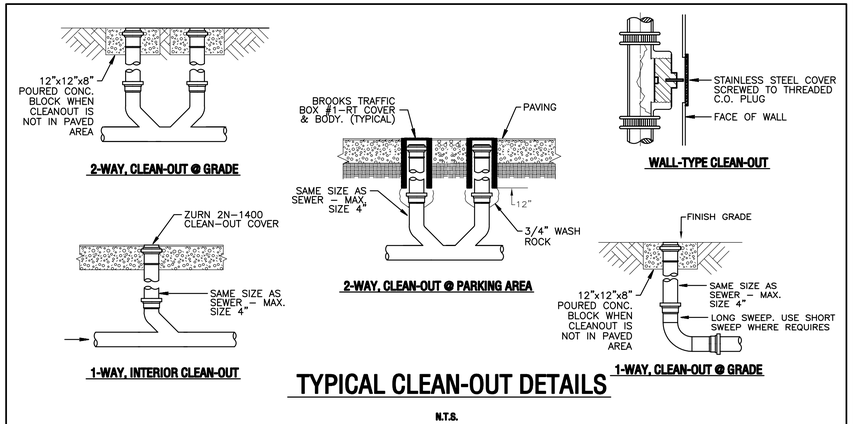
90° PIPE BRACING DETAIL

N.T.S. (ON ALL PIPING 4" AND LARGER)



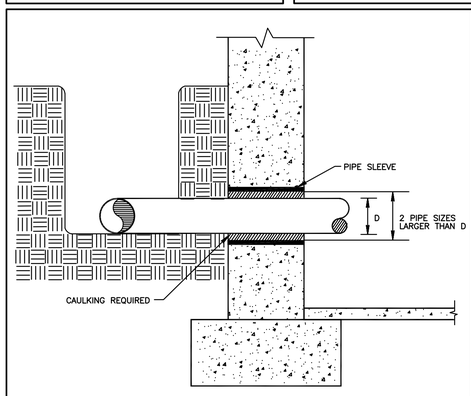
45° PIPE BRACING DETAIL

N.T.S. (ON ALL PIPING 4" AND LARGER)



TYPICAL CLEAN-OUT DETAILS

N.T.S.

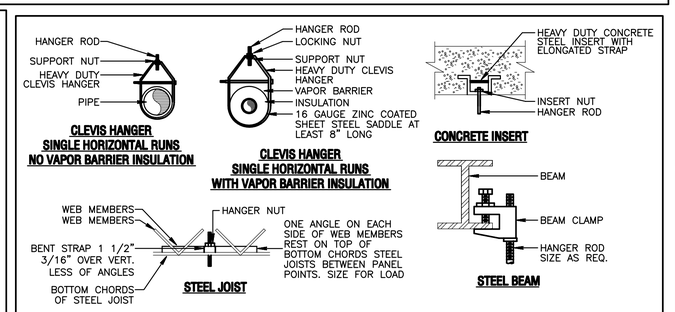


PIPE PROTECTION DETAIL

N.T.S.

NOTE:

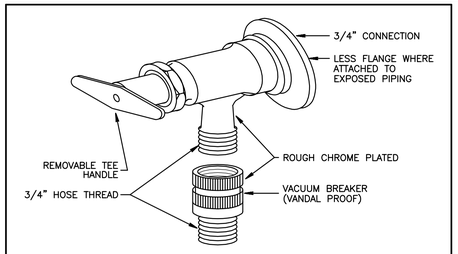
ANY PIPE THAT PASSES THRU A FOUNDATION WALL SHALL BE PROVIDED WITH A RELIVING ARCH OR PIPE SLEEVE BUILT INTO FOUNDATION WALL AS PER FBC 2010 SEC. 305.3. SLEEVE SHALL BE TWO PIPE SIZES GREATER THAN THE PIPE PASSING THRU WALL.



PIPE SUPPORT DETAIL

N.T.S. (FOR SANITARY & WATER PIPING)

(SPACING OF HANGERS TO BE IN ACCORDANCE WITH FLORIDA BUILDING CODE #308.5)



HOSE BIBB DETAIL

N.T.S.

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PLUMBING INDEX
NTS

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FEDERAL COURTHOUSE PARKING GARAGE
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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: PLUMBING INDEX

DRAWING NO: P100

SCALE:

DATE:

PROJECT NO: 11-23117-1

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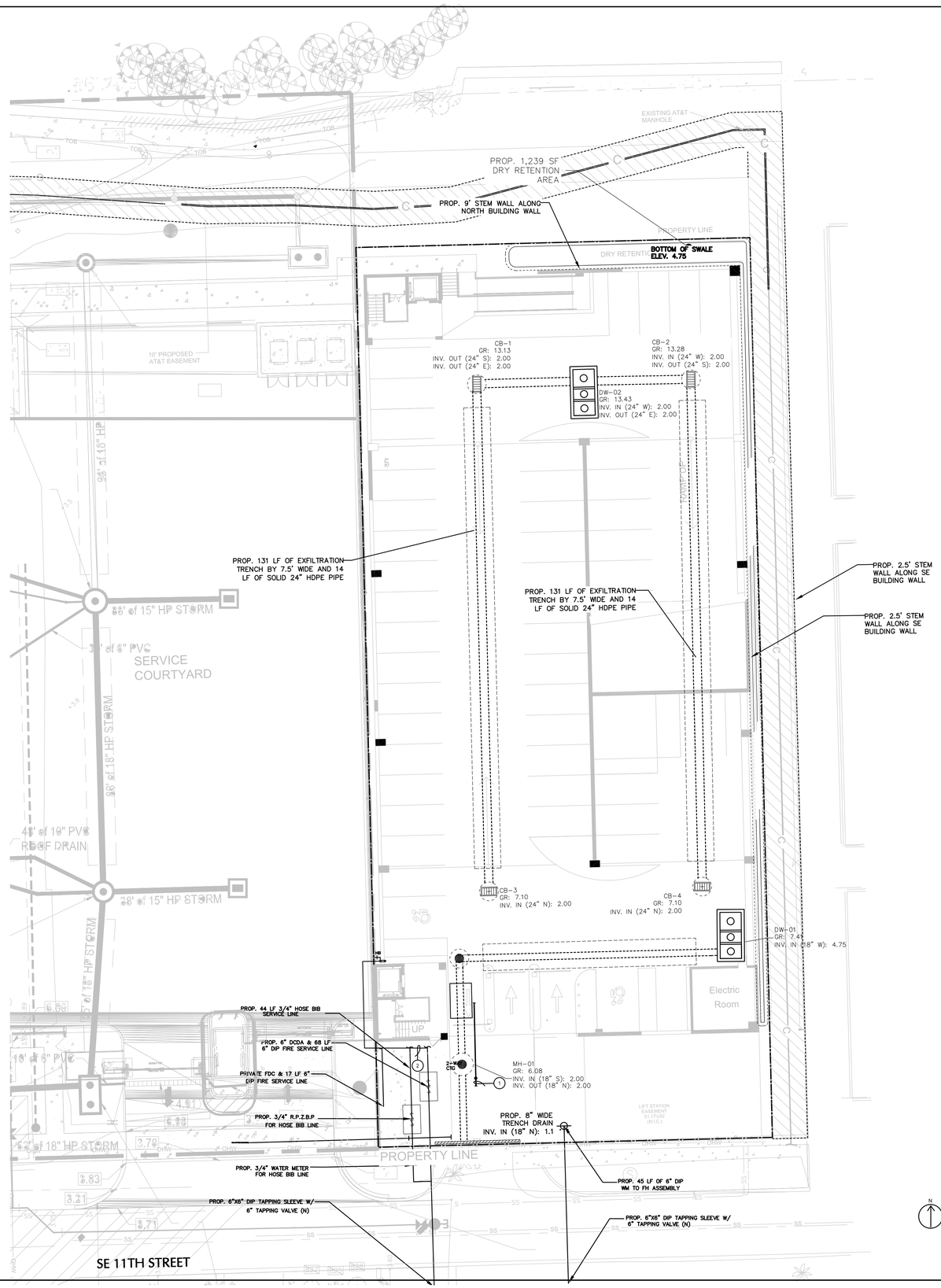
AB	CD	EK



KEY NOTES:

1. 4" SANITARY, SLOPE AT 1/8"/FT. REFER TO CIVIL PLANS FOR CONTINUATION.
2. 3/4" DOMESTIC WATER SERVICE. REFER TO CIVIL PLANS FOR CONTINUATION.

N

PLUMBING SITE PLAN
SCALE: 1/16" = 1'-0"

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No.	DESCRIPTION	DATE

DRAWING TITLE:

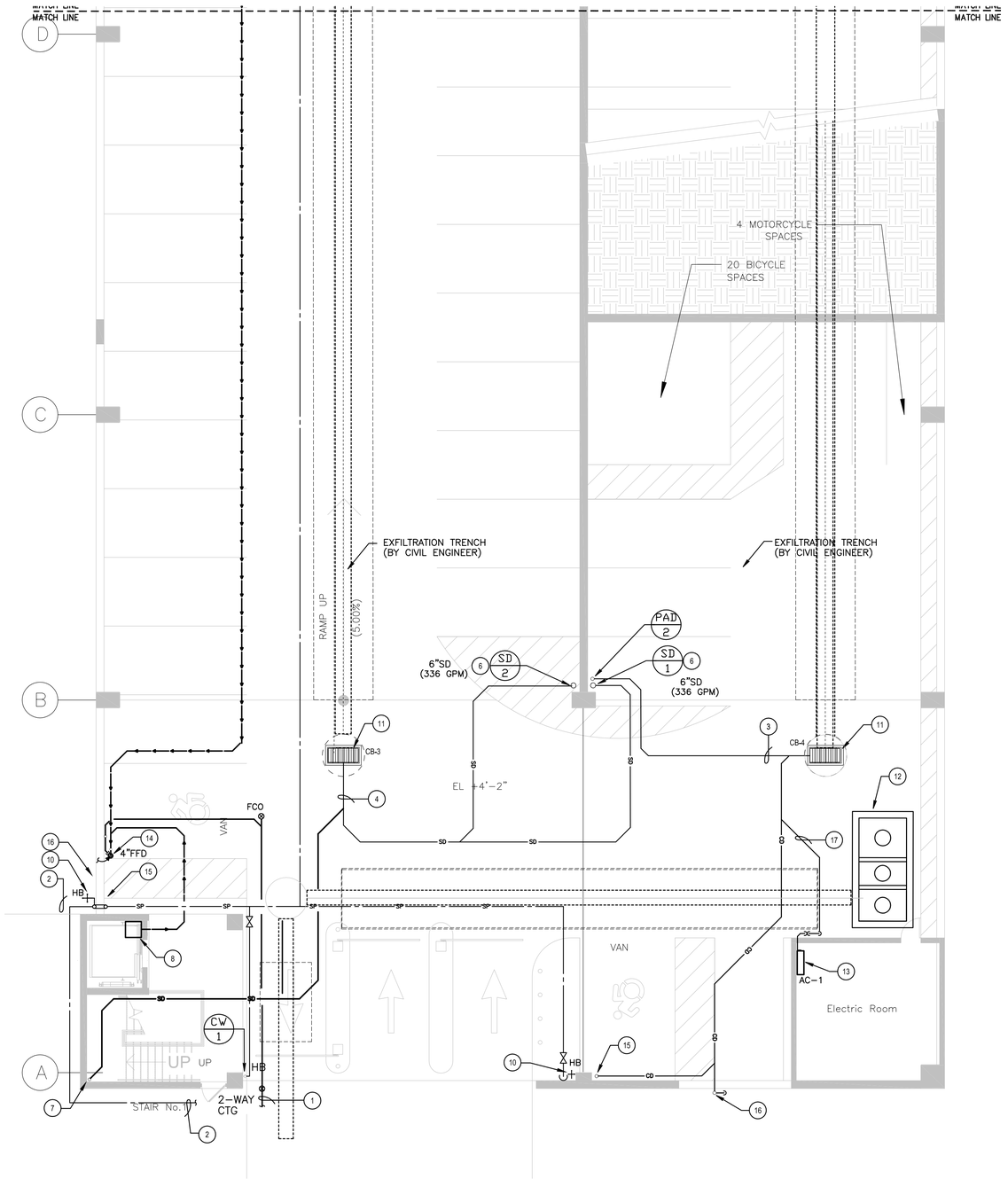
DRAWING NO: P200

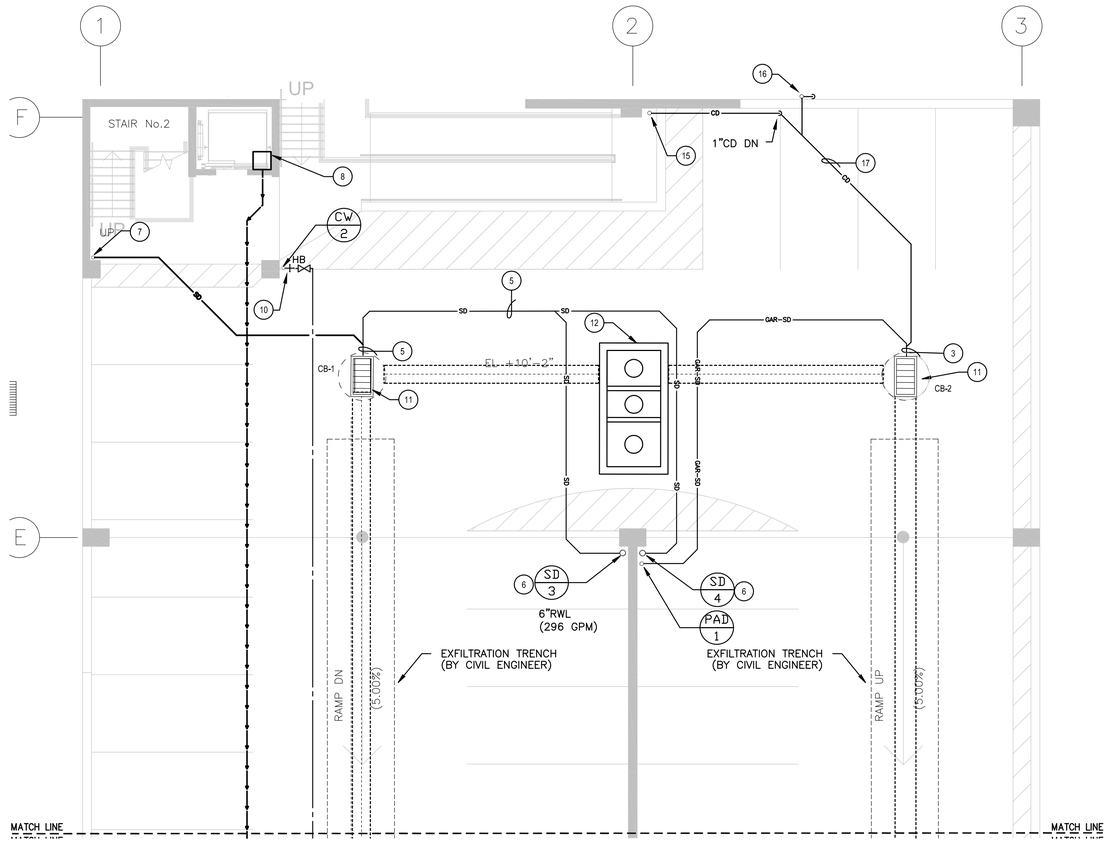
SCALE: 1/16" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





KEY NOTES:

1. 4" SANITARY, SLOPE AT 1/8"/FT. REFER TO CIVIL PLANS FOR CONTINUATION.
2. 3/4" DOMESTIC WATER SERVICE. REFER TO CIVIL PLANS FOR CONTINUATION.
3. 4" STORM DRAIN PIPE (GARAGE) AT 1/8"/FT TO EXFILTRATION TRENCH. REFER TO CIVIL PLANS FOR CONTINUATION.
4. 10" STORM DRAIN PIPE (ROOF) AT 1/8"/FT TO EXFILTRATION TRENCH. REFER TO CIVIL PLANS FOR CONTINUATION.
5. 8" STORM DRAIN PIPE (ROOF) AT 1/8"/FT TO EXFILTRATION TRENCH. REFER TO CIVIL PLANS FOR CONTINUATION.
6. 6" STORM DRAIN RISER.
7. 3" STANDPIPE DRAIN WITH CHECK VALVE.
8. ELEVATOR SUMP PUMP. (50gpm)
9. PIPING RUNS BELOW SLAB.
10. 3/4" HOSE BIB WITH SHUT-OFF AND VACUUM BREAKER.
11. CATCH BASIN. REFER TO CIVIL ENGINEERING DRAWING C-400.
12. DRAINAGE WELL. REFER TO CIVIL ENGINEERING DRAWING C-400.
13. WALL MOUNTED A/C UNIT WITH 3/4" CONDENSATE DRAIN.
14. 2" DRAIN PIPE FROM ELEVATORS SUMP PUMPS TO TERMINATE OVER 4"FFD W/AIR GAP.
15. 1" CONDENSATE DRAIN PIPE FROM FLOOR ABOVE.
16. 1" CONDENSATE DRAIN PIPE WITH GOOSE NECK TO TERMINATE 6" ABOVE GRADE.
17. 1" CONDENSATE DRAIN PIPE RUNS BELOW FLOOR SLAB @ 1/4"/FT TO CATCH BASIN.

GRADE LEVEL PLUMBING PLAN

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

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: GRADE, LEVEL PLUMBING PLAN

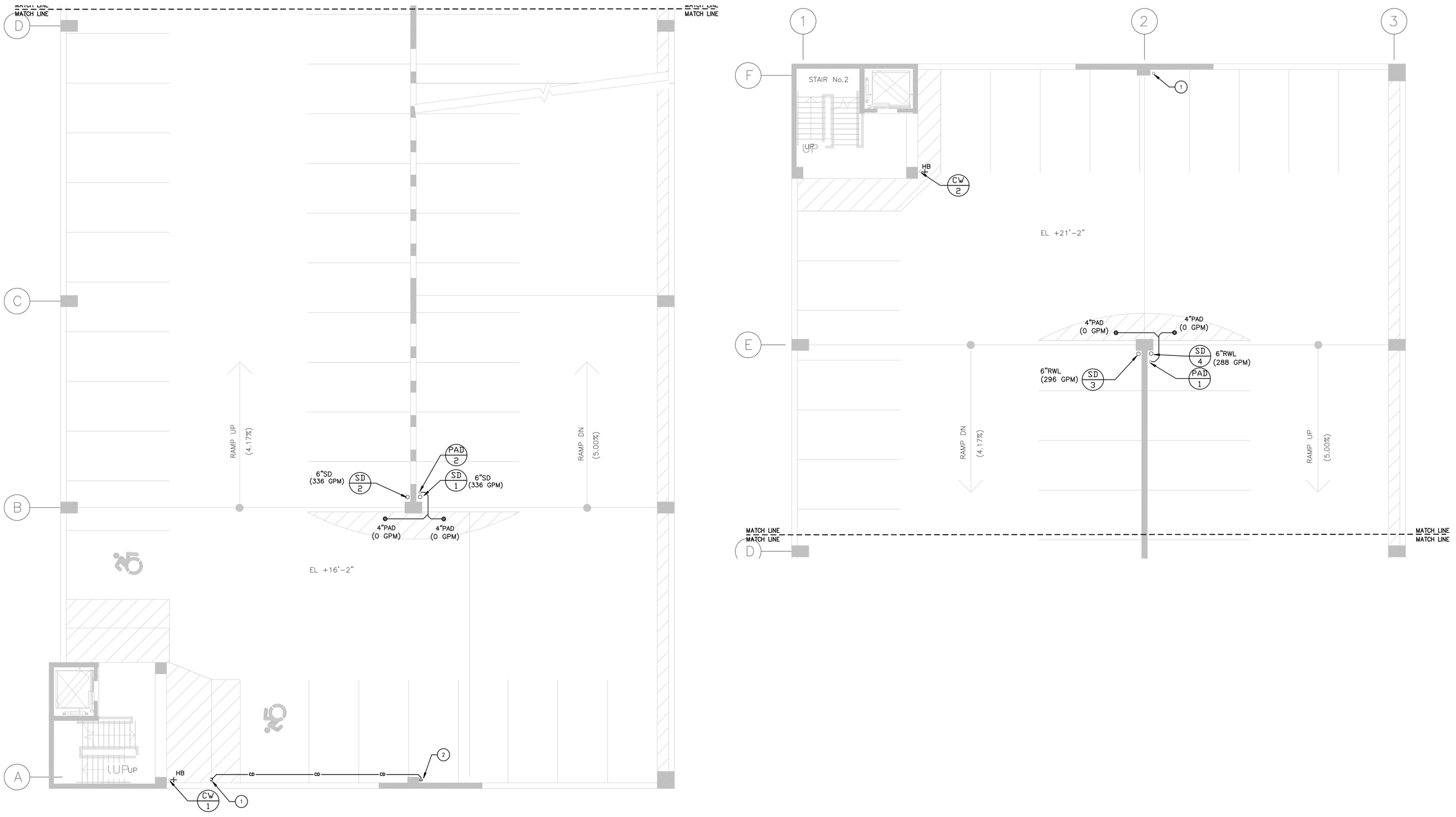
DRAWING NO: P201

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK



KEY NOTES:

1. 1" CONDENSATE DRAIN PIPE FROM FLOOR ABOVE.
2. 1" CONDENSATE DRAIN PIPE DOWN TO FLOOR BELOW.

SECOND LEVEL PLUMBING PLAN

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

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: SECOND LEVEL PLUMBING PLAN

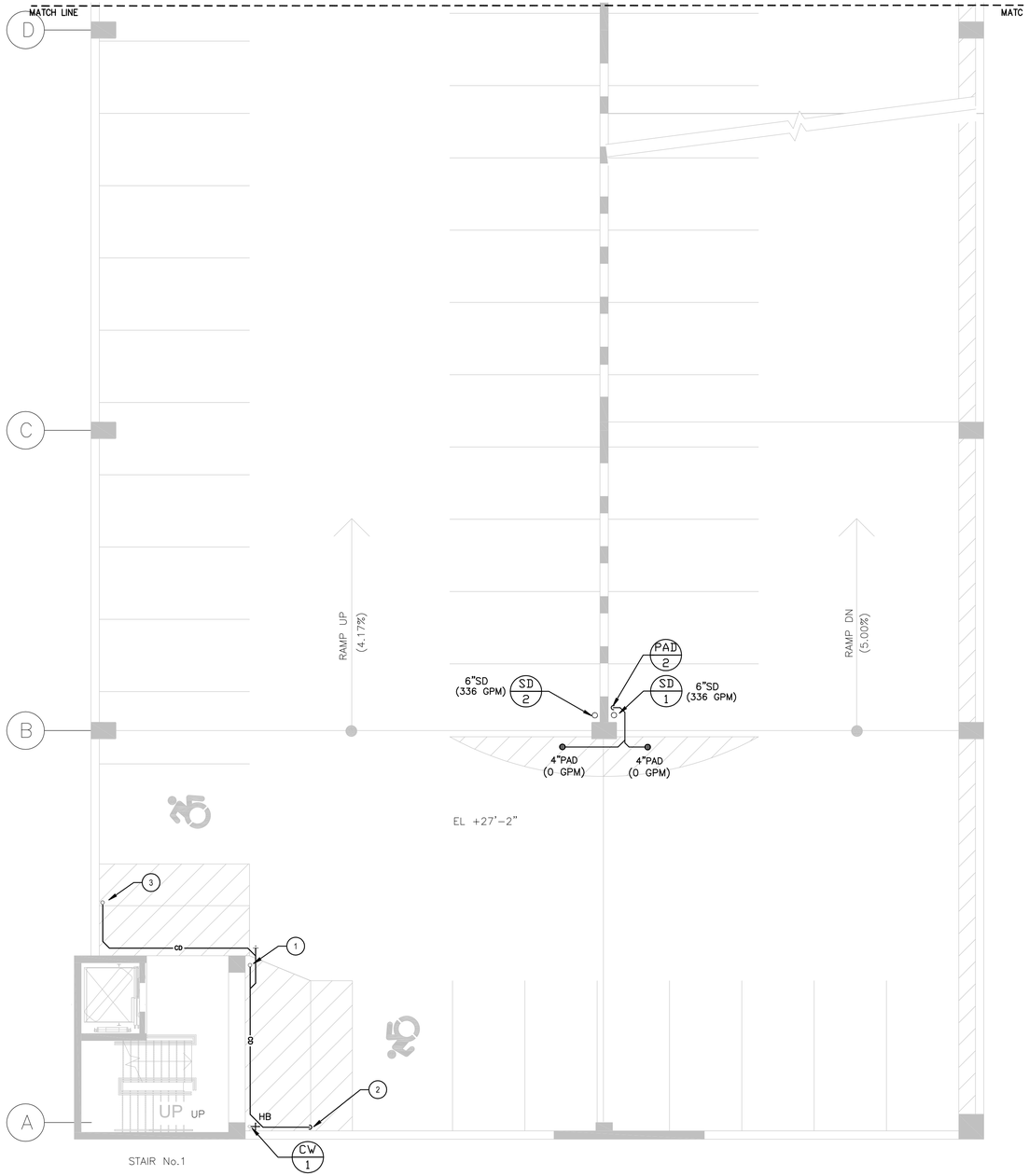
DRAWING NO: P202

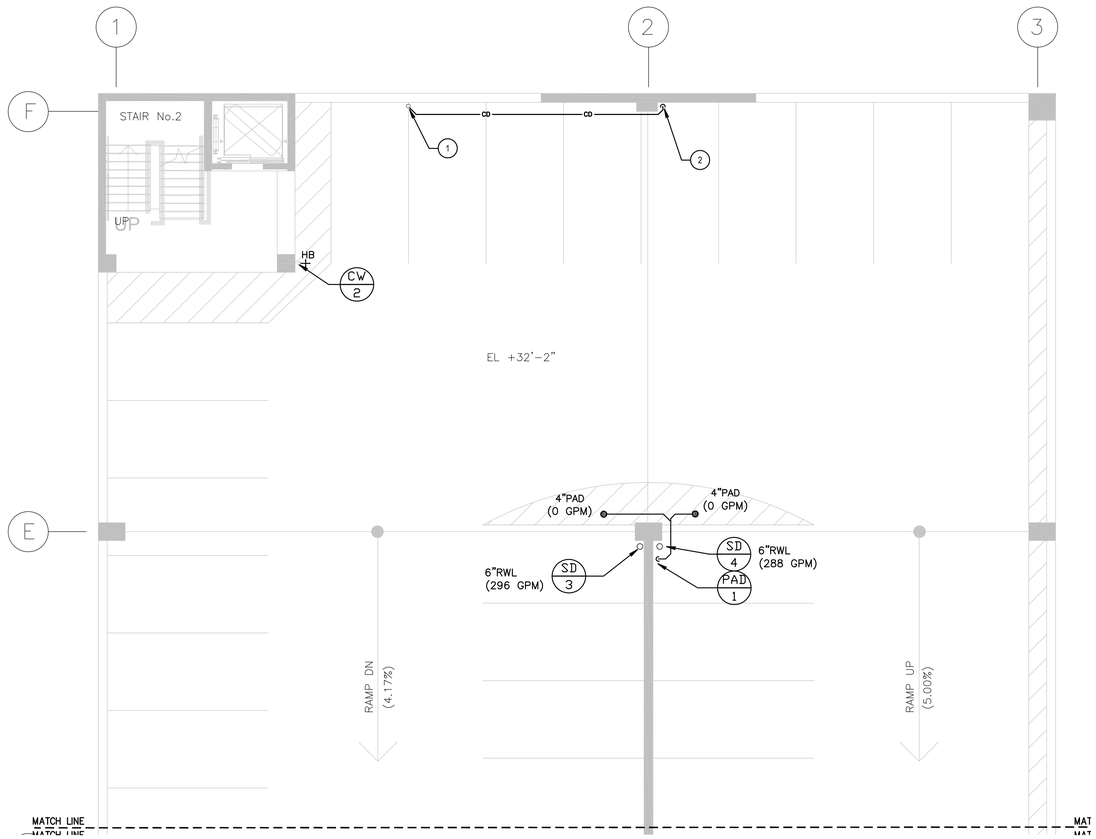
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





KEY NOTES:

1. 1" CONDENSATE DRAIN PIPE FROM FLOOR ABOVE.
2. 1" CONDENSATE DRAIN PIPE DOWN TO FLOOR BELOW.
3. 3/4" CONDENSATE DRAIN PIPE FROM FLOOR ABOVE.

THIRD LEVEL ENLARGED PLUMBING PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE: THIRD LEVEL PLUMBING PLAN

DRAWING NO: P203

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK

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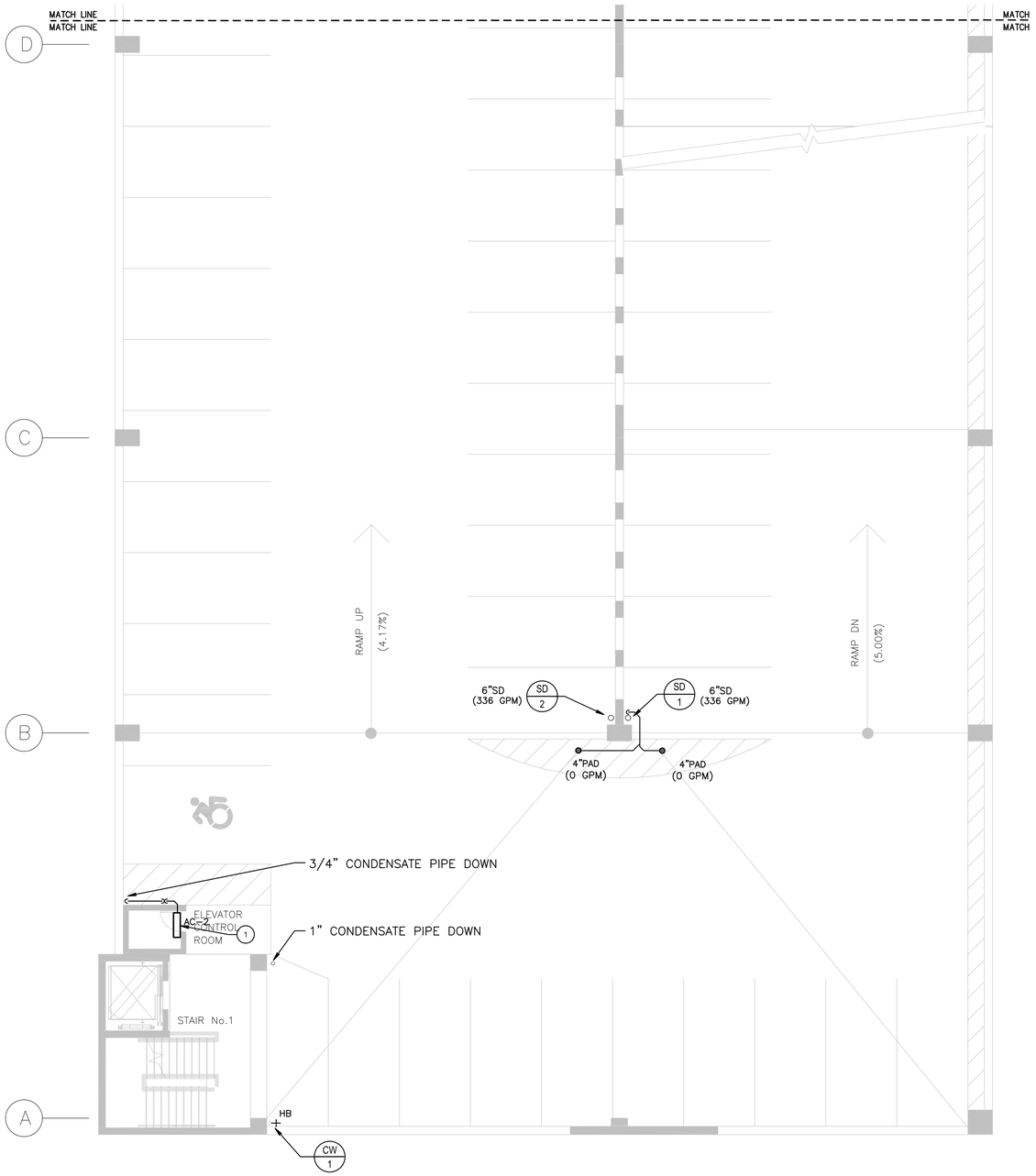

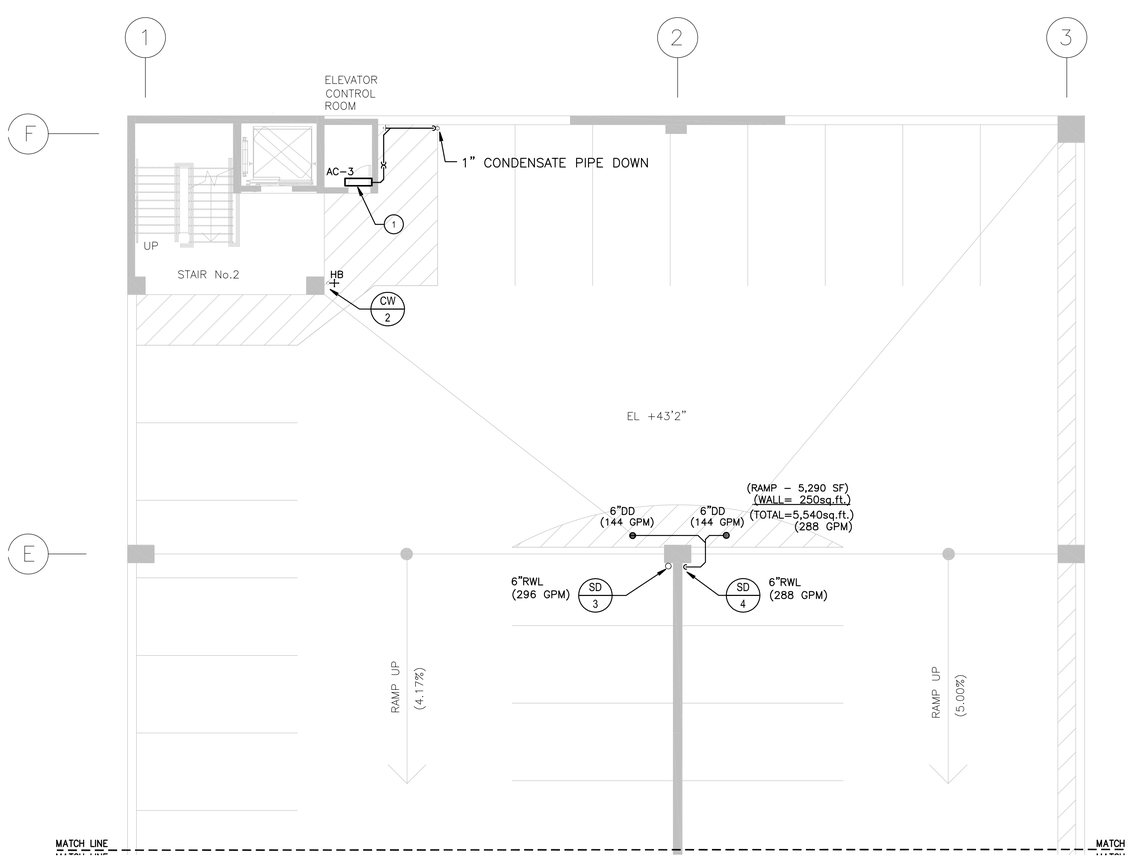

KEY NOTES:

(1) WALL MOUNTED A/C UNIT WITH 3/4" CONDENSATE DRAIN.

FOURTH LEVEL PLUMBING PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE: FOURTH LEVEL PLUMBING PLAN

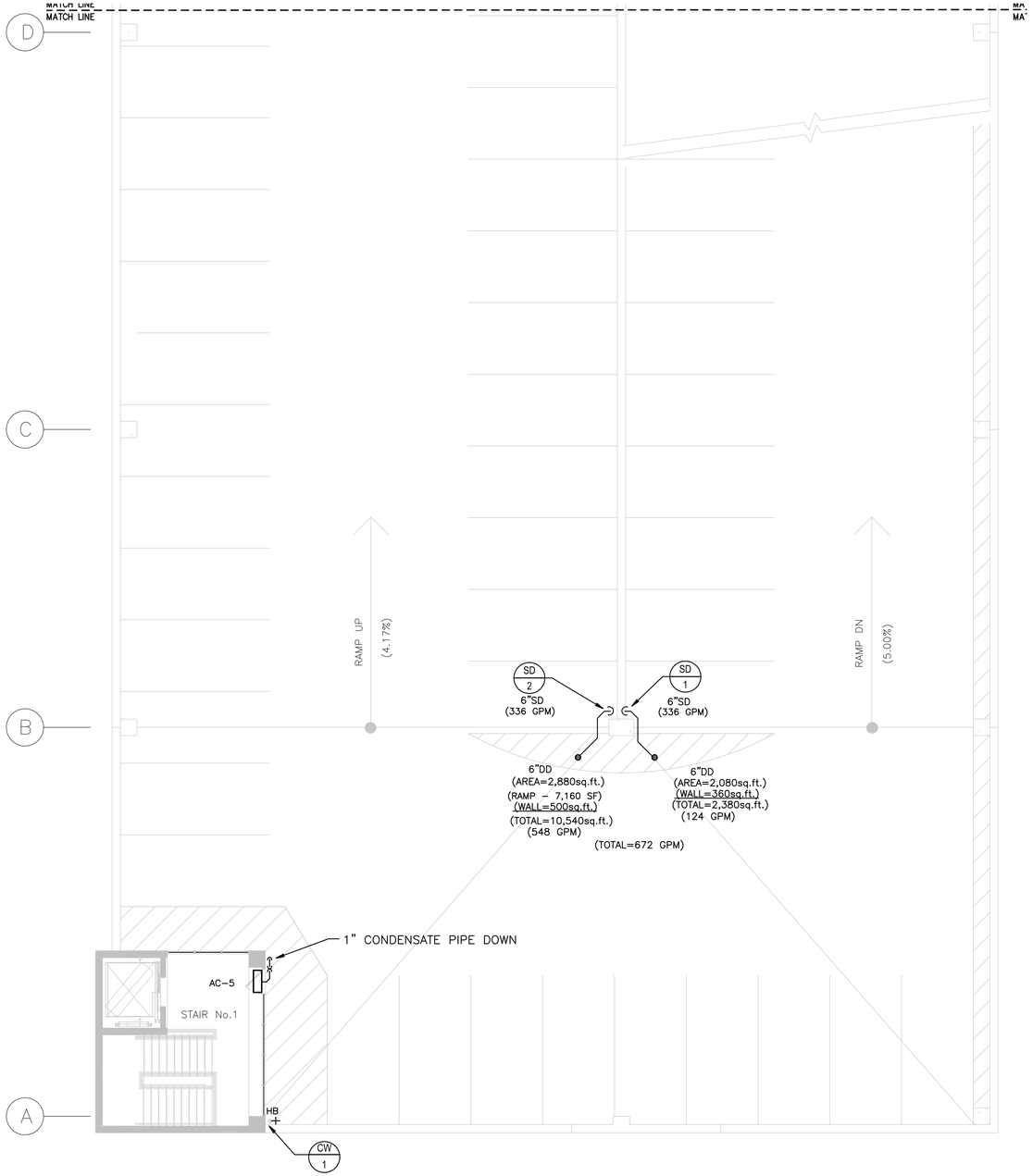
DRAWING NO: P204

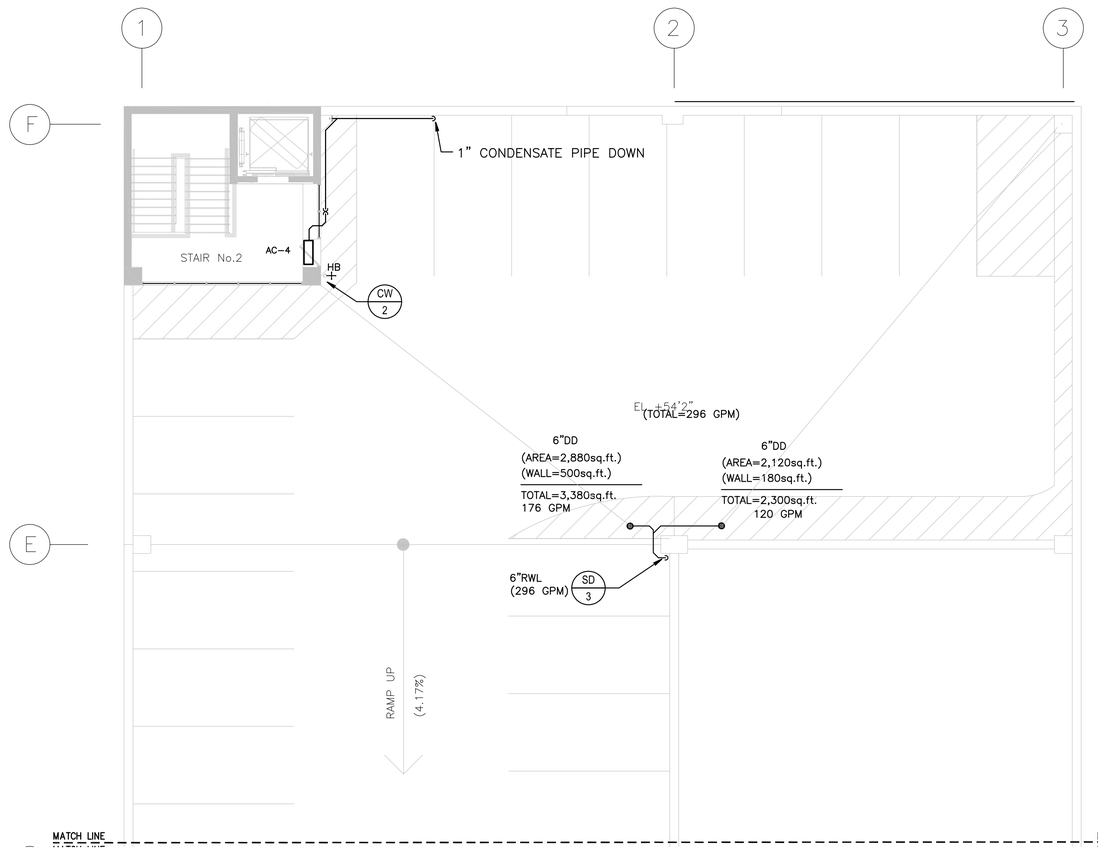
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





FIFTH LEVEL PLUMBING PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE: FIFTH LEVEL PLUMBING PLAN

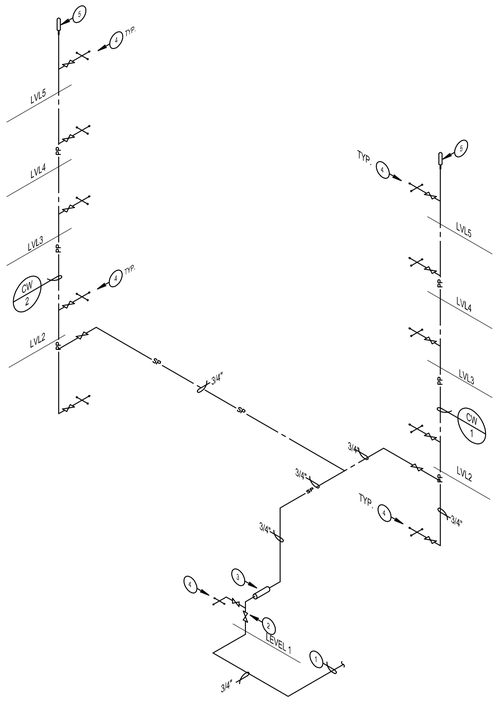
DRAWING NO: P205

SCALE: 1/8" = 1'–0"

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
TB	JS	EK

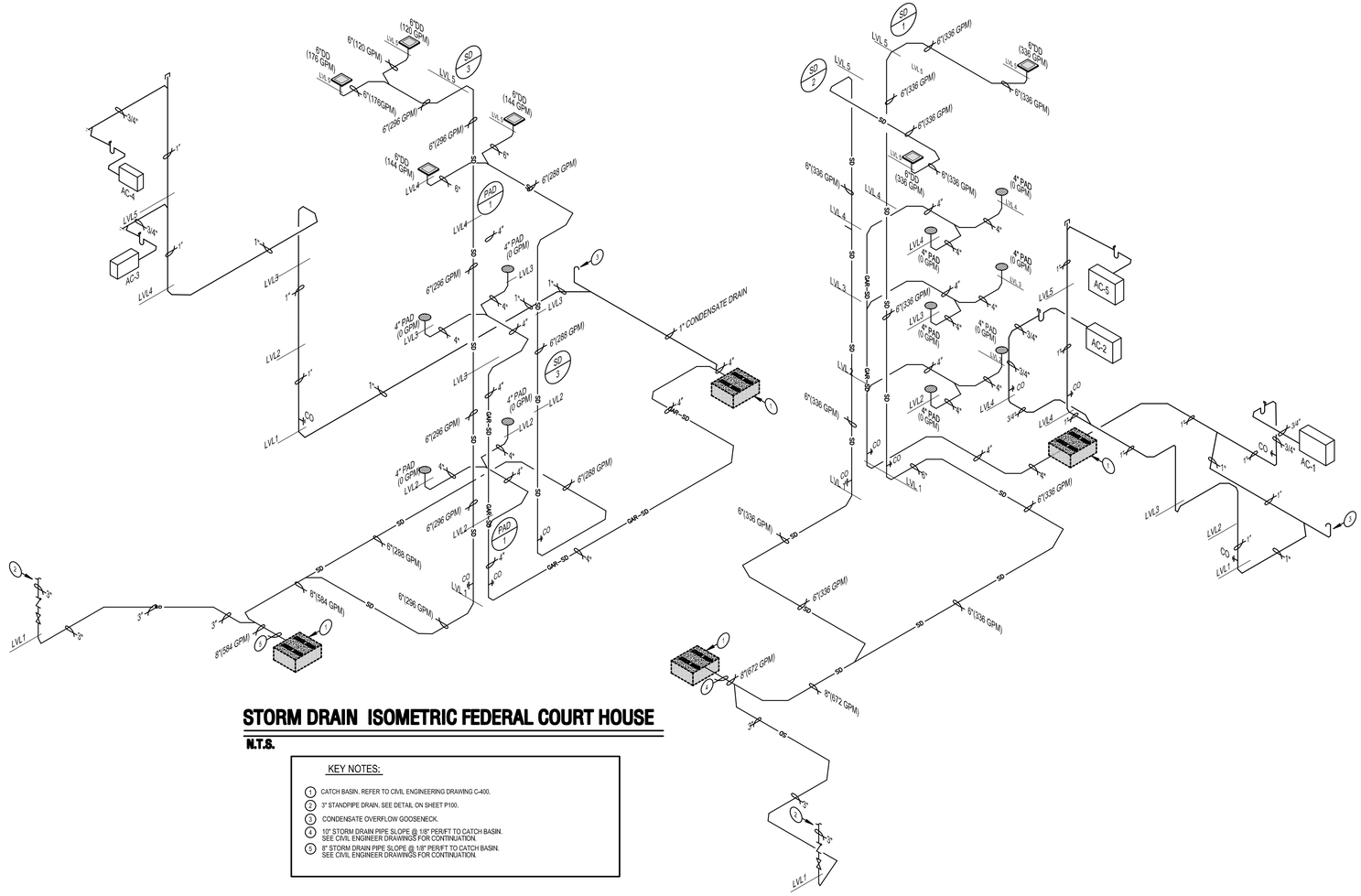


WATER ISOMETRIC FEDERAL COURT HOUSE

N.T.S.

KEY NOTES:

1. 3/4" DOMESTIC WATER SERVICE. SEE CIVIL ENGINEERING DRAWINGS FOR CONTINUATION.
2. MAIN SHUT OFF WATER VALVE.
3. SLEEVE PIPING THRU. WALL IN P.V.C SLEEVE PACK WATER TIGHT.
4. 3/4" HOSE BIB WITH SHUT-OFF AND VACUUM BREAKER. (TYP.)
5. SIOUX CHIEF WATER HAMMER ARRESTOR SIZE AS PER MANUFACTURER RECOMMENDATION. (TYP)



STORM DRAIN ISOMETRIC FEDERAL COURT HOUSE

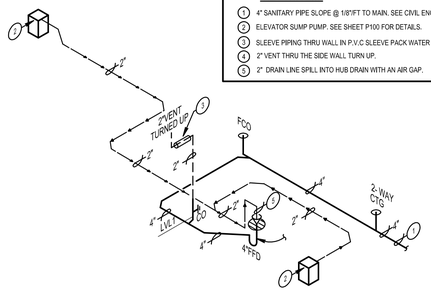
N.T.S.

KEY NOTES:

1. CATCH BASIN. REFER TO CIVIL ENGINEERING DRAWING C-400.
2. 3" STANDPIPE DRAIN. SEE DETAIL ON SHEET P100.
3. CONDENSATE OVERFLOW GOOSENECK.
4. 10" STORM DRAIN PIPE SLOPE @ 1/8" PERFT TO CATCH BASIN. SEE CIVIL ENGINEER DRAWINGS FOR CONTINUATION.
5. 8" STORM DRAIN PIPE SLOPE @ 1/8" PERFT TO CATCH BASIN. SEE CIVIL ENGINEER DRAWINGS FOR CONTINUATION.

KEY NOTES:

1. 4" SANITARY PIPE SLOPE @ 1/8"/FT TO MAIN. SEE CIVIL ENGINEERING DRAWINGS FOR CONTINUATION.
2. ELEVATOR SUMP PUMP. SEE SHEET P100 FOR DETAILS.
3. SLEEVE PIPING THRU WALL IN P.V.C SLEEVE PACK WATER TIGHT.
4. 2" VENT THRU THE SIDE WALL TURN UP.
5. 2" DRAIN LINE SPILL INTO HUB DRAIN WITH AN AIR GAP.



SANITARY COLLECTION ISOMETRIC FEDERAL COURT HOUSE

N.T.S.

PLUMBING ISOMERICS
NTS

FELLER ENGINEERING
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DESMAN

FEDERAL COURTHOUSE PARKING GARAGE

FORT LAUDERDALE FLORIDA

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
DETAILS
NOTES

DRAWING NO:
P301

SCALE:

DATE:

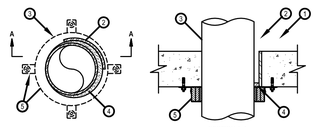
PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
AB	CD	EK

1

CAJ 2109

System No. C-AJ-2109
F Ratings — 2 and 3 Hr (See Item 3)
T Ratings — 0, 2 and 3 Hr (See Items 2 and 3)
W Rating - Class 1 (See Items 2, 3 and 4)
L Rating at Ambient — Less Than 1 CFM/sq ft (See Item 4)
L Rating at 400 F — Less Than 1 CFM/sq ft (See Item 4)



SECTION A-A

1. FLOOR OR WALL ASSEMBLY — MIN 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 12 IN. (305 MM).
   SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. STEEL SLEEVE — (OPTIONAL) — NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES A MAX OF 3 IN. (76 MM) ABOVE THE FLOOR. IF THE STEEL SLEEVE EXTENDS ABOVE THE FLOOR, THE T RATING OF THE FIRESTOP SYSTEM IS 0 HR AND A MIN 12 IN. (13 MM) ANNULAR SPACE IS REQUIRED BETWEEN THE THROUGH PENETRANT (ITEM 3) AND THE PERIPHERY OF THE OPENING. THE W RATING DOES NOT APPLY WHEN THE STEEL SLEEVE IS USED.
3. THROUGH PENETRANTS — ONE NONMETALLIC PIPE TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. FOR MAX 8 IN. (152 MM) DIAM PIPES, THE ANNULAR SPACE BETWEEN THE PIPE AND THE PERIPHERY OF OPENING SHALL BE MIN 0 IN. (MIN. POINT CONTACT) TO MAX 1/2 IN. (13 MM). FOR NOM 8 IN. (203 MM) AND 10 IN. (254 MM) DIAM PIPES, THE ANNULAR SPACE BETWEEN THE PIPE AND THE PERIPHERY OF OPENING SHALL BE MIN 0 IN. (0 MM, POINT CONTACT) TO MAX 1-1/4 IN. (32 MM). IF THE STEEL SLEEVE EXTENDS ABOVE THE FLOOR (ITEM 2), A MIN 1/2 IN. (13 MM) ANNULAR SPACE IS REQUIRED BETWEEN THE THROUGH PENETRANT (ITEM 3) AND THE PERIPHERY OF THE OPENING. PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. FOR SYSTEMS WITH A W RATING, THE MAX ANNULAR SPACE IS 1/2 IN. (13 MM). THE T RATINGS ARE DEPENDENT ON THE SIZE AND/OR TYPE OF PIPE AS SHOWN IN THE TABLE BELOW. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES MAY BE USED:
   A. POLYVINYL CHLORIDE (PVC) PIPE — NOM 10 IN. (254 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. FOR SYSTEMS WITH A W RATING, THE NOM DIAM OF PIPE SHALL NOT EXCEED 8 IN. (152 MM).
   B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE — NOM 10 IN. (254 MM) DIAM (OR SMALLER) SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. FOR SYSTEMS WITH A W RATING, THE NOM DIAM OF PIPE SHALL NOT EXCEED 6 IN. (152 MM).
   C. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE — NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID-CORE OR CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   D. FLAME RETARDANT POLYPROPYLENE (FRPP) PIPE — NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 40 FRPP PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

2

CAJ 2109

System No. C-AJ-2109

Pipe Type	Nom Pipe Diam, In. (mm)	F Rating Hr
PVC, CPVC	Greater than 6 (152)	2
PVC, CPVC, ABS, FRPP	6 (152) or smaller	
Pipe Type	**Nom Pipe Diam, In. (mm)**	**T Rating Hr**
PVC, CPVC, ABS, FRPP	1-1/2, 2, 3 (38, 51, 76)	2
PVC, CPVC, ABS, FRPP	4 (102)	3
PVC, CPVC, ABS*, FRPP	6 (152)	3
PVC, CPVC	Greater than 6 (152)	0
ABS++	6 (152)	0

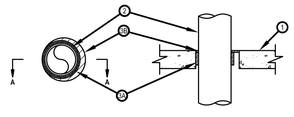
* INDICATES SOLID CORE ABS ONLY.
++ INDICATES CELLULAR CORE ABS ONLY.

4. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 1/2 IN. (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP OR BOTTOM SURFACE OF FLOOR OR BOTH SURFACES OF WALL. SEALANT IS OPTIONAL FOR PIPES HAVING A MAX DIAM OF 6 IN. (152 MM) IN UNSLEEVED OPENINGS. FOR SYSTEMS WITH W RATING AND/OR L RATING, MIN 1/2 IN. (13 MM) THICKNESS OF CP 601S, CFS-S SIL GG, CFS-S SIL SL (FLOORS ONLY) SEALANT SHALL BE APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP OR BOTTOM SURFACE OF FLOOR.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX INTUMESCENT SEALANT, CP 601S SEALANT, CFS-S SIL GG, CFS-S SIL SL (FLOORS ONLY) SEALANT
4A. PACKING MATERIAL — (NOT SHOWN) — MIN 1/2 IN. (13 MM) THICKNESS OF 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO ANNULAR SPACE AND RECESSED FROM THE TOP SURFACE OF FLOOR TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. REQUIRED ONLY WHEN CP 604 SEALANT IS USED.
5. FIRESTOP DEVICE* — FIRESTOP COLLAR — FIRESTOP COLLAR SHALL BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. COLLAR TO BE INSTALLED AND LATCHED AROUND THE PIPE AND SECURED TO UNDERSIDE OF FLOOR OR BOTH SIDES OF WALL USING THE ANCHOR HOOKS PROVIDED WITH THE COLLAR. MINIMUM TWO ANCHOR HOOKS FOR NOM 1-1/2 AND 2 IN. (38 AND 51 MM) DIAM PIPES. MINIMUM THREE ANCHOR HOOKS REQUIRED FOR NOM 3 AND 4 IN. (76 AND 102 MM) DIAM PIPES. MINIMUM FOUR ANCHOR HOOKS REQUIRED FOR NOM 6 IN. (152 MM) DIAM PIPES. MINIMUM TEN ANCHOR HOOKS REQUIRED FOR NOM 8 IN (203 MM) DIAM PIPES. MINIMUM TWELVE ANCHOR HOOKS REQUIRED FOR NOM 10 IN. (254 MM) DIAM PIPES. THE ANCHOR HOOKS ARE TO BE SECURED WITH MIN 1/4 IN. (6 MM) DIAM BY MIN 1-1/4 IN. (32 MM) LONG STEEL EXPANSION BOLTS OR MIN 0.145 IN. (3.7 MM) DIAM BY 1-1/4 IN. (32 MM) LONG POWDER ACTUATED FASTENERS UTILIZING A 1-1/16 IN. (27 MM) DIAM BY 1/16 IN. (1.6 MM) THICK STEEL WASHER. AS ALTERNATES TO THE ANCHORS SPECIFIED ABOVE, HILTI 1/4 IN. (6 MM) DIAM BY 1-1/4 IN. (32 MM) LONG KWK-CON II+ CONCRETE SCREW ANCHOR, HILTI 1/4 IN. (6 MM) DIAM BY 1-3/4 IN. (45 MM) LONG KWK-BOLT 3 STEEL EXPANSION ANCHOR OR HILTI X-DNI 27 P8 S15 POWDER ACTUATED FLOOR PIN WITH INTEGRAL NOM 9/16 IN. (15 MM) DIAM WASHER MAY BE USED.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 643N 501.5*, CP 643N 63/2*, CP 643N 90/3*, CP 643N 110/4*, CP 643 160/6*, CP 644-2008* US OR CP 644-2S/10* US FIRESTOP COLLAR
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

3

CAJ 2342

System No. C-AJ-2342
F Rating — 3 Hr
T Rating — 0 Hr
W Rating - Class 1 (See Item 3B)
L Rating at Ambient — Less Than 1 CFM/sq ft (See Item 3B)
L Rating at 400 F — Less Than 1 CFM/sq ft (See Item 3B)



SECTION A-A

1. FLOOR OR WALL ASSEMBLY — MIN 2-1/2 IN. (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE FLOOR OR WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 6 IN. (152 MM).
   SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. THROUGH PENETRANTS — ONE NONMETALLIC PIPE TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. ANNULAR SPACE WITHIN THE FIRESTOP SYSTEM IS DEPENDENT UPON THE MAX DIAM AND TYPE OF PENETRANT USED AS TABULATED IN ITEM 3A. PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES MAY BE USED:
   A. POLYVINYL CHLORIDE (PVC) PIPE — NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE PVC FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE — NOM 4 IN. (102 MM) DIAM (OR SMALLER) SDR13.5 CPVC FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.
   C. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE — NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE ABS FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   D. FLAME RETARDANT POLYPROPYLENE (FRPP) PIPE — NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 FRPP PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
3. FIRESTOP SYSTEM — THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   A. FILL, VOID OR CAVITY MATERIAL* — WRAP STRIP — LAYERS OF INTUMESCENT WRAP STRIP ARE CONTINUOUSLY WRAPPED AROUND THE PIPE WITH ENDS HELD IN PLACE WITH TAPE. WRAP STRIP INSTALLED RECESSED MAX 1/4 IN. (6 MM) FROM BOTTOM SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. SIZE OF WRAP STRIP AND NUMBER OF LAYERS FOR A GIVEN SIZE PENETRANT ARE SHOWN IN TABLE BELOW:
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E W25/1* OR CP648-E W45/1-3/4* FIRESTOP WRAP STRIP

4

CAJ 2342

System No. C-AJ-2342

Product Designation	Pipe Size in. (mm)	Max Opening Diam (in.)	Annular Space Min in.(mm)	Annular Space Max in. (mm)	Number of Layers	Nom Wrap Strip Width in. (mm)
CP648-E W25/1*	1 1/2 (38)	3 (76)	3/16 (4.8)	15/16 (24)	1	1 (25)
CP648-E W45/1-3/4*	1 1/2 (38)	3 (76)	3/16 (4.8)	15/16 (24)	1	1 3/4 (45)
CP648-E W25/1*	2 (51)	3 1/2 (89)	3/16 (4.8)	15/16 (24)	1	1 (25)
CP648-E W45/1-3/4*	2 (51)	3 1/2 (89)	3/16 (4.8)	15/16 (24)	1	1 3/4 (45)
CP648-E W45/1-3/4*	3 (76)	4 (102)	3/16 (4.8)	15/16 (24)	1	1 3/4 (45)
CP648-E W45/1-3/4*	3 (76)	5 (127)	3/8 (10)	1 1/16 (27)	2	1 3/4 (45)
CP648-E W45/1-3/4*	4 (102)	6 (152)	3/8 (10)	1 1/8 (29)	2	1 3/4 (45)

A1. FILL, VOID OR CAVITY MATERIAL* — WRAP STRIP — (AS AN ALTERNATE TO THE WRAP STRIP IN ITEM 3A) — ONE LAYER OF INTUMESCENT WRAP STRIP IS CONTINUOUSLY WRAPPED AROUND THE PIPE WITH ENDS BUTTED AND HELD IN PLACE WITH INTEGRATED TAPE. WRAP STRIP INSTALLED RECESSED MAX 1/4 IN. (6 MM) FROM BOTTOM SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. SIZE OF WRAP STRIP FOR A GIVEN SIZE PENETRANT ARE SHOWN IN THE TABLE BELOW.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-S-1.5* US, CP648-S-2* US, CP648-S-3* US OR CP648-S-4* US WRAP STRIP

Product Designation	Pipe Size in.(mm)	Max Opening Diam (in.)	Annular Space Min in. (mm)	Annular Space Max in. (mm)	Nom Wrap Strip Length in. (mm)	Nom Wrap Strip Thick in. (mm)	Nom Wrap Strip Width in. (mm)
CP648-S-1.5* US	1 1/2 (38)	3 (76)	3/16 (4.8)	15/16 (24)	6.5 (165)	0.18 (4.6)	1 (25)
CP648-S-2* US	2 (51)	3 1/2 (89)	3/16 (4.8)	15/16 (24)	8 (203)	0.18 (4.6)	1 (25)
CP648-S-3* US	3 (76)	4 (102)	3/16 (4.8)	5/16 (8)	11.5 (292)	0.18 (4.6)	1 3/4 (45)
CP648-S-4* US	4 (102)	6 (152)	3/8 (10)	1 1/8 (29)	15.1 (384)	0.36 (9)	1 3/4 (45)

B. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 1/4 IN. (6 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OF BOTH SURFACES OF WALL. W RATING AND/OR L RATING APPLIES ONLY WHEN CP 601S, CFS-S SIL GG OR CFS-S SIL SL (FLOORS ONLY) SEALANT IS USED.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE SEALANT, FS-ONE MAX INTUMESCENT SEALANT, CP 601S SEALANT, CFS-S SIL GG OR CFS-S SIL SL (FLOORS ONLY) SEALANT
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

5

FA 2053

System No. F-A-2053

3. THROUGH PENETRANTS — ONE NONMETALLIC PIPE OR CONDUIT TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR ASSEMBLY. FOR W RATING WITH WATER BARRIER MODULE, PIPE SHALL BE INSTALLED FROM BOTTOM OF DEVICE. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES OR CONDUITS MAY BE USED:
   A. POLYVINYL CHLORIDE (PVC) PIPE — NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE — NOM 6 IN. (152 MM) DIAM (OR SMALLER) SDR11 OR SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.
   C. RIGID NONMETALLIC CONDUIT+ — NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 40 PVC CONDUIT INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA NO. 70).
THE FIRESTOP DEVICES AND NONMETALLIC PENETRANTS SHALL BE SIZED AS FOLLOWS:

Nom Pipe Diameter	Firestop Device
1/2 in. to 2 in. (19 mm to 51 mm)	CP 680-7S/2.5"N CP 680-P 2" CP 680-PX 2"
3 in. (76 mm)	CP 680-P 3" CP 680-PX 3"
3 in. to 4 in. (76 mm to 102 mm)	CP 680-110/4"N CP 680-P 4"
6 in. (152 mm)	CP 680-160/6"N CP 680-P 6"

++ L RATING APPLIES ONLY TO CP 680-P(X) DEVICES AND ONLY WHEN THE NOM DIAM OF PIPE EQUALS SIZE OF DEVICE (2 IN. DIAM PIPE IN 2" DEVICE ETC.). L RATING DOES NOT APPLY TO CP 680N DEVICES.
4. FIRESTOP DEVICE* — (NOT SHOWN) - TOP SEAL PLUG FOR USE WITH CP 680-P(X) 2" DEVICE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE TOP SEAL PLUG IS OPTIONAL FOR NOM 1-1/2 IN. (38 MM) PIPES AND CONDUITS. TOP SEAL PLUGS ARE REQUIRED FOR ALL PIPES AND CONDUITS LESS THAN NOM 1-1/2 IN. (38 MM). W RATING APPLIES ONLY TO THE IPS TOP SEAL PLUG AND NOM 2 IN. DIAM PENETRANTS. AND TO CPS TOP SEAL PLUGS WITH NOM 1/2 TO 2 IN. (13 TO 51 MM) DIAM PENETRANTS.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CPS AND IPS TOP SEAL PLUGS
4A. FIRESTOP DEVICE* - WATER BARRIER MODULE — (OPTIONAL, NOT SHOWN) - USED AS AN ALTERNATE TO THE TOP SEAL PLUG (ITEM 4). APPLIES TO NOM 2", 3", 4" AND 6" WATER BARRIER MODULES USED IN COMBINATION WITH THE CP 680-P(X) 2", CP 680-P 4" CP 680-P 6" DEVICES, RESPECTIVELY, AND SUPPLIED BY DEVICE MANUFACTURER. MODULE IS THREADED ONTO TOP OF DEVICE. W RATING APPLIES ONLY WHEN WATER BARRIER MODULE IS USED AND NOM DIAM OF PENETRANT EQUALS SIZE OF DEVICE.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — WATER BARRIER MODULE
* INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.
+BEARING THE UL LISTING MARK.

PLUMBING DETAILS
NTS

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FEDERAL COURTHOUSE PARKING GARAGE
FORT LAUDERDALE FLORIDA

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE:
DETAILS
NOTES

DRAWING NO:
P401

SCALE:

DATE:

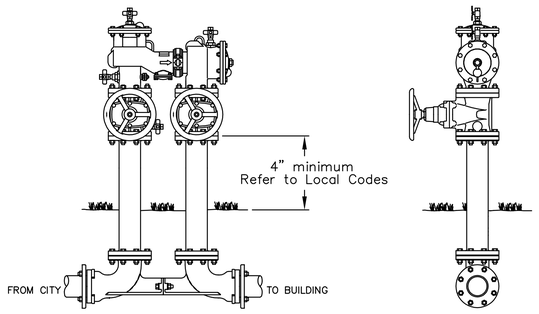
PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
AB	CD	EK

FIRE SPRINKLER NOTES:

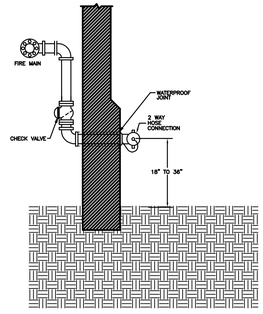
SCOPE OF WORK: PROVIDE A MANUAL WET STANDPIPE SYSTEM.

1. SPRINKLER SYSTEM SHALL BE INSTALLED BY AN APPROVED CERTIFIED AUTOMATIC FIRE SPRINKLER CONTRACTOR.
2. CONTRACTOR SHALL CAREFULLY EXAMINE ALL DOCUMENTS ASSOCIATED WITH THIS PROJECT SO AS TO BECOME FAMILIAR WITH THE DESIGN CONDITIONS AND COORDINATE WITH ALL TRADES PRIOR TO INSTALLATION OF ANY PART OF THE SYSTEM FOR ANY DIFFICULTIES THAT CAN OCCUR. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION AND COORDINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED BECAUSE OF ANY DESIGN CONDITIONS OR DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED.
3. SYSTEMS SHALL COMPLY WITH N.F.P.A. 13, 14, 20, 24, 25 APPLICABLE EDITIONS & THE FLORIDA BUILDING CODE, 8th Edition (2023) & FLORIDA FIRE PREVENTION CODE, 8th Edition (2023) & LOCAL AUTHORITY HAVING JURISDICTION. REQUIREMENTS. ALL EQUIPMENT USED IN THIS INSTALLATION SHALL BE "FACTORY MUTUAL" APPROVED AND INSTALLATION DETAILS SHALL CONFORM TO F.M.E.A. RECOMMENDED GOOD PRACTICES.
4. NO COMBUSTIBLE OCCUPANCY SHALL BE INTRODUCED INTO THE AREA UNTIL THE AUTOMATIC SPRINKLERS ARE INSTALLED AND IN FULL SERVICE.
5. ALL AREAS WITH DROPPED CEILINGS SHALL HAVE CONCEALED PENDENT SPRINKLER HEAD WITH WHITE ESCUTCHEON PLATE UNLESS NOTED OTHERWISE.
6. IN ALL FINISHED AREAS WITH DROPPED CEILINGS HEADS SHALL BE INSTALLED VISUALLY STRAIGHT AND NOT LESS THAN 6" FROM EDGE OF TILE.
7. ALL AREAS WITH EXPOSED F.S. PIPING SHALL HAVE CORROSION RESISTANT COATED BRASS UPRIGHT HEAD.
8. ALL FIRE DEPARTMENT CONNECTIONS SHALL BE POLISHED CHROME PLATED OR ROUGH BRASS FINISH WITH SIGN SIZED AS REQUIRED.
9. ALL PIPE ELEVATIONS AND HEAD LOCATIONS ARE TO BE COORDINATED WITH ALL OTHER TRADES.
10. PIPE SIZE TO BE HYDRAULICALLY DESIGNED AS PER N.F.P.A. 13 2016 EDITION. USE THE FOLLOWING GENERAL DESIGN DENSITY CRITERIA:
    - ORDINARY HAZARD GP#2: .20 GPM AT 1500 SQ. FT.
11. ALL FITTINGS TO BE BLACK CAST IRON. FOR ALL PIPING 2 1/2" AND LARGER ALL FITTINGS SHALL BE ROLLED GROOVED FOR SCHEDULE 10 & CUT GROOVED FOR SCH 40.
12. ALL PIPING 2 1/2" & LARGER SHALL BE BLACK STEEL SCHEDULE 10, AND ALL PIPING 2" & SMALLER TO BE BLACK STEEL SCHEDULE 10 OR THREADED BLT-BLACK LIGHTWALL AS PER N.F.P.A. 13.
13. UNDERGROUND PIPING (ONLY) TO BE C-900 DR-14 AND BE RESTRAINED OR SUPPORTED WITH MEG-A-LUG SUPPORT OR APPROVED EQUAL AS PER N.F.P.A. 13 2016 EDITION OR AUTHORITY HAVING JURISDICTION. THERE SHALL BE NO FIRE PROTECTION PIPING ROUTED OR RUN BELOW THE BUILDING SLAB.
14. ALL PIPING TO BE HYDROSTATICALLY TESTED AT 200 P.S.I. FOR 2 HOURS AS PER N.F.P.A. 13 2016 EDITION.
15. ALL PIPING TO BE FLUSHED AS PER N.F.P.A. 13 2016 EDITION
16. ALL VALVES TO BE U.L. LISTED WITH TAMPER SWITCH (UNLESS NOTED OTHERWISE) AND COMPLY WITH N.F.P.A. 13 2016 EDITION PRESSURE REGULATING TYPE VALVES SHALL BE INSTALLED IN ALL AREAS WITHIN THE SYSTEMS WHERE PRESSURE EXCEEDS 175PSI.
17. ALL MATERIALS AND DEVICES TO BE U.L. LISTED AND COMPLY WITH N.F.P.A. 13 2016 EDITION
18. HANGERS SHALL BE IN ACCORDANCE WITH N.F.P.A. 13, 2016 EDITION.
19. THE FIRE PROTECTION CONTRACTOR SHALL CONSULT THE STRUCTURAL ENGINEER PRIOR TO USING POWDER DRIVEN STUDS OR PIERCING STEEL BEAMS OR COLUMNS.
20. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES INSPECTIONS AND TESTS.
21. CONTRACTOR SHALL SUBMIT 4 COPIES OF SHOP DRAWINGS COORDINATED WITH ELECTRICAL AND A/C CONTRACTOR SHOP DRAWINGS FOR OUR REVIEW.
22. PROVIDE A 24 HEAD SPRINKLER HEAD CABINET WITH WRENCH AND STANDARD RED ENAMEL FINISH.
23. ALL EXPOSED VISIBLE PIPING SHALL BE PAINTED RED OR AS RECOMMENDED BY ARCHITECT.
24. EACH HYDRAULICALLY CALCULATED SYSTEM SHALL BE IDENTIFIED BY A PERMANENT PLACARD ATTACHED TO THE BASE OF THE RISER INDICATING THE DESIGN CHARACTERISTICS OF THE SYSTEM.
25. ALL WELDED FITTINGS USED IN THIS INSTALLATION SHALL CONFORM TO F.M.R.C. STANDARDS.
26. COORDINATE WITH "OWNER'S" STANDARD SPECS FOR ALL ADDITIONAL INFORMATION AND REQUIREMENTS REGARDING THE FIRE PROTECTION SYSTEM.
27. WHERE CORROSIVE CONDITIONS EXIST OR SPRINKLERS & PIPING ARE EXPOSED TO THE WEATHER, CORROSION TYPE MATERIAL OR PROTECTIVE CORROSION COATINGS SHALL BE USED. WHEN STEEL PIPE IS TO BE BURIED UNDERGROUND, IT SHALL BE PROTECTED AGAINST CORROSION BEFORE BEING BURIED.
28. ALL UPRIGHT SPRINKLERS SHALL BE INSTALLED PARALLEL TO BRANCH PIPING.
29. WHEN THE AUTOMATIC SPRINKLER AND/OR STANDPIPE SYSTEMS ARE REQUIRED TO BE OUT OF SERVICE FOR MORE THAN 4 HOURS IN A 24-HOUR PERIOD, THE AUTHORITY HAVING JURISDICTION SHALL BE NOTIFIED, AND THE BUILDING SHALL BE EVACUATED OR AN APPROVED FIRE WATCH SHALL BE PROVIDED FOR ALL PARTIES LEFT UNPROTECTED BY THE SHUTDOWN UNTIL THE SPRINK. & OR STANDPIPE SYSTEMS HAS BEEN RETURNED TO SERVICE.
30. WHERE CONDITIONS ARE FOUND THAT CONTRIBUTES TO MICRO BIOLOGICALLY INFLUENCED CORROSION (MIC), PLANS SHALL BE DEVELOPED BY THE OWNERS TO TREAT THE SYSTEM USING ONE OF THE FOLLOWING METHODS AS PER NFPA 13 APPLICABLE EDITION:
    1. INSTALL A WATER PIPE THAT WILL NOT BE AFFECTED BY THE MIC MICROBES.
    2. TREAT ALL WATER THAT ENTERS THE SYSTEM USING AN APPROVED BIOCIDE.
    3. IMPLEMENT AN APPROVED PLAN FOR MONITORING THE INTERIOR CONDITIONS OF THE PIPE AT ESTABLISHED TIME INTERVALS AND LOCATIONS.

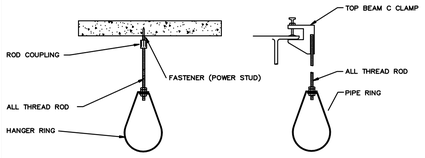


DOUBLE DETECTOR CHECK VALVE DETAIL

NTS DDCHECK



WALL MOUNT SIAMESE CONNECTION



FOR CONCRETE CEILING FOR STEEL BAR JOIST

HANGER SPAN SCHEDULE
STEEL PIPE

DIA. IN.	SPAN, FT-IN	DIA. IN.	SPAN, FT-IN
1	12(3.7)	3	15(4.6)
1 1/4	12(3.7)	4	15(4.6)
1 1/2	15(4.6)	5	15(4.6)
2	15(4.6)	6	15(4.6)
2 1/2	15(4.6)	8	15(4.6)
		10	20(6.0)
		12	20(6.0)

BLAZE MASTER

NOMINAL DIA., IN.	SPAN, FT-IN	DROP TEE FT-IN	DROP ELBOW IN-MM
3/4	5.5(1.7)	3(0.91)	6(152)
1	6.0(1.8)	4(1.22)	9(229)
1 1/4	6.5(2.0)	5(1.52)	12(305)
1 1/2	7.0(2.1)	7.0(2.1)	12(305)
2	8.0(2.4)	7.0(2.1)	12(305)
2 1/2	9.0(2.7)	7.0(2.1)	12(305)
3	10(3.0)	7.0(2.1)	12(305)

HANGER ROD SCHEDULE
N.T.S.

PIPE SIZE	ROD SIZE	PIPE SIZE	ROD SIZE
UP TO 4"	3/8" DIA.	10" AND 12"	5/8" DIA.
5", 6" & 8"	1/2" DIA.		

HANGER DETAILS

NTS-HNGRS

FIRE SPRINKLER HEAD SCHEDULE

SYM	QNT	NAME	COVERAGE	METAL	TEMP	K	NPT	MFG.	MODEL & SIN #	ESCUT.	COAT (*)	CONN.
⊕	-	CONCEALED	16' X 16'	BRASS	200°	4.9	1/2"	VIKING	FREEDOM RES VK494 ***	WHITE	WHITE	Thread
◎	-	RECESSED	16' X 16'	BRASS	155°	4.20	1/2"	VIKING	RESIDENTIAL M-4 VK430 **	WHITE	WHITE	Thread
▷	-	EX. COVER-SIDEWALL	16' X 20'	BRASS	155°	4.20	1/2"	VIKING	RESIDENTIAL HSV FREEDOM VK458 **	WHITE	WHITE	Thread
⊙	-	EX. COVER-UPRIGHT	20' X 20'	BRASS	155°	11.20	3/4"	VIKING	ECOH ELO VK532	NO	CORROSION RESISTANT	Thread
▷	-	EX. COVER-SIDEWALL	16' X 22'	BRASS	155°	4.2	1/2"	VIKING	FREEDOM HSW VK450	WHITE	WHITE	Thread
▶	-	ATTIC	60'	BRASS	155°	5.60	1/2"	CENTRAL	BB1, BB2, BB3	NO	NO	Thread
⊗	-	CONCEALED	STANDARD	BRASS	165°	8.00	1/2"	VIKING	HORIZON MIRAGE B-2 VK406	WHITE	WHITE	Thread
▷	-	EX. COVER-SIDEWALL	20' X 20'	BRASS	155°	4.00	1/2"	VIKING	VK453	WHITE	WHITE	Thread
◎	-	RECESSED	STANDARD	BRASS	155°	5.60	1/2"	VIKING	M VK302	WHITE	WHITE	Thread
●	-	PENDENT	STANDARD	BRASS	155°	5.60	1/2"	VIKING	M VK302	CHROME	CHROME	Thread
○	-	UPRIGHT	STANDARD	BRASS	155°	5.60	1/2"	VIKING	M VK300	NO	CORROSION RESISTANT	Thread
▶	-	SIDEWALL	STANDARD	BRASS	155°	5.60	1/2"	VIKING	M-5 VK305	CHROME	CHROME	Thread
◐	-	UPRIGHT/ PENDENT	STANDARD	BRASS	286°	5.60	1/2"	VIKING	M VK300/302	CHROME	CHROME	Thread
↔	-	RECESSED PENDENT	STANDARD	BRASS	155°	5.60	1/2"	VIKING	M VK302	WHITE	CORROSION RESISTANT	Thread
⊗	-	DRY PEND.	STANDARD	BRASS	155°	5.60	1"	VIKING	M VK180	CHROME	CHROME	Thread
▷	-	DRY SIDE.	STANDARD	BRASS	155°	5.60	1"	VIKING	M VK182	CHROME	CHROME	Thread

(*) COORDINATE FINISH WITH ARCHITECT
(**) MODEL M TO BE USED IN ALL NON-RESIDENTIAL AREAS
(***) MODEL HORIZON MIRAGE B-2 TO BE USED IN ALL NON-RESIDENTIAL AREAS
NOTE: PROVIDE ENT CORROSION RESISTANT HEADS IN ALL EXPOSED OUTDOOR AREAS INCLUDING PARKING GARAGES

Job # 24024 **Federal Courthouse Parking**

Updated Feller Engineering

6/12/2025 **Fire Protection Drawing Log**

SHEET NUMBER		PERMIT SET 06-XX-2025			
FP100	DRAWING INDEX, DETAILS AND NOTES - FIRE PROTECTION	•			
FP201	GRADE LEVEL - FIRE PROTECTION PLAN	•			
FP202	SECOND FLOOR - FIRE PROTECTION PLAN	•			
FP203	THIRD LEVEL - FIRE PROTECTION PLAN	•			
FP204	FOURTH LEVEL - FIRE PROTECTION PLAN	•			
FP205	FIFTH LEVEL - FIRE PROTECTION PLAN	•			

FIRE PROTECTION DETAILS & INDEX

NTS

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: FIRE PROTECTION INDEX

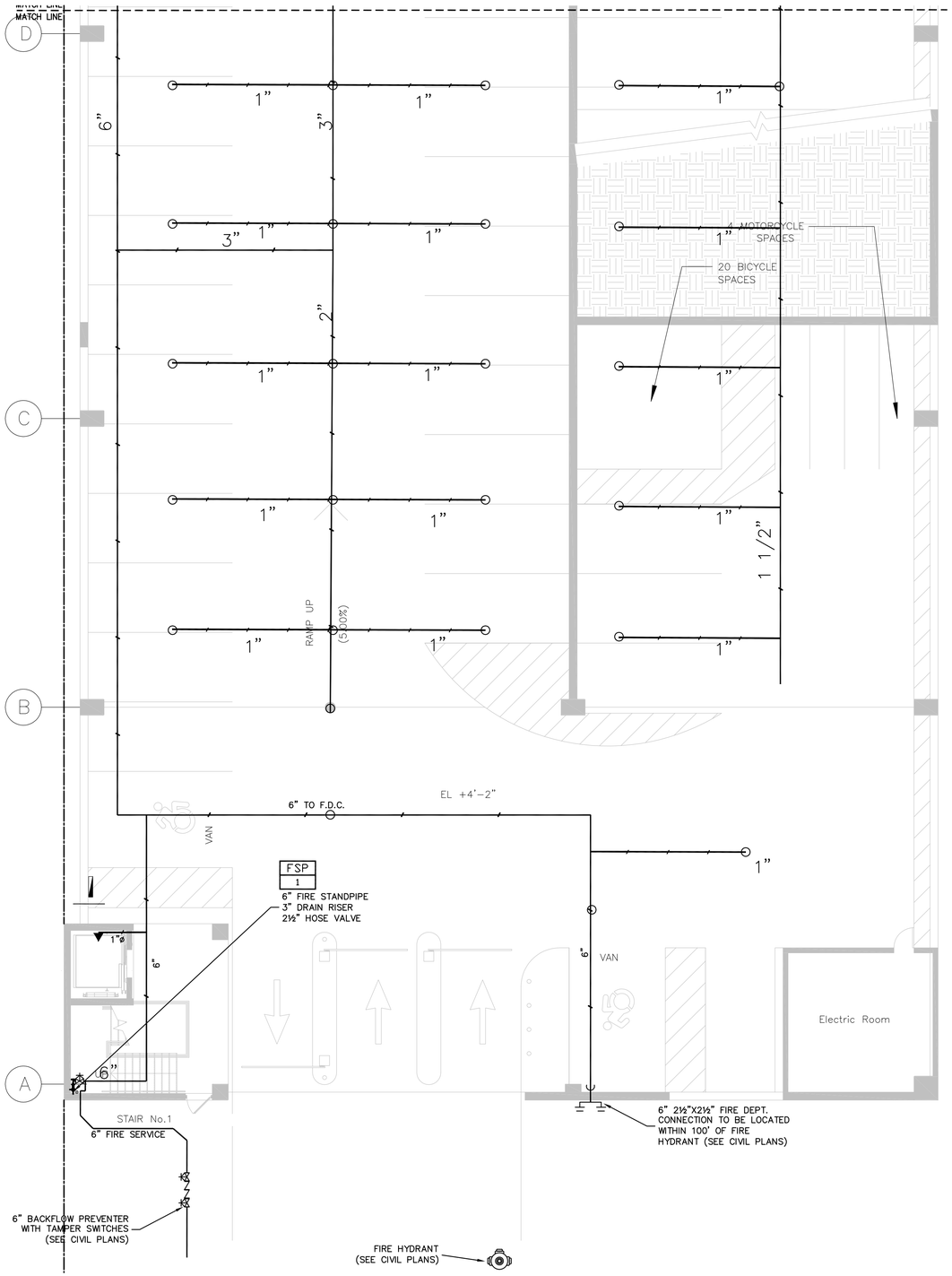
DRAWING NO: **FP100**

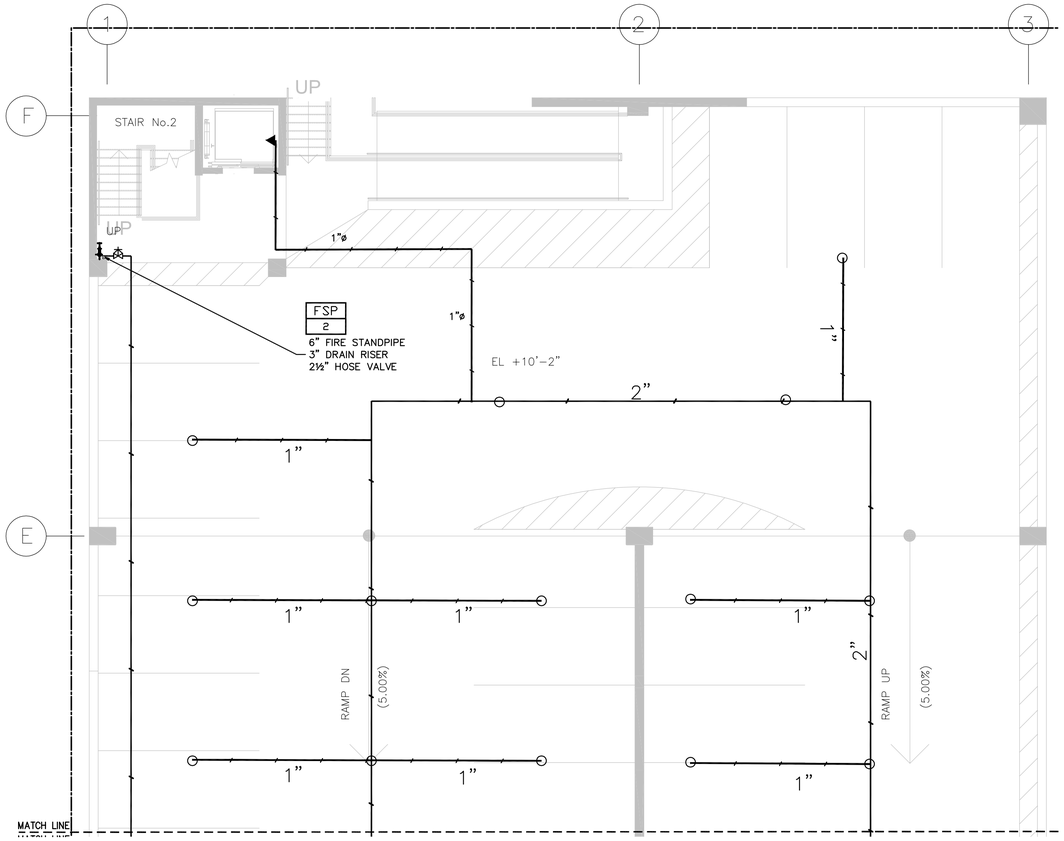
SCALE:

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
AB	CD	EK





GRADE LEVEL ENLARGED FIRE PROTECTION PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE:
GRADE, LEVEL FIRE PROTECTION PLAN

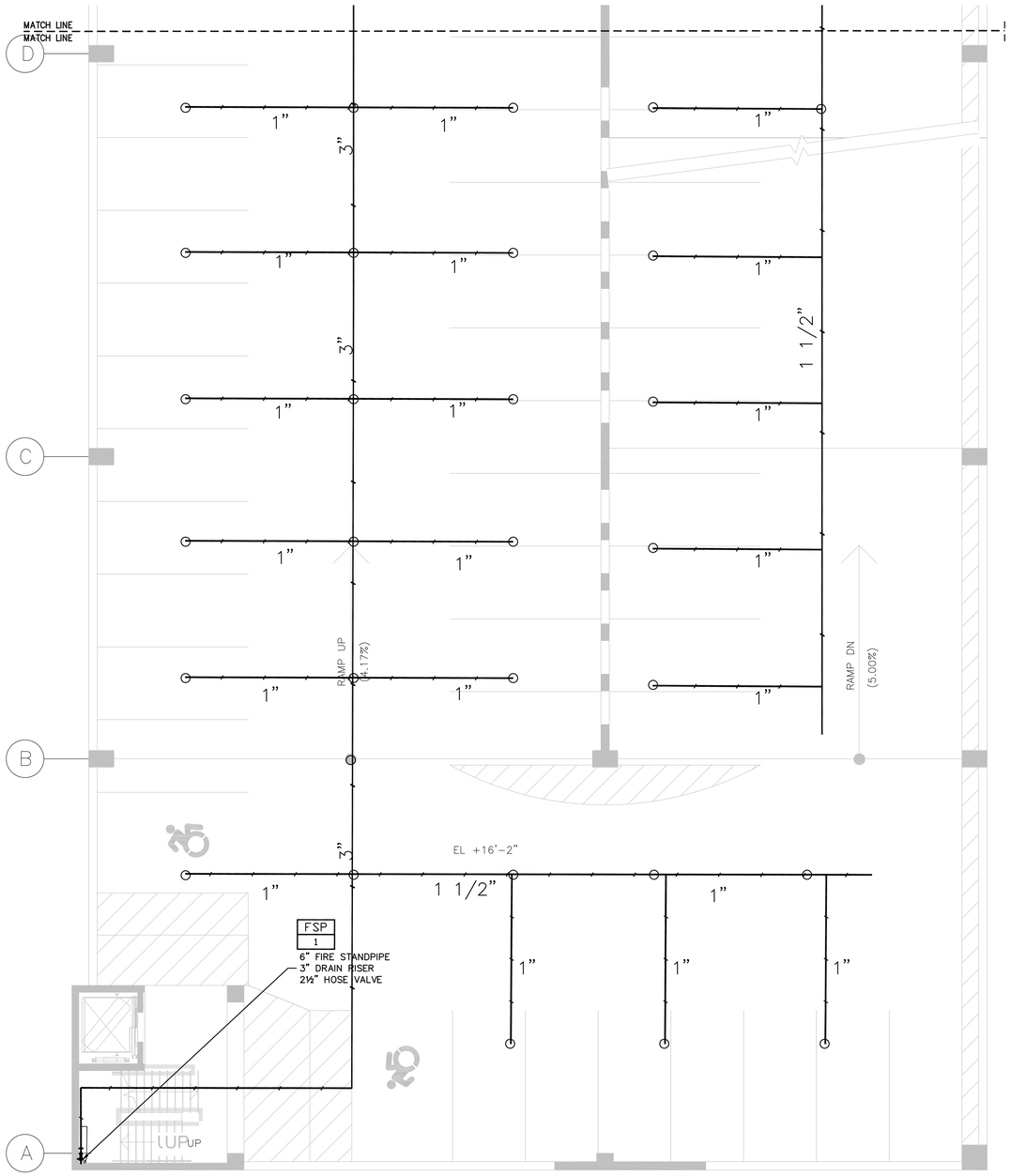
DRAWING NO:
FP201

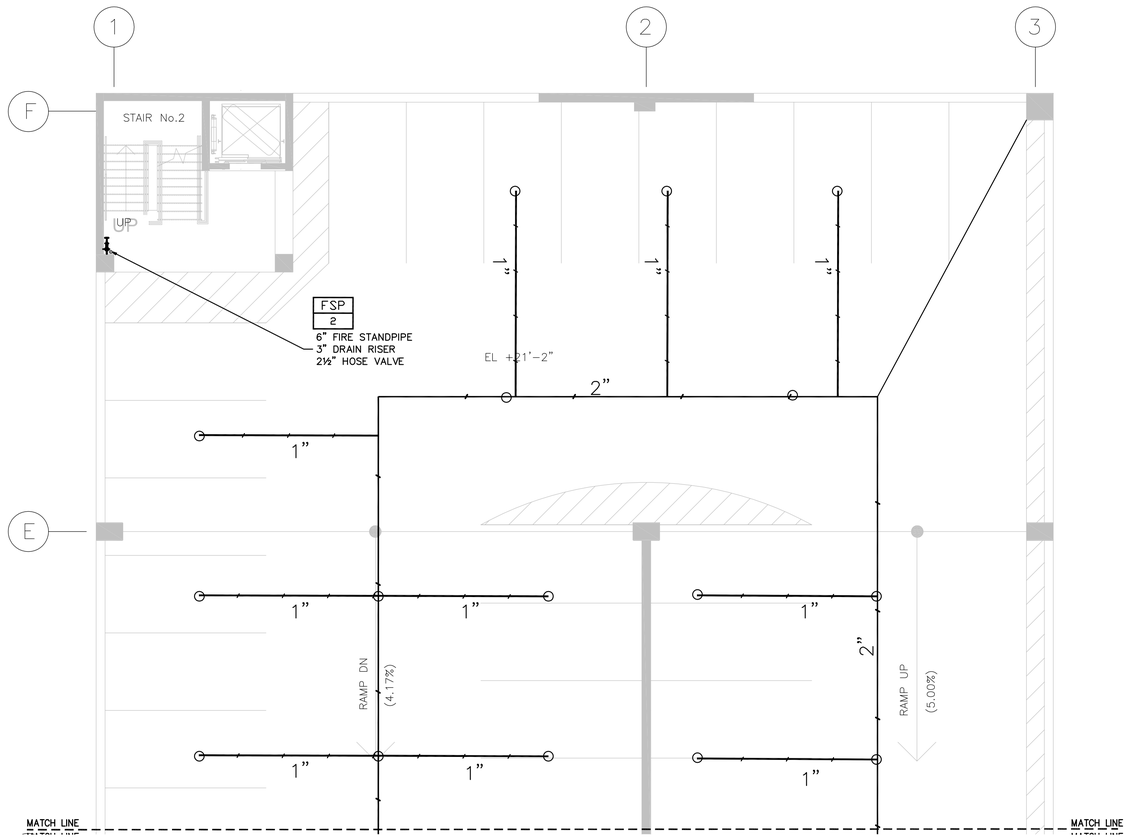
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





SECOND LEVEL ENLARGED FIRE PROTECTION PLAN

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

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DRAWING TITLE:
SECOND LEVEL FIRE PROTECTION PLAN

DRAWING NO:
FP202

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

DATE:

PROJECT NO: 11-23117-1

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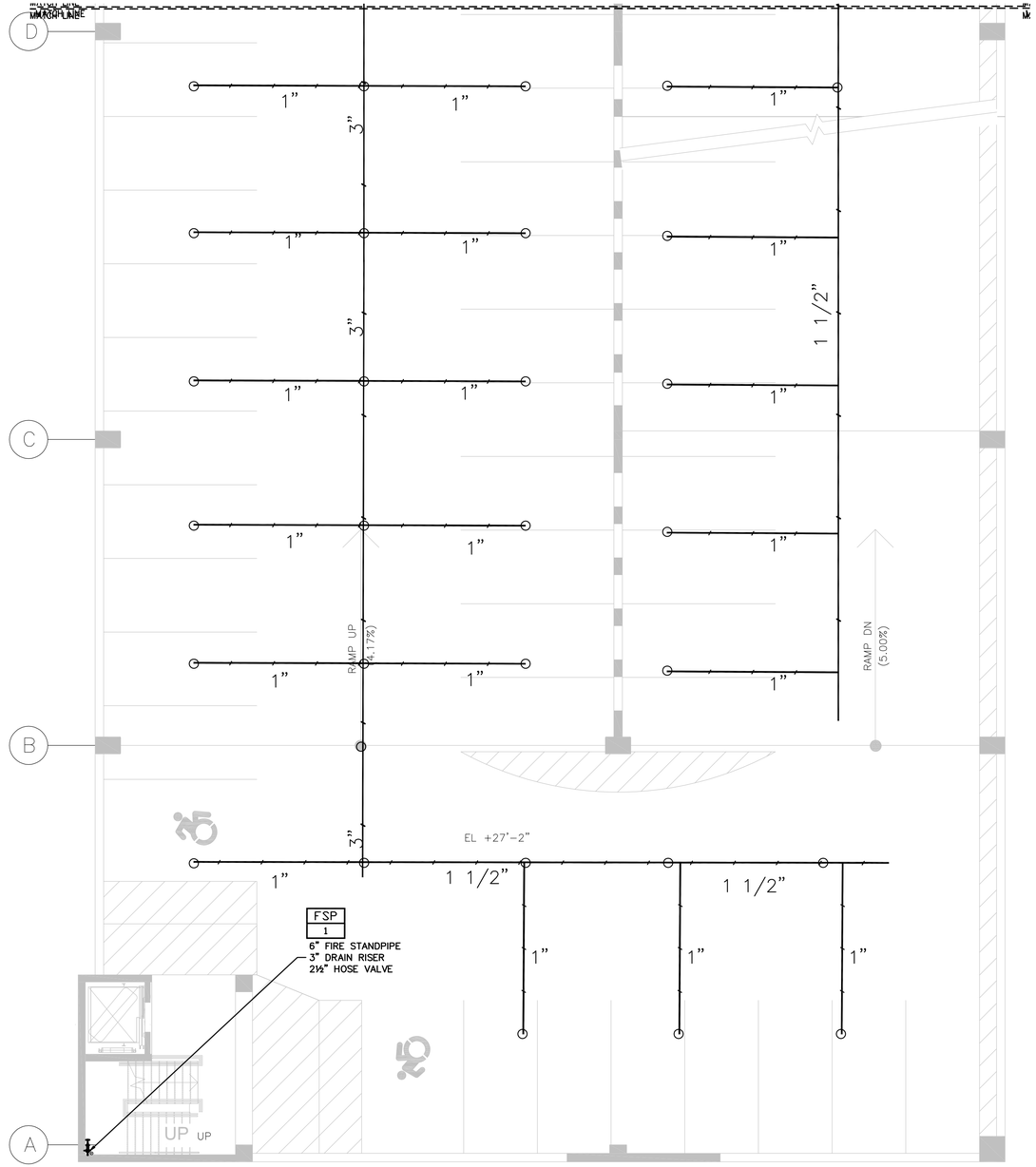
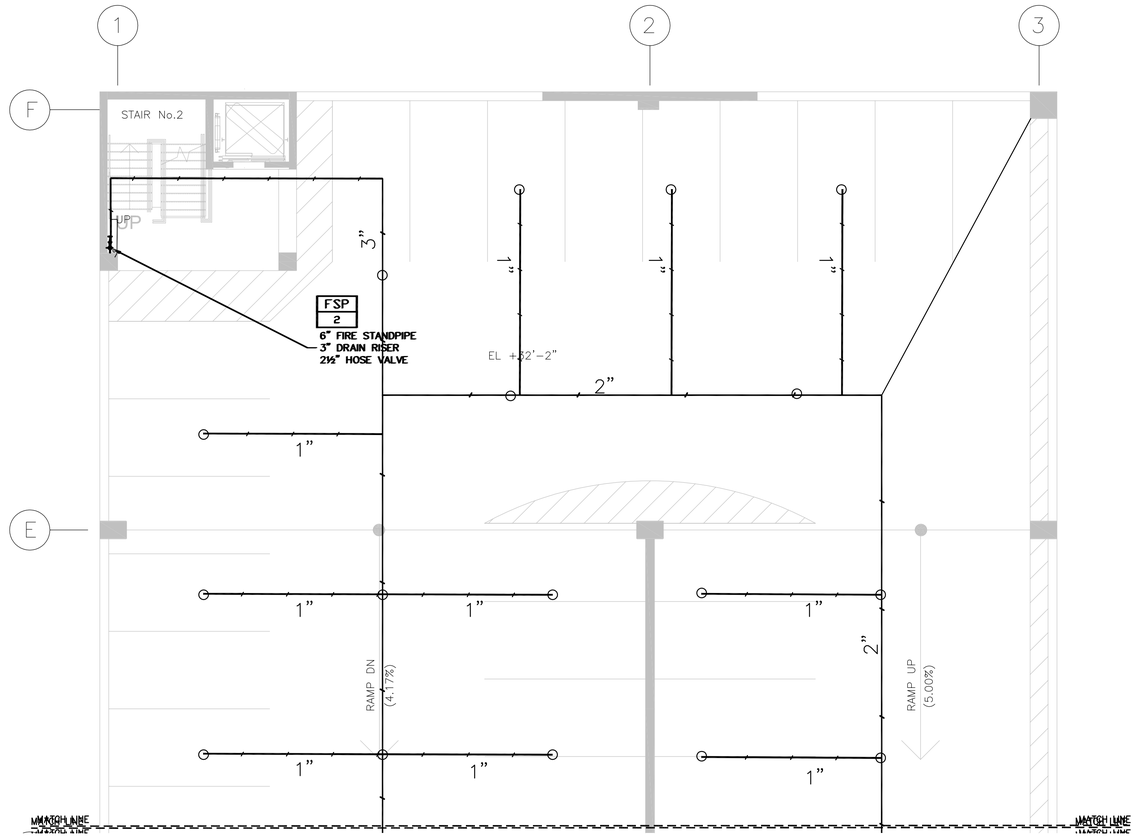
TB	JS	EK





THIRD LEVEL ENLARGED FIRE PROTECTION PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE:
THIRD LEVEL FIRE PROTECTION PLAN

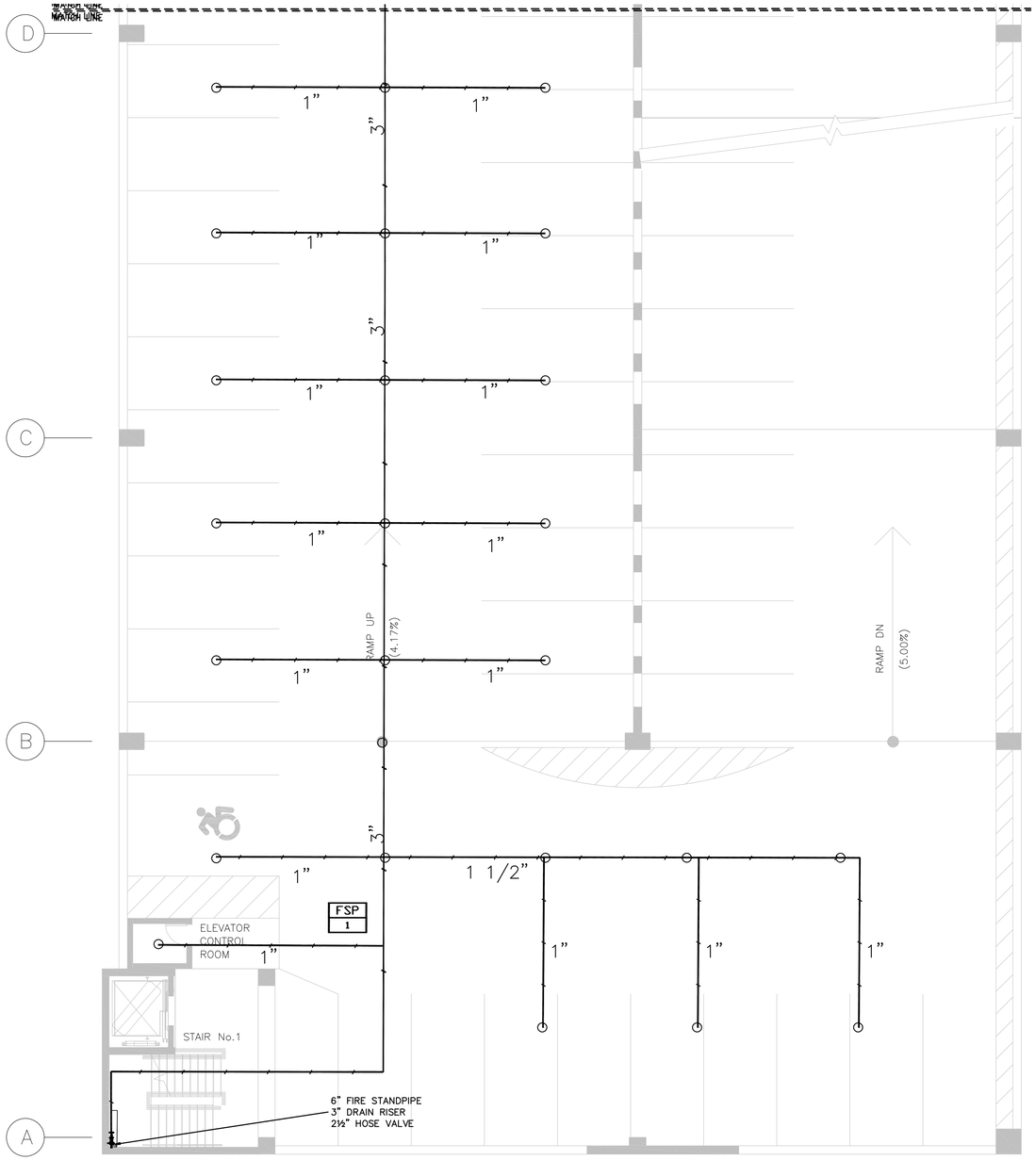
DRAWING NO:
FP203

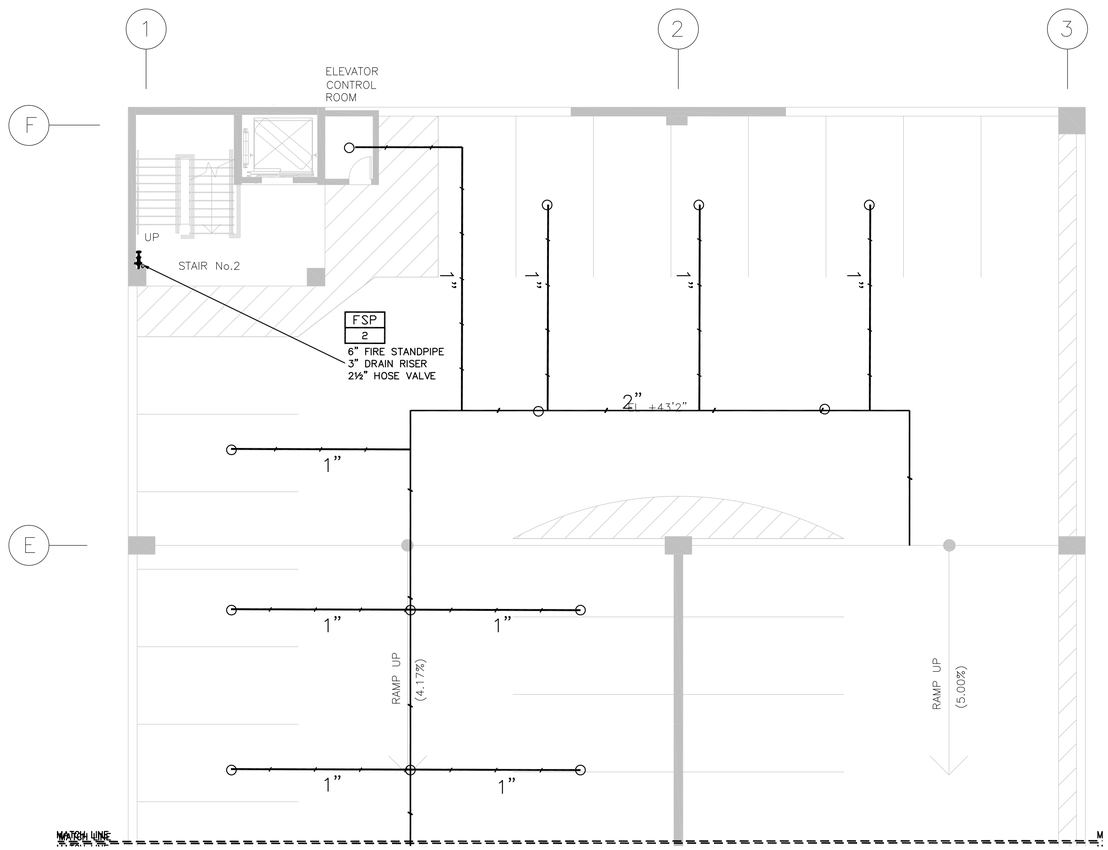
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





FOURTH LEVEL FIRE PROTECTION PLAN
SCALE: 1/8" = 1'-0"

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DRAWING TITLE:
FOURTH LEVEL FIRE PROTECTION PLAN

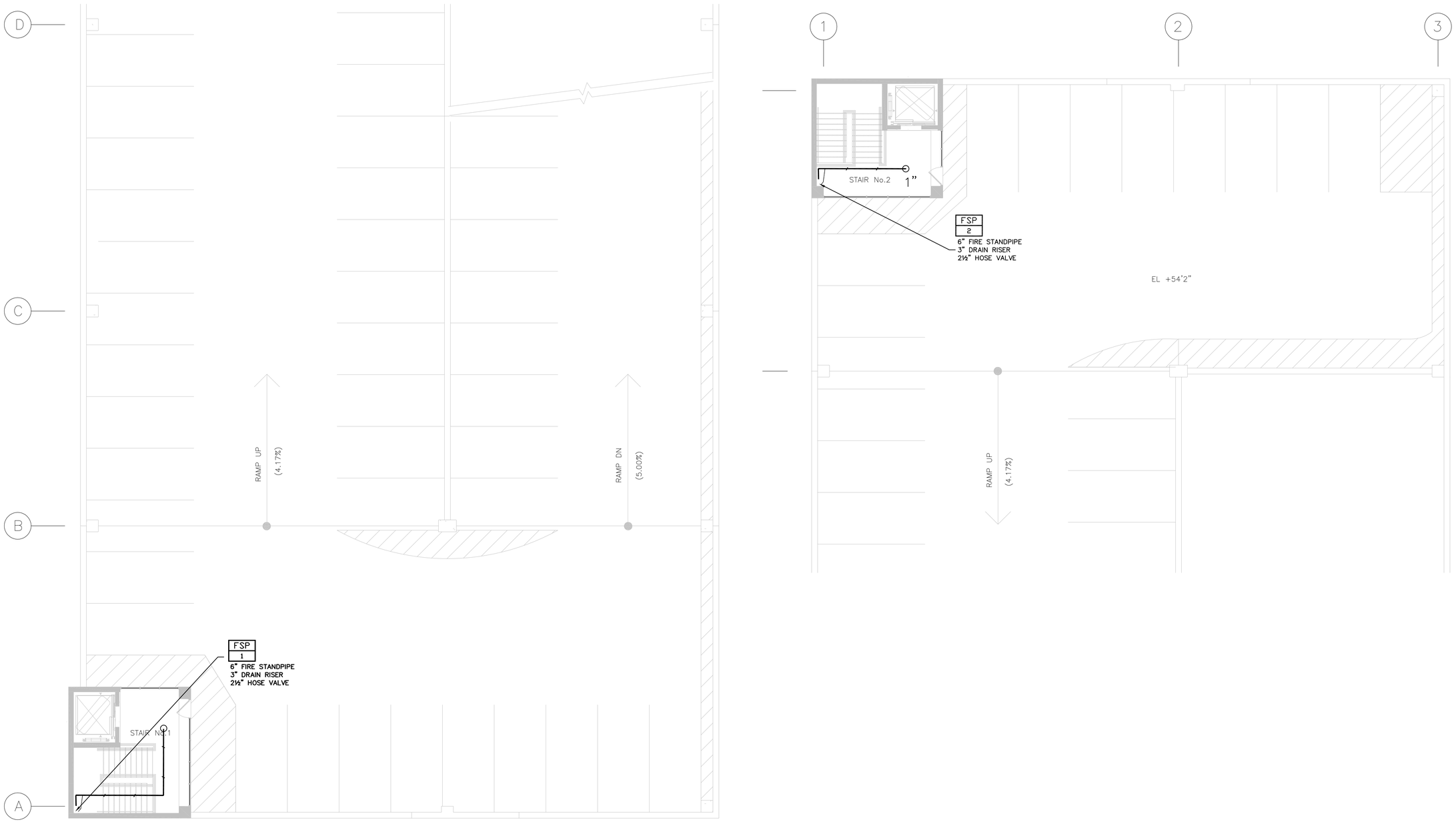
DRAWING NO:
FP204

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK



FIFTH LEVEL FIRE PROTECTION PLAN

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

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DRAWING TITLE:
FIFTH, LEVEL FIRE PROTECTION PLAN

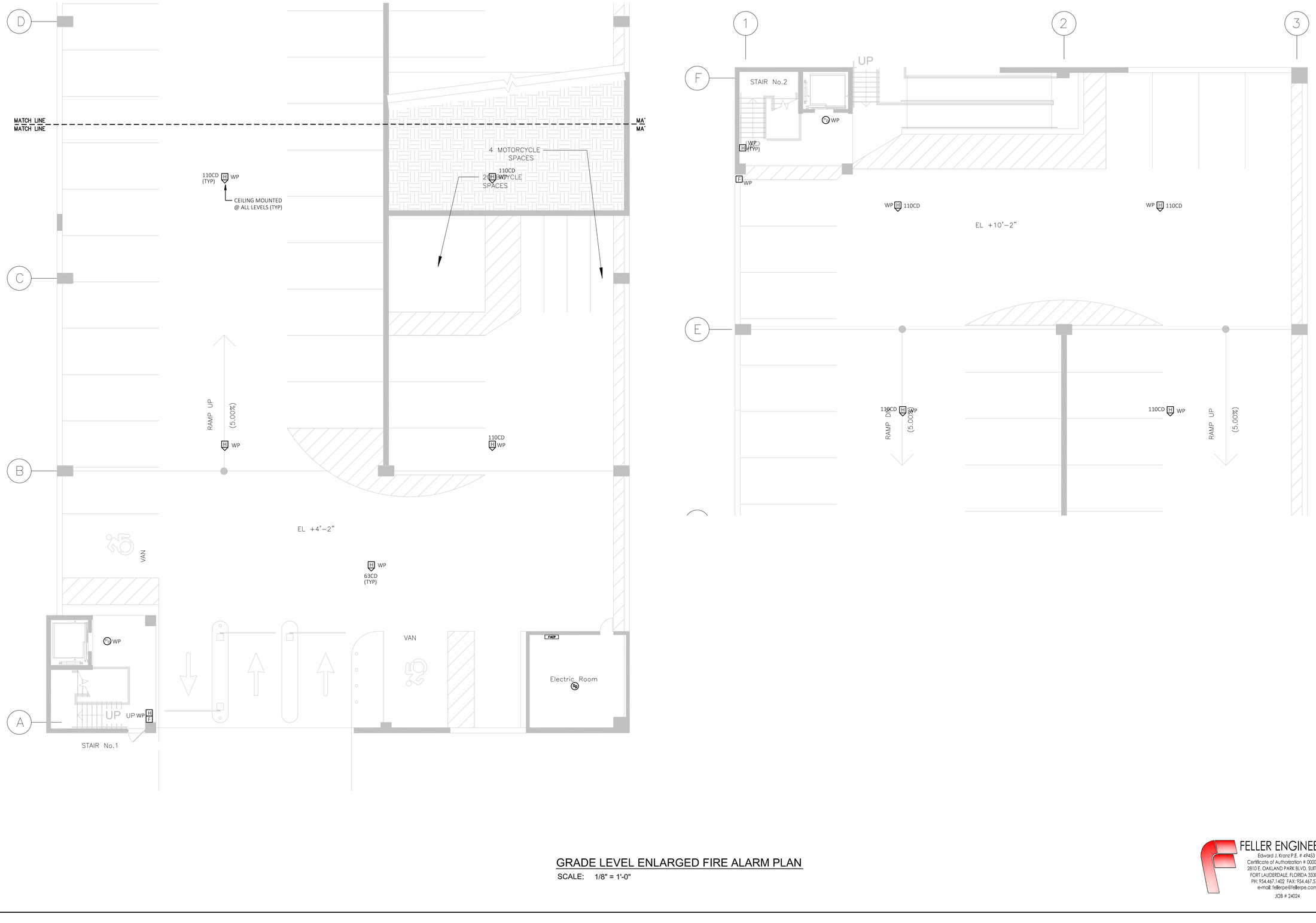
DRAWING NO:
FP205

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK



GRADE LEVEL ENLARGED FIRE ALARM PLAN

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

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DRAWING TITLE: GRADE LEVEL ENLARGED FIRE ALARM PLAN

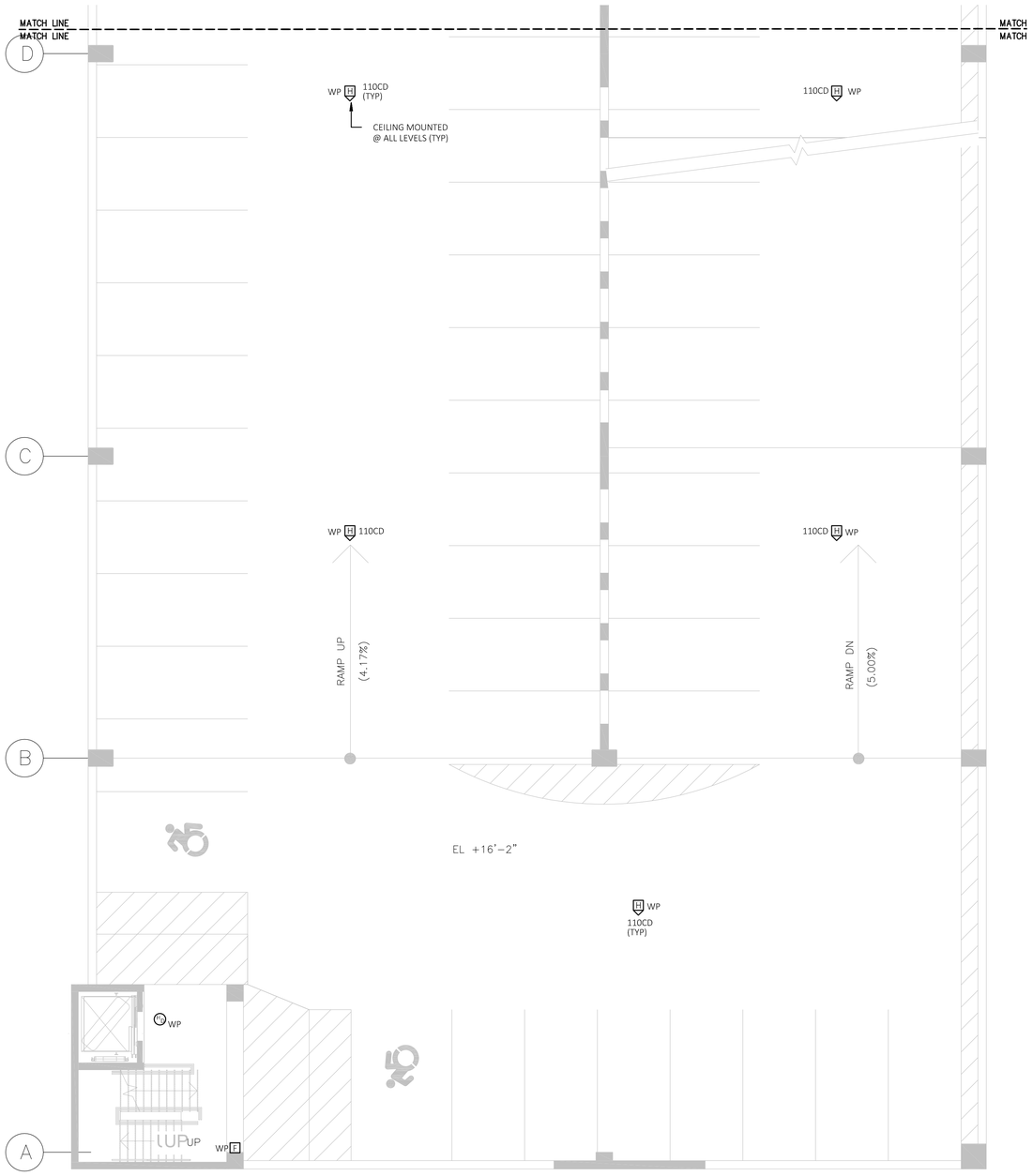
DRAWING NO: FA201

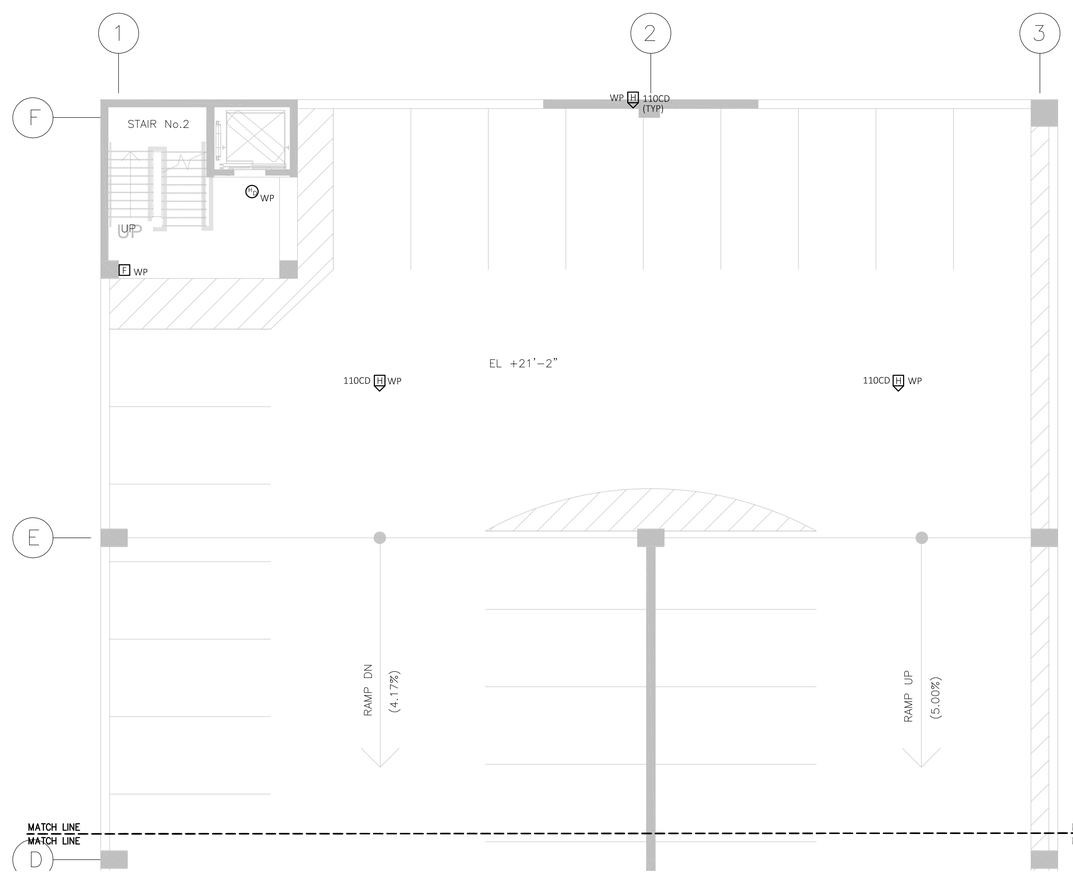
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11–23117–1

DES.	DRWN.	CHK'D.
TB	JS	EK





SECOND LEVEL ENLARGED FIRE ALARM PLAN

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

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No.	DESCRIPTION	DATE

DRAWING TITLE: SECOND LEVEL ENLARGED FIRE ALARM PLAN

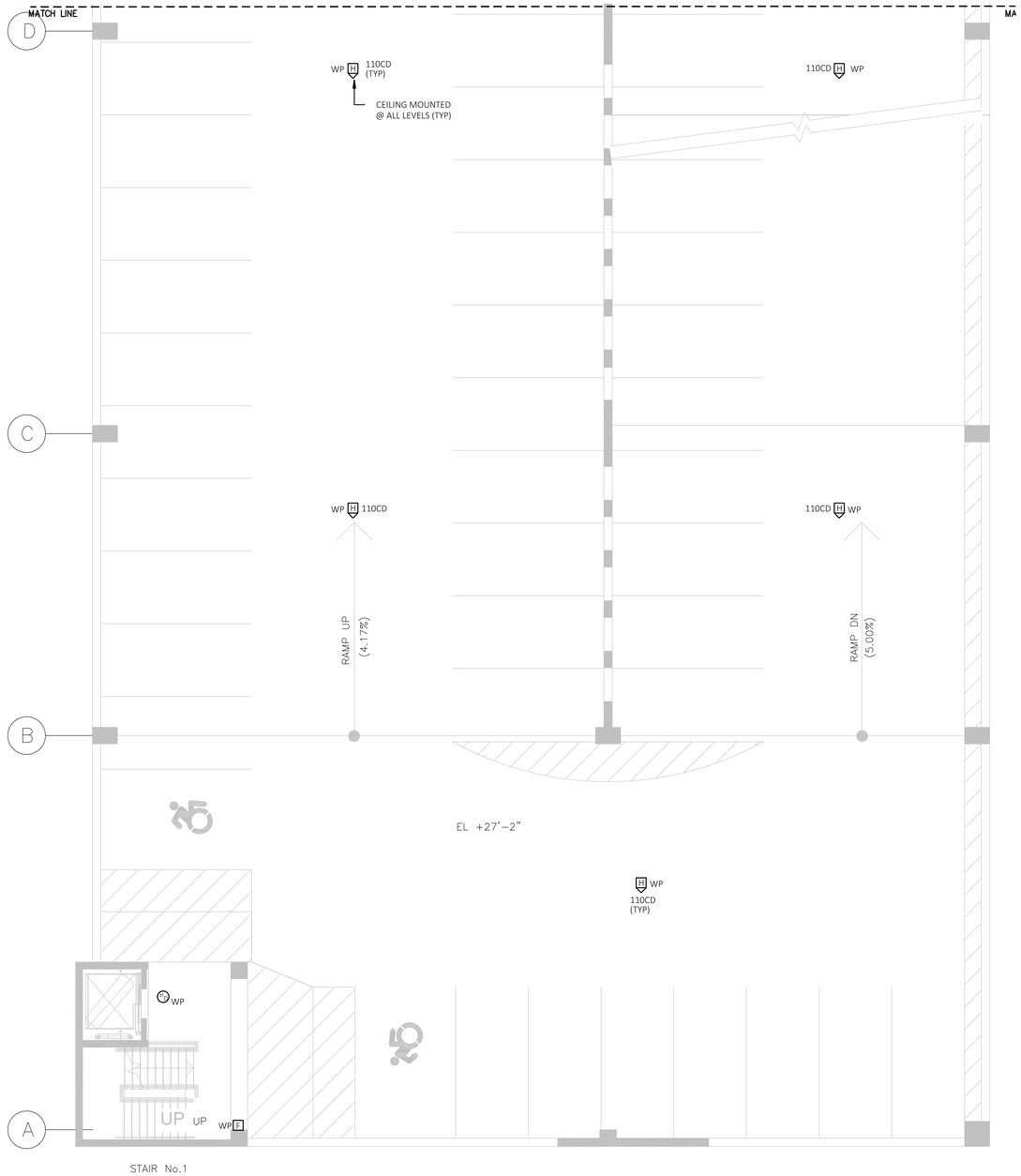
DRAWING NO: FA202

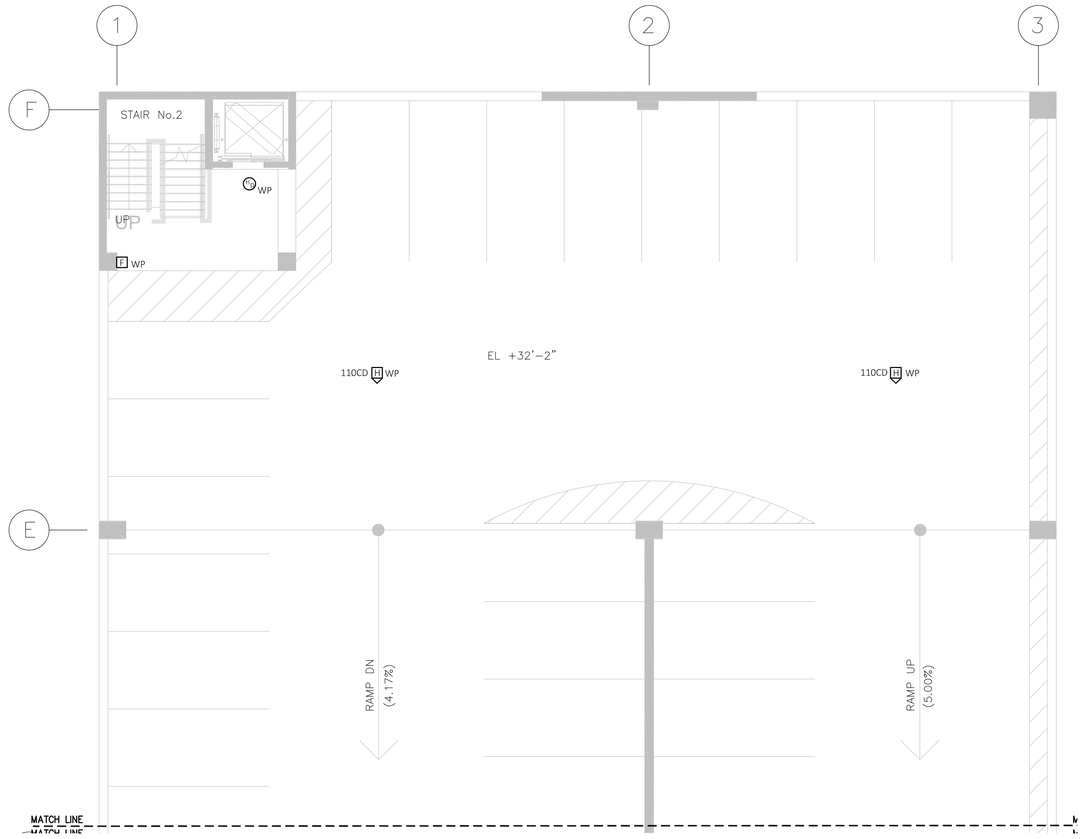
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





THIRD LEVEL ENLARGED FIRE ALARM PLAN

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

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REVISION/ISSUE		

No.	DESCRIPTION	DATE

DRAWING TITLE:
THIRD LEVEL ENLARGED FIRE ALARM PLAN

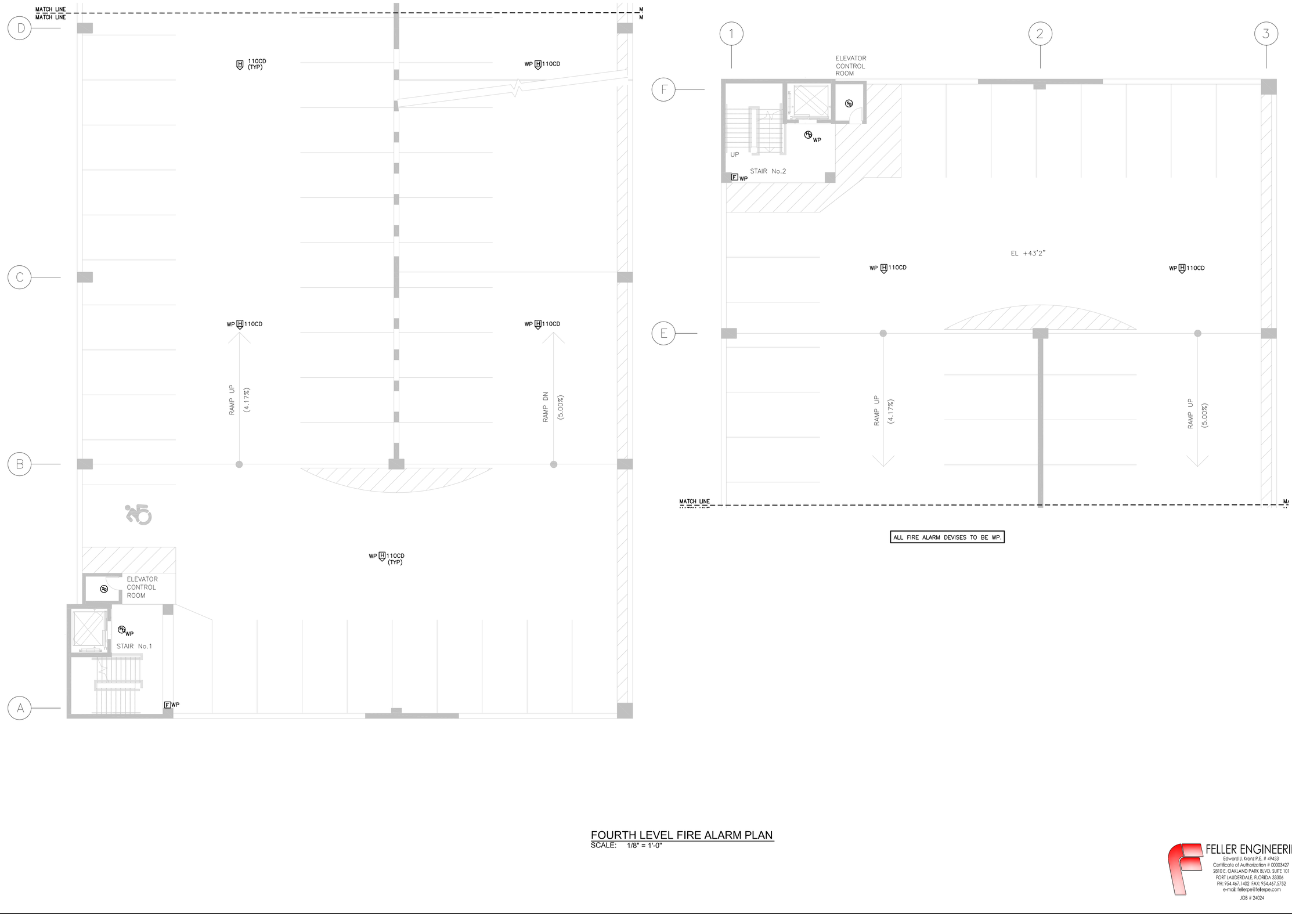
DRAWING NO:
FA203

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK



FOURTH LEVEL FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"

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Certificate of Authorization # 00003427
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DESMAN
DESIGN MANAGEMENT, INC.

FEDERAL COURTHOUSE PARKING GARAGE
FORT LAUDERDALE FLORIDA

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No.	DESCRIPTION	DATE

DRAWING TITLE: FOURTH, LEVEL FIRE ALARM PLAN

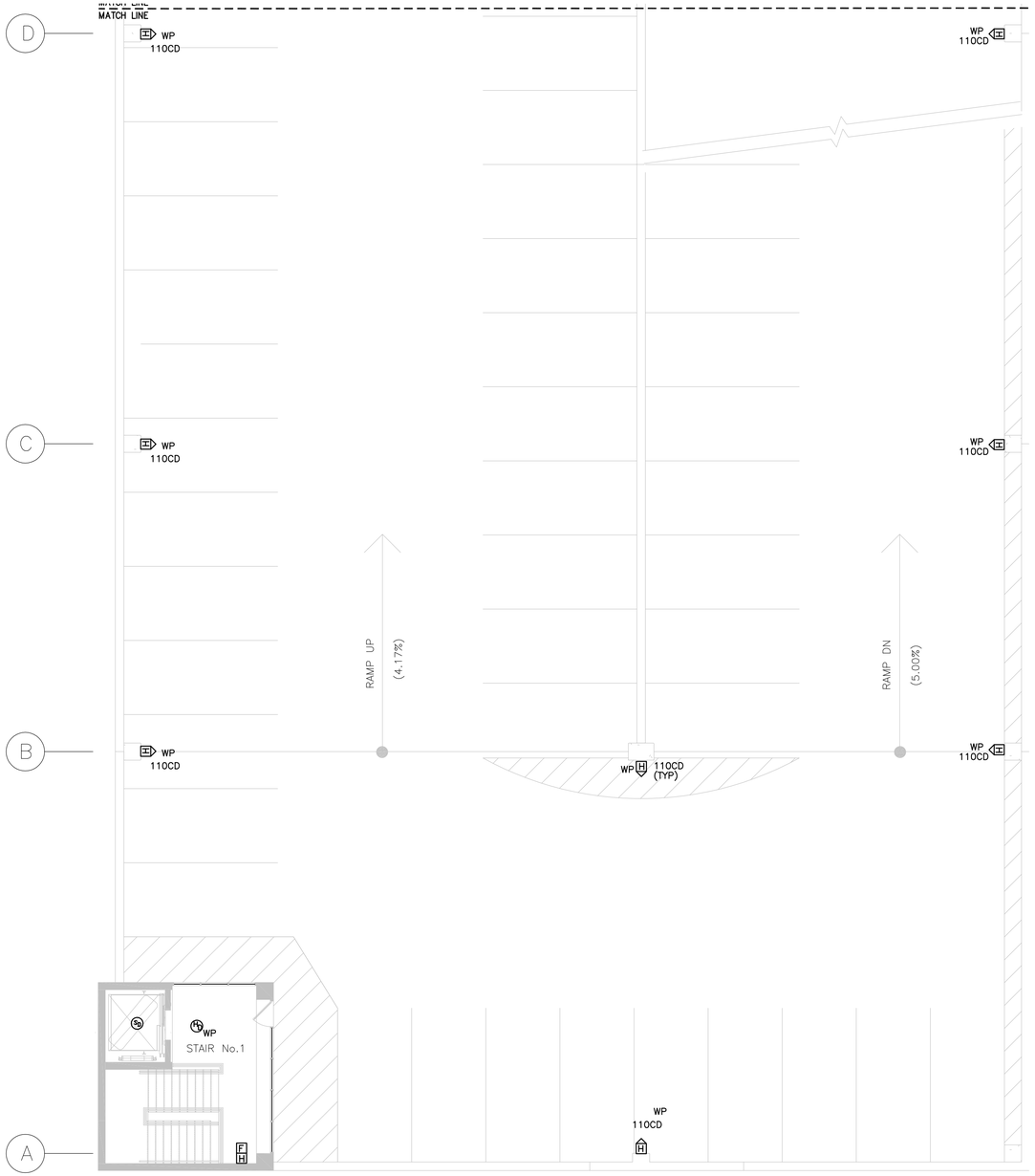
DRAWING NO: FA204

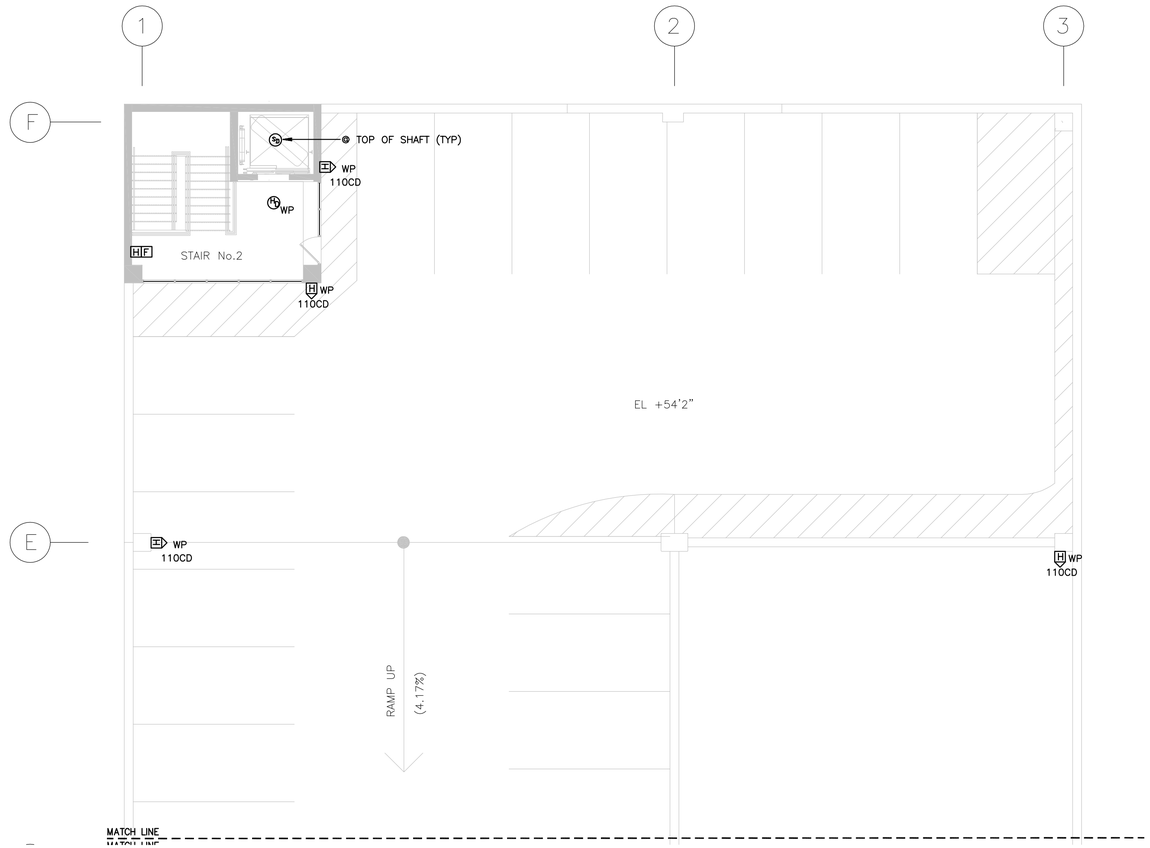
SCALE: 1/8" = 1'-0"

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK





FIFTH LEVEL FIRE ALARM PLAN

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

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FEDERAL COURTHOUSE PARKING GARAGE

FORT LAUDERDALE FLORIDA

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REVISION/ISSUE

No.	DESCRIPTION	DATE

DRAWING TITLE: FIFTH, LEVEL FIRE ALARM PLAN

DRAWING NO: FA205

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

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
TB	JS	EK

FIRE ALARM DEVICE LEGEND

SYMBOL	DESCRIPTION	CATALOG MODEL	MOUNTING HEIGHT
FACP	FIRE ALARM CONTROL PANEL	EST4	72" AFF TO TOP
FAA	FIRE ALARM ANNUCIATOR	4-2ANN	
NAC 1	BOOSTER POWER SUPPLY	BPS10A	
S P	SMOKE DETECTOR	SIGA-OSD	
H R	HEAT DETECTOR	SIGA-HRD	
H WP	WEATHERPROOF HEAT DETECTOR	302-ET-135	
S	DUCT DETECTOR	SIGA-DDOS	
F	PULL STATION	SIGA-278	48" AFF TO BOTTOM
F WP	PULL STATION (WEATHERPROOF)	SG-32	48" AFF TO BOTTOM
AIM CT1	CONTROL MODULE	SIGA-CT1	
AIM CT2	DUAL CONTROL MODULE	SIGA-CT2	
IM	ISOLATOR MODULE	SIGA-IM	
RL	HARDWIRE CONTROL RELAY	RIBU1C	
	LED MULTICANDELA STROBE	G1VWF/G4VWF	80" AFF TO BOTTOM
	LED HORN/STROBE MULTICANDELA	G1AVWF/G4AVWF	
WP	GENESIS HORN/STROBE (W.PROOF)	WGAVWF	80" AFF TO BOTTOM
STARLINK	CELLULAR ALARM COMMUNICATOR FOR LTE NETWORKS	SLE-MAXAI-FIRE	
F WP	FIRE ALARM BELL	439D-6AW(R)	
T120	120V SURGE PROTECTOR	E120V-GT	
T24	24V SURGE PROTECTOR	T24-MD	
FATC	FIRE ALARM TERMINAL CABINET	BY OTHERS	
FDC	FIRE DEPARTMENT CONNECTION	BY OTHERS	
VS	TAMPER SWITCH	BY OTHERS	
WF	FLOW SWITCH	BY OTHERS	
BFP	BACKFLOW PREVENTOR	BY OTHERS	
AOM	OUTPUT SIGNAL MODULE	SIGA-CC1	
CC1S AOM	SYNCHRONIZATION OUTPUT MODULE	SIGA-CC1S	
AOM	CONTROL RELAY	SIGA-CR	
AIO 2	INPUT/OUTPUT MODULE	SIGA-IO	

FIRE ALARM SYMBOL LEGEND
NTS

FELLER ENGINEERING
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FEDERAL COURTHOUSE PARKING GARAGE
FORT LAUDERDALE FLORIDA

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REVISION/ISSUE		

No.	DESCRIPTION	DATE

DRAWING TITLE:
DETAILS
NOTES

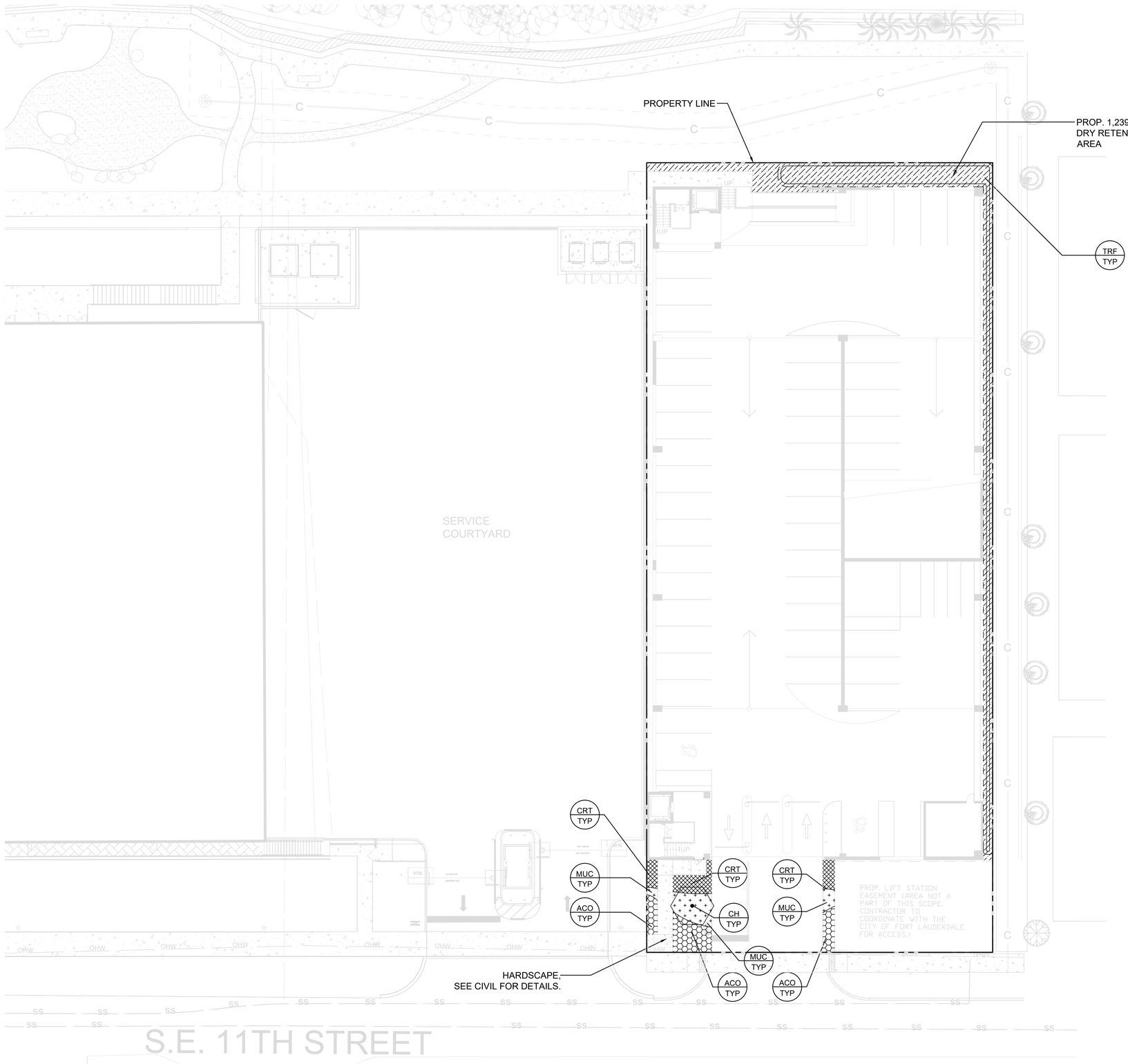
DRAWING NO:
FA206

SCALE:

DATE:

PROJECT NO: 11-23117-1

DES.	DRWN.	CHK'D.
AB	CD	EK



N

PLANTING LEGEND

TREES		
	CH	FRINGETREE
SHRUB AREA		
	TRF	FAKAHATCHEE GRASS
	CRT	RED TIP COCOPLUM
	MUC	PINK MUHLY GRASS
GROUNDCOVER		
	ACO	BABY SUNROSE

NOTES:

1. THIS IS A SCHEMATIC PLAN, NOT FOR CONSTRUCTION.
2. REFER TO ARCHITECTURAL PLANS FOR GARAGE DETAILS.

0 16' 32'

Scale: 1" = 16'

BROOKS SCARPA

FEDERAL COURTHOUSE PARKING GARAGE

FORT LAUDERDALE FLORIDA

PROJECT TEAM

OWNER:
CITY OF FORT LAUDERDALE

ARCHITECT:
WOLFBERG ALVAREZ & PARTNERS

CIVIL:
LANGAN

STRUCTURE:
DESMAN

MEP:
FELLER ENGINEERING

LANDSCAPE:
BROOKS + SCARPA

SURVEY:
BROWN & PHILLIPS

ISSUE

NO.	DESCRIPTION	DATE

DRAWING TITLE

LANDSCAPE PLAN

DRAWING NO.

L0.01

SCALE: 1" = 16'

DATE:

PROJECT NO : 11–23117–1

DES.	DRWN.	CK'D.

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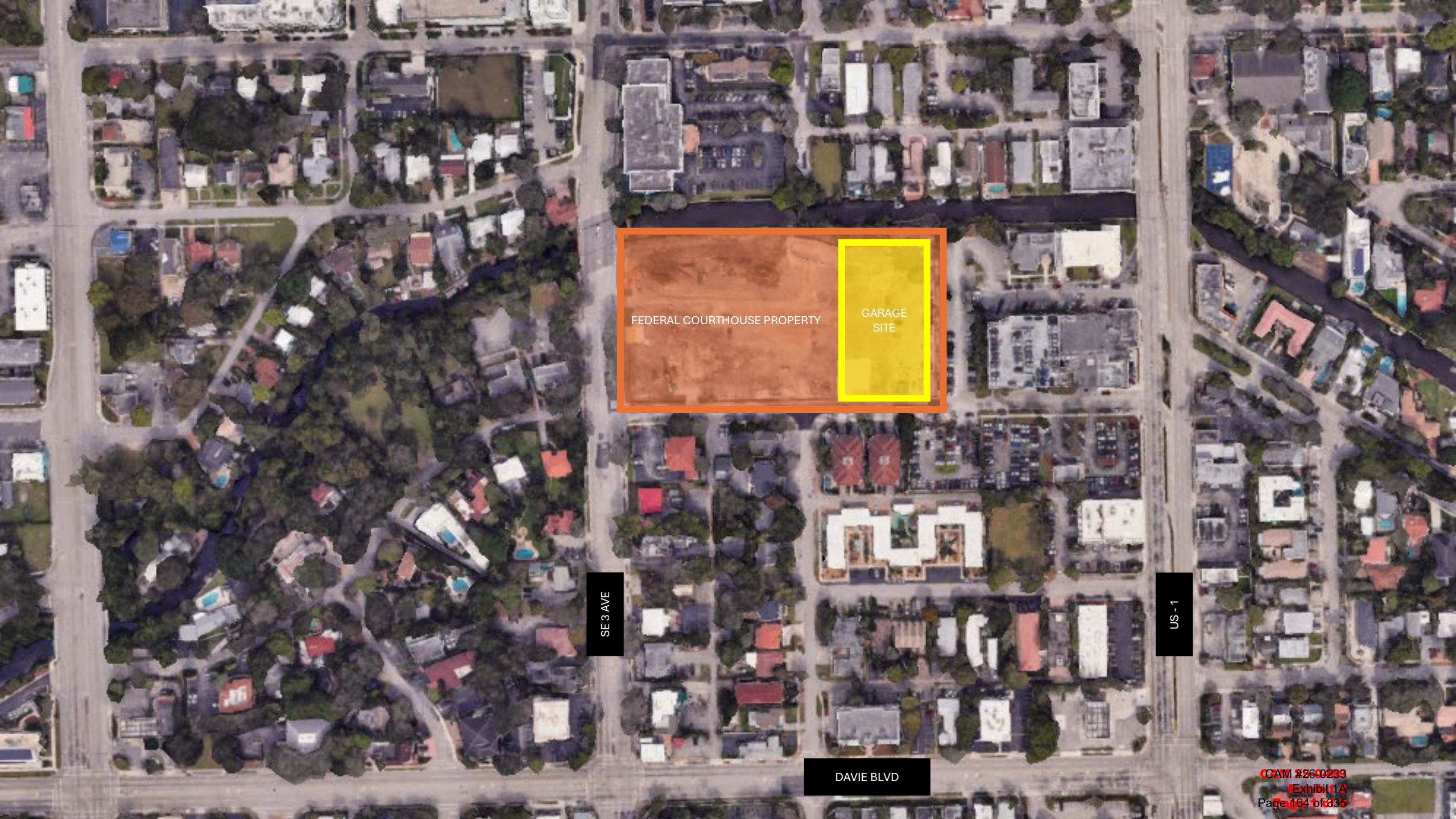
Exhibit B

Enclosed is an aerial image of the construction site location. There is limited space for staging and employee parking, as well as delivery coordination.

The City is asking these challenges be considered when submitting proposals.

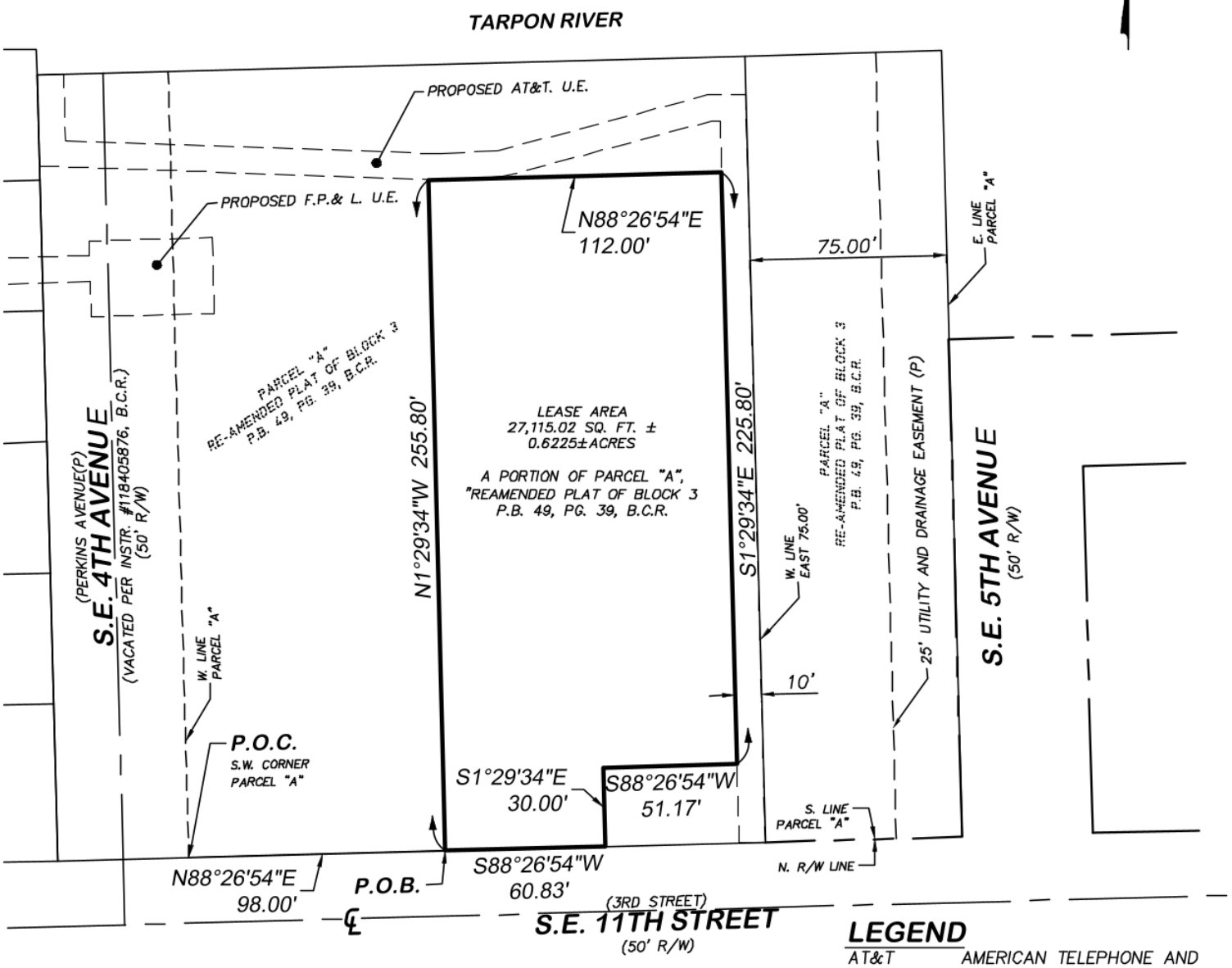

FEDERAL COURTHOUSE PROPERTY
GARAGE SITE
SE 3 AVE
US - 1
DAVIE BLVD

SKETCH OF DESCRIPTION

PARKING GARAGE LEASE AREA

U.S. FEDERAL COURTHOUSE

CITY OF FORT LAUDERDALE, BROWARD COUNTY, FLORIDA



LEGEND

AT&T	AMERICAN TELEPHONE AND TELEGRAPH
B.C.R.	BROWARD COUNTY RECORDS
F.P. & L.	FLORIDA, POWER & LIGHT
M.D.C.R.	MIAMI-DADE COUNTY RECORDS
O.R.B.	OFFICIAL RECORD BOOK
(P)	BY PLAT
P.B.	PLAT BOOK
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
PG.	PAGE
R/W	RIGHT-OF-WAY
SQ. FT.	SQUARE FEET
U.E.	UTILITY EASEMENT
	BREAK IN LINE SCALE

0 60' 120'

GRAPHIC SCALE IN FEET

\\CTAFILE02\SURVEY_PROJECTS\PROJECTS\2022\22-0016-001-01 US COURTHOUSE FORT LAUDERDALE\DRAWINGS\SKETCH_AND_DESC\22-0016-FPL UE.DWG

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DRAWN BY: AC	F.B. N/A PG. N/A
CHECKED BY: RGC	DATED: 07/16/2024

City of Fort Lauderdale Federal Courthouse Garage Architectural & Engineering Design Criteria Package

APPENDIX C – Geotechnical Soils Report

DESIGN CRITERIA GETOECHNICAL ENGINEERING STUDY

for

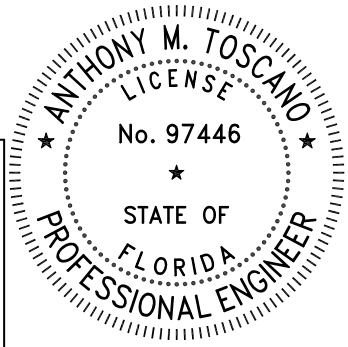
FEDERAL COURTHOUSE PARKING GARAGE NORTHEAST CORNER (NEC) OF SE 4TH AVENUE AND SE 11TH STREET FORT LAUDERDALE, FLORIDA

Prepared For:

DESMAN
100 SE 3rd Avenue, 10th Floor
Fort Lauderdale, Florida 33394

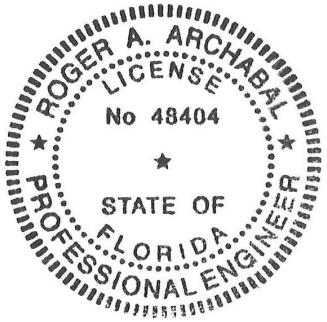
Prepared By:

Langan Engineering and Environmental Services, LLC
110 E. Broward Boulevard, Suite 1500
Fort Lauderdale, Florida 33301
FBPE Registry No. 00006601



This item has been digitally signed and sealed by Roger A. Archabal, PE and Anthony M. Toscano, PE on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Anthony M. Toscano, P.E.
Senior Staff Engineer
Professional Engineer License No.97446



Roger A. Archabal, P.E.
Principal / Vice President
Professional Engineer License No. 48404

10 May 2024
330130301

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INTRODUCTION

This report presents our design criteria geotechnical engineering study performed for the proposed Parking Garage for the proposed Federal Courthouse. The project consists of a 5-to-6-level Parking Garage that will be a standalone structure from the main Federal Courthouse building. The project is located at northeast corner of SE 4th Avenue and SE 11th Street in Ft. Lauderdale, Florida. The purpose of the design criteria geotechnical study was to: 1) review relevant available geotechnical information in our files for neighboring properties; 2) review the geotechnical engineering reports completed by others; 3) determine and evaluate the subsurface conditions at the site; 4) perform a preliminary foundation evaluation and develop preliminary foundation recommendations, and 5) develop preliminary recommendations for other construction activities, such as dewatering and site preparation related activities. This work was performed for DESMAN in general accordance with our revised proposal, dated 26 March 2024.

Our understanding of the existing site conditions is based on our observations made during the field exploration. Our understanding of the proposed development is based on a Paving, Grading, and Drainage Plan by Craven Thompson and Associates, Inc. and dated 6 November 2023. Additionaly, we were provded with a presentation by DESMAN for the revised garage site for the city of Fort Lauderdale which is dated 23 February 2024. Site elevations in this report are in feet and with reference to the North American Vertical Datum of 1988 (NAVD), unless otherwise stated. We inferred the site elevations from the aforementioned Paving, Grading, and Drainage plan as well as an ALTA/NSPS Land Title Survey by McLaughlin Engineering Company dated 3 Feburay 2023. Both documents contain existing ground surface spot elevations within the proposed Parking Garage area.

SITE DESCRIPTION

The project site is approximately 1.67-acre vacant lot parcel located at the northwest corner of SE 4th Avenue and SE 11th Street in Ft. Lauderdale, Florida. The approximate location of the site is shown on Figure 1, Site Vicinity Plan. The main Federal Courthouse structure is under construction to the west. The east side of the overall site, where the proposed Parking Garage is located, is part of the overall Federal Courthouse development and currently serves as parking for the workers and for the general contractors trailer. The project site is bordered by Tarpon River to the north, an at-grade parking lot associated with a 3-to-4-level Nissan dealership to the east, SE 11th Street to the south, and the Federal Courthouse that is under construction to the west. The site is relatively flat with existing grades ranging from el +2.6 ft to el +3.7 ft, NAVD. The general location of site can be found on Figure 1.

The area between the Federal Courthouse and the proposed Parking Garage is a vacant area that will serve as an interim green area. Our understanding is that this area between the courhouse and the garage will be used as a future expansion for the courthouse in the next 30-years, approximately as shown on Figure 2B.

PROPOSED CONSTRUCTION

We understand the project will consist of a 5-to-6-level Parking Garage. The exact layout of the Parking Garage has still not been finalized at the time of this report but anticipate the footprint to occupy a 125 foot by 218 foot area. The Parking Garage is estimated to contain approximately 350 parking spaces. The Parking Garage is rectangular in shape and is offset approximately by 10.5 feet from the east property line and about 30 feet from the southern property line. The approximate location of the Parking Garage is shown on Figures 2A and 2B.

At the time of this report we have not received structural loads. However, we preliminarily estimate that the maximum Parking Garage column loads may be between 2,000 to 2,500 kips (1,000 to 1,250 tons). The

presenstation from DESMAN shows a FFE elevation of el +4.2 ft, NAVD for the top of finished at grade slab. It also shows section elevations to the fifth floor with the highest elevation set at el +53.2 ft, NAVD.

SUBSURFACE INVESTIGATION

Investigation By Others

A previous geotechnical investigation was performed by Terracon for the Fort Lauderdale Courthouse and Parking Garage. The geotechnical engineering report is a draft and was issued on 28 June 2021. The investigation consisted of 11 borings and 7 percolation tests for both the courthouse (located to the west) and for the proposed Parking Garage (located to the east). For the proposed Parking Garage, a total of five borings were performed from depths 50 to 100 feet below ground surface (bgs). Three of the borings (B-4, B-7, and B-11) were drilled within the current limits of the proposed Parking Garage. The other borings were drilled west of the Parking Garage. There were four percolation tests performed within or near the Parking Garage area to a depth of 10 feet. Locations of the previously performed borings can be found on Figures 2A and 2B.

Although outside the limits of the Parking Garage, five borings were drilled to depths of between 150 and 175 feet in an additional geotechnical study for the new courthouse. This additional report was revised by Terracon and is dated 10 November 2021. The latest report can be found in Appendix B.

Below is a summary table generalizing the findings within the overall project site from the revised Terracon report including the Federal Courthouse borings and the Parking Garage borings.

STRATIFICATION SUMMARY FROM TERRACON REPORT

Stratum No.	Stratum Name	Termination Depths (ft)		N-Values		
		Min.	Max	Min.	Max	Average
1	Topsoil/Asphalt	-	-	-	-	-
2	Fill	0.3	6	-	-	-
3	Sand & Sand with Limestone Lenses	2	7.8	0(3)	26	10
4	Upper Limestone	8.6	25	3	38	14
5	Sand & Sand with Limestone Lenses	48.5	48.5	6	42	15
6	Intermediate Limestone	50	70	5	Refusal (2)	32
7	Sand & Sand with Limestone Lenses	93.5	100	3	39	21
8	Lower Limestone 1	150	150	8	Refusal (2)	57
9	Lower Limestone 2	175	175	19	Refusal (2)	65

Notes:

1.)Information in the above table was provided from a Draft Geotechnical Report by Terracon date 28 June 2021.
2.)A reported value of refusal indicates that it would take greater than 50 blows per foot for 6 inches of penetration or less.
3.)A reported value of 0 indicates a weight of hammer (WOH) or weight of rod (WOR) condition.
4.)Surface elevations ranged from el +2.9 to +3.8 ft.
5.)Data summarized is for borings drilled to up to 100 feet. It does not include the deeper borings completed at a later date.

Langan Borings

Two supplemental test borings were performed at the proposed Parking Garage site by Langan. Borings were drilled to a depth of 100 ft below ground surface (bgs). The approximate test boring locations are identified on Figure 2. Standard Penetration Tests (SPT) and sampling were typically performed continuously in the upper 10 ft and at 5 ft intervals thereafter. Our field engineer marked the test boring locations in the field. Prior to performing our field exploration, we called Sunshine State One Call to locate utilities at the site. We also had each boring location cleared using a private utility locating service using ground

penetrating radar (GPR). The ground elevations at each test boring location were estimated based on spot elevations shown on the Paving, Grading, and Drainage plan and ALTA/NSPS Land Survey previously mentioned. The test borings were performed by a specialty drilling subcontractor under our supervision. All geotechnical sampling and documentation were performed by a Langan field engineer. Detailed logs of the subsurface conditions observed at the boring locations are included in Appendix A.

SUBSURFACE CONDITIONS

Generalized Subsurface Conditions

Based on Langan's test borings, the generalized subsurface conditions are summarized in the following table. A generalized subsurface profile for the site is shown on Figure 3.

Stratum Number	Material Description	Approx. Elevation to Top of Stratum (Feet)	Thickness (ft)	Typical SPT N-values (blows/ft)
1	Fill – fine Sand with varying amounts of limerock	3.5 (Existing Grade)	2 to 4 (Avg. = 3.0)	7 to 12 (Avg. = 10)
2	Upper Sand (loose to medium dense)	1.5	0 to 6 (Avg. = 3) (Not present in LB-2)	6 to 15 (Avg. = 9)
3	Upper Limestone (soft to moderately hard)	-0.5 to -3	18.5 to 22.5 (Avg. = 20.5)	4 to 22 (Avg. = 10)
4	Intermediate Sand with trace to some limestone fragments (very loose to loose)	-23	15 to 25 (Avg. = 20)	2 to 15 (Avg. = 8)
5	Intermediate Limestone (very soft to very hard typ. moderately hard)	-38 to -48	25	4 to Refusal (Avg. = 17)
6	Lower Sand with limestone fragments (medium dense to dense)	-63 to -73	10 to 20 (Avg. = 15)	21 to 31 (Avg. = 26)
7	Lower limestone/cemented sand (moderately hard to very hard)	-83	Not determined (Borings were terminated within this stratum)	17 to Refusal (Avg. = 49)

Groundwater

At the boring locations, ground water readings were recorded when it was first encountered at depths of 4.0 to 4.1 ft below existing grade (or an approximate elevation of el -0.6 ft). The groundwater levels will fluctuate seasonally between el +0 and +3 as a function of rainfall and infiltration of the soil.

The Flood Insurance Rate Map (FIRM) number 12011C0557H, effective 18 September 2014, indicates the site is within Zone AE with a base elevation of el +6 ft. Zone AE has a 1% annual chance of flooding and a 26% chance of flooding over 30 years.

PRELIMINARY FOUNDATION EVALUATION

Parking Garage

The 5-to-6-level Parking Garage has a finished ground floor elevation, based on current project documents, at el +4.2 ft, NAVD. The ground floor elevation is set lower than the base flood elevation of el +6 ft. The elevation increases with each floor reaches an elevation high on the fifth floor of el +53.2 ft, NAVD. A sixth floor is not shown on the available project documents, but the garage is referenced as a 5-to-6-level Parking Garage. Based on our assumed loads for the Parking Garage, a shallow foundation system without ground improvement would result in unacceptable settlement. Therefore, a deep foundation support system or a ground improvement program to allow for shallow foundations are deemed the most suitable approaches to support the proposed Parking Garage structure.

Augered-Cast-In-Place (ACIP) Piles

ACIP piles are the most commonly used deep foundation type in South Florida because they can attain relatively high side-shear resistance against the sedimentary rocks (limestones, sandstones, cemented sands) present throughout South Florida, thereby providing higher axial capacities compared to other deep foundation alternatives. The higher side shear is primarily due to the ability to cast the piles in place directly against a roughened surface without using drilling fluids (i.e., bentonite, polymer additives, etc.). ACIP piles develop the majority of their bearing resistance through side shear between the ground and soil-rock bond with only a small percentage of the load being carried in end bearing. Additional advantages of the ACIP piles leading to its preference in the local area are their rapid rate of installation, negligent vibration levels, and relatively low noise levels, all of which are desirable for urban foundation installation applications.

The limestone within the upper 100 ft at the project site is generally a poorly to moderately cemented; however, it can still offer substantial frictional resistance to develop significant axial capacity for the proposed Parking Garage. The upper and intermediate limestone strata can develop suitable axial capacity however, the loose sands between the limestone strata are prone to settlement, specifically Stratum 4. In order to mitigate the concern of settlement, ACIP piles will need to be drilled into the lower limestone strata, below the looser sand pockets.

Ground Improvement - Vibro-Replacement (Stone Columns)

Vibro-replacement (VR, also referred to as Stone Columns) is a commonly used ground improvement technique in the region and throughout Florida. Vibro-replacement essentially densifies and stiffens the weaker ground conditions, improving the soil's load-bearing capacity and reducing settlement. This technique involves the use of a vibratory probe that is extended to the maximum treatment depth weaker soil conditions, followed by placement of crushed stone into the shaft created by the vibratory probe. The placement of the crushed stone is done systematically, compaction the stone as the probe is extracted creating a column of compacted material. For this site, the target zones of improvement are the lower zones of the Stratum 3 Limestone and the very loose to medium dense Stratum 4 sand.

Vibro-replacement can be performed successfully at the subject site; however, due to the harder zones in the upper limestone it is likely that the limestone will need to be pre-drilled at each VR location which will be an increased cost compared to a typical site. To alleviate the settlement concern, ground improvement should extend to at least 2.5B (B being the width of the column footing) below the bottom of footing or to the bottom of the Stratum 4 Sand (el -40 to el -45 ft), whichever is deeper. Based on our experience, a bearing pressure of up to or greater than 8 ksf can be readily achieved with a suitably designed and implemented ground improvement program. A specialty contractor should design a probe diameter, densification, and distribution pattern that will yield a design allowable bearing pressure of at least 8 ksf from

the vibro-replacement method. The improvement depths should extend as noted above. Additionally, the specialty contractor shall design the vibro-replacement to have a limit of 1 inch of total settlement and a differential settlement of ½ inch or less. The specialty contractor should submit a detailed design calculation package and shop drawings indicating the location of all proposed densified sand or stone columns, assumptions, soil parameters, etc.

Before implementation, the vibro-replacement design and layout should be reviewed by us and the structural engineer prior to construction.

General Cost Evaluation

We expect that the vibro-replacement installation will be cheaper in comparison to the ACIP pile installation. However, the total foundation cost may be similar between the two options when including the cost of the pile caps (for deep foundation option) and large footing size (for vibro-replacement option). From experience, we anticipate the size and ultimate volume of reinforced concrete associated with vibro-replacement will be substantially larger than that of efficient pile caps making the options relatively cost comparable.

FOUNDATION RECOMMENDATIONS

5-To-6-Level Parking Garage

Vibro-Replacement (Stone Columns)

Vibro-replacement (stone columns) is an appropriate ground improvement method for the proposed structure based on the subsurface conditions found at the site. This ground improvement technique will densify weaker ground conditions at the bottom of Stratum 3 and within Stratum 4, while also placing compacted columns of crushed stone material, creating a stiffened ground condition. The vibro-replacement support system would be designed by a specialty contractor for a design bearing pressure of 8 ksf or greater and a maximum total settlement of 1 inch. Although the upper limestone is poorly cemented, it is likely that it will need to be predrilled to avoid any refusal conditions before the termination design depth.

ACIP Piles

The proposed 5-to-6-level Parking Garage can be supported on medium length high-capacity ACIP piles embedded into Stratum 5 or Stratum 7. While an appropriate amount of capacity for a structure of this size can be achieved by tipping into Stratum 5/6, tipping into Stratum 7 would achieve a greater capacity while also minimizing the settlement concern. The following table summarizes the design criteria for the ACIP piles consisting of 16-inch-diameter ACIP piles.

These criteria are subject to modification, based on the results of the full-scale load testing program that will need to be implemented for the selected pile tip elevation.

ACIP Pile Design Parameters	16-inch-diameter ACIP Pile	16-inch-diameter ACIP Pile
Compressive Capacity	250 tons	300 tons
Uplift Capacity	125 tons	150 tons
Lateral Capacity(1)	15 tons	15 tons
Recommended Tip Elevation	el -75 feet, NAVD	el -90 feet, NAVD

Minimum Center to Center Spacing	4.0 feet	4.0 feet
Minimum Recommended Compression Steel Reinforcement(2)	5#6 full length	5#6 full length
Minimum Recommended Grout Compressive Strength(3)	8,000 lbs/in^2	9,500 lbs/in^2

Notes:

(1) The lateral capacities presented above are based on approximately 3/8-inch deflection of the pile head, 50% of the compressive axial load acting at the top of the pile, and a p-multiplier of 0.35 to model group effects. The values are based on a fully fixed-head condition. The lateral capacity assumes the top of pile to be at approximately el -1 feet, NAVD. We can provide additional information as it pertains to deflection, shear and induced bending moment with depth upon request by the project Structural Engineer. If additional lateral capacity is required, the 16-inch-diameter could be installed with batters of up to 1:6 considering the diameter and the length of the piles.

(2) The steel reinforcing presented in this table is the recommended minimum reinforcing only. Adequate pile reinforcing must be designed by the structural engineer to resist all axial, bending, tensile, and shear stresses.

(3) The minimum grout compressive strength has been preliminarily specified based upon utilizing 33% of the design compressive strength of the grout only considering FBC permitted allowable stresses for ACIP piles. The project structural engineer should specify the final design compressive strength for the pile grout based upon their final pile design.

Based on our assumed structural loading and the subsurface conditions encountered, we anticipate that a maximum total settlement of the proposed structure supported on the 16-inch-diameter piles will differ depending on the tip elevation selected. If the piles are tipped at el -75 ft, we anticipate the total settlement to be on the order of ¾ to 1¼ inches near the center of the tower with settlement being on the order of 50 percent of these values towards the edges of the structure. If the piles are tipped at el -90 ft, we anticipate the total settlement to be on the order of ½ to ¾ inches near the center of the tower with settlement being on the order of 50 percent of these values towards the edges of the structure.

Pile Spring Constants for 5-to-6-Level Parking Garage

Based on our evaluation of the subsurface conditions and our estimated structural loading, we estimate that the 5-to-6-level Parking Garage podium supported on 16-inch-diameter ACIP piles will vary depending on the chosen tip elevation and pile capacity. Based on this estimated range of Parking Garage settlement, we recommend the use of the following static soil spring constant/axial stiffness values.

Podium Foundation System Alternatives	Static Soil Spring Constant/Axial Stiffness Recommended Initial Design Value
16-inch ACIP Piles (250 tons)	500 kips/inch
16-inch ACIP Piles (300 tons)	750 kips/inch

Floor Slab

Based on the current conceptual plans, the ground level floor will likely be a slab-on-grades. The slab-on-grade can be supported by the current subsurface conditions if proper site preperation is performed or if engineered fill is used.The ground floor slab, supported on grade, can be designed using a modulus of subgrade reaction of between 150 lbs/in^3 after proper site preparation is completed. Site preparation, including removal of any topsoil, as well as any remnant subsurface elements, followed by proof-rolling and engineered fill placement, should be performed as discussed in the following sections.

Support of Miscellaneous Site Ground Features

The near-surface conditions consist of the fill and upper sand with shells (Stratum 1 and Stratum 2). After proper site preparation and surface compaction with a heavy vibratory roller, these strata would be suitable for support of light ground features, such as slabs-on-grade, drives, planters, fountains, utilities, etc.

For these lightly loaded elements, a shallow foundation system can be used. An allowable soil bearing pressure of up to 2,500 psf can be used after proper footing preparation. Footing subgrade shall be compacted to at least 95% of the material's maximum dry density per ASTM 1557 for a depth of 12 inches below the bearing level.

SITE PREPARATION PROCEDURES

The site-preparation work is expected to involve removing asphalt pavement, removing existing or previously abandoned utilities, clearing the site, grubbing, stripping, heavy surface compaction, and placing compacted fill. The following sections present the general requirements for this work; however, technical specifications should be prepared the design-build team.

Demolition

The existing paved parking lot will be demolished, including landscaping islands, etc. Underground utilities, foundations, floor slabs and site improvements should be completely removed from within the areas of the proposed development. In addition, any remnants (if encountered) of previous development at the site should be completely removed.

Site Clearing, Grubbing, and Stripping

All areas of future construction and at least 10 feet beyond should be cleared, grubbed, and stripped. Any abandoned underground utilities, buried remnants of former development or features, or other buried deleterious materials where residential structures will be constructed should be completely removed.

Construction Dewatering

Properly sloped or benched open-cut excavations, meeting the requirements of the Occupational Safety and Health Administration (OSHA) are expected to be feasible for shallow pile caps or footings above the groundwater table where distances are available to slope or bench the excavations and not adversely affect off-site structures and features or on-site construction operations. In excavations that will be within the upper sand fill and within the shallow groundwater table, localized dewatering and shoring or with shallower slopes. Where either off-site or on-site constraints do not permit sloping or benching of excavations, properly designed and constructed support of excavation systems (i.e., sheeting and/or shoring systems) should be utilized. Perimeter support of excavation systems should also be considered to protect adjacent structures during foundation installation and construction. Due to the presence of the shallow limestone, sheet piles will likely not be viable as a support of excavation system. Alternatively, permeation grouting could potentially be used as a means to stabilize slopes in the upper fill/sand zone of concern where sheet piles are not considered feasible. In deeper excavations within the upper limestone, near vertical cuts may be achievable in the depth range of the limestone. However, it is important to perform test sections within the upper limestone to ensure the safety of the vertical cuts.

Excavations below the groundwater level will be necessary to reach the bottom elevations of the larger pile caps. Dewatering in similar subsurface conditions has been successfully accomplished using high-capacity sump pumping. Due to the undulating and thin nature of the upper Stratum 3 Limestone stratum and prior experience, which has indicated the top of the limestone contains sand filled slots or zones of sand,

dewatering and excavation support techniques should take into consideration this potential subsurface condition. We suggest the feasibility of dewatering open-cut excavations as well as determining the appropriate dewatering technique be evaluated by performing field test pit excavations and pumping tests, which will allow the prospective contractor to observe both excavation stability as well as rate of groundwater inflow into the excavations.

Based on our experience, we expect that on-site disposal of the pumped water (injection wells) will be required, and that special permits will be required for the wells. Reduction of the turbidity of the discharged water is recommended and is typically accomplished through the use of temporary sedimentation tanks. A design of the proposed dewatering system should be prepared by the prospective dewatering contractor including the equipment, layout, strategy, and anticipated pumping capacity. In addition, the general contractor should prepare an excavation procedure and excavation-support plan, if necessary.

The need for construction dewatering and the proposed use of stormwater injection wells will also require dewatering permits from several environmental agencies. Contaminated soil and groundwater could impact proposed excavation and dewatering activities at the site. Langan has been engaged as the project environmental consultant and has performed a Phase I study. The Phase I was issued as a draft and is dated 21 February 2024. The study did not identify any Recognized Environmental Conditions (RECs), Controlled Recognized Environmental Conditions (CRECs), Historical Recognized Environmental Conditions (HRECs), De Minimis Conditions, nor Significant Data Gaps in their findings. For more details refer to the Phase I report. For permitting related questions they can be referred to our environmental team. Additionally, Langan has experience in and can assist the Owner in the dewatering permitting process.

We also suggest that consideration be given to the installation of temporary injection wells specifically for injection of construction dewatering, instead of counting on the permanent stormwater injection wells. It has been our experience that injection wells used during construction for disposal of dewatering effluent have to be re-developed and "cleaned out" at the end of construction. The re-developed wells may not regain the full capacities assigned to them prior to their use for disposal of construction dewatering effluent, and additional wells may need to be installed if the capacities are reduced significantly.

Engineered Fill and Backfill

Fill will be needed to establish the finished subgrade elevations of the structures and backfill around foundations. Engineered fill should be compacted to field-dry densities not less than 95% of the material's maximum dry density as determined by the Modified Compaction Test (ASTM D-1557) and within ±3% of the material's optimum moisture content. The engineered fill and backfill material must be placed under qualified oversight and each lift must be tested to ensure conformance with the project specifications. Engineered fill should consist of inorganic, granular soils free from deleterious materials and should be preapproved by our firm. The excavated sandy materials that will be generated from the excavations for the shallow footings (i.e., after crushing of any large limestone fragments, and removal of construction debris, silt, roots, and other deleterious materials, if encountered) is expected to be acceptable for reuse as backfill and fill. If material other than on-site material is to be used as fill, it should be submitted for review and preapproval by the geotechnical engineer of record (GEOR). Imported fill should contain less than 15% passing the No. 200 sieve and should consist of a mixture of sand and crushed limestone.

The engineered fill and backfill should be placed in lifts not thicker than 12 inches, and each lift should be compacted to the compaction criteria mentioned above, or to the project specified density, if more stringent.

In restricted areas where a small compactor must be used, the lift thickness should be reduced to 6 to 9 inches, depending on the compaction equipment used by the contractor.

If backfilling is required near or below the elevation of the natural groundwater table, compacted ¾-inch filter stone (No. 57 stone, ASTM C 33) or lean concrete should be used in lieu of the abovementioned materials subject to the approval by the geotechnical engineer. If soil fill is placed above filter stone, a properly designed geosynthetic should be placed on the surface of the filter stone before placing soil fill above. Additionally, non-vibratory compaction of engineered fill should be considered for the first lift of engineered fill placed near the natural groundwater level, thus assisting with attaining compaction and limiting the potential for the groundwater level to affect the first lift of engineered fill. All imported fill material shall be certified as environmentally free of contamination.

Backfilling Over Utility Lines

All utilities should be installed according to the requirements of the civil engineering drawings and specifications. When backfilling over any utility line, fill should be placed in lifts and compacted to the requirements discussed above for engineered fill. The loose lift thickness is expected to vary between 6 and 12 inches, based on the compaction equipment used by the contractor. Final lift thicknesses should be determined once the type of equipment to be used is known. The backfill to be used over utility lines should meet the requirements for engineered fill presented in the previous section, as well as the requirements of the project civil engineer and pipe manufacturer.

Paved Areas

Pavement sections for any proposed on-grade parking and driveway areas should be designed to meet local city and/or county requirements. We anticipate that most paved areas will be subjected to the relatively light-axle loads associated with standard vehicles with limited areas (i.e., delivery and trash pick-up areas) subjected to relatively high-axle loads associated with trucks.

The upper 12 inches of pavement subgrade should consist of in-situ soil or imported engineered fill material meeting the requirements for subgrade material per the project civil engineer's criteria in terms of material type and density and have a minimum Limerock Bearing Ratio (LBR) of 40. Engineered fill material used for pavement subgrade should be compacted to at least 95% of the material's maximum dry density (ASTM D 1557) or higher if required by the project civil engineer, and within ±3% of the material's optimum moisture content. If the in-situ sandy fill does not achieve the LBR 40 criteria, our experience is the upper 8 inches of existing subgrade could be mixed with 4 inches of limerock fill to achieve stabilized subgrade.

Limerock for use in the pavement base, or for subgrade stabilization (if necessary), should consist of approved Florida Department of Transportation (FDOT) crushed limerock with a minimum LBR of 100. Pavement base should be compacted to at least 98% of the material's maximum dry density, or higher if required by the project civil engineer, and within ±3% of the material's optimum moisture content.

OTHER CONSIDERATIONS

Test Piles and Load Tests

General

A load-test program must be performed to (1) verify the design criteria for the estimated capacities of the selected foundation elements well in advance of production foundation installation, and (2) identify any constructability issues that should be evaluated and resolved before the start of production work. Load tests should be performed for the selected design of either the vibro-replacement stone columns or ACIP piles.

Stone Columns (Vibro-Replacement)
A compression load test should be performed to verify the design by the speciality consultant. The compression load test should be a conventional plate load test loaded up to 1.5 times the design load. The stone columns to be tested should be at non-production locations and follow appropriate ASTM load test procedures.

Auger-Cast-In-Place (ACIP) Piles
Considering the anticipated smaller diameter design pile, the 5-to-6-level Parking Garage ACIP piles will likely be load tested with a conventional top-down load test rather than a bi-axial testing technique. For the ACIP pile option, a tension and lateral test should also be performed. If tension loads are deemed to be negible the tension test can be omited.

The compression load tests should be conducted to at least twice the design compressive capacity of the piles. The tension load test should be performed to at least twice the design uplift capacity of the piles. A lateral load test should be performed to at least two times the design fixed-head lateral capacity. The applicable ASTM and building code requirements shall be followed for the performance of these load tests. The ASTM Standard Methods that apply to each of these test types are ASTM D-1143 (compression load test), ASTM D-3689 (tension load test) and ASTM D-3966 (lateral load test). Overloading to 2.5 to 3.0 times the design loads using quick test procedures is recommended.

Test piles should not be installed at production locations; however, indicator piles can be installed at production locations. In addition, any necessary reaction piles can be installed at either non-production or production locations. If reaction piles are installed at production locations, the reinforcement within the reaction piles shall include the production reinforcement cage (at a minimum), in addition to any reinforcement required for the purpose of load testing.

Technical Specifications
Technical specifications should to be prepared by the GEOR for the design build team, to outline the requirements for the deep-foundation production and load-test programs. The specifications should assure that design intent is properly addressed by the load tests, and the required data is obtained from the load tests to properly evaluate the results and correlate them to the design recommendations.

Settlement and Vibration Monitoring
The settlement of the Parking Garage should be monitored during construction to allow the design and construction teams to confirm the anticipated settlement of the structure and provide information to the design/construction team as construction progresses. Vibration monitoring should also be performed during ACIP or vibro-replacment activites, surface vibratory compaction, or other vibration-inducing construction activities in the immediate vicinity of the adjacent structure to confirm these activities do not adversely impact the off-site structures. The monitoring should be accomplished in a pro-active manner with established alert and alarm threshold levels.

LIMITATIONS
This design criteria geotechnical engineering study report, including geotechnical information (soil boring data, etc.), are provided for reference only. This report is provided to assist prospective design-build contractor and their design teams during the bid and proposal phase. Prospective design-build contractors shall make their own interpretations, evaluations, conclusions, and design recommendations for this project.

Environmental issues (such as permitting or potentially contaminated soil and groundwater) are outside the scope of this study and should be addressed in a separate evaluation by the project Environmental Consultant.

FL Registry No. 6601

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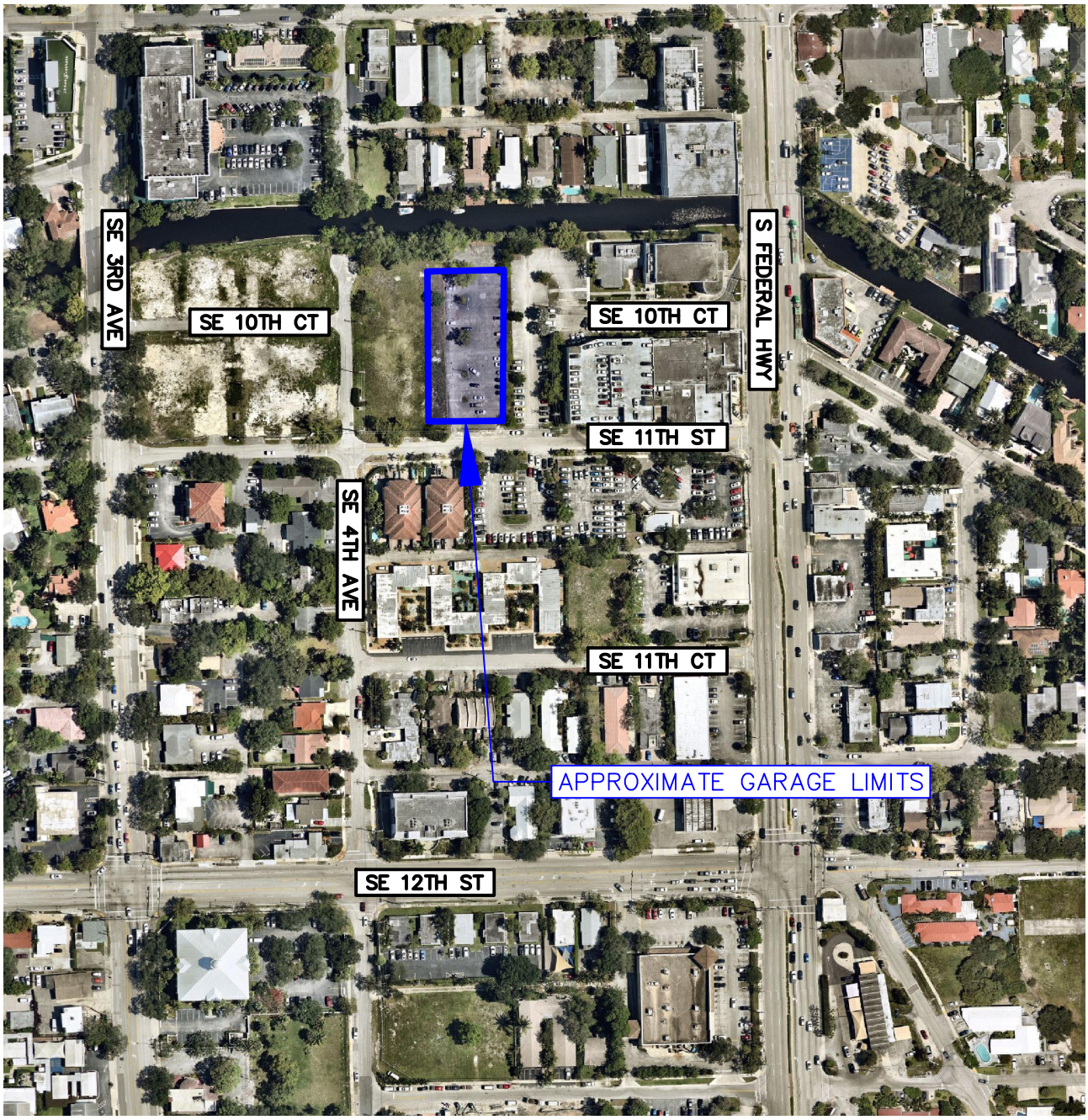
FIGURES



NOTES:

1. AERIAL IMAGERY WAS ACQUIRED ON 04/23/2024 VIA NEARMAP SERVICES DATED 05/02/2023.

250 0 125 250

SCALE: 1 INCH = 250 FEET

LANGAN Langan Engineering and Environmental Services, LLC 110 East Broward Boulevard, Suite 1500 Fort Lauderdale, FL 33301 T: 954.320.2100 F: 954.320.2101 www.langan.com FBPE Registry No. 00006601/LB8172/LB8198	Project FEDERAL COURTHOUSE PARKING GARAGE NEC OF SE 4TH AVE AND SE 11TH ST FORT LAUDERDALE BROWARD FLORIDA	Drawing Title SITE VICINITY PLAN	Project No. 330130301 Date MAY 2024 Drawn By EMP Checked By AT	Drawing No. FIG. 1

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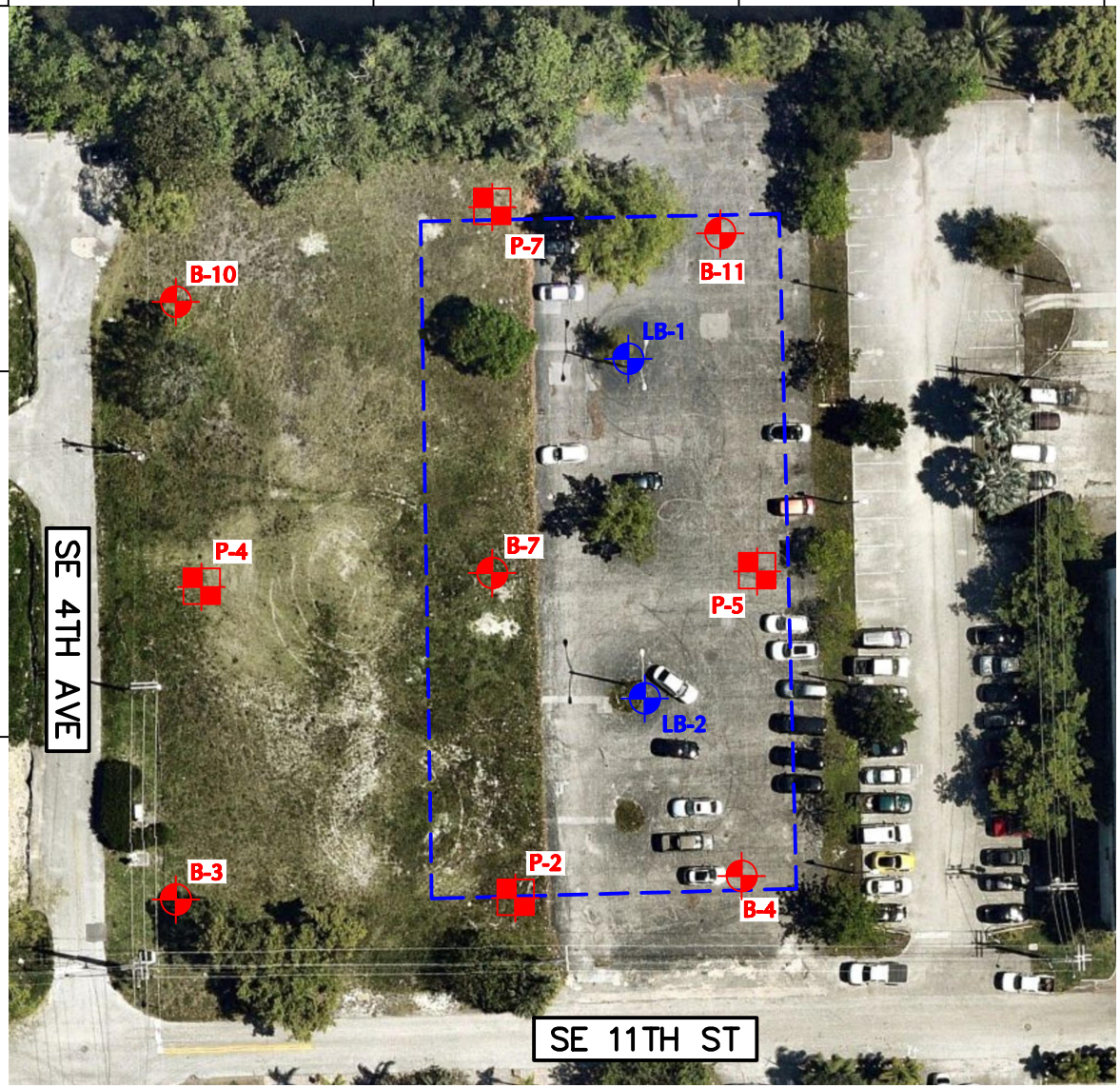
Filename: \\langan.com\data\FTL\data3\330130301\Project Data_Discipline\Geotechnical\OpenGround Cloud\FIG. 1 - Site Vacitnity Plan - Rev.1.dwg Date: 5/10/2024 Time: 10:10 User: atoscano Style table: Langan.stb Layout: FIG. 1



NOTES:

LB-# — LANGAN TEST BORING LOCATION AND IDENTIFICATION

LB-# — TEST BORING LOCATION AND IDENTIFICATION PERFORMED BY TERRACON (2021)

P-# — PERCOLATION TEST LOCATION AND IDENTIFICATION PERFORMED BY TERRACON (2021)

APPROXIMATE PARKING GARAGE LIMITS

LEGEND:

1. ALL BORING AND PERCOLATION TEST LOCATIONS SHOWN ARE APPROXIMATE.
2. AERIAL IMAGERY WAS ACQUIRED ON 04/23/2024 VIA NEARMAP SERVICES DATED 05/02/2023.
3. TEST BORING AND PERCOLATION TEST LOCATIONS BY OTHERS WERE REPRODUCED FROM "NEW COURTHOUSE IN FORT LAUDERDALE GEOTECHNICAL ENGINEERING REPORT" BY TERRACON CONSULTANTS, INC. AND DATED 11/10/2021.
4. PROPOSED PARKING GARAGE LIMITS REPRODUCED FROM SLIDE 1 OF THE GSA PRESENTATION DATED 23 FEBRUARY 2024.

60 0 20 40 60
SCALE: 1 INCH = 60 FEET

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FBPE Registry No. 00006601/LB8172/LB8198

Project: FEDERAL COURTHOUSE PARKING GARAGE
NEC OF SE 4TH AVE AND SE 11TH ST
FORT LAUDERDALE
BROWARD FLORIDA

Drawing Title: GEOTECHNICAL EXPLORATION PLAN - AERIAL

Project No.	330130301
Date	MAY 2024
Drawn By	EMP
Checked By	AMT

Drawing No. FIG. 2A

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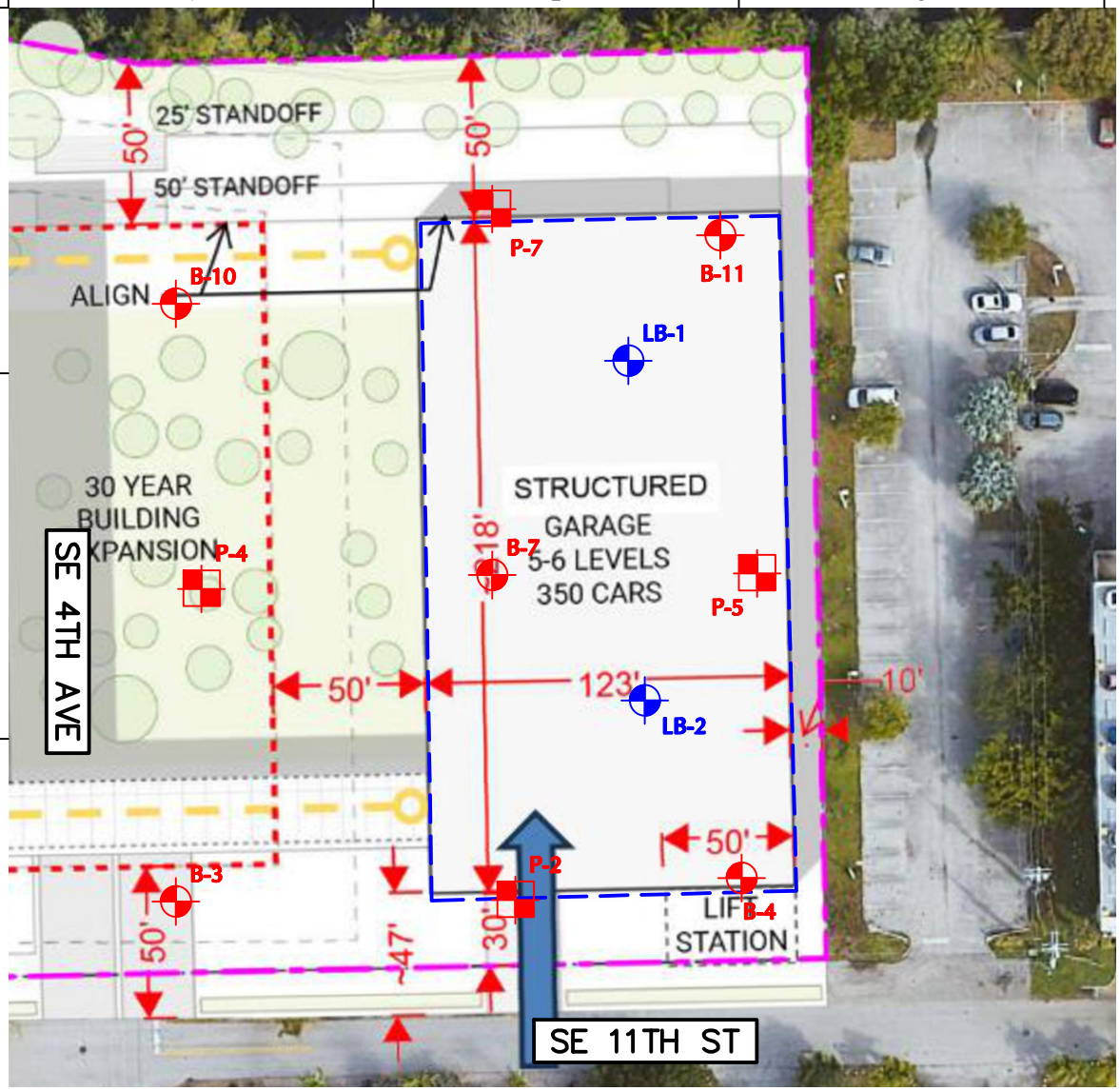
Filename: \\langan.com\data\FTL\data3\330130301\Project Data_Discipline\Geotechnical\OpenGround Cloud\FIG. 2 - Geotechnical Exploration Plan - Revised - Rev.1.dwg Date: 5/10/2024 Time: 09:55 User: atoscano Style: Langan.ctb Layout: FIG. 2a



NOTES:

LB-# — LANGAN TEST BORING LOCATION AND IDENTIFICATION

LB-# — TEST BORING LOCATION AND IDENTIFICATION PERFORMED BY TERRACON (2021)

P-# — PERCOLATION TEST LOCATION AND IDENTIFICATION PERFORMED BY TERRACON (2021)

APPROXIMATE PARKING GARAGE LIMITS

LEGEND:

1. ALL BORING AND PERCOLATION TEST LOCATIONS SHOWN ARE APPROXIMATE.
2. TEST BORING AND PERCOLATION TEST LOCATIONS BY OTHERS WERE REPRODUCED FROM "NEW COURTHOUSE IN FORT LAUDERDALE GEOTECHNICAL ENGINEERING REPORT" BY TERRACON CONSULTANTS, INC. AND DATED 11/10/2021.
3. PROPOSED PARKING GARAGE LIMITS AND SITE PLAN REPRODUCED FROM SLIDE 1 OF THE GSA PRESENTATION DATED 23 FEBRUARY 2024.

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SCALE: 1 INCH = 60 FEET

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Project: FEDERAL COURTHOUSE PARKING GARAGE
NEC OF SE 4TH AVE AND SE 11TH ST
FORT LAUDERDALE
BROWARD FLORIDA

Drawing Title: GEOTECHNICAL EXPLORATION PLAN - SITE PLAN

Project No. 330130301
Date MAY 2024
Drawn By EMP
Checked By AMT

Drawing No. FIG. 2B

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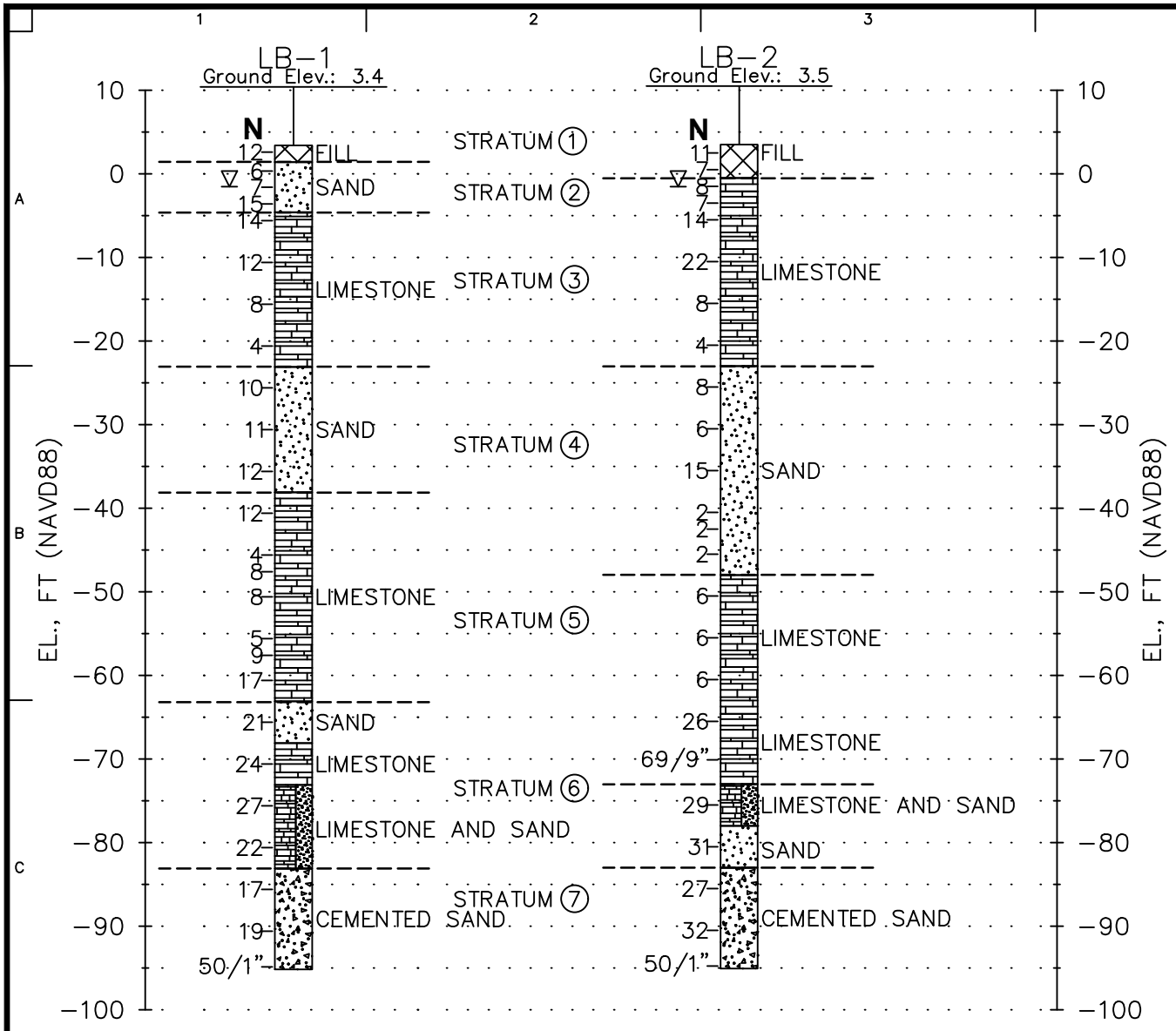
Filename: \\langan.com\data\FTL\data3\330130301\Project Data_Discipline\Geotechnical\OpenGround Cloud\FIG. 2 - Geotechnical Exploration Plan - Revised - Rev.1.dwg Date: 5/10/2024 Time: 09:59 User: atoscano Style: Langan.ctb Layout: FIG. 2b



LEGEND:

N	STANDARD PENETRATION RESISTANCE N–VALUE (BLOWS/FT)
▽	WATER LEVEL WHEN FIRST ENCOUNTERED
Ground Elev.: 3.4	GROUND SURFACE ELEVATION AT THE TIME OF BORING

NOTES:

1. THE PROFILE SHOWS ONLY THE GENERALIZED SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. VARIATION IN SUBSURFACE CONDITIONS SHOULD BE EXPECTED BETWEEN BORINGS. SEE BORING LOGS FOR DETAILED DESCRIPTION OF CONDITIONS ENCOUNTERED AT EACH LOCATION.
2. SPT N–VALUES SHOWN ARE BASED ON UNCORRECTED AUTOMATIC HAMMER BLOW COUNTS. AUTOMATIC HAMMER SPT N–VALUES MAY BE ADJUSTED TO STANDARD N60 VALUES BY APPLYING A CORRECTION FACTOR OF 1.24 PER THE FDOT AND FOUNDATION HANDBOOK.
3. ALL ELEVATIONS SHOWN ARE IN FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

GENERALIZED SUBSURFACE PROFILE

VERTICAL SCALE: 1" = 20'; HORIZONTAL SCALE: N.T.S

20 0 5 10 20

SCALE: 1 INCH = 20 FEET

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FBPE Registry No. 00006601/LB8172/LB8198

Project	FEDERAL COURTHOUSE PARKING GARAGE NEC OF SE 4TH AVE AND SE 11TH ST FORT LAUDERDALE BROWARD FLORIDA
Drawing Title	GENERALIZED SUBSURFACE PROFILE
Project No.	330130301
Date	MAY 2024
Drawn By	EMP
Checked By	AMT
Drawing No.	FIG. 3

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Filename: \\langan.com\data\FTL\data3\330130301\Project Data_Discipline\Geotechnical\OpenGround Cloud\FIG. 3 - Generalized Subsurface Profile - Rev.1.dwg Date: 5/10/2024 Time: 10:15 User: atosca Style: Langan.stb Layout: FIG. 3

APPENDIX A

BORING LOGS

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Log of Boring **LB-1** Sheet 1 of 3

Project: Federal Courthouse Parking Garage		Project No.: 330130301	
Location: 320 SE 10th Ct, Fort Lauderdale, Florida		Elevation and Datum: Approx. el. 3.4 (NAVD 88)	
Drilling Company: Florida Geotechnical Drilling		Date Started: 4/23/2024	Date Finished: 4/23/2024
Drilling Equipment: Mobile B-57 Truck-Mounted Drill Rig		Completion Depth: 98.6 ft	Rock Depth: N/A
Size and Type of Bit: 2in Dual-Cone Roller Bit and 3in Casing Bit		Number of Samples: Disturbed 25	Undisturbed 0 / Core 0
Casing Diameter (in): 3.00	Casing Depth (ft): 98.0	Water Level (ft.): First ▽ 4.0	Completion ▼ N/A / 24 HR. ▼ N/A
Casing Hammer: N/A	Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Andy Garcia	
Sampler: 2in OD Split Spoon			
Sampler Hammer: Automatic	Weight (lbs): 140 / Drop (in): 30	Field Engineer: Esteban Miranda Pinzon	

Elev. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
+3.4									
	Light tan to light gray fine SAND, trace limerock [FILL]			S-1	SS	18	8 6 6	12	
+1.4	Brown fine SAND		2	S-2	SS	17	2 2 4	6	
	Brown fine SAND, trace roots		4	S-3	SS	24	2 4 3	7	
	Brown fine SAND, trace limestone		6	S-4	SS	24	8 7 8	15	
-4.6	Light tan to light brown LIMESTONE, some sand		8	S-5	SS	17	5 8 6	14	
			10				10		Advanced casing to 13 ft. Moderate drilling. Good circulation.
			12						
	Light tan to light brown LIMESTONE, some sand		14	S-6	SS	15	4 6 6	12	
			16				9		Advanced casing to 18 ft. Moderate drilling. Good circulation.
	Light tan to light brown LIMESTONE, trace sand		18	S-7	SS	11	4 4 4	8	
			20				4		Advanced casing to 23 ft. Moderate drilling. Good circulation.
			22						
	Light tan to light brown LIMESTONE, trace sand		24	S-8	SS	4	2 2 2	4	
-23.1			26				4		Advanced casing to 28 ft. Easy drilling. Good circulation.
	Light tan fine SAND, trace limestone		28	S-9	SS	11	4 4 6	10	
			30				5		Advanced casing to 33 ft. Easy drilling. Poor circulation.
			32						
	Light tan fine SAND, trace limestone		34	S-10	SS	12	4 5 6	11	
			36				5		Advanced casing to 38 ft. Easy drilling. Poor circulation.

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Log of Boring **LB-1** Sheet 2 of 3

Project	Project No.
Federal Courthouse Parking Garage	330130301
Location	**Elevation and Datum**
320 SE 10th Ct, Fort Lauderdale, Florida	Approx. el. 3.4 (NAVD 88)

Elev. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
-32.6									
	Light tan fine SAND		38	S-11	SS	13	6 6 6 9	12	
			40						Advanced casing to 43 ft. Moderate drilling. Poor circulation.
-38.1									
	Light tan LIMESTONE, some sand		42						
			44	S-12	SS	11	10 6 6 4	12	
			46						Advanced casing to 48 ft. Moderate drilling. Poor circulation.
	Light tan to light brown LIMESTONE, trace sand		48	S-13	SS	11	4 2 2 6	4	
	Light tan to light brown LIMESTONE, some sand		50	S-14	SS	11	4 3 5 2	8	
			52						Advanced casing to 53 ft. Moderate drilling. Poor circulation.
	Light tan to light brown LIMESTONE, trace sand		54	S-15	SS	7	4 4 4 4	8	
			56						Advanced casing to 58 ft. Moderate drilling. Poor circulation.
	Light tan to light brown LIMESTONE, trace sand		58	S-16	SS	9	5 2 3 8	5	
	Light tan to light brown LIMESTONE, little sand		60	S-17	SS	13	6 5 4 8	9	
			62						Advanced casing to 63 ft. Moderate drilling. Poor circulation.
	Light tan LIMESTONE, some sand		64	S-18	SS	14	6 9 8 9	17	
									Advanced casing to 68 ft. Easy drilling. Poor circulation.
-63.1			66						
	Light gray fine SAND, little limestone		68	S-19	SS	11	6 10 11 11	21	
			70						Advanced casing to 73 ft. Easy to moderate drilling. Poor circulation.
-68.1			72						
	Light gray LIMESTONE, some sand		74	S-20	SS	16	10 10 14 11	24	
									Advanced casing to 78 ft. Easy to moderate drilling. Poor circulation.
-73.1			76						
	Light gray fine SAND and LIMESTONE		78	S-21	SS	19	8 14 13 19	27	
			80						Advanced casing to 83 ft. Moderate drilling. Poor circulation.

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Log of Boring **LB-1**

Project	Project No.
Federal Courthouse Parking Garage	330130301
Location	**Elevation and Datum**
320 SE 10th Ct, Fort Lauderdale, Florida	Approx. el. 3.4 (NAVD 88)

Elev. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
-77.6									
	Light gray fine SAND and LIMESTONE		82						
			84	S-22	SS	17	8 10 12 17	22	Advanced casing to 88 ft. Moderate to hard drilling. Poor circulation.
-83.1			86						
	Light gray CEMENTED SAND, some sand		88	S-23	SS	11	8 9 8 9	17	
			90						Advanced casing to 93 ft. Moderate drilling. Poor circulation.
	Light gray CEMENTED SAND, some sand		92						
			94	S-24	SS	20	6 9 10 11	19	
			96						Advanced casing to 98 ft. Hard drilling. Poor circulation.
-95.2	Light gray CEMENTED SAND		98	S-25	SS	4	49 50/1"	50/1"	
	Boring terminated at 98.6ft.		100						
			102						
			104						
			106						
			108						
			110						
			112						
			114						
			116						
			118						
			120						
			122						
			124						
			126						

LANGAN

Log of Boring **LB-2** Sheet 1 of 3

Project: Federal Courthouse Parking Garage		Project No.: 330130301	
Location: 320 SE 10th Ct, Fort Lauderdale, Florida		Elevation and Datum: Approx. el. 3.5 (NAVD 88)	
Drilling Company: Florida Geotechnical Drilling		Date Started: 4/22/2024	Date Finished: 4/22/2024
Drilling Equipment: Mobile B-57 Truck-Mounted Drill Rig		Completion Depth: 98.6 ft	Rock Depth: N/A
Size and Type of Bit: 2in Dual-Cone Roller Bit and 3in Casing Bit		Number of Samples: Disturbed 24	Undisturbed 0 / Core 0
Casing Diameter (in): 3.00	Casing Depth (ft): 98.0	Water Level (ft.): First ▽ 4.1	Completion ▼ N/A / 24 HR. ▼ N/A
Casing Hammer: N/A	Weight (lbs): N/A / Drop (in): N/A	Drilling Foreman: Andy Garcia	
Sampler: 2in OD Split Spoon			
Sampler Hammer: Automatic	Weight (lbs): 140 / Drop (in): 30	Field Engineer: Esteban Miranda Pinzon	

Elev. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
+3.5	Light tan to light gray fine SAND, trace limerock [FILL]			S-1	SS	21	4 5 6 10	11	
	Light tan to light brown fine SAND, little limerock [FILL]		2	S-2	SS	18	6 4 3 7	7	
-0.5	Light tan to light brown LIMESTONE, some sand		4	S-3	SS	16	5 4 4 6	8	
	Light tan to light brown LIMESTONE, trace sand		6	S-4	SS	15	5 3 4 4	7	
	Light tan LIMESTONE, some sand		8	S-5	SS	13	6 8 6 10	14	
			10						Advanced casing to 13 ft. Moderate drilling. Good circulation.
	Light tan LIMESTONE, trace sand		12						
			14	S-6	SS	14	8 12 10 12	22	
			16						Advanced casing to 18 ft. Moderate drilling. Good circulation.
	Light tan LIMESTONE, trace sand		18	S-7	SS	10	5 4 4 4	8	
			20						Advanced casing to 23 ft. Moderate drilling. Poor circulation.
	Light tan LIMESTONE, trace sand		22						
			24	S-8	SS	7	3 2 2 3	4	
			26						Advanced casing to 28 ft. Easy drilling. Poor circulation.
-23.0	Light tan fine SAND, trace limestone		28	S-9	SS	10	4 4 4 6	8	
			30						Advanced casing to 33 ft. Easy drilling. Poor circulation.
	Light tan fine SAND		32						
			34	S-10	SS	12	2 4 2 6	6	
			36						Advanced casing to 38 ft. Easy drilling. Poor circulation.

Template: Log-BH-GEO-FLA; Strip: BH-GEO-FLA (4); Printed on 05/02/2024

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Log of Boring **LB-2** Sheet 2 of 3

Project	Project No.
Federal Courthouse Parking Garage	330130301
Location	**Elevation and Datum**
320 SE 10th Ct, Fort Lauderdale, Florida	Approx. el. 3.5 (NAVD 88)

Elev. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
-32.5	Light tan fine SAND		38	S-11	SS	14	4 9 6 10	15	
			40						Advanced casing to 43 ft. Easy drilling. Poor circulation.
			42						
	Light gray fine SAND		44	S-12	SS	19	1 1 1 2	2	
	Light gray fine SAND, some limestone		46	S-13	SS	23	1 1 1 1	2	
									Advanced casing to 48 ft. Easy drilling. Poor circulation.
	Light gray fine SAND, some limestone		48	S-14	SS	16	3 1 1 2	2	
-48.0			50						Advanced casing to 53 ft. Easy to moderate drilling. Poor circulation.
	Light tan LIMESTONE, trace sand		52						
			54	S-15	SS	10	2 3 3 3	6	
			56						Advanced casing to 58 ft. Moderate drilling. Poor circulation.
	Light tan LIMESTONE, trace sand		58	S-16	SS	8	3 2 4 4	6	
			60						Advanced casing to 63 ft. Moderate drilling. Poor circulation.
	Light tan LIMESTONE, some sand		62						
			64	S-17	SS	12	1 5 1 7	6	
-63.0			66						Advanced casing to 68 ft. Moderate drilling. Poor circulation.
	Light gray LIMESTONE, some sand		68	S-18	SS	16	8 12 14 15	26	
			70						Advanced casing to 73 ft. Moderate drilling. Poor circulation.
	Light gray LIMESTONE, trace sand		72						
			74	S-19	SS	11	17 50/3" 19	69/9"	
-73.0			76						Advanced casing to 78 ft. Easy to moderate drilling. Poor circulation.
	Light gray fine SAND and LIMESTONE		78						
			80	S-20	SS	15	27 15 14 15	29	Advanced casing to 83 ft. Easy to moderate drilling. Poor circulation.

Template: Log-BH-GEO-FLA; Strip: BH-GEO-FLA (4); Printed on 05/02/2024

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Log of Boring **LB-2**

Project	Project No.
Federal Courthouse Parking Garage	330130301
Location	**Elevation and Datum**
320 SE 10th Ct, Fort Lauderdale, Florida	Approx. el. 3.5 (NAVD 88)

Elev. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.)
-77.5									
-78.0			82						
	Light gray fine SAND, trace limestone		84	S-21	SS	10	9 11 20 28	31	Advanced casing to 88 ft. Moderate drilling. Poor circulation.
-83.0			86						
	Light gray CEMENTED SAND, trace sand		88	S-22	SS	13	12 14 13 12	27	
			90						Advanced casing to 93 ft. Moderate to hard drilling. Poor circulation.
	Light gray CEMENTED SAND, some sand		92						
			94	S-23	SS	19	24 18 14 18	32	
			96						Advanced casing to 98 ft. Hard drilling. Poor circulation.
-95.1	Light gray CEMENTED SAND		98	S-24	SS	6	34 50/1"	50/1"	
	Boring terminated at 98.6ft.		100						
			102						
			104						
			106						
			108						
			110						
			112						
			114						
			116						
			118						
			120						
			122						
			124						
			126						

APPENDIX B

TERRACON REPORT

Terracon GeoReport

Geotechnical Engineering Report

New Courthouse in Fort Lauderdale
Fort Lauderdale, FL
September 23, 2021 / Revised November 10, 2021
Terracon Project No. 34215061

Prepared for:
GSA
Nashville, TN

Prepared by:
Terracon Consultants, Inc.
Fort Lauderdale, FL

September 23, 2021 / Revised November 10, 2021

Terracon GeoReport

GSA
801 Broadway, Suite C113
Nashville, TN 34203

Attn: Mr. Anthony Fontanetta
P: (615) 474-4179
E: Anthony.fontanetta@gsa.gov

Re: Geotechnical Engineering Report
New Courthouse in Fort Lauderdale
Along SE 11th Street between SE 3rd Avenue and S Federal Highway
Fort Lauderdale, FL
Terracon Project No. 34215061

Dear Mr. Fontanetta:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P34215018 dated March 3, 2021 with CEMS and the supplemental services authorized by GSA on August 12, 2021 .This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations and floor slabs for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have concerning this report or if we may be of further service, please contact us.

HUGO E SOTO LICENSE No. 36440 STATE OF FLORIDA PROFESSIONAL ENGINEER

Sincerely,
Terracon Consultants, Inc.

Nicholas Mata, P.E.
Project Engineer

Hugo Soto, P.E.
Principal
Florida PE #: 36440

REPORT TOPICS

ATTACHMENTS

REPORT SUMMARY

Topic	Overview Statement
	The project consists of the construction of a 12-story 223-foot-tall Courthouse Building. The footprint of the building is approximately 140 feet by 170 feet in plan view. Extensions of the building are planned on the north and west sides of the structure and range in height from 33 feet to 38 feet. In addition, the project consist of the construction of a six (6)-story, 55-foot-tall Parking Garage. The parking garage measures approximately 225 feet by 125 feet in plan view. In general, the geotechnical exploration performed at the project site encountered topsoil or asphalt underlain by fill and varying layers of sand, sand with limestone lenses and layers, and limestone. Completely remove existing foundations and prepare the site according to the Section. **Augered Cast-in-Place (ACIP) Piles:** Courthouse Building We recommend the Courthouse Building be supported on 30-inch-diameter ACIP piles extending 140 feet below existing grades. We estimate that 30-inch-diameter ACIP piles will provided an allowable compression capacity of 750 tons and an allowable uplift capacity of 375 tons. In addition, 18-inch-diameter ACIP piles can be used extending 90 feet below existing grade. We estimate that 18-diameter ACIP piles will provide an allowable compression capacity of 200 tons and an uplift capacity of 100 tons. Parking Garage We recommend the Parking Garage be supported on 18-inch-diameter piles extending 90 feet below existing grades. We estimate that 18-inch-diameter ACIP piles will provided an allowable compression capacity of 200 tons and an allowable uplift capacity of 100 tons. The lateral capacity for 18-inch-diameter- and 30-inch-diameter-ACIP piles are provided. The design recommendations are subject to modification based on the results of the load testing program that will be necessary prior to production pile installation. Floor slabs can be supported at grade following the recommendation in the Section. The ground floor slab can be supported structurally by deep foundations. Design recommendations for a 14-inch-diameter ACIP pile are provided. Shallow foundations bearing on existing or imported granular soils or on the limestone formation are applicable: Allowable bearing pressure = 3,000 psf. Expected settlements: 1-inch total, ½-inch differential None This section contains important information about the limitations of this geotechnical engineering report.

This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.

Geotechnical Engineering Report
New Courthouse in Fort Lauderdale
Along SE 11th Street between SE 3rd Avenue and S Federal Highway
Fort Lauderdale, FL
Terracon Project No. 34215061
September 23, 2021 / Revised November 10, 2021

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed Fort Lauderdale Courthouse project to be located at Along SE 11th Street between SE 3rd Avenue and S Federal Highway in Fort Lauderdale, FL. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Demolition considerations
- Excavation considerations
- Foundation design and construction
- Floor slab design and construction
- Seismic site classification per IBC
- Lateral earth pressures
- Hydraulic Conductivity (K-Value)

The geotechnical engineering Scope of Services for this project was completed in two phases. Phase 1 included the advancement of 18 test borings to depths ranging from approximately 10 to 100 feet below existing site grades. In addition, seven (7) percolation tests were completed at a depth of 10 feet below existing grades. Phase 2 included the advancement of five (5) test borings to depths ranging from approximately 150 feet to 175 feet.

Maps showing the site and boring locations are shown in the and sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs in the section.

This geotechnical report has been completed in general accordance with the 2021 International Building Code, and Section 7 of the 2016 American Society of Civil Engineers standard and the 2021 Florida Building Code (where applicable).

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located along Southeast 11th Street between Southeast 3rd Avenue and South Federal Highway in Fort Lauderdale, FL. Latitude: 26°6'35.71"N Longitude: 80° 8'20.91"W See
Existing Improvements	The area of the proposed courthouse building is currently occupied by one (1) two-story structure in the central portion of the site and numerous one-story structures in the western and northern portions of the site. The area of the proposed parking garage in the eastern half of the site is currently occupied by a large grass-covered are and asphalt parking.
Existing Topography	Based on the provided ATLA/NSPS Land Title Survey, elevations across the site approximately range from elevation el +2.34 feet to el +11.16 feet NAVD88.

PROJECT DESCRIPTION

Our understanding of the project conditions is as follows:

Item	Description
Information Provided	The following information has been provided: Boundary Survey and ALTA/NSPS Land Title Survey by McLaughlin Engineering Company, dated June 23, 2020 with the footprint of the courthouse building and parking garage overlain.
Project Description	The project consist of the construction of the following: A 12-story, 223-foot-tall Courthouse Building. The footprint of the building is approximately 140 feet by 170 feet in plan view A six (6)-story, 55-foot-tall Parking Garage. The parking garage measures approximately 225 feet by 125 feet in plan view.
Finished Floor Elevation	The finished floor elevation is unknown at this time.

Item	Description
Maximum Loads (Assumed)	The following loading conditions have been assumed: 12-Story Courthouse Building Columns: 3500 kips Ground Floor Slabs: 150 pounds per square foot (psf) 6-Story Parking Garage Columns: 2500 kips Ground Floor Slabs: 150 pounds per square foot (psf)
Below-Grade Structures	None

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration. This characterization forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs can be found in the section of this report.

As part of our analyses, we identified the following layers within the subsurface profile.

Stratum No.	Stratum Name	General Description
1	**Topsoil / Asphalt**	Topsoil or asphalt was encountered in the upper one (1) to 1.5 inches. Topsoil was encountered in soil borings B-1, B-3, B-6, B-7, B-8, B-9, B-10, TB-2, TB-4, TB-5, P-2, P-4, and P-7. Asphalt was encountered in soil borings B-2, B-4, B-5, B-11, TB-1, TB-3, P-1, P-3, P-5, and P-6.
2	**Fill**	Fill consisting of sand and/or limerock was encountered in variable thicknesses extending to between 0.3 feet and six (6) feet below existing grades. Fill was not encountered in soil borings B-6, B-7, TB-2, TB-4, TB-5, P-2, and P-6.
3	**Sand & Sand with Limestone Lenses**	Sand and/or sand with limestone lenses and layers was encountered extending from between two (2) and eight (8) feet below existing grades. This stratum is generally considered to be very loose to medium dense with SPT N-Values ranging from 0 to 26 blows per foot (bpf), averaging 10 bpf.
4	**Upper Limestone**	The Upper Limestone formation extends from the bottom of Stratum 3 extending to 8.6 feet below existing grade in Soil Boring P-5, nine (9) feet below existing grade in Soil Boring B-5, to the termination depth of 10 feet below existing grade in soil borings P-1, P-2, P-3, P-4, P-6, and P-7, to 20 feet below existing grade in Soil Boring B-8, to 22 feet below existing grade in Soil Boring TB-

		4,and to 25 feet below existing grade in the remaining borings. The limestone is considered weakly to well-cemented with SPT N-value ranging from three (3) bpf to 38 bpf, averaging 14 bpf.
5	**Sand & Sand with Limestone Lenses**	Sand and/or sand with limestone lenses and layers was encountered typically extending to 48.5 feet below existing grades. This stratum is generally considered very loose to dense with SPT N-Values ranging from six (6) bpf to 42 bpf, averaging 15 bpf
6	**Intermediate Limestone**	An intermediate layer of limestone was encountered extending to the termination depth of 50 feet below existing grade in soil borings B-1, B-3, B-4, B-8, B-9, and B-10, and to between 60 and 70 feet below existing grades in soil borings B-2, B-5, B-6, B-7, B-11, TB-1, TB-2, TB-3, TB-4, and TB-5. The Intermediate Limestone is generally considered weakly- to well-cemented with SPT N-Values ranging from five (5) bpf and refusal (greater than 6 bpf for six (6) inches), averaging 32 bpf.
7	**Sand & Sand with Limestone Lenses**	Sand and sand with limestone lenses and layers was encountered typically extending to between 93.5 and 100 feet below existing grades in soil borings B-5, B-6, B-7, B-11, TB-1, TB-2, TB-3, TB-4, and TB-5, and extending to the termination depth of Soil Boring B-2 of 100 feet below existing grade. This stratum is generally considered loose to dense with SPT N-Values ranging from 3 bpf to 39 bpf, averaging 21 bpf.
8	**Lower Limestone 1**	The Lower Limestone 1 formation was encountered extending to the termination depth of 150 feet below existing grade in soil borings TB-2 and B-4. The limestone is generally considered well-cemented with SPT N-Values ranging from eight (8) bpf to refusal, averaging 57 bpf.
9	**Lower Limestone 2**	The Lower Limestone 2 formation was encountered extending to the termination depth of 175 feet below existing grade in soil borings TB-1 TB-3, and TB-5. The limestone is generally considered well-cemented with SPT N-Values ranging from 19 bpf to refusal, averaging 65 bpf.

Groundwater

The boreholes were observed while drilling for the presence and level of groundwater. The water levels observed in the boreholes can be found on the boring logs in , and are summarized below.

Boring Number	Date Completed	Interpreted Ground Surface Elevation (feet-NAVD88)	Approximate Depth to Groundwater while Drilling (feet)	Approximate Elevation of Groundwater while Drilling (feet-NAVD88)
B-1	6/15/2021	+9.7	8.5	+1.2
B-2	6/14/2021	+7.8	7.7	+0.1
B-3	6/16/2021	+3.8	4.3	-0.1
B-4	6/15/2021	+3.3	3.5	-0.2
B-5	6/11/2021	+6.1	7.0	-0.9
B-6	6/9/2021	+3.6	3.7	-0.1
B-7	6/7/2021	+3.8	4.3	-0.1
B-8	6/10/2021	+4.9	4.7	+0.2
B-9	6/17/2021	+3.8	4.3	-0.1
B-10	6/16/2021	+3.3	4.1	-0.8
B-11	6/8/2021	+2.9	4.0	-1.1
TB-1	8/26/2021	+6.8	5.0	+1.8
TB-2	8/30/2021	+4.1	4.3	-0.2
TB-3	8/24/2021	+4.4	5.5	-1.1
TB-4	8/23/2021	+3.9	5.1	-1.2
TB-5	8/31/2021	+3.5	4.4	-0.9
P-1	6/18/2021	+8.9	7.8	+1.1
P-2	6/21/2021	+3.8	4.0	-0.2
P-3	6/18/2021	+7.4	6.7	+0.7
P-4	6/21/2021	+3.5	4.1	-0.6
P-5	6/18/2021	+2.9	3.0	-0.1
P-6	6/17/2021	+3.8	3.1	+0.7
P-7	6/21/2021	+3.6	4.3	-0.7

The ground surface elevation at the boring locations were interpreted based on the provided ALTA/NSPS Survey.

Below ground surface

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Groundwater levels in the

table above could vary due to changes in the ground surface elevation at the location of the borings. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

Seasonal High Groundwater Level

Based on the U.S. Geological Survey (USGS) National Water Information System website, Observation Well G-561, located approximately 1.0 mile south of the project site at GPS coordinates: Latitude 26°05'45.8", Longitude 80°08'18.6", has recorded a high-water level of EL +6.59 feet NGVD29 and a 50th percentile water level of EL+1.86 NGVD29 between January 1956 and October 2020. We recommend a design groundwater elevation of EL +3.39 which corresponds to the 95th percentile of the available groundwater data. The available groundwater information is presented in the Seasonal High Groundwater Data section of the attachments.

Percolation Testing

Seven (7) percolation tests were performed at the site. The tests were performed at a depth of 10 feet below the existing ground surface. A Site Location and an Exploration Plan illustrating the test locations has been provided in the attachments.

The exfiltration tests were performed in general accordance with the South Florida Water Management District (SFWMD) procedures for the "Usual Condition Constant Head" exfiltration Tests. The tests were performed in a 6-inch diameter borehole. A 4-inch diameter perforated PVC pipe was placed in the borehole. Water was then pumped into the borehole in order to raise the water level in the borehole to the ground surface. Once the inflow stabilized with the outflow rate, the average pumping rate and the elevation of the water obtained with this stabilized flow rate were recorded. The hydraulic conductivity value was then calculated from the test results and is reported in units of cubic feet per second per square foot, per foot of head (cfs/ft^2-ft head).

The percolation tests resulted in a hydraulic conductivity value shown in the table below.

Test No.	Depth of Test (ft)	K, Hydraulic Conductivity SFWMD Equation (cfs/ft2-ft Head)
P-1	10	4.7×10^{-5}
P-2	10	6.6×10^{-5}
P-3	10	6.3×10^{-5}
P-4	10	8.6×10^{-5}
P-5	10	1.1×10^{-4}
P-6	10	2.0×10^{-3}
P-7	10	1.1×10^{-4}

The reported values are typical for loose to dense, clean fine sands but are unfactored. Therefore, you should consider applying a factor of safety to the measured values given the potential for reduction in permeability due to densification and/or siltation during the life of the drainage (infiltration) feature.

The percolation tests locations are shown on the Exploration Plan and the percolation results are shown in the Percolation Test Results section of the attachments.

GEOTECHNICAL OVERVIEW

The subsurface conditions consist of topsoil and fill underlain by varying layers of sand, sand with limestone lenses and layers, and limestone.

The site appears suitable for the proposed construction based on upon the geotechnical conditions encountered in the borings and our current understanding of the proposed development. Based on the results of the subsurface exploration and our geotechnical engineering analysis, we recommend the Courthouse Building be supported on 30-inch-diameter augered cast-in-place (ACIP) piles installed to 140 feet below the existing ground surface. 14-inch-diameter ACIP piles installed to 90 feet below the existing ground surface can also be used. Properly constructed 30-inch diameter ACIP piles installed to 140 feet below existing grades and 18-inch-diameter ACIP piles installed to 90 feet below existing grades have an allowable capacity of 750 tons compression and 375 tons in tension, and 200 tons compression and 100 tons tension, respectively.

We recommend the Parking Garage Building be supported on 18-inch-diamter ACIP piles installed to 90 feet below the existing ground surface. Properly constructed 18-inch diameter ACIP

piles installed to 90 feet below existing grades have an allowable capacity of 200 tons in compression and 100 tons in tension.

For slabs that are structurally supported, the pile capacities for a 14-inch-diameter ACIP pile are presented.

Design and construction recommendations for ACIP piles are presented in the . The foundation areas should be prepared according to the recommendations provided in the section. The section addresses slab-on-grade support.

It should be noted that natural limestone was encountered in the soil borings as shallow as 2 feet below the existing ground surface. Therefore, the contractor should be made aware that limestone exists near the existing ground surface and excavations performed within this rock formation may require special tools and/or methods.

The section provides an understanding of the report limitations.

EARTHWORK

Earthwork will include demolition of the existing structures, removal of existing foundations, clearing and grubbing, excavations and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria as necessary to render the site in the state considered in our geotechnical engineering evaluation for foundations, and floor slabs.

Site Preparation (Courthouse Building & Parking)

Prior to placing fill, existing foundations, asphalt and any vegetation, root mat should be removed. Complete stripping of the asphalt or topsoil should be performed in the proposed addition areas. Site preparation should extend to a lateral distance of 5 feet beyond all appurtenances and pavement areas. Topsoil and vegetation may be reused as topsoil only, if desired, and should not be used as structural fill. Any unsuitable material as well as topsoil not used in landscaped areas should be disposed off-site. All site preparation should be performed in the presence of a geotechnical engineer representative

The location of any existing underground utility lines within the construction area should be established. Provisions should be made to relocate any interfering utility lines within the construction area. Abandoned utilities should be removed or grouted to reduce the possibility of subsurface erosion that could result in future settlement.

Slab on Grade (Courthouse & Parking Garage)

We recommend proof-rolling the granular soils in the structure areas including a five-foot wide perimeter zone that extends beyond the maximum outside limits of the structure. This should be

accomplished using a vibratory drum roller capable of exerting a minimum impact force of 40,000 pounds. At least 10 overlapping passes (5 passes in an east/west direction and 5 passes in a north/south direction) should be completed as a proof-roll measure. The proof-rolling should continue until the exposed subgrade has achieved at least 95 percent of the materials maximum dry density as determined by the Modified Proctor (ASTM D-1557). Prior to proof-rolling, the subgrade should be moisture conditioned to within +- 2 percent of the optimum for compaction. Proof-rolling aids in providing a firm base for compaction of new fill and delineating soft areas that may exist at or near the exposed subgrade level. Proof-rolling should be performed in the presence of a Terracon representative in order to aid in evaluating unstable subgrade areas. Unstable areas observed at this time should be improved as recommended by the engineer based on field conditions and typically includes scarification and re-compaction or by undercutting and replacement with suitable compacted backfill.

Structural Fill Material

Fill required to achieve design grade should be classified as structural fill. Earthen materials used for structural fill should meet the following material property requirements:

Fill Type	USCS Classification	Acceptable Location for Placement
Structural	SP, SP-SM or GP, GP-GM (fines content < 12 percent, maximum particle size < 3 inches)	All locations and elevations
Fill Placed Below Groundwater	Inorganic, non-plastic material, free of any man-made debris, with ASTM classification (USCS) of GP, GW or FDOT 57 Stone with less than 5 percent material finer than the No. 200 sieve and a maximum particle size of 3 inches. The FDOT 57 stone should not be placed more than one foot above the water level.	Below Groundwater

Structural and fill should consist of approved materials free of organic matter and debris. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on this site.

Structural Fill Compaction Requirements

Structural and should meet the following compaction requirements.

Item	Description
Fill Lift Thickness	Fill lift thicknesses vary with the compaction methods used and should be completed as follows: 12 inches or less in loose thickness when heavy vibratory compaction equipment is used. Maximum particle size should not exceed 3 inches on a 12-inch lift. 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used. Maximum particle size should not exceed 1 ½ inches in a 4- to 6-inch lift.
Minimum Compaction Requirements	The area beneath the structure footprint subgrade elevation should be compacted to at least 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTM D-1557)
Water Content Range	Within +/- 2 percent of optimum moisture content as determined by the Modified Proctor Test, at the time of placement and compaction.

We recommend that structural fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and compacted as required until the specified moisture and compaction requirements are achieved.

Grading and Drainage

All grades must provide effective drainage away from the building during and after construction and should be maintained throughout the life of the structure. Water retained next to the building can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential floor slab and/or foundation movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge onto splash blocks at a distance of at least 10 feet from the building.

Exposed ground should be sloped and maintained at a minimum 5 percent away from the building for at least 10 feet beyond the perimeter of the building. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After building construction and landscaping, final grades should be verified to document effective drainage has been achieved. Grades around the structure should also be periodically inspected and adjusted as necessary as part of the structure's maintenance program. Where paving or flatwork abuts the structure a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Earthwork Construction Considerations

It should be noted that natural limestone was encountered in the soil borings as shallow as 2 feet below the existing ground surface. Therefore, the contractor should be made aware that limestone

exists near the existing ground surface and excavations performed within this rock formation may require special tools and/or methods.

Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of floor slabs. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over or adjacent to construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted prior to floor slab construction.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of concrete and/or vegetation and top soil, and compaction.

Each lift of compacted fill should be tested, evaluated, and reworked as necessary until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas. One density and water content test for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. In the event that unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

DEEP FOUNDATIONS

Auger Cast-in-Place (ACIP) Pile Recommendations

The proposed structure could be supported on augered cast-in-place (ACIP) piles installed into the limestone formation. ACIP piles are the most commonly used deep foundation system in the South Florida area because they can attain relatively high side-shear resistance against the cemented formations present throughout the area, and thus provide high compressive and tensile capacities. The high side shear is primarily due to the ability to cast the piles in-place, directly against the roughened surface without the use of drilling fluids (i.e. bentonite, polymer additives, etc.). ACIP piles we recommend below develop their load-carrying capacity through the side shear between the cemented formation and grout. Additional advantages of the ACIP piles are their rapid rate of installation, negligent vibration levels, and relatively low noise levels.

The following table summarizes the design criteria and other design information for an 30-inch and 18-inch diameter ACIP piles. The design recommendations are subject to modification based on the results of the load testing program that will be necessary prior to production pile installation.

12-Story Courthouse Building	
ACIP Pile Parameters	**30-inch diameter ACIP Pile**
Compressive Capacity	750 tons
Uplift Capacity	375 tons
Lateral Capacity (Free Head / Fixed Head)	17 tons / 39 tons
Minimum Depth Below Existing Grade	140 feet
Approximate Tip Elevation	-135 feet NAVD88
Minimum Center to Center Spacing	7.5 feet
Minimum recommended Grout Compressive Strength (1)	8,500 psi

Notes
(1) Adequate pile reinforcing steel and Grout Compressive Strength must be designed by the structural engineer to resist all axial, bending, tensile, and shear stresses. Any tension piles would need to be reinforced with reinforcement cages that have all vertical reinforcement extended the full length of the piles.
(2) The lateral capacities were calculated using the L-Pile program. The lateral capacities presented above are based on an approximately 3/8-inch deflection of the pile head for the free and fixed head conditions, and on the assumption that the typical bottom of pile caps will be at the ground surface.
(3) For a 30-inch-diameter pile subject to a 17-ton lateral load under the free-head condition, the calculated bending moment is about 2,260 in-kips occurring at a depth of about 7-feet below the pile top. For a 30-inch-diameter pile subject to a 39-ton lateral load under the fixed-head condition, the calculated bending moment is about 4,200 in-kips occurring at the pile top.

Parking Garage and 12-Story Courthouse Building	
ACIP Pile Parameters	**18-inch diameter ACIP Pile**
Compressive Capacity	200 tons
Uplift Capacity	100 tons
Lateral Capacity (Free Head / Fixed Head)	5 tons / 10 tons
Minimum Depth Below Existing Grade	90 feet
Approximate Tip Elevation	-85 feet NAVD88
Minimum Center to Center Spacing	4.5 feet
Minimum recommended Grout Compressive Strength (1)	6,000 psi

Notes
(1) Adequate pile reinforcing steel and Grout Compressive Strength must be designed by the structural engineer to resist all axial, bending, tensile, and shear stresses. Any tension piles would need to be reinforced with reinforcement cages that have all vertical reinforcement extended the full length of the piles.
(2) The lateral capacities were calculated using the L-Pile program. The lateral capacities presented above are based on an approximately 3/8-inch deflection of the pile head for the free and fixed head conditions, and on the assumption that the typical bottom of pile caps will be at the ground surface.
(3) For an 18-inch-diameter pile subject to a 5-ton lateral load under the free-head condition, the calculated bending moment is about 384 in-kips occurring at a depth of about 5.4-feet below the pile top. For a 18-inch-diameter pile subject to a 10-ton lateral load under the fixed-head condition, the calculated bending moment is about 825 in-kips occurring at the pile top.

Structurally Supported Slabs for the 12-Story Courthouse Building	
ACIP Pile Parameters	**14-inch diameter ACIP Pile**
Compressive Capacity	40 tons
Uplift Capacity	20 tons
Minimum Depth Below Existing Grade	56 feet
Approximate Tip Elevation	-50 feet NAVD88
Minimum Center to Center Spacing	3.5 feet

Notes
(1) Adequate pile reinforcing steel and Grout Compressive Strength must be designed by the structural engineer to resist all axial, bending, tensile, and shear stresses. Any tension piles would need to be reinforced with reinforcement cages that have all vertical reinforcement extended the full length of the piles.

Expected Settlements

Based on the above loading conditions, we expect that properly constructed 30-inch-diameter, 18-inch-diameter, and 14-inch-diameter ACIP piles to undergo settlements on the order of 1 inch, with the greatest settlement occurring at the more heavily loaded columns or shear walls. The majority of the settlement is expected to be concurrent with application of dead loads during construction.

ACIP Pile Installation

Recommendations for augered cast-in-place pile installation are presented hereafter.

1. We recommend that the piles be spaced at least three (3) pile diameters center-to-center to minimize pile capacity reduction caused by group effects. A placement tolerance with respect to the design center of 3 inches should be specified for groups of piles and one (1) inch for isolated piles unless more stringent construction positioning is required. Out-of-plumbness for the piling should be limited to two (2) percent maximum.

2. The 28-day compressive strength of the grout used in the piles should be determined by the Structural Engineer in accordance with applicable building code requirements.

3. In order to provide some assurance that the piles have been constructed with a continuous cross section a full-length steel reinforcing bar or cage should be installed at the center of each pile immediately after grouting. Centralizers should be attached to individual bars at the bottom and at third points.

4. Piles subjected to uplift due to wind load must be provided with adequate reinforcing steel throughout their entire length. Similarly, laterally loaded piles should be provided with adequate reinforcement for moment resistance.

Drilling and Grouting

Augered cast-in-place piles are constructed by rotating a hollow-stem continuous flight auger into the ground until the planned tip depth or termination criterion is achieved. At the termination depth, a grout with high fluidity is pumped under pressure into the hole through the hollow stem auger. As long as pressure is observed in the line, the auger is slowly withdrawn up the hole and the augered cast-in-place pile shaft is constructed. Grout volumes, possibly up to 1.5 times or higher than the theoretical pile volume may be required for proper pile installation. The grout factor is defined as the actual volume of grout pumped into the pile divided by the theoretical volume of the drilled hole. After achieving the desired depth, a positive grout pressure should be achieved prior to initiating withdrawal of the auger. A continuous fluid return consisting of slurry and then grout at the top of the hole is the best indication that the desired pressure head is being achieved. The auger should be withdrawn slowly so that a positive grout pressure is maintained in the hole at all times during auger withdrawal. If the withdrawal of the auger becomes erratic, grout pressure suddenly drops, or if the grout flow is interrupted, the auger tip should be reinserted at least five (5) feet below the level where the grouting operation was disrupted prior to resuming pumping and withdrawal of the auger. We recommend a minimum allowable grout factor of 1.2 be specified.

The installation of adjacent piles located within three (3) pile diameters of each other on the same working day is not recommended due to the potential existence of inter-connected pores or cavities in the limestone layers through which the fluid grout can flow. We recommend that adjacent piles located within 3 pile diameters not be installed until the initial grouted pile has set

overnight. Some subsidence of fresh grout may occur in the top of the piles. This subsidence is in-part a result of the weight of the grout column "pushing" laterally into pores in the limestone layer. We anticipate that subsidence will occur within a period of approximately two hours following the grouting operation. If subsidence occurs while the pile grout is in a fluid state, we recommend that the pile be immediately filled with fresh grout to the proper cutoff elevation. We recommend that a pile grout subsidence of up to eight (8) inches be considered acceptable. Grout should not be pumped into the piles when it is older than 90 minutes from the time it was batched. Prior to actual installation of the piles, the contractor should demonstrate that the materials and equipment proposed for use are capable of installing the production piles. The contractor should provide an accurate method of determining the depth and alignment of the auger.

ACIP Pile Monitoring

Successful augered cast-in-place pile installation is in large part dependent upon the expertise of the contractor and the techniques used. Because of the possibility of soil intrusions occurring during auger withdrawal and pile out-of-plumbness issues developing, the job specifications must be carefully prepared and continuous observations made of the installation. Full-time observations must be made during installation to monitor depths and the amount of grout pumped versus the rate of auger withdrawal. The full-time monitoring of pile installation will provide a degree of assurance that continuous piles of the proper cross-section are being constructed. We recommend that the grout pump be calibrated prior to initiation of production pile installation. At least one (1) set of six (6), 2-inch cubes should be made for each 50 cubic yards of grout placed.

Test Pile Program

The production pile lengths and capacities must be confirmed with a load test program(s) prior to construction. The load test program(s) will provide a better understanding of the behavior of the piles under the proposed loadings and the existing subsurface conditions, as well as the possibility of reducing the production pile lengths. A load test is required on piles designed to carry greater than 40 tons of allowable axial load (FBC Section 1806, Allowable Pile Load). We recommend one (1) static compression load test for each pile diameter used in the foundation design. The test pile should be subjected to full scale static compression testing (ASTM D1143) pursuant to the requirements of ASTM and the Florida Building Code under the direct supervision of a geotechnical engineer from this office. We recommend that the compression pile load test be fully instrumented with vibrating wire strain gages. Also, a tension load test should be performed in accordance with ASTM D3689 (tension). In addition, the lateral load test should be performed in accordance with ASTM D3966. The piles shall be loaded in compression, tension, and lateral to at least two (2) times the design load. Testing of the piles should include the standard method of loading.

As stated above, we recommend that the compression load test be fully instrumented. We recommend that strain gages be attached to the reinforcing cage and placed every 5 feet from the cut-off elevation to the pile tip elevation. Using the strain gage data, Terracon can identify the load distribution characteristics of the various subsurface materials. The purpose of the

instrumented test piles is to evaluate the load-deformation behavior as well as the load distribution of this foundation element as compared to the production piles. Therefore, it is imperative that the cut-off elevation of the test pile be the same as that of the production piles. If performing the pile load test at the cut-off elevation is not practical, we recommend pre-forming to the cut-off elevation and installing a casing in order to diminish the side shear capacity between the pile and the soil/rock. We recommend that a strain gage be placed below the casing to obtain any load transfer that may occur along it, and thus be able adjust the final load test results. Based on the results of the load tests, the geotechnical engineer will then provide additional installation criteria (i.e. pile length, minimum grout factor, etc.) for the production piles.

The pile intended for load testing should be installed with the same equipment that is to be used for the production piling. The piles should be constructed close to one of the borings to allow for correlation of the drilling characteristics and load-settlement relations with known subsurface conditions.

SHALLOW FOUNDATIONS

We understand that structures outside of the main structures will require the use of shallow foundations.

Limestone was encountered typically at between four (4) and six (6) feet below the existing ground surface, but as shallow a two (2) feet below the existing ground surface in some areas. Accordingly, the table below provides recommendations for shallow foundations supported on existing or imported granular soils above the limestone formation and recommendations for shallow foundations supported on the limestone formation, should either condition be applicable.

If the site has been prepared in accordance with the requirements noted in , the following design parameters are applicable for shallow foundations.

Item	Column/Wall Footings
Maximum Net Allowable Bearing pressure	3,000 psf
Minimum Foundation Dimensions	Columns: 24 inches Continuous: 18 inches
Minimum Embedment Depth Below Finished Grade	18 inches
Estimated Total Settlement from Structural Loads	Less than about 1 inch
Estimated Differential Settlement	Less than about ½ inch per 40 feet
Minimum Compaction Requirements for Existing or Imported Fill	95 percent of the material's Modified Proctor maximum dry density (ASTM D1557)

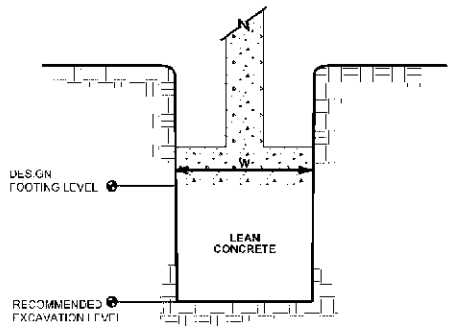
Item	Column/Wall Footings
Minimum Compaction Requirements for the Limestone Formation	In lieu of compaction, the exposed limestone should be observed and inspected for solution cavities and areas of severely fractured or weathered limestone. If pockets of loose or soft soils or solution features in the form of slots or chimneys are found in the carbonate rock formation, they should be excavated to a depth of three times the feature width or diameter, where applicable, and backfilled with lean concrete or grout.
Minimum Testing Frequency for Footings Above the Limestone Formation	One field density test per footing One field density test per 100 linear feet (wall footing, thickened edge slab)
Ultimate Coefficient of Sliding Friction	0.4

The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the foundation base elevation. Assumes any unsuitable fill, organic, or soft soils will be undercut and replaced with engineered fill as recommended in this project. Relative to lowest adjacent finished grade, typically exterior grade.
Sliding friction along the base of the foundation will not develop where net uplift conditions exist. Resistance to sliding determined in accordance with the noted parameter should be considered available/ultimate resistance. Accordingly, the design for sliding resistance should include a factor of safety. We recommend that a factor of safety of at least 1.5 be used.

Shallow Foundation Construction Considerations for Shallow Foundation on Existing or Imported Granular Soils or the Limestone Formation

As noted in , the footing excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

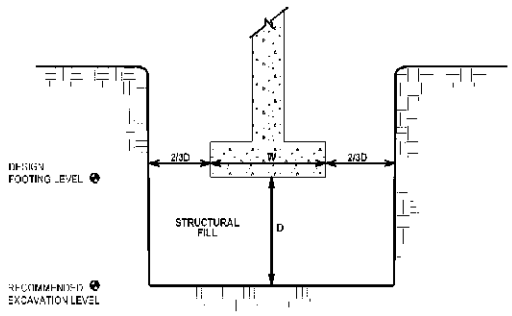
If unsuitable bearing soils are encountered at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. This is illustrated on the sketch below.



LEAN CONCRETE BACKFILL

NOTE: EXCAVATIONS ARE SHOWN VERTICAL; HOWEVER, THE SIDEWALLS SHOULD BE SLOPED AS NECESSARY FOR SAFETY

Over-excavation for structural fill placement below footings should be conducted as shown below. The over-excavation should be backfilled up to the footing base elevation, with structural fill material placed, as recommended in the section.



OVER-EXCAVATION / BACKFILL ZONE

NOTE: EXCAVATIONS ARE SHOWN VERTICAL; HOWEVER, THE SIDEWALLS SHOULD BE SLOPED AS NECESSARY FOR SAFETY

FLOOR SLABS

The ground-floor slab for the Courthouse Building and Parking Garage can either be support at grade or can be structurally supported by the pile foundations. The recommendations in the sections should be followed. The table below presents parameters for grade-supported floor slabs.

Subgrade-Supported Floor Slab Design Parameters

Item	Description
Floor slab support	A minimum of 12 inches of granular material meeting the fill properties in the Section .
Compaction Requirements	95 percent of the material's modified Proctor maximum dry density (ASTM D 1557)
Modulus of subgrade reaction	150 pounds per square inch per in (psi/in) for point loading conditions
Aggregate base course/capillary break	4 inches of granular material

If floor slabs are not structurally supported by the pile foundations, floor slabs should be structurally independent of building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation. Floor slabs should be designed by the Structural Engineer to resist hydrostatic forces.

Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in , and the floor slab support as noted in this table. It is provided for point loads. For large area loads the modulus of subgrade reaction would be lower.

The floor slab design should include a capillary break, comprised of compacted, granular material, as described in subsection **Fill Material Types**.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a water-proof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

Subgrade-Supported Floor Slab Construction Considerations

Finished subgrade within and for at least 10 feet beyond the floor slab should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of floor slabs, the affected material should be removed, and structural fill should be added to replace the resulting excavation.

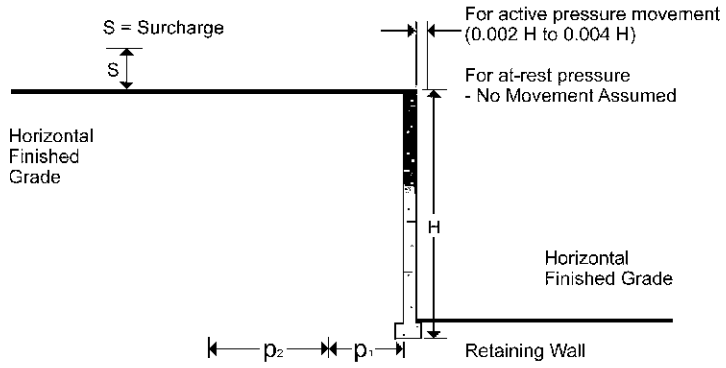
The Geotechnical Engineer should approve the condition of the floor slab subgrades immediately prior to placement of the reinforcing steel and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

Structurally Supported Floor Slabs

A 14-inch-diameter ACIP pile can be used to support structurally-supported floor slabs.

LATERAL EARTH PRESSURES

Structures with unbalanced backfill levels on opposite sides should be designed for earth pressures at least equal to values indicated in the following table. Earth pressures will be influenced by structural design of the walls, conditions of wall restraint, methods of construction and/or compaction and the strength of the materials being restrained. Two wall restraint conditions are shown in the diagram below. Active earth pressure is commonly used for design of free-standing cantilever retaining walls and assumes wall movement. The "at-rest" condition assumes no wall movement and is commonly used for basement walls, loading dock walls, or other walls restrained at the top. The recommended design lateral earth pressures do not include a factor of safety and do not provide for possible hydrostatic pressure on the walls (unless stated).



Lateral Earth Pressure Design Parameters

Earth Pressure Condition	Coefficient for Backfill Type	Equivalent Fluid Density (pcf)	Surcharge Pressure p_1 (psf)	Earth Pressure, p_2 (psf)
Active (Ka)	Granular – 0.33	40	(0.33)S	(40)H
At-Rest (Ko)	Granular – 0.5	60	(0.5)S	(60)H
Passive (Kp)	Granular – 3.0	360	-	-

For active earth pressure, wall must rotate about base, with top lateral movements 0.002 H to 0.004 H, where H is wall height. For passive earth pressure, wall must move horizontally to mobilize resistance.

Only passive pressure should be used to resist lateral loads.

Uniform, horizontal backfill, compacted between 95 and 98 percent of the Standard Proctor maximum dry density maximum dry density, with maximum unit weight of 120 pcf.

Uniform surcharge, where S is surcharge pressure.

Loading from heavy compaction equipment is not included.

No hydrostatic pressure acting on the wall is included.

No dynamic loading is included.

No factor of safety is included.

Backfill placed against structures should consist of granular soils. For the granular values to be valid, the granular backfill must extend out and up from the base of the wall at an angle of at least 45 and 60 degrees from vertical for the active and passive cases, respectively.

If unbalanced hydrostatic forces are anticipated behind proposed retaining walls, then combined hydrostatic and lateral pressures should be calculated using an equivalent fluid weighing 85 and 90 pcf for active and at-rest conditions, respectively. These pressures do not include the influence of surcharge, equipment or pavement loading, which should be added. Heavy equipment should not operate within a distance closer than the exposed height of retaining walls to prevent lateral pressures more than those provided.

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures, per IBC, are related to one of six site classifications. The Site Classification is defined by the upper 100 feet of the subsoil properties in terms of weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 11.8.3 of ASCE 7-16 which is adopted by the IBC.

Using data from five (5) 100-foot soil borings, two (2) 150-foot soil borings, and three (3) 175-foot soil borings drilled at the project site. The weighted average standard penetration resistance for the top 100 feet of borings B-2, B-5, B-6, B-7, B-11, TB-1, TB-2, TB-3, TB-4, and TB-5 is 23, 22, 15, 18, 14, 20, 13, 13, 14, and 21 blows per foot, respectively. The calculation for the weighted average are presented in the attachments. Referencing the table presented below from Section

11.8.3 of ASCE 7-16, the project site can be categorized as Site Class D (stiff soil). Accordingly, the site classification represents a low risk setting with respect to seismic liquefaction. The seismic acceleration values for F_a and F_v are 1.6 and 2.4, respectively.

Table 20.3-1 Site Classification

Site Class	$\bar{v}_s$	$\bar{N}$ or $\bar{N}_{ch}$	$\bar{s}_u$
A. Hard rock	>5,000 ft/s	NA	NA
B. Rock	2,500 to 5,000 ft/s	NA	NA
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50 blows/ft	>2,000 lb/ft²
D. Stiff soil	600 to 1,200 ft/s	15 to 50 blows/ft	1,000 to 2,000 lb/ft²
E. Soft clay soil	<600 ft/s	<15 blows/ft	<1,000 lb/ft²
	Any profile with more than 10 ft of soil that has the following characteristics: — Plasticity index PI > 20. — Moisture content $w \geq 40\%$. — Undrained shear strength $\bar{s}_u$ < 500 lb/ft²		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

Note: For SI: 1 ft = 0.3048 m; 1 ft/s = 0.3048 m/s; 1 lb/ft² = 0.0479 kN/m².

GENERAL POTENTIAL FOR SINKHOLE DEVELOPMENT

Sinkhole development occurs in Florida and varies geographically from areas with almost no potential or a very low potential to areas with a high potential where sinkholes occur frequently. The subject property is located in Area II, on the United States Geological Survey map entitled "Sinkhole Type, Development, and Distribution in Florida" (Published as Florida Geologic Survey Map Series N. 110). The cover (over limestone bedrock) in Area II is over 200 feet thick and consists generally incohesive and permeable sand. Sinkholes are few, shallow, of small diameter and develop gradually and are cover-subsidence sinkholes.

A review of Florida Geologic Survey's on-line Subsidence Incident Reports (SIRs) database reveals the closest reported sinkhole is about 2 miles south of the subject site. It should be noted that the number of sinkholes is based on information reported to the FGS and does not necessarily reflect the number of sinkholes confirmed by public or private industry.

During our limited evaluation, we did not encounter traditional signs associated with potential sinkhole development including abnormal downward pore water pressure gradients, obvious raveled zones, surface depressions, etc. Due to the geologic setting, this evaluation was not planned to specifically address sinkhole potential which normally could require additional site-specific data including geophysical methods such as Electrical Resistivity tests and additional geotechnical tests such as Cone Penetrometer Test (CPT) soundings, and/or more/deeper Standard Penetration Test borings. However, Based on review of the published geologic data and the boring results, it is our professional opinion that the project site has very little risk of sinkhole occurrence.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

ATTACHMENTS

SITE LOCATION AND EXPLORATION PLANS

Terracon
GeoReport

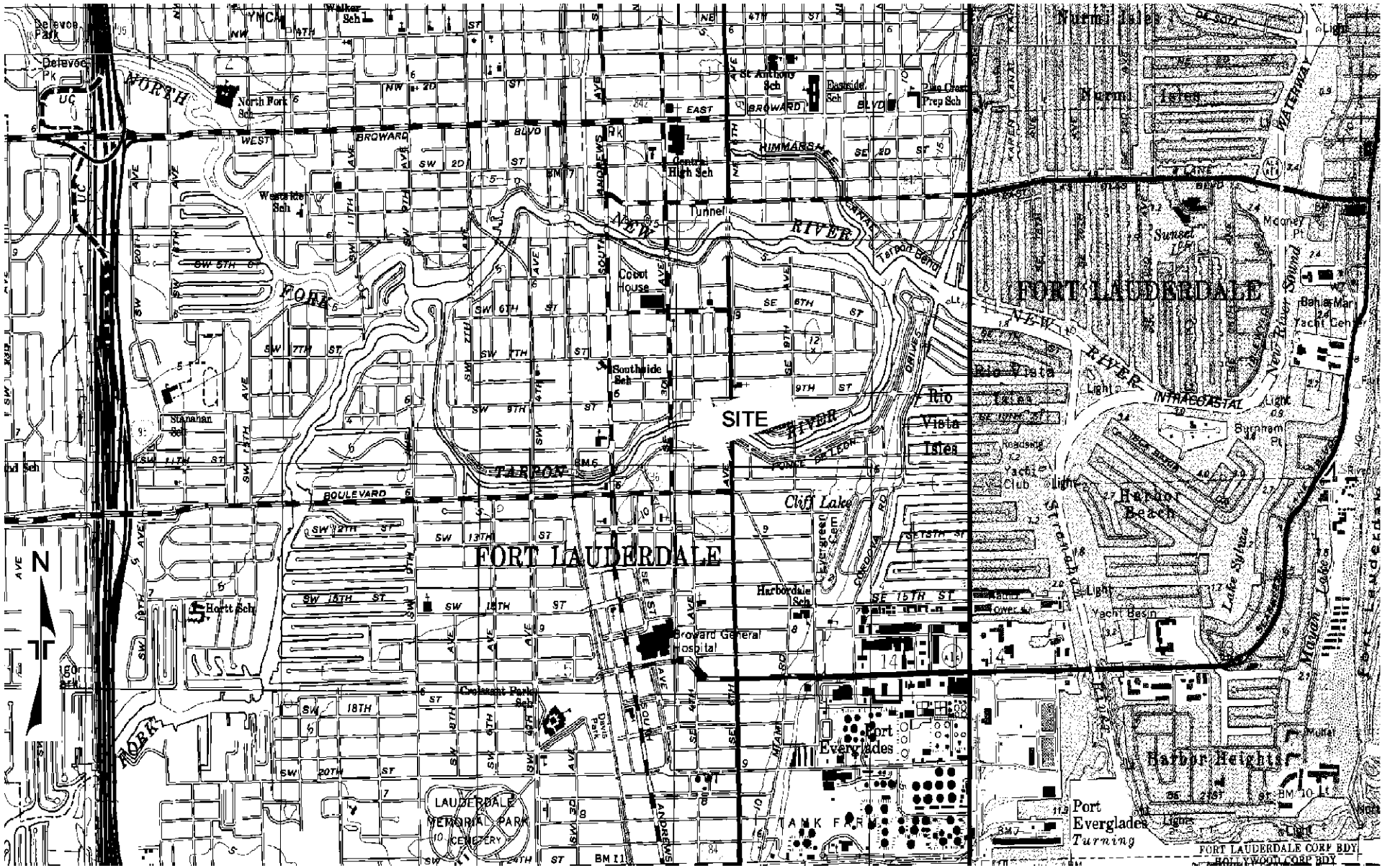


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: FORT LAUDERDALE NORTH, FL (1/1/1995), POMPANO BEACH, FL (1/1/1983), FORT LAUDERDALE SOUTH, FL (1/1/1994) and PORT EVERGLADES, FL (1/1/1983).

Terracon GeoReport

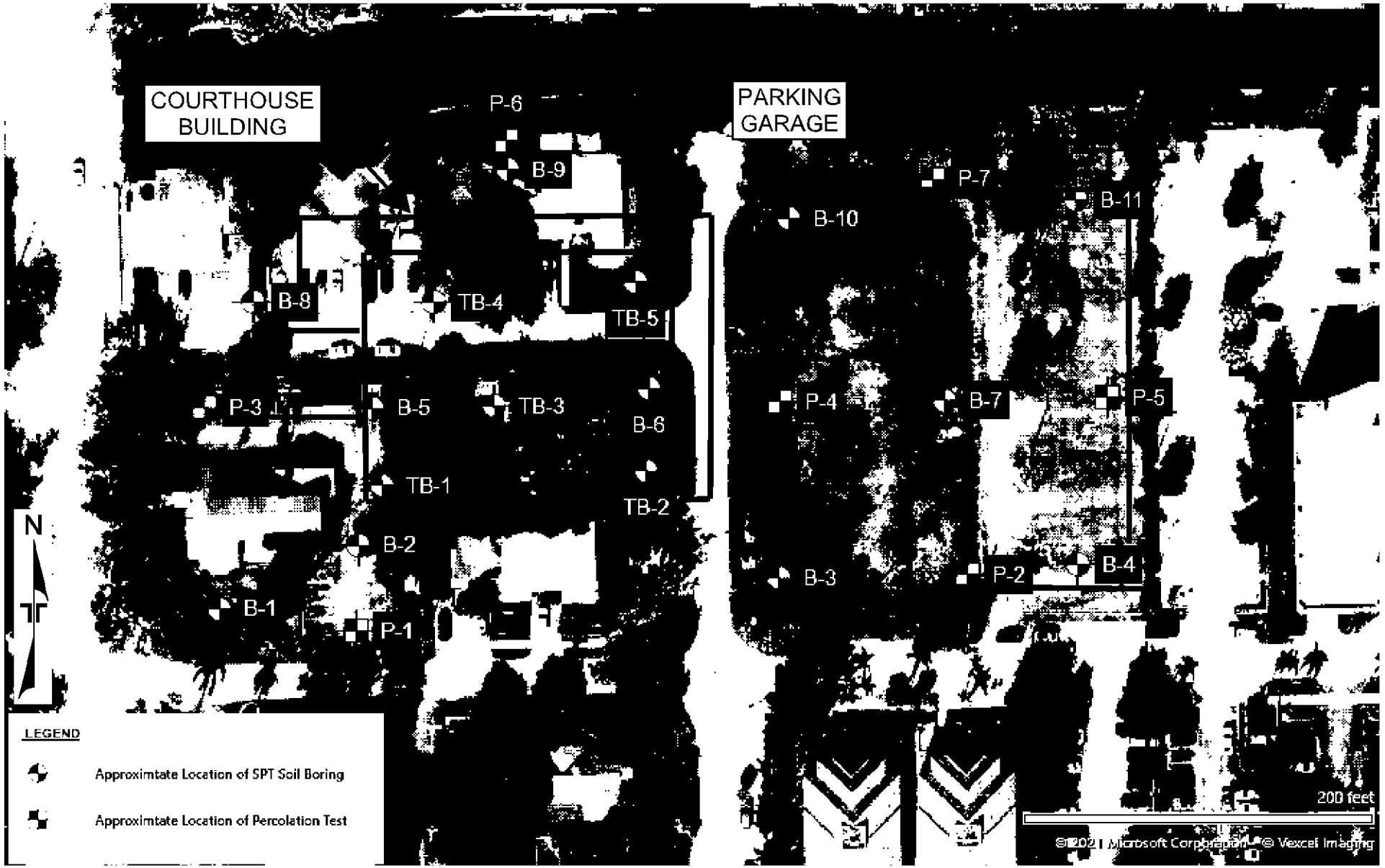
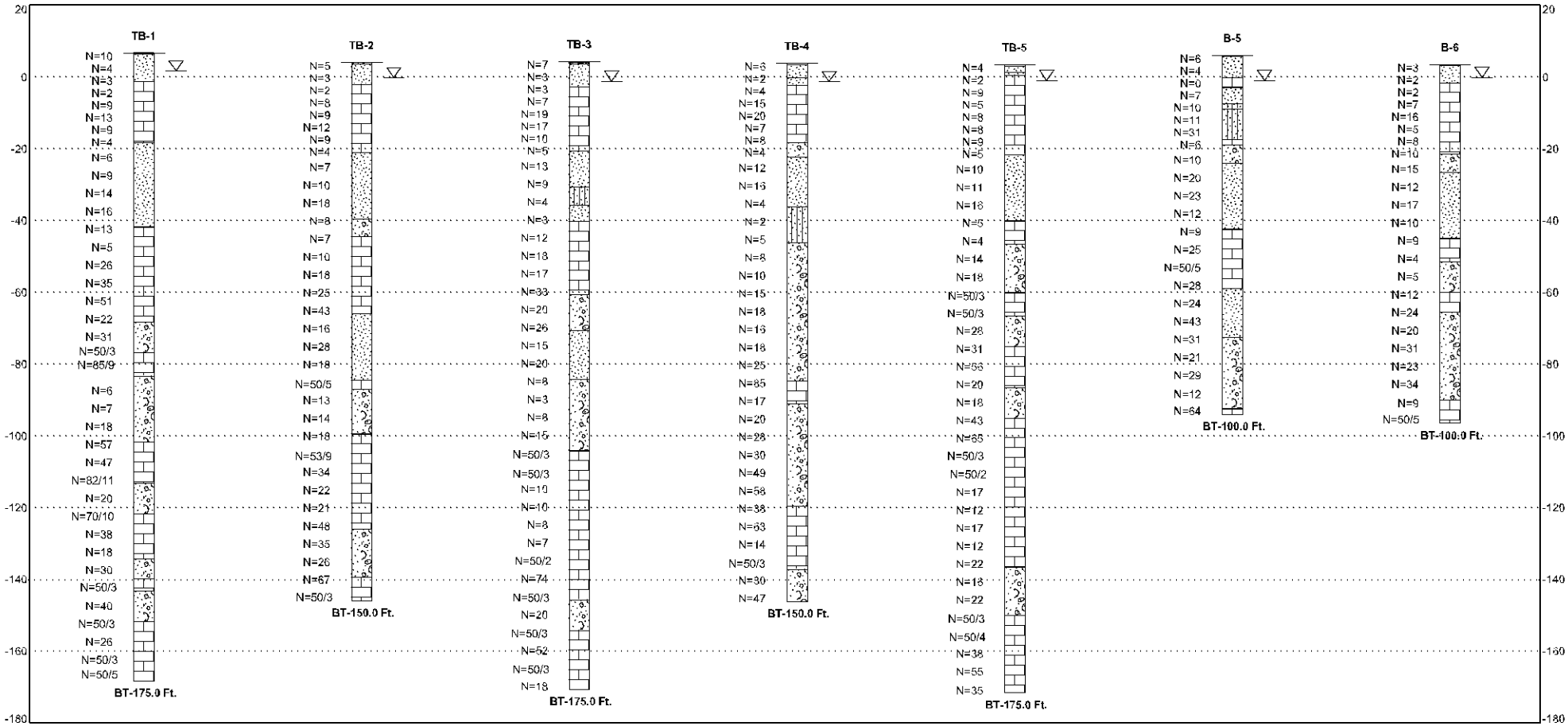


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS



THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART FENCE 34215018 FORT LAUDERDALE C:\1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

Explanation

TB-1 — Borehole Number
Moisture Content — %w — LL PL — Liquid and Plastic Limits
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

▽ Water Level Reading at time of drilling.
▼ Water Level Reading after drilling.

Asphalt | Fill | Fine Sand | Limestone | Fine Sand with Limestone | Topsoil | Silty Fine Sand

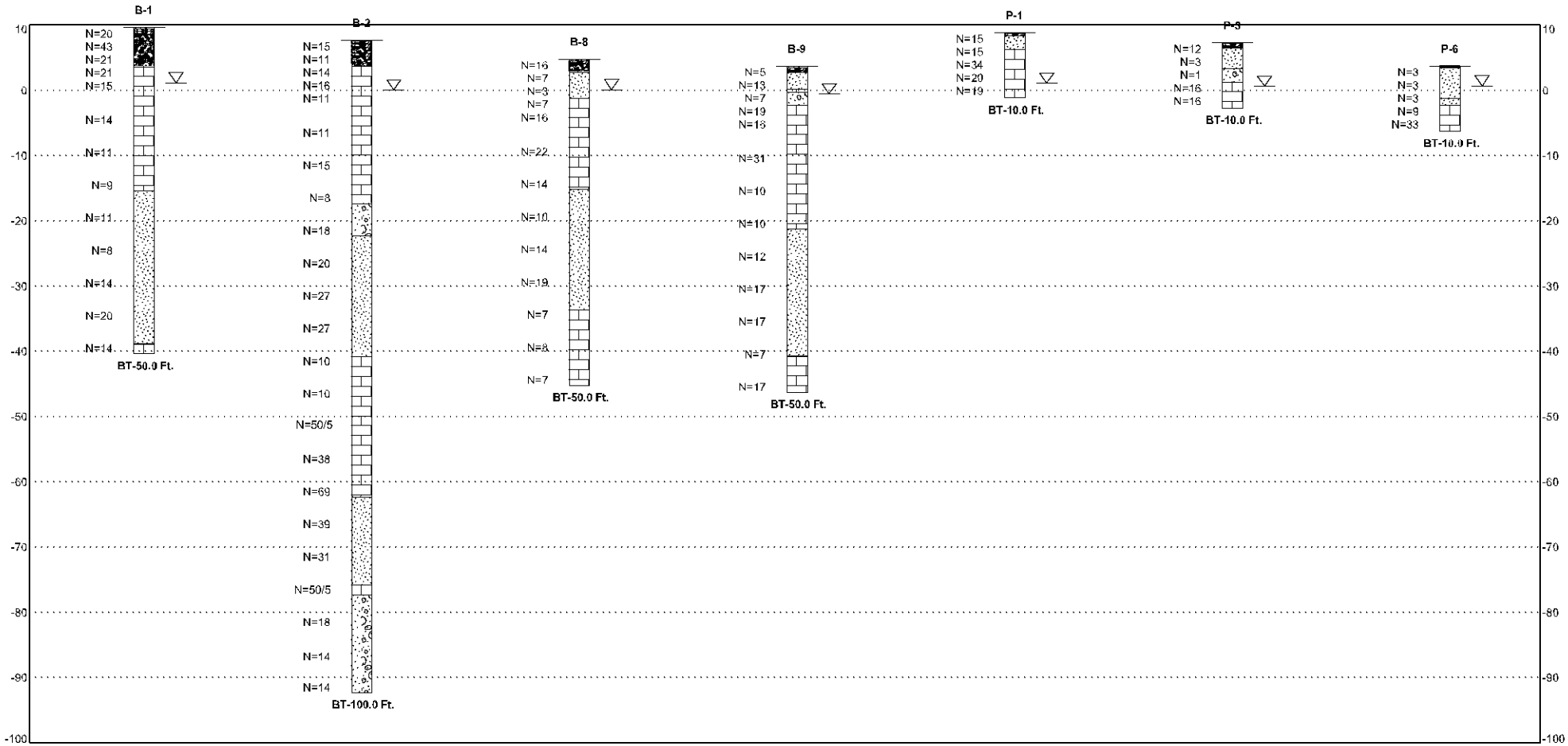
NOTES:
See Exhibit A-2 for orientation of soil profile.
See General Notes in Appendix C for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager:	Project No.: 34215018
Drawn by: I.S.	Scale: N.T.S.
Approved by: H.S.	File Name: 34215018
Date: 9/14/2021	

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL
PH. 954-741-8282 FAX. 954-741-8240

SUBSURFACE PROFILE - COURTHOUSE
FORT LAUDERDALE COURTHOUSE
SE 11TH STREET BETWEEN SE 3RD AVENUE AND SE 4TH AVENUE FORT LAUDERDALE, FL

EXHIBIT



Topsoil | Fill | Limestone | Fine Sand | Asphalt

Explanation

B-1 — Borehole Number
Moisture Content — %w — LL PL — Liquid and Plastic Limits
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.
Water Level Reading after drilling.

Fine Sand with Limestone

NOTES:
See Exhibit A-2 for orientation of soil profile.
See General Notes in Appendix C for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

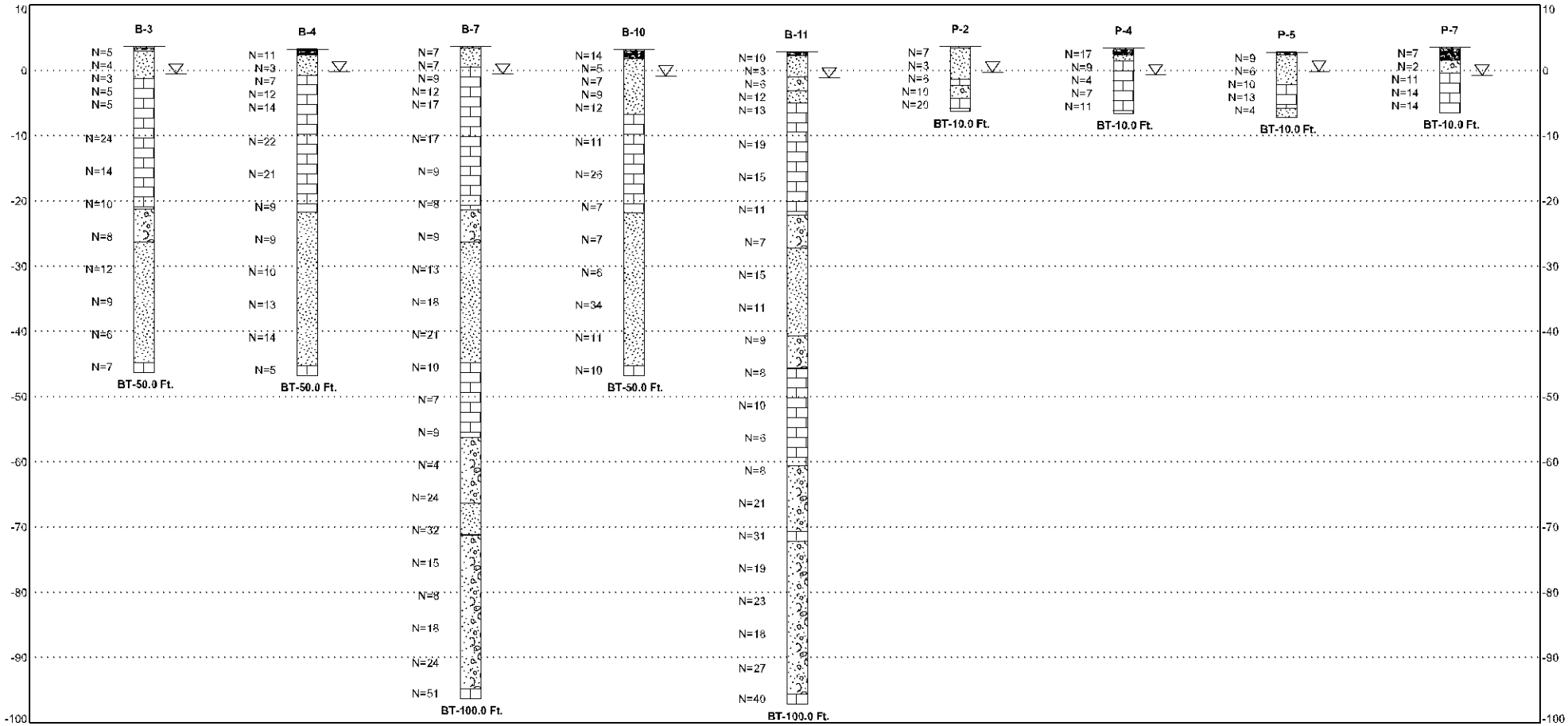
Project Manager:	Project No.: 34215018
Drawn by: I.S.	Scale: N.T.S.
Approved by: H.S	File Name: 34215018
Date: 9/16/2021	

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL
PH. 954-741-8282 FAX. 954-741-8240

SUBSURFACE PROFILE - COURTHOUSE
FORT LAUDERDALE COURTHOUSE
SE 11TH STREET BETWEEN SE 3RD AVENUE AND SE 4TH AVENUE FORT LAUDERDALE, FL

EXHIBIT

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART FENCE 34215018 FORT LAUDERDALE C.GPJ TERRACON DATATEMPLATE.GDT 9/16/21



Topsoil | Fill | Fine Sand | Limestone | Fine Sand with Limestone | Asphalt

Explanation

B-3 — Borehole Number
Moisture Content — %w — LL PL — Liquid and Plastic Limits
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type
Water Level Reading at time of drilling.
Water Level Reading after drilling.

NOTES:
See Exhibit A-2 for orientation of soil profile.
See General Notes in Appendix C for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager:	Project No.: 34215018
Drawn by: I.S.	Scale: N.T.S.
Approved by: H.S	File Name: 34215018
Date: 9/17/2021	

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL
PH. 954-741-8282 FAX. 954-741-8240

SUBSURFACE PROFILE - PARKING GARAGE
FORT LAUDERDALE COURTHOUSE
SE 11TH STREET BETWEEN SE 3RD AVENUE AND SE 4TH AVENUE FORT LAUDERDALE, FL

EXHIBIT

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART FENCE 34215018 FORT LAUDERDALE C.GPJ TERRACON DATATEMPLATE.GDT 9/17/21

BORING LOG NO. B-1

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 9.7 (Ft.)

DEPTH		ELEVATION (Ft.)	FIELD TEST RESULTS
0.3	**TOPSOIL (OL)**, dark brown, (3" Thick)	9.5	2-6-14-18 N=20
0.6	**FILL - FINE SAND (SP)**, light brown	9	17-20-23-22 N=43
	FILL - LIMEROCK (GP), with fine sand, light brown		14-11-10-13 N=21
6.0		3.5	12-10-11-12 N=21
	LIMESTONE, with fine sand, light brown		10-8-7-8 N=15
			10-7-7 N=14
			8-6-5 N=11
25.0		-15.5	12-5-4 N=9
	FINE SAND (SP), light brown		7-6-5 N=11
			5-4-4 N=8
			10-8-6 N=14
			7-10-10 N=20
48.5		-39	
50.0	**LIMESTONE**, with fine sand, light brown	-40.5	5-7-7 N=14
	Boring Terminated at 50 Feet		

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 8.5'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-15-2021 | Boring Completed: 06-15-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-1

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-2

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 7.75 (Ft.)

DEPTH		ELEVATION (Ft.)	FIELD TEST RESULTS
0.1	**ASPHALT**, (1" Thick)	7.5	16-8-7-6 N=15
0.6	**FILL - LIMEROCK (GP)**, with fine sand, light brown	7	
2.0	**FILL - FINE SAND (SP)**, light brown	6	5-5-6-8 N=11
4.0	**FILL - FINE SAND (SP)**, with limerock, light brown	4	5-7-7-7 N=14
	LIMESTONE, with fine sand, light brown		8-9-7-8 N=16
			8-5-6-4 N=11
			7-5-6 N=11
			11-8-7 N=15
25.0		-17.5	8-5-3 N=8
	FINE SAND (SP), with limestone lenses/layers, light brown		
30.0		-22.5	11-10-8 N=18
	FINE SAND (SP), light brown		9-10-10 N=20
			8-13-14 N=27
			11-12-15 N=27
48.5		-41	
	LIMESTONE, with fine sand, light brown		5-4-6 N=10

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 7.7'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-11-2021 | Boring Completed: 06-14-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-2

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-2

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 7.75 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS
	LIMESTONE, with fine sand, light brown *(continued)*	55	7-6-4 N=10
		60	26-50/5"
		65	33-21-17 N=38
70.0	-62.5	70	17-44-25 N=69
	FINE SAND (SP), light brown	75	12-19-20 N=39
		80	10-15-16 N=31
83.5	-76		
85.0	**LIMESTONE**, with fine sand, light brown -77.5		50/5"
	FINE SAND (SP), with limestone lenses/layers, light brown	85	
		90	12-10-8 N=18
		95	10-7-7 N=14
100.0	-92.5	100	7-7-7 N=14
	Boring Terminated at 100 Feet		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 7.7'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-11-2021 | Boring Completed: 06-14-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-2

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-3

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.8 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS
0.3	3.5	**TOPSOIL (OL)**, dark brown, (3" Thick)	3-2-3-4 N=5
0.7	3	**FILL - FINE SAND (SP)**, with limerock, brown	2-2-2-1 N=4
		FINE SAND (SP), light brown	1-1-2-2 N=3
5.0	-1		3-3-2-3 N=5
		LIMESTONE, with fine sand, light brown	2-2-3-4 N=5
			14-11-13 N=24
			12-8-6 N=14
25.0	-21		6-5-5 N=10
		FINE SAND (SP), with limestone lenses/layers, light brown	5-4-4 N=8
30.0	-26		5-6-6 N=12
		FINE SAND (SP), light brown	4-5-4 N=9
			3-3-3 N=6
48.5	-44.5		
50.0	-46	**LIMESTONE**, with fine sand, light brown	5-3-4 N=7
		Boring Terminated at 50 Feet	

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.3'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-16-2021 | Boring Completed: 06-16-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-4

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.34 (Ft.)

DEPTH		ELEVATION (Ft.)	FIELD TEST RESULTS
0.3	**ASPHALT**, (3" Thick)	3	10-7-4-3 N=11
0.9	**FILL - FINE SAND (SP)**, with limerock, light brown	2.5	3-2-1-1 N=3
4.0	**FINE SAND (SP)**, light brown	-0.5	4-3-4-4 N=7
	LIMESTONE, with fine sand, light brown		4-6-6-5 N=12
			7-7-7-10 N=14
			11-13-9 N=22
			8-10-11 N=21
25.0		-21.5	7-5-4 N=9
	FINE SAND (SP), light brown		6-4-5 N=9
			4-5-5 N=10
			6-7-6 N=13
			5-7-7 N=14
48.5		-45	
50.0	**LIMESTONE**, with fine sand, light brown	-46.5	5-2-3 N=5
	Boring Terminated at 50 Feet		

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 3.5'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-15-2021 | Boring Completed: 06-15-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-5

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 6.12 (Ft.)

DEPTH	ELEVATION (Ft.)	Stratum Description	FIELD TEST RESULTS
0.2	6	**ASPHALT**, (2" Thick)	9-3-3-3 N=6
0.3	6	**FILL - LIMEROCK (GP)**, with fine sand, light brown	3-2-2-2 N=4
		FINE SAND (SP), light brown	1-0-0-1 N=0
6.1	0		1-3-4-5 N=7
		LIMESTONE, with fine sand, light brown	5-5-5-3 N=10
9.0	-3		
		FINE SAND (SP), light brown	1-0-11 N=11
13.5	-7.5		
14.8	-8.5	**SILTY FINE SAND (SM)**, light brown	6-7-24 N=31
15.0	-9	**LIMESTONE**, with fine sand, light brown	7-3-3 N=6
		SILTY FINE SAND (SM), light brown	4-4-6 N=10
23.5	-17.5		8-7-13 N=20
25.0	-19	**LIMESTONE**, with fine sand, light brown	7-10-13 N=23
		FINE SAND (SP), with limestone lenses/layers, light brown	6-6-6 N=12
30.0	-24		6-4-5 N=9
		FINE SAND (SP), light brown	
48.5	-42.5		
		LIMESTONE, with fine sand, light brown	

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
0: Weight of Hammer

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 7.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-10-2021 | Boring Completed: 06-11-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-5

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 6.12 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS
LIMESTONE, with fine sand, light brown *(continued)*		55	8-13-12 N=25
		60	13-50/5"
65.0	-59	65	20-14-14 N=28
FINE SAND (SP), light brown		70	13-15-9 N=24
		75	15-20-23 N=43
78.5	-72.5	80	10-15-16 N=31
FINE SAND (SP), with limestone lenses/layers, light brown		85	8-10-11 N=21
		90	11-13-16 N=29
		95	9-7-5 N=12
98.5	-92.5		
100.0 **LIMESTONE**, with fine sand, light brown	-94	100	10-21-43 N=64
Boring Terminated at 100 Feet			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 7.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-10-2021 | Boring Completed: 06-11-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-6

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.6 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS
0.3	3.3	**TOPSOIL (OL)**, dark brown, (3" Thick)	2-2-1-2 N=3
		FINE SAND (SP), light brown	2-1-1-1 N=2
5.1	-1.5		1-1-1-2 N=2
		LIMESTONE, with fine sand, light brown	3-3-4-4 N=7
			6-7-9-12 N=16
			3-2-3 N=5
			10-4-4 N=8
25.0	-21.5		6-5-5 N=10
		FINE SAND (SP), with limestone lenses/layers, light brown	
30.0	-26.5		5-6-9 N=15
		FINE SAND (SP), light brown	7-7-5 N=12
			7-7-10 N=17
			5-5-5 N=10
48.5	-45		
		LIMESTONE, with fine sand, light brown	8-5-4 N=9

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 3.7'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-09-2021 | Boring Completed: 06-09-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-6

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.6 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS
LIMESTONE, with fine sand, light brown *(continued)*				
55.0	-51.5	55		7-2-2 N=4
FINE SAND (SP), with limestone lenses/layers, light brown		60		5-3-2 N=5
63.5	-60			
LIMESTONE, with fine sand, light brown		65		5-6-6 N=12
69.0	-65.5			
FINE SAND (SP), with limestone lenses/layers, light brown		70		15-13-11 N=24
		75		9-11-9 N=20
		80		17-15-16 N=31
		85		7-10-13 N=23
		90		14-15-19 N=34
93.5	-90			
LIMESTONE, with fine sand, light brown		95		4-6-3 N=9
100.0	-96.5			14-50/5"
Boring Terminated at 100 Feet		100		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 3.7'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-09-2021 | Boring Completed: 06-09-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-7

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.76 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS
0.3	3.5	**TOPSOIL (OL)**, dark brown, (3" Thick)	2-3-4-4 N=7
3.2	0.5	**FINE SAND (SP)**, light brown	4-3-4-9 N=7
		LIMESTONE, with fine sand, light brown	6-4-5-8 N=9
			10-5-7-9 N=12
			11-8-9-12 N=17
			12-8-9 N=17
			11-5-4 N=9
25.0	-21		4-4-4 N=8
		FINE SAND (SP), with limestone lenses/layers, light brown	
30.0	-26		8-5-4 N=9
		FINE SAND (SP), light brown	6-6-7 N=13
			8-10-8 N=18
			10-12-9 N=21
48.5	-44.5		
		LIMESTONE, with fine sand, light brown	4-5-5 N=10

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

GRAPHIC LOG

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.3'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-07-2021 | Boring Completed: 06-07-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-7

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.76 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS
LIMESTONE, with fine sand, light brown *(continued)*		55		5-3-4 N=7
60.0	-56	60		7-5-4 N=9
FINE SAND (SP), with limestone lenses/layers, light brown		65		5-2-2 N=4
70.0	-66	70		11-11-13 N=24
FINE SAND (SP), light brown				
74.8	-71	75		13-16-16 N=32
75.0 **LIMESTONE**, with fine sand, light brown	-71			
FINE SAND (SP), with limestone lenses/layers, light brown		80		10-9-6 N=15
		85		5-4-4 N=8
		90		14-10-8 N=18
		95		14-14-10 N=24
98.5	-94.5			
100.0 **LIMESTONE**, with fine sand, light brown	-96	100		25-30-21 N=51
Boring Terminated at 100 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.3'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-07-2021 | Boring Completed: 06-07-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-8

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 4.86 (Ft.)

DEPTH		ELEVATION (Ft.)	FIELD TEST RESULTS
0.3	**TOPSOIL (OL)**, dark brown, (3" Thick)	4.5	7-9-7-7 N=16
2.0	**FILL - FINE SAND (SP)**, with limerock, light brown and brown	3	8-4-3-2 N=7
	FINE SAND (SP), traces of wood, light brown		2-1-2-2 N=3
6.0		-1	2-3-4-7 N=7
	LIMESTONE, with fine sand, light brown		11-6-10-7 N=16
			8-10-12 N=22
20.0		-15	5-7-7 N=14
	FINE SAND (SP), light brown		6-5-5 N=10
			7-5-9 N=14
38.5		-33.5	5-8-11 N=19
	LIMESTONE, with fine sand, light brown		5-3-4 N=7
			6-5-3 N=8
50.0		-45	7-3-4 N=7
	Boring Terminated at 50 Feet		

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encoutered at 4.7'

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-10-2021 | Boring Completed: 06-10-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-8

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-9

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.8 (Ft.)

DEPTH		ELEVATION (Ft.)	FIELD TEST RESULTS
0.3	**TOPSOIL (OL)**, dark brown, (3" Thick)	3.5	1-2-3-3 N=5
1.0	**FILL - FINE SAND (SP)**, brown	3	7-10-3-1 N=13
3.6	**FINE SAND (SP)**, light brown	0	2-3-4-7 N=7
4.0	**LIMESTONE**, with fine sand, light brown	0	10-10-9-10 N=19
6.0	**FINE SAND (SP)**, with limestone lenses/layers, light brown	-2	4-6-10-14 N=16
	LIMESTONE, with fine sand, light brown		7-20-11 N=31
25.0		-21	7-5-5 N=10
	FINE SAND (SP), light brown		5-4-6 N=10
			4-5-7 N=12
			6-7-10 N=17
			5-8-9 N=17
44.5		-40.5	1-2-5 N=7
	LIMESTONE, with fine sand, light brown		13-11-6 N=17
50.0		-46	
	Boring Terminated at 50 Feet		

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.3'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-17-2021	Boring Completed: 06-17-2021
Drill Rig: BK-66	Driller: HA
Project No.: 34215018	Exhibit: A-9

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-10

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.3 (Ft.)

DEPTH		ELEVATION (Ft.)	FIELD TEST RESULTS
0.3	**TOPSOIL (OL)**, dark brown, (3" Thick)	3	5-9-5-6 N=14
1.4	**FILL - FINE SAND (SP)**, brown	2	4-3-2-2 N=5
	FINE SAND (SP), light brown		2-3-4-6 N=7
			5-5-4-4 N=9
10.0		-6.5	5-6-6-8 N=12
	LIMESTONE, with fine sand, light brown		8-6-5 N=11
			18-19-7 N=26
25.0		-21.5	4-4-3 N=7
	FINE SAND (SP), light brown		2-3-4 N=7
			5-3-3 N=6
			12-16-18 N=34
			6-5-6 N=11
48.5		-45	
50.0	**LIMESTONE**, with fine sand, light brown	-46.5	5-6-4 N=10
	Boring Terminated at 50 Feet		

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS: ▽ at 4.1'

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.1'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-16-2021	Boring Completed: 06-16-2021
Drill Rig: BK-66	Driller: HA
Project No.: 34215018	Exhibit: A-10

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-11

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 2.91 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS
0.1	3	**ASPHALT**, (1" Thick)	11-6-4-3 N=10
0.6	2.5	**FILL - FINE SAND (SP)**, with limerock, light brown	2-2-1-2 N=3
3.8	-1	**FINE SAND (SP)**, light brown	2-3-3-4 N=6
6.0	-3	**FINE SAND (SP)**, with limestone lenses/layers, light brown	2-4-8-8 N=12
7.8	-5	**FINE SAND (SP)**, light brown	10-7-6-6 N=13
		LIMESTONE, with fine sand, light brown	8-10-9 N=19
			7-8-7 N=15
25.0	-22		4-6-5 N=11
		FINE SAND (SP), with limestone lenses/layers, light brown	6-4-3 N=7
30.0	-27		8-8-7 N=15
		FINE SAND (SP), light brown	6-5-6 N=11
43.5	-40.5		6-5-4 N=9
		FINE SAND (SP), with limestone lenses/layers, light brown	6-4-4 N=8
48.5	-45.5	**LIMESTONE**, with fine sand, light brown	

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-08-2021 | Boring Completed: 06-08-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. B-11

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 2.91 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS
LIMESTONE, with fine sand, light brown *(continued)*		55	4-6-4 N=10
		60	7-3-3 N=6
63.5	-60.5		
FINE SAND (SP), with limestone lenses/layers, light brown		65	4-5-3 N=8
		70	8-8-13 N=21
73.5	-70.5		
75.0 **LIMESTONE**, with fine sand, light brown	-72	75	24-18-13 N=31
FINE SAND (SP), with limestone lenses/layers, light brown		80	12-10-9 N=19
		85	15-11-12 N=23
		90	12-9-9 N=18
		95	10-12-15 N=27
98.5	-95.5		
100.0 **LIMESTONE**, with fine sand, light brown	-97	100	18-21-19 N=40
Boring Terminated at 100 Feet			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-08-2021 | Boring Completed: 06-08-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. P-1

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 8.92 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.1 **ASPHALT**, (1.5" Thick)	9				
0.5 **FILL - LIMEROCK (GP)**, with fine sand, light brown	8.5				19-8-7-7 N=15
2.6 **FINE SAND (SP)**, light brown	6.5				7-7-8-9 N=15
LIMESTONE, with fine sand, light brown		5	▽		9-14-20-15 N=34
					12-11-9-9 N=20
10.0	-1	10			12-9-10-10 N=19

Boring Terminated at 10 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 7.8'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-18-2021 | Boring Completed: 06-18-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-12

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. P-2

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.76 (Ft.)

DEPTH	ELEVATION (Ft.)		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.2	3.5	**TOPSOIL (OL)**, dark brown, (2" Thick)				
		FINE SAND (SP), light brown		▽		2-3-4-5 N=7
						3-1-2-2 N=3
5.0	-1		5			2-3-3-3 N=6
6.0	-2	**LIMESTONE**, with fine sand, light brown				3-5-5-7 N=10
8.0	-4	**FINE SAND (SP)**, with limestone lenses/layers, light brown				12-11-9-10 N=20
		LIMESTONE, with fine sand, light brown				
10.0	-6		10			

Boring Terminated at 10 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-18-2021 | Boring Completed: 06-21-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-13

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. P-3

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 7.35 (Ft.)

DEPTH		ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS
0.1	**ASPHALT**, (1.5" Thick)	7.5		18-7-5-3 N=12
0.8	**FILL - FINE SAND (SP)**, with limerock, light brown	6.5		
4.0	**FINE SAND (SP)**, light brown	3.5		3-2-1-1 N=3
6.0	**FINE SAND (SP)**, with limestone lenses/layers, light brown	1.5	5	1-0-1-3 N=1
	LIMESTONE, with fine sand, light brown			4-6-10-14 N=16
10.0		-2.5	10	7-7-9-12 N=16
	Boring Terminated at 10 Feet			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
0: Weight of Hammer

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 6.7'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-18-2021 | Boring Completed: 06-18-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-14

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. P-4

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.5 (Ft.)

DEPTH		ELEVATION (Ft.)	FIELD TEST RESULTS
0.3	**TOPSOIL (OL)**, dark brown, (3" Thick)	3.5	6-8-9-8 N=17
1.0	**FILL - FINE SAND (SP)**, with limerock, light brown	2.5	7-5-4-3 N=9
2.0	**FINE SAND (SP)**, light brown	1.5	1-2-2-3 N=4
	LIMESTONE, with fine sand, light brown		3-3-4-4 N=7
10.0		-6.5	6-4-7-7 N=11

Boring Terminated at 10 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.1'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-21-2021 | Boring Completed: 06-21-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-15

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. P-5

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 2.89 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.1	3	**ASPHALT**, (1.5" Thick)				
0.4	2.5	**FILL - FINE SAND (SP)**, with limerock, light brown				17-5-4-4 N=9
		FINE SAND (SP), light brown		▽		3-3-3-4 N=6
5.0	-2		5			3-4-6-9 N=10
		LIMESTONE, with fine sand, light brown				12-10-3-2 N=13
8.6	-5.5					
10.0	-7	**FINE SAND (SP)**, light brown	10			6-2-2-1 N=4
		Boring Terminated at 10 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 3.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-18-2021 | Boring Completed: 06-18-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-16

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. P-6

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.8 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.3 **ASPHALT**, (3" Thick)	3.5				
FINE SAND (SP), light brown			▽		1-1-2-3 N=3
					1-2-1-1 N=3
5.0	-1	5			1-1-2-2 N=3
6.0 **FINE SAND (SP)**, with limestone lenses/layers, light brown	-2				6-5-4-6 N=9
LIMESTONE, with fine sand, light brown					12-13-20-8 N=33
10.0	-6	10			
Boring Terminated at 10 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 3.1'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-17-2021 | Boring Completed: 06-17-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-17

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. P-7

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: Along SE 11th Street between SE 3rd Avenue and S. Federal Highway, Fort Lauderdale, FL

LOCATION See Exploration Plan

Surface Elev.: 3.6 (Ft.)

DEPTH		ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.3	**TOPSOIL (OL)**, dark brown, (3" Thick)	3.3				
2.0	**FILL - FINE SAND (SP)**, with limerock, light brown	1.5				3-3-4-3 N=7
4.0	**FINE SAND (SP)**, with limestone lenses/layers, light brown	-0.5		▽		2-1-1-2 N=2
	LIMESTONE, with fine sand, light brown		5			6-5-6-9 N=11
						5-7-7-8 N=14
10.0		-6.5	10			6-7-7-7 N=14
	Boring Terminated at 10 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Rotary Mud Drilling and Casing

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.3'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 06-21-2021 | Boring Completed: 06-21-2021

Drill Rig: BK-66 | Driller: HA

Project No.: 34215018 | Exhibit: A-18

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C.GPJ TERRACON_DATATEMPLATE.GDT 6/24/21

BORING LOG NO. TB-1

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1098° Longitude: -80.1397°

Surface Elev.: 6.8 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS
0.1	6.5	**ASPHALT**, black, (1" ± Thick)	12-6-4-3 N=10
0.3	6.5	**FILL - LIMEROCK (GP)**, with fine sand, light brown	2-2-2-1 N=4
		FINE SAND (SP), brown to light brown	1-1-2-1 N=3
8.0	-1		
		LIMESTONE, with fine sand, light brown	1-1-1-1 N=2
			3-4-5-5 N=9
		Total loss of drilling fluid at 16 feet	10-8-5 N=13
			4-5-4 N=9
25.0	-18		2-2-2 N=4
		FINE SAND (SP), light brown	2-3-3 N=6
			4-4-5 N=9
			4-5-9 N=14
			5-8-8 N=16
48.5	-41.5		
		LIMESTONE, with fine sand, light brown to light gray	5-6-7 N=13
			3-2-3 N=5
			13-10-16 N=26
			18-15-20 N=35
			18-35-16 N=51
75.0	-68		10-10-12 N=22
		FINE SAND (SP), with limestone lenses and layers, light gray	

DEPTH (Ft.): 10, 20, 30, 40, 50, 60, 70

WATER LEVEL OBSERVATIONS: ▽ Water Initially Encoutered at 5.0'

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 5.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-25-2021	Boring Completed: 08-26-2021
Drill Rig: CME-75	Driller: OC
Project No.: 34215018	Exhibit: A-1

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-1

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1098° Longitude: -80.1397°

Surface Elev.: 6.8 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS
		FINE SAND (SP), with limestone lenses and layers, light gray *(continued)*	80		15-15-16 N=31
83.5	-76.5				
		LIMESTONE, with fine sand, light gray Thin lense of hard rock at 85 feet			50/3"
90.0	-83		90		23-35-50/3"
		FINE SAND (SP), with limestone lenses and layers, light gray			5-3-3 N=6
			100		3-3-4 N=7
					5-8-10 N=18
108.5	-101.5				
		LIMESTONE, with fine sand, light gray	110		18-38-19 N=57
					15-22-25 N=47
120.0	-113		120		26-32-50/5"
		FINE SAND (SP), with limestone lenses and layers, light gray			9-10-10 N=20
128.5	-121.5				
		LIMESTONE, with fine sand, light gray Extremely hard drilling from 130 to138.5 feet	130		13-20-50/4"
					25-15-23 N=38
141.0	-134		140		15-8-10 N=18
		FINE SAND (SP), with limestone lenses and layers, light gray Total loss of drilling fluid at 141 feet			13-15-15 N=30
146.5	-139.5				
		LIMESTONE, with fine sand, light gray			
150.0	-143	Thin lense of hard rock at 150 feet	150		23-50/3"
		FINE SAND (SP), with limestone lenses and layers, light gray			18-15-25

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 5.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-25-2021	Boring Completed: 08-26-2021
Drill Rig: CME-75	Driller: OC
Project No.: 34215018	Exhibit: A-1

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-1

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1098° Longitude: -80.1397°

Surface Elev.: 6.8 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	158.5 **FINE SAND (SP)**, with limestone lenses and layers, light gray *(continued)*	-151.5				N=40
	LIMESTONE, with fine sand, light gray to light brown		160			23-50/3"
						32-18-8 N=26
			170			50/3"
	175.0	-168				50/5"
	Boring Terminated at 175 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 5.0'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-25-2021	Boring Completed: 08-26-2021
Drill Rig: CME-75	Driller: OC
Project No.: 34215018	Exhibit: A-1

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-2

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1098° Longitude: -80.1391°

Surface Elev.: 4.1 (Ft.)

DEPTH	ELEVATION (Ft.)		FIELD TEST RESULTS
0.3	4	**TOPSOIL (OL)**, brown, (4" ± Thick)	
		FINE SAND (SP), light gray to light brown	2-2-3-2 N=5
6.0	-2		2-2-1-1 N=3
		LIMESTONE, with fine sand, light brown	1-1-1-1 N=2
			3-4-4-5 N=8
			4-4-5-5 N=9
			4-5-7 N=12
			5-5-4 N=9
25.0	-21		3-2-2 N=4
		FINE SAND (SP), light brown	3-3-4 N=7
			4-5-5 N=10
			9-8-10 N=18
43.5	-39.5		8-4-4 N=8
		FINE SAND (SP), with limestone lenses and layers, light gray	
48.5	-44.5		3-3-4 N=7
		LIMESTONE, with fine sand, light brown to light gray	4-5-5 N=10
		Total loss of drilling fluid at 52 feet	7-8-10 N=18
			13-10-15 N=25
70.0	-66		13-25-18 N=43
		FINE SAND (SP), light gray	7-8-8 N=16

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.3'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-27-2021 | Boring Completed: 08-30-2021

Drill Rig: CME-75 | Driller: OC

Project No.: 34215018 | Exhibit: A-2

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-2

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1098° Longitude: -80.1391°

Surface Elev.: 4.1 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	FINE SAND (SP), light gray *(continued)*	80			12-13-15 N=28
	Thin lense of hard rock at 85 feet				8-8-10 N=18
88.5	-84.5				
91.0	**LIMESTONE**, with fine sand, light gray -87	90			28-50/5"
	FINE SAND (SP), with limestone lenses and layers, light gray				13-8-5 N=13
		100			5-7-7 N=14
103.5	-99.5				
	LIMESTONE, with fine sand, light gray to light brown				8-10-8 N=18
	Partial loss of drilling fluid at 106 feet	110			5-3-50/3"
					15-16-18 N=34
		120			10-10-12 N=22
					10-8-13 N=21
130.0	-126	130			7-13-35 N=48
	FINE SAND (SP), with limestone lenses and layers, light gray				21-15-20 N=35
		140			8-13-13 N=26
143.5	-139.5				
	LIMESTONE, with fine sand, light gray				25-32-35 N=67
150.0	-146	150			50/3"
	Boring Terminated at 150 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.3'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-27-2021 | Boring Completed: 08-30-2021

Drill Rig: CME-75 | Driller: OC

Project No.: 34215018 | Exhibit: A-2

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-3

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1099° Longitude: -80.1394°

Surface Elev.: 4.4 (Ft.)

DEPTH	ELEVATION (Ft.)		FIELD TEST RESULTS
0.1	4.5	**ASPHALT**, black, (1" ± Thick)	
0.7	3.5	**FILL - LIMEROCK (GP)**, with fine sand, light brown	8-4-3-1 N=7
		FINE SAND (SP), light brown	1-2-1-1 N=3
7.0	-2.5	**LIMESTONE**, with fine sand, light brown	1-1-2-2 N=3
			2-2-5-7 N=7
			8-10-9-7 N=19
		Total loss of drilling fluid at 16 feet	4-5-12 N=17
			4-5-5 N=10
25.0	-20.5	**FINE SAND (SP)**, light brown	3-3-2 N=5
			6-6-7 N=13
35.0	-30.5	**SILTY FINE SAND (SM)**, light gray	4-4-5 N=9
40.0	-35.5	**FINE SAND (SP)**, light gray	2-2-2 N=4
44.5	-40	**LIMESTONE**, with fine sand, light brown	1-1-2 N=3
			5-5-7 N=12
			8-10-8 N=18
			7-7-10 N=17
65.0	-60.5	**FINE SAND (SP)**, with limestone lenses and layers, light gray	15-20-13 N=33
			8-10-10 N=20
75.0	-70.5	**FINE SAND (SP)**, light gray	8-11-15 N=26

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 5.5'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-23-2021 | Boring Completed: 08-24-2021

Drill Rig: CME-75 | Driller: OC

Project No.: 34215018 | Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-3

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1099° Longitude: -80.1394°

Surface Elev.: 4.4 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	FINE SAND (SP), light gray *(continued)*		80			9-7-8 N=15
	Thin lense of hard rock at 82 feet					8-8-12 N=20
	88.5	-84				
	FINE SAND (SP), with limestone lenses and layers, light gray		90			5-5-3 N=8
						3-2-1 N=3
			100			2-3-5 N=8
						8-8-7 N=15
	108.5	-104				
	LIMESTONE, with fine sand, light gray and light brown		110			35-50/3"
						50/3"
			120			3-5-5 N=10
						4-5-5 N=10
			130			5-5-3 N=8
	Extremely hard drilling at 132 feet					2-3-4 N=7
			140			50/2"
						30-48-26 N=74
	150.0	-145.5				25-50/3"
	FINE SAND (SP), with limestone lenses and layers, light gray		150			32-12-8

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 5.5'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-23-2021 | Boring Completed: 08-24-2021

Drill Rig: CME-75 | Driller: OC

Project No.: 34215018 | Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-3

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1099° Longitude: -80.1394°

Surface Elev.: 4.4 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	158.5	-154				N=20
	FINE SAND (SP), with limestone lenses and layers, light gray *(continued)*					
	LIMESTONE, with fine sand, light gray and light brown		160			50/3"
	Thin lense of hard rock at 162 feet					23-32-20 N=52
	Total loss of drilling fluid at 167 feet		170			50/3"
	175.0	-170.5				12-8-10 N=18
	Boring Terminated at 175 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 5.5'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-23-2021	Boring Completed: 08-24-2021
Drill Rig: CME-75	Driller: OC
Project No.: 34215018	Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-4

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1101° Longitude: -80.1395°

Surface Elev.: 3.9 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.3	3.5	**TOPSOIL (OL)**, brown, (4" ± Thick)				2-3-3-2 N=6
4.0	0	**FINE SAND (SP)**, light brown		▽		2-1-1-2 N=2
6.0	-2	**FINE SAND (SP)**, dark brown				2-2-2-3 N=4
		LIMESTONE, with fine sand, light brown	10			8-8-7-8 N=15
						8-10-10-6 N=20
		Total loss of drilling fluid at 16 feet				4-3-4 N=7
22.0	-18		20			3-5-3 N=8
		FINE SAND (SP), with limestone lenses and layers, light brown				
26.0	-22					2-1-3 N=4
		FINE SAND (SP), light brown to light gray	30			4-5-7 N=12
						6-8-8 N=16
40.0	-36		40			3-2-2 N=4
		SILTY FINE SAND (SM), light gray				1-1-1 N=2
50.0	-46		50			2-2-3 N=5
		FINE SAND (SP), with limestone lenses and layers, light gray				7-3-5 N=8
		Thin lense of hard rock at 52 feet	60			4-5-5 N=10
						5-7-8 N=15
			70			8-8-10 N=18
						6-8-8 N=16

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 5.1'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-20-2021	Boring Completed: 08-23-2021
Drill Rig: CME-75	Driller: OC
Project No.: 34215018	Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-4

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1101° Longitude: -80.1395°

Surface Elev.: 3.9 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
		FINE SAND (SP), with limestone lenses and layers, light gray *(continued)*	80			8-8-10 N=18
						13-15-10 N=25
88.5	-84.5					
		LIMESTONE, with fine sand, light brown Thin lense of hard rock from 88.5 to 91 feet	90			28-35-50 N=85
95.0	-91	Thin lense of hard rock from 93.5 to 94 feet				17-7-10 N=17
		FINE SAND (SP), with limestone lenses and layers, light gray	100			8-10-10 N=20
						12-13-15 N=28
			110			10-13-17 N=30
						15-21-28 N=49
			120			18-23-35 N=58
123.5	-119.5					
		LIMESTONE, with fine sand, light gray and light brown				12-15-23 N=38
		Extremely hard drilling from 126 to 128 feet	130			30-35-28 N=63
						5-8-6 N=14
		Total loss of drilling fluid at 137 feet	140			50/3"
141.0	-137					
		FINE SAND (SP), with limestone lenses and layers, light gray				10-12-18 N=30
150.0	-146		150			15-22-25 N=47
		Boring Terminated at 150 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 5.1'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-20-2021 | Boring Completed: 08-23-2021

Drill Rig: CME-75 | Driller: OC

Project No.: 34215018 | Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-5

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1101° Longitude: -80.1392°

Surface Elev.: 3.5 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.3 **TOPSOIL (OL)**, brown, (4" ± Thick)	3				1-2-2-2 N=4
2.0 **FINE SAND (SP)**, light brown	1.5				2-1-1-4 N=2
3.0 **FINE SAND (SP)**, brown	0.5		▽		3-4-5-4 N=9
LIMESTONE, with fine sand, light brown		10			3-2-3-4 N=5
					4-4-4-5 N=8
					3-4-4 N=8
		20			4-4-5 N=9
25.0	-21.5				3-2-3 N=5
FINE SAND (SP), light brown		30			4-5-5 N=10
					5-5-6 N=11
		40			6-8-8 N=16
43.5	-40				3-2-3 N=5
LIMESTONE, with fine sand, light brown					
50.0	-46.5	50			2-2-2 N=4
FINE SAND (SP), with limestone lenses and layers, light gray					5-7-7 N=14
		60			8-8-10 N=18
63.5	-60				28-50/3"
LIMESTONE, with fine sand, light gray Thin lense of hard rock at 67 feet					
70.0	-66.5	70			28-50/3"
FINE SAND (SP), with limestone lenses and layers, light gray					10-13-15 N=28

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.4'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-30-2021 | Boring Completed: 08-31-2021

Drill Rig: CME-75 | Driller: OC

Project No.: 34215018 | Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-5

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1101° Longitude: -80.1392°

Surface Elev.: 3.5 (Ft.)

DEPTH	ELEVATION (Ft.)	Material Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
78.5	-75	**LIMESTONE**, with fine sand, light gray and light brown	80			13-13-18 N=31
						20-26-30 N=56
90.0	-86.5		90			13-10-10 N=20
		FINE SAND (SP), with limestone lenses and layers, light gray				5-6-12 N=18
98.5	-95					
		LIMESTONE, with fine sand, light gray and light brown	100			15-23-20 N=43
						28-35-30 N=65
			110			50/3"
						50/2"
			120			15-7-10 N=17
						5-5-7 N=12
			130			9-10-7 N=17
						5-5-7 N=12
140.0	-136.5		140			10-12-10 N=22
		FINE SAND (SP), with limestone lenses and layers, light gray				9-8-8 N=16
			150			16-10-12 N=22
153.5	-150					
		LIMESTONE, with fine sand, light gray and light brown				50/3"

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.4'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-30-2021 | Boring Completed: 08-31-2021

Drill Rig: CME-75 | Driller: OC

Project No.: 34215018 | Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

BORING LOG NO. TB-5

PROJECT: Fort Lauderdale Courthouse

CLIENT: CEMS Engineering, Inc.
Wilmington, NC

SITE: SE 11th Street between SE 3rd Avenue and SE 4th Avenu
Fort Lauderdale, FL

LOCATION See Exploration Plan

Latitude: 26.1101° Longitude: -80.1392°

Surface Elev.: 3.5 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	LIMESTONE, with fine sand, light gray and light brown *(continued)*		160			50/4"
						25-20-18 N=38
			170			15-23-32 N=55
	175.0	-171.5				13-15-20 N=35
	Boring Terminated at 175 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary Drilling and Casing

Abandonment Method:
Boring backfilled with cement-grout upon completion

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encoutered at 4.4'*

Terracon
5371 NW 33rd Ave, Ste 201
Ft Lauderdale, FL

Boring Started: 08-30-2021 | Boring Completed: 08-31-2021

Drill Rig: CME-75 | Driller: OC

Project No.: 34215018 | Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 34215018 FORT LAUDERDALE C (1).GPJ TERRACON_DATATEMPLATE.GDT 9/14/21

PERCOLATION TEST RESULTS

HYDRAULIC CONDUCTIVITY TEST RESULTS

Fort Lauderdale Courthouse
Fort Lauderdale, Florida
Project No 34215018

SFWMD Method									
Test No.	Date Performed	Diameter		Depth of Hole (feet)	Depth to Groundwater Level Below Ground Surface (Feet)		Saturated Hole Depth, Ds (feet)	Average Flow Rate (gpm)	K, Hydraulic Conductivity (cfs/ft2-ft Head)
		Hole (inches)	Perforated Casing (inches)		Prior to Test	During Test			
P-1	06/18/21	6	2	10	7.8	0.00	2.2	1.60	4.67E-05
P-2	06/21/21	6	2	10	4.0	0.00	6.0	1.50	6.55E-05
P-3	06/18/21	6	2	10	6.7	0.00	3.3	2.00	6.25E-05
P-4	06/21/21	6	2	10	4.1	0.00	5.9	2.00	8.57E-05
P-5	06/18/21	6	2	10	3.0	0.00	7.0	2.00	1.10E-04
P-6	06/17/21	6	2	10	3.1	0.00	6.9	37.00	1.97E-03
P-7	06/21/21	6	2	10	4.3	0.00	5.7	2.60	1.08E-04

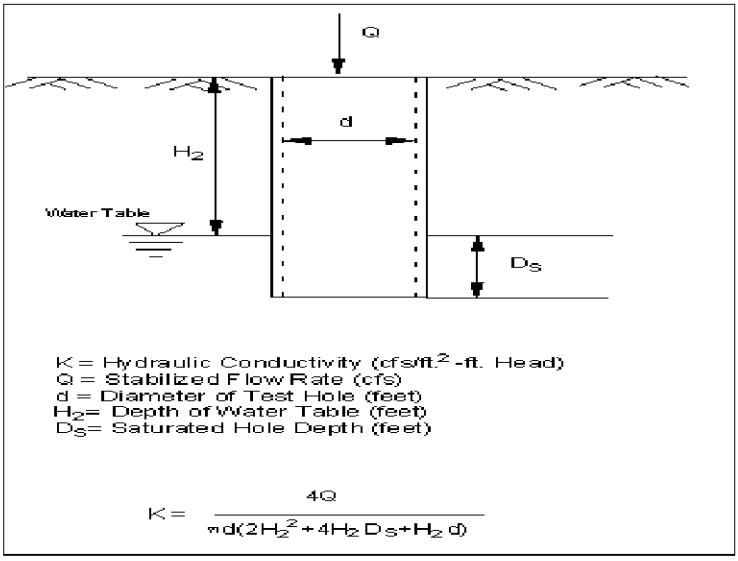
NOTES:

1) The above hydraulic conductivity values are for a French drain installed to the same depth as the borehole tests. **The values represent an ultimate value. The designer should decide on the required factor of safety**

2) The hydraulic conductivity values are calculated based on the South Florida Water Management Districts' USUAL OPEN HOLE CONSTANT HEAD exfiltration test procedure as shown below.

3) Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the boring was performed. The groundwater level in the table above could vary due to changes in the ground surface elevation at the location of the borings.

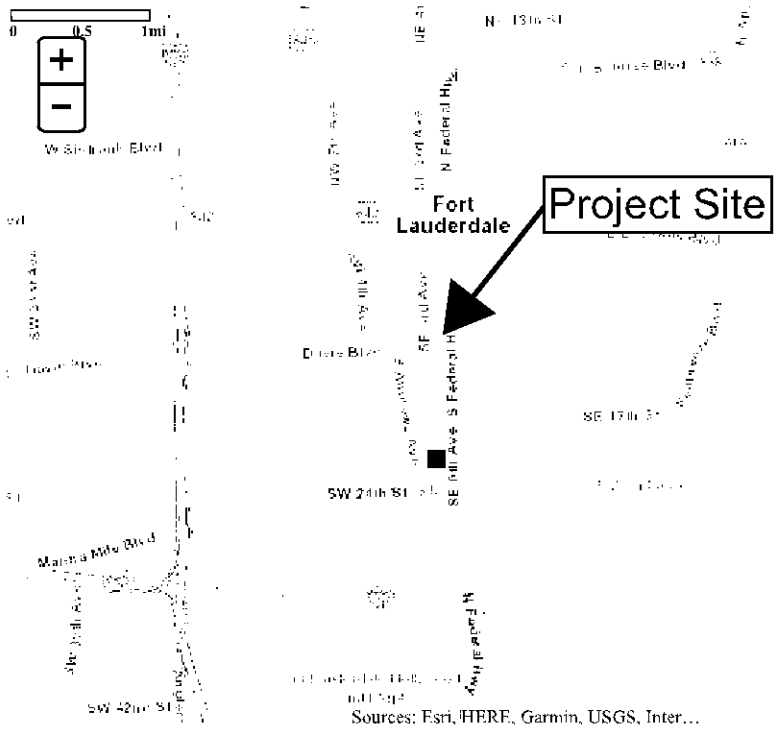
USUAL OPEN-HOLE CONSTANT HEAD BOREHOLE PERMEABILITY TEST SCHEMATIC



K = Hydraulic Conductivity (cfs/ft^2-ft. Head)
Q = Stabilized Flow Rate (cfs)
d = Diameter of Test Hole (feet)
H_2= Depth of Water Table (feet)
D_S= Saturated Hole Depth (feet)

$$K = \frac{4Q}{\pi d(2H_2^2 + 4H_2 D_S + H_2 d)}$$

SEASONAL HIGH GROUNDWATER DATA



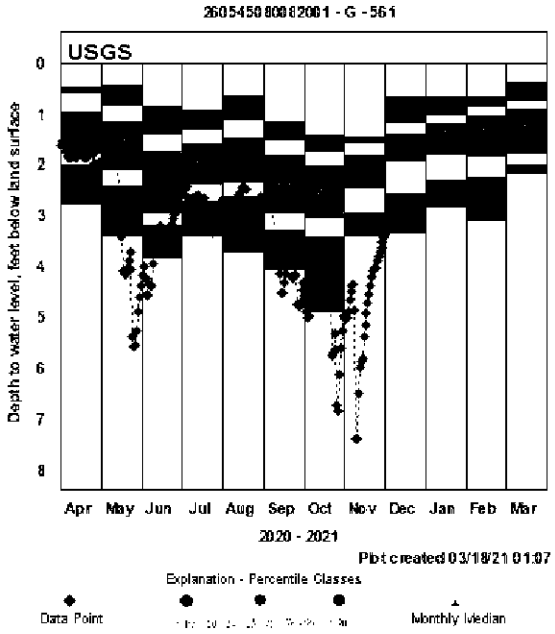
DESCRIPTION:
Latitude 26°05'45.8", Longitude 80°08'18.6" NAD83
Broward County, Florida, Hydrologic Unit 03090202
Well depth: 20.3 feet
Land surface altitude: 8.5feet above NGVD29.
Well completed in "Biscayne aquifer" (N400BISCYN) national aquifer.
Well completed in "Biscayne Limestone Aquifer" (112BSCNN) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Current / Historical Observations	2007-10-05	2021-03-23	
Daily Data			
Groundwater level above NGVD 1929, feet	1956-01-01	2021-03-22	18533
Field groundwater-level measurements	1948-02-11	2021-03-23	702
Water-Year Summary	2006	2019	14

OPERATION:
Record for this site is maintained by the USGS Florida Water Science Center - Ft. Lauderdale
Email questions about this site to Florida Water-Data Inquiries

Groundwater Watch Help Page



Most recent data value: 1.84 on 6/8/2021
Period of Record Monthly Statistics for 260545080082001
Groundwater level above NGVD 1929, feet
All Approved Continuous & Periodic Data Used In Analysis
Note: Highlighted values in the table indicate closest statistic to the most recent data value.

Month	Lowest Median	10th %ile	25th %ile	50th %ile	75th %ile	90th %ile	Highest Median	Number of Years
Jan	0.68	1.01	1.19	1.43	1.8	2.3	2.82	64
Feb	0.67	0.83	1.03	1.36	1.81	2.25	3.07	64
Mar	0.38	0.72	0.91	1.33	1.76	1.98	2.17	63
Apr	0.46	0.57	0.97	1.41	1.75	1.99	2.75	63
May	0.44	0.82	1.15	1.57	2.08	2.43	3.39	64
Jun	0.85	1.38	1.74	2.14	2.93	3.2	3.83	64
Jul	0.94	1.31	1.59	1.9	2.36	2.71	3.38	64
Aug	0.65	1.11	1.46	1.88	2.32	2.61	3.72	64
Sep	1.16	1.49	1.83	2.34	2.94	3.27	4.04	64
Oct	1.41	1.74	2.03	2.53	3.01	3.41	4.87	65
Nov	1.43	1.57	1.82	2.09	2.46	2.93	3.38	64
Dec	0.67	1.15	1.38	1.62	1.91	2.55	3.33	64

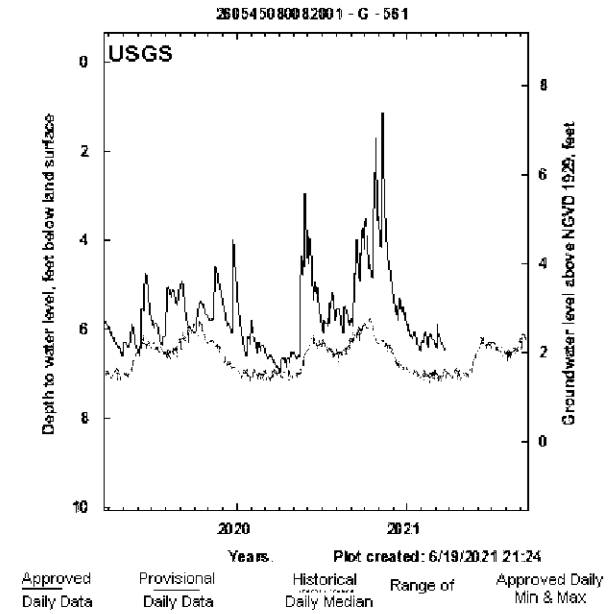
As of 6/20/2021 09:37-M

Statistics Options

View month/year statistics

Most recent Provisional daily data value: 1.84 on 06/08/21

Begin Date	End Date	Days	% Complete



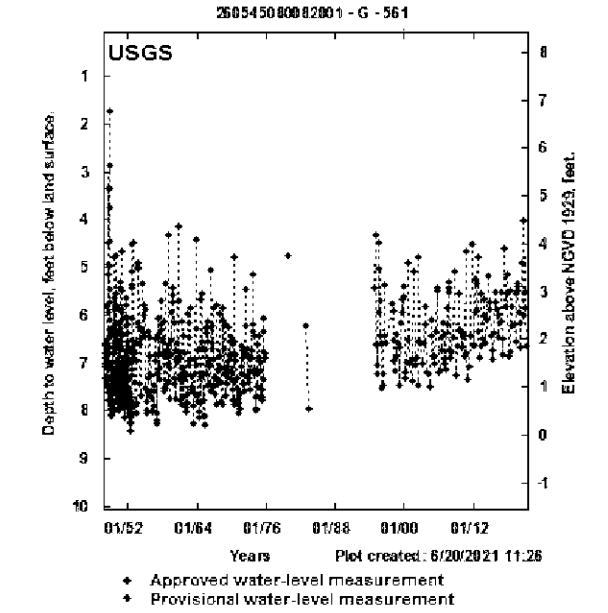
01/01/56	10/05/20					18,338		77
Lowest Level	**5th %ile**	**10th %ile**	**25th %ile**	**50th %ile**	**75th %ile**	**90th %ile**	**95th %ile**	**Highest Level**
0.23	0.86	1.06	1.42	1.86	2.39	3.01	3.39	6.59

View latest data on NWISWeb

View data in calendar format

Download data in text format

View daily medians



Summary for Period of Record Periodic Water Levels
Depth to water level, feet below land surface
Approved Periodic Water Level Values

Begin Date	End Date	Number of Values
02/11/48	03/23/21	697

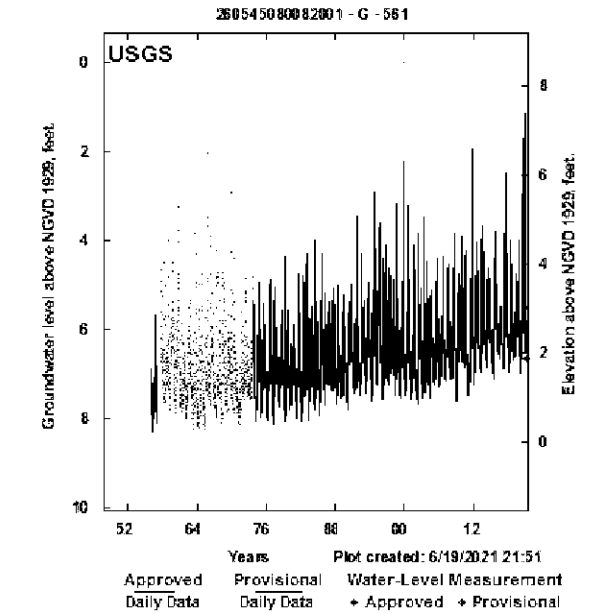
Highest WL	Date of Highest WL	Lowest WL	Date of Lowest WL
1.74	10/06/48	8.40	06/27/52

Groundwater Levels Options

View latest data on NWISWeb

Download groundwater levels in text format

Note: The most recent measurement on 03/23/2021 has the following status:
''



Summary for Period of Record - All Data Types
Depth to water level, feet below land surface

Begin Date	End Date	Number of Values
01/01/56	03/22/21	18,534

Lowest WL	Date of Lowest WL	Highest WL	Date of Highest WL
0.23	05/07/56	7.38	11/08/20

Period of Record Options

View latest data on NWISWeb for all data types

View month/year statistics

Download groundwater levels in text format of all data types

SEISMIC SITE CLASS CALCULATIONS

WEIGHTED AVERAGE SPT N-VALUE
FOR SEISMIC SITE CLASS EVALUATION

Seismic Site Class Based on Weighted Average SPT N-Value

Boring Number	Depth (ft) From	to	Soil	Average SPT N-Value (bpf)	Weighted Average SPT N-Value Per Layer	Boring Weighted Average
B-2	0	4	Fill	13	0.52	23
	4	25	Limestone	12	2.52	
	25	48.5	sand	23	5.405	
	48.5	70	Limestone	35	7.525	
	70	85	sand	35	5.25	
	85	100	sand	15	2.25	
B-5	0	6	Sand	3	0.18	22
	6	9	Limestone	7	0.21	
	9	30	sand	14	2.94	
	30	48.5	Sand	16	2.96	
	48.5	65	Limestone	28	4.62	
	65	100	sand	32	11.2	
B-6	0	5	Sand	2	0.1	15
	5	25	Limestone	9	1.8	
	25	48.5	sand	13	3.055	
	48.5	55	Limestone	6	0.39	
	55	63.5	Sand	5	0.425	
	63.5	69	Limestone	12	0.66	
	69	93.5	Sand	26	6.37	
	93.5	100	Limestone	29	1.885	
B-7	0	3	Sand	7	0.21	18
	3	25	Limestone	12	2.64	
	25	48.5	sand	15	3.525	
	48.5	60	Limestone	8	0.92	
	60	98.5	Sand	25	9.625	
	98.5	100	Limestone	51	0.765	
B-11	0	8	Sand	7	0.56	14
	8	25	Limestone	14	2.38	
	25	48.5	sand	10	2.35	
	48.5	64	Limestone	8	1.24	
	64	98.5	Sand	21	7.245	
	98.5	100	Limestone	40	0.6	
TB-1	0	8	Sand	4	0.32	20
	8	25	limestone	7	1.19	
	25	48.5	sand	11	2.585	
	48.5	75	limestone	25	6.625	
	75	83.5	sand	31	2.635	
	83.5	90	limestone	92	5.98	
	90	100	sand	10	1	
TB-2	0	6	sand	3	0.18	13
	6	25	limestone	8	1.52	
	25	48.5	sand	10	2.35	
	48.5	70	limestone	20	4.3	
	70	100	sand	17	5.1	
TB-3	0	7	sand	4	0.28	13
	7	25	limestone	11	1.98	
	25	44.5	sand	7	1.365	
	44.5	65	limestone	20	4.1	
	65	100	sand	14	4.9	
TB-4	0	6	sand	4	0.24	14
	6	22	limestone	12	1.92	
	22	88.5	sand	11	7.315	
	88.5	95	limestone	51	3.315	
	95	100	sand	20	1	
TB-5	0	3	sand	4	0.12	21
	3	25	limestone	6	1.32	
	25	43.5	sand	12	2.22	
	43.5	50	limestone	4	0.26	
	50	63.5	sand	16	2.16	
	63.5	70	limestone	100	6.5	
	70	78.5	sand	28	2.38	
	78.5	90	limestone	35	4.025	
	90	98.5	sand	18	1.53	
	98.5	100	limestone	43	0.645	

LPILE ANALYSIS OUTPUT

30-inch-diameter ACIP Pile
18-inch-diameter ACIP Pile

```
================================================================================

                    LPile for Windows, Version 2018-10.006

                 Analysis of Individual Piles and Drilled Shafts
                Subjected to Lateral Loading Using the p-y Method
                          © 1985-2018 by Ensoft, Inc.
                              All Rights Reserved

================================================================================

This copy of LPile is being used by:

Nick Mata
Fort Lauderdale

Serial Number of Security Device: 138584418

This copy of LPile is licensed for exclusive use by:

Terracon, LPILE Global, Global L

Use of this program by any entity other than Terracon, LPILE Global, Global L
is a violation of the software license agreement.

--------------------------------------------------------------------------------
                             Files Used for Analysis
--------------------------------------------------------------------------------

Path to file locations:
\Users\cnmata\OneDrive - Terracon Consultants Inc\Desktop\Desktop Projects\Active
PROJECTS\Courthouse\Revised Concept\LPILE\30-inch\

Name of input data file:
New LPile (USCS units).lp10

Name of output report file:
New LPile (USCS units).lp10

Name of plot output file:
New LPile (USCS units).lp10

Name of runtime message file:
New LPile (USCS units).lp10



--------------------------------------------------------------------------------
                           Date and Time of Analysis
--------------------------------------------------------------------------------
```

Date: September 17, 2021 Time: 10:04:54

Problem Title

Project Name: New Courthouse in Fort Lauderdale

Job Number: 34215061

Client: GSA

Engineer: NM

Description: 30 inch diameter ACIP Pile_B-5

Program Options and Settings

Computational Options:
- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:
- US Customary System Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed	=	500
- Deflection tolerance for convergence	=	1.0000E-05 in
- Maximum allowable deflection	=	100.0000 in
- Number of pile increments	=	100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- Analysis uses layering correction (Method of Georgiadis)
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined	=	1
Total length of pile	=	100.000 ft
Depth of ground surface below top of pile	=	0.0000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	30.0000
2	100.000	30.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile

Length of section	=	100.000000 ft
Shaft Diameter	=	30.000000 in
Shear capacity of section	=	0.0000 lbs

```
--------------------------------------------------------------------------------
                      Ground Slope and Pile Batter Angles
--------------------------------------------------------------------------------

Ground Slope Angle                                    =        0.000 degrees
                                                      =        0.000 radians

Pile Batter Angle                                     =        0.000 degrees
                                                      =        0.000 radians


--------------------------------------------------------------------------------
                      Soil and Rock Layering Information
--------------------------------------------------------------------------------

The soil profile is modelled using 7 layers

Layer 1 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer          =       0.0000 ft
   Distance from top of pile to bottom of layer       =     6.000000 ft
   Effective unit weight at top of layer              =   110.000000 pcf
   Effective unit weight at bottom of layer           =   110.000000 pcf
   Friction angle at top of layer                     =    29.000000 deg.
   Friction angle at bottom of layer                  =    29.000000 deg.
   Subgrade k at top of layer                         =       0.0000 pci
   Subgrade k at bottom of layer                      =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 2 is stiff clay without free water

   Distance from top of pile to top of layer          =     6.000000 ft
   Distance from top of pile to bottom of layer       =     9.000000 ft
   Effective unit weight at top of layer              =    62.600000 pcf
   Effective unit weight at bottom of layer           =    62.600000 pcf
   Undrained cohesion at top of layer                 =        4000. psf
   Undrained cohesion at bottom of layer              =        4000. psf
   Epsilon-50 at top of layer                         =       0.0000
   Epsilon-50 at bottom of layer                      =       0.0000

   NOTE: Default values for Epsilon-50 will be computed for this layer.

Layer 3 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer          =     9.000000 ft
```

```
   Distance from top of pile to bottom of layer        =    23.500000 ft
   Effective unit weight at top of layer               =    52.600000 pcf
   Effective unit weight at bottom of layer            =    52.600000 pcf
   Friction angle at top of layer                      =    32.000000 deg.
   Friction angle at bottom of layer                   =    32.000000 deg.
   Subgrade k at top of layer                          =       0.0000 pci
   Subgrade k at bottom of layer                       =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer           =    23.500000 ft
   Distance from top of pile to bottom of layer        =    48.500000 ft
   Effective unit weight at top of layer               =    52.600000 pcf
   Effective unit weight at bottom of layer            =    52.600000 pcf
   Friction angle at top of layer                      =    31.000000 deg.
   Friction angle at bottom of layer                   =    31.000000 deg.
   Subgrade k at top of layer                          =       0.0000 pci
   Subgrade k at bottom of layer                       =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 5 is stiff clay with user-defined k-value

   Distance from top of pile to top of layer           =    48.500000 ft
   Distance from top of pile to bottom of layer        =    65.000000 ft
   Effective unit weight at top of layer               =    62.600000 pcf
   Effective unit weight at bottom of layer            =    62.600000 pcf
   Undrained cohesion at top of layer                  =        5000. psf
   Undrained cohesion at bottom of layer               =        5000. psf
   Epsilon-50 at top of layer                          =       0.0000
   Epsilon-50 at bottom of layer                       =       0.0000
   Subgrade k at top of layer                          =       0.0000 pci
   Subgrade k at bottom of layer                       =       0.0000 pci

   NOTE: Default values for Epsilon-50 will be computed for this layer.
   NOTE: Default values for subgrade k will be computed for this layer.

Layer 6 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer           =    65.000000 ft
   Distance from top of pile to bottom of layer        =    98.500000 ft
   Effective unit weight at top of layer               =    52.600000 pcf
   Effective unit weight at bottom of layer            =    52.600000 pcf
   Friction angle at top of layer                      =    34.000000 deg.
   Friction angle at bottom of layer                   =    34.000000 deg.
   Subgrade k at top of layer                          =       0.0000 pci
   Subgrade k at bottom of layer                       =       0.0000 pci
```

NOTE: Default values for subgrade k will be computed for this layer.

Layer 7 is stiff clay without free water

Distance from top of pile to top of layer	=	98.500000 ft
Distance from top of pile to bottom of layer	=	100.000000 ft
Effective unit weight at top of layer	=	62.600000 pcf
Effective unit weight at bottom of layer	=	62.600000 pcf
Undrained cohesion at top of layer	=	8000. psf
Undrained cohesion at bottom of layer	=	8000. psf
Epsilon-50 at top of layer	=	0.0000
Epsilon-50 at bottom of layer	=	0.0000

NOTE: Default values for Epsilon-50 will be computed for this layer.

(Depth of the lowest soil layer extends 0.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	E50 or kpy krm pci
1	Sand	0.00	110.0000	--	29.0000	--
	default (Reese, et al.)	6.0000	110.0000	--	29.0000	--
	default					
2	Stiff Clay w/o Free Water	6.0000	62.6000	4000.	--	default
	default	9.0000	62.6000	4000.	--	default
	--					
3	Sand	9.0000	52.6000	--	32.0000	--
	default (Reese, et al.)	23.5000	52.6000	--	32.0000	--
	default					
4	Sand	23.5000	52.6000	--	31.0000	--
	default (Reese, et al.)	48.5000	52.6000	--	31.0000	--
	default					
5	Stiff Clay w/o Free Water, using k	48.5000	62.6000	5000.	--	default
	default	65.0000	62.6000	5000.	--	default

default	default					
6	Sand	65.0000	52.6000	--	34.0000	
--	default					
	(Reese, et al.)	98.5000	52.6000	--	34.0000	
--	default					
7	Stiff Clay	98.5000	62.6000	8000.	--	
default	--					
	w/o Free Water	100.0000	62.6000	8000.	--	
default	--					

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length
1	4	y = 0.375000 in	M = 0.0000 in-lbs	0.0000000	N.A.
2	5	y = 0.375000 in	S = 0.0000 in/in	0.0000000	N.A.

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	100.000000	ft
Shaft Diameter	=	30.000000	in
Concrete Cover Thickness (to edge of long. rebar)	=	3.000000	in
Number of Reinforcing Bars	=	9	bars
Yield Stress of Reinforcing Bars	=	60000.	psi
Modulus of Elasticity of Reinforcing Bars	=	29000000.	psi
Gross Area of Shaft	=	706.858347	sq. in.
Total Area of Reinforcing Steel	=	7.110000	sq. in.
Area Ratio of Steel Reinforcement	=	1.01	percent
Edge-to-Edge Bar Spacing	=	6.866463	in
Maximum Concrete Aggregate Size	=	0.750000	in
Ratio of Bar Spacing to Aggregate Size	=	9.16	
Offset of Center of Rebar Cage from Center of Pile	=	0.0000	in

Axial Structural Capacities:

Nom. Axial Structural Capacity = 0.85 Fc Ac + Fy As	=	5482.282	kips
Tensile Load for Cracking of Concrete	=	-443.547	kips
Nominal Axial Tensile Capacity	=	-426.600	kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.000000	0.790000	11.500000	0.00000
2	1.000000	0.790000	8.809511	7.392058
3	1.000000	0.790000	1.996954	11.325289
4	1.000000	0.790000	-5.750000	9.959292
5	1.000000	0.790000	-10.806465	3.933232
6	1.000000	0.790000	-10.806465	-3.933232
7	1.000000	0.790000	-5.750000	-9.959292
8	1.000000	0.790000	1.996954	-11.325289
9	1.000000	0.790000	8.809511	-7.392058

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 6.866 inches
between bars 3 and 4.

Ratio of bar spacing to maximum aggregate size = 9.16

Concrete Properties:

Compressive Strength of Concrete	=	8500. psi
Modulus of Elasticity of Concrete	=	5255140. psi
Modulus of Rupture of Concrete	=	-691.465834 psi
Compression Strain at Peak Stress	=	0.002750
Tensile Strain at Fracture of Concrete	=	-0.0001142
Maximum Coarse Aggregate Size	=	0.750000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 1

Number	Axial Thrust Force kips
1	0.000

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.
Y = stress in reinforcing steel has reached yield stress.
T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.
Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
Position of neutral axis is measured from edge of compression side of pile.
Compressive stresses and strains are positive in sign.
Tensile stresses and strains are negative in sign.

Axial Thrust Force = 0.000 kips

Bending Max Conc Curvature Stress rad/in.	Bending Max Steel Moment Stress in-kip	Bending Run Stiffness Msg kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in

ksi	ksi					
0.00000125	320.0361106	256028888.	15.0000520	0.00001875	-0.00001875	
0.1143760	0.5383144					
0.00000250	638.6652347	255466094.	15.0000521	0.00003750	-0.00003750	
0.2279773	1.0766288					
0.00000375	955.8873723	254903299.	15.0000523	0.00005625	-0.00005625	
0.3408038	1.6149432					
0.00000500	1272.	254340505.	15.0000525	0.00007500	-0.00007500	
0.4528556	2.1532576					
0.00000625	1586.	253777710.	15.0000527	0.00009375	-0.00009375	
0.5641327	2.6915720					
0.00000750	1899.	253214916.	15.0000529	0.0001125	-0.0001125	
0.6746350	3.2298865					
0.00000875	1899.	217041356.	6.4237996	0.00005621	-0.0002063	
0.3360060	-5.9443984 C					
0.00001000	1899.	189911187.	6.4255598	0.00006426	-0.0002357	
0.3835601	-6.7930876 C					
0.00001125	1899.	168809944.	6.4273233	0.00007231	-0.0002652	
0.4310021	-7.6416482 C					
0.00001250	1899.	151928949.	6.4290902	0.00008036	-0.0002946	
0.4783316	-8.4900798 C					
0.00001375	1899.	138117227.	6.4308604	0.00008842	-0.0003241	
0.5255487	-9.3383819 C					
0.00001500	1899.	126607458.	6.4326341	0.00009649	-0.0003535	
0.5726532	-10.1865541 C					
0.00001625	1899.	116868423.	6.4344111	0.0001046	-0.0003829	
0.6196448	-11.0345962 C					
0.00001750	1899.	108520678.	6.4361915	0.0001126	-0.0004124	
0.6665235	-11.8825078 C					
0.00001875	1899.	101285966.	6.4379753	0.0001207	-0.0004418	
0.7132890	-12.7302884 C					
0.00002000	1899.	94955593.	6.4397625	0.0001288	-0.0004712	
0.7599412	-13.5779377 C					
0.00002125	1899.	89369970.	6.4415532	0.0001369	-0.0005006	
0.8064800	-14.4254553 C					
0.00002250	1899.	84404972.	6.4433473	0.0001450	-0.0005300	
0.8529051	-15.2728408 C					
0.00002375	1899.	79962605.	6.4451449	0.0001531	-0.0005594	
0.8992165	-16.1200939 C					
0.00002500	1899.	75964475.	6.4469460	0.0001612	-0.0005888	
0.9454139	-16.9672141 C					
0.00002625	1899.	72347119.	6.4487506	0.0001693	-0.0006182	
0.9914972	-17.8142010 C					
0.00002750	1899.	69058613.	6.4505300	0.0001774	-0.0006476	
1.0374616	-18.6610772 C					
0.00002875	1899.	66056065.	6.4522486	0.0001855	-0.0006770	
1.0833004	-19.5078751 C					
0.00003000	1899.	63303729.	6.4539704	0.0001936	-0.0007064	

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1.1290234   -20.3545457 C
0.00003125        1899.     60771580.     6.4556953     0.0002017     -0.0007358
1.1746302   -21.2010885 C
0.00003250        1899.     58434211.     6.4574235     0.0002099     -0.0007651
1.2201208   -22.0475033 C
0.00003375        1899.     56269981.     6.4591549     0.0002180     -0.0007945
1.2654950   -22.8937896 C
0.00003500        1899.     54260339.     6.4608895     0.0002261     -0.0008239
1.3107526   -23.7399471 C
0.00003625        1899.     52389293.     6.4626273     0.0002343     -0.0008532
1.3558934   -24.5859754 C
0.00003750        1899.     50642983.     6.4643685     0.0002424     -0.0008826
1.4009172   -25.4318742 C
0.00003875        1899.     49009338.     6.4661128     0.0002506     -0.0009119
1.4458240   -26.2776431 C
0.00004000        1899.     47477797.     6.4678605     0.0002587     -0.0009413
1.4906136   -27.1232817 C
0.00004125        1899.     46039076.     6.4696115     0.0002669     -0.0009706
1.5352856   -27.9687897 C
0.00004250        1899.     44684985.     6.4713657     0.0002750     -0.0010000
1.5798401   -28.8141667 C
0.00004375        1899.     43408271.     6.4731233     0.0002832     -0.0010293
1.6242768   -29.6594122 C
0.00004500        1899.     42202486.     6.4748842     0.0002914     -0.0010586
1.6685956   -30.5045260 C
0.00004625        1899.     41061878.     6.4766485     0.0002995     -0.0010880
1.7127962   -31.3495076 C
0.00004750        1899.     39981302.     6.4784161     0.0003077     -0.0011173
1.7568786   -32.1943567 C
0.00004875        1899.     38956141.     6.4801871     0.0003159     -0.0011466
1.8008425   -33.0390729 C
0.00005125        1899.     37055841.     6.4837392     0.0003323     -0.0012052
1.8884141   -34.7281051 C
0.00005375        1899.     35332314.     6.4873050     0.0003487     -0.0012638
1.9755098   -36.4166008 C
0.00005625        1978.     35156415.     6.4908846     0.0003651     -0.0013224
2.0621282   -38.1045571 C
0.00005875        2065.     35142464.     6.4944780     0.0003816     -0.0013809
2.1482677   -39.7919707 C
0.00006125        2152.     35128467.     6.4980853     0.0003980     -0.0014395
2.2339270   -41.4788384 C
0.00006375        2239.     35114422.     6.5017068     0.0004145     -0.0014980
2.3191045   -43.1651571 C
0.00006625        2325.     35100330.     6.5053425     0.0004310     -0.0015565
2.4037989   -44.8509233 C
0.00006875        2412.     35086191.     6.5089925     0.0004475     -0.0016150
2.4880087   -46.5361339 C
0.00007125        2499.     35072003.     6.5126569     0.0004640     -0.0016735
2.5717323   -48.2207853 C
0.00007375        2586.     35057767.     6.5163358     0.0004806     -0.0017319
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2.6549683   -49.9048744 C
0.00007625         2672.     35043482.     6.5200295     0.0004972     -0.0017903
2.7377152   -51.5883975 C
0.00007875         2759.     35029148.     6.5237379     0.0005137     -0.0018488
2.8199713   -53.2713513 C
0.00008125         2845.     35014765.     6.5274612     0.0005304     -0.0019071
2.9017353   -54.9537323 C
0.00008375         2931.     35000331.     6.5311995     0.0005470     -0.0019655
2.9830055   -56.6355368 C
0.00008625         3018.     34985848.     6.5349530     0.0005636     -0.0020239
3.0637803   -58.3167614 C
0.00008875         3104.     34971313.     6.5387218     0.0005803     -0.0020822
3.1440583   -59.9974024 CY
0.00009125         3190.     34956728.     6.5425060     0.0005970     -0.0021405
3.2238377   -60.0000000 CY
0.00009375         3276.     34942091.     6.5463058     0.0006137     -0.0021988
3.3031169   -60.0000000 CY
0.00009625         3362.     34927402.     6.5501212     0.0006304     -0.0022571
3.3818944   -60.0000000 CY
0.00009875         3448.     34912661.     6.5539524     0.0006472     -0.0023153
3.4601686   -60.0000000 CY
 0.0001013         3533.     34897867.     6.5577995     0.0006640     -0.0023735
3.5379376   -60.0000000 CY
 0.0001038         3617.     34863868.     6.5605215     0.0006807     -0.0024318
3.6146450   -60.0000000 CY
 0.0001063         3690.     34724752.     6.5568898     0.0006967     -0.0024908
3.6876782   -60.0000000 CY
 0.0001088         3753.     34513079.     6.5487508     0.0007122     -0.0025503
3.7578144   -60.0000000 CY
 0.0001113         3814.     34283296.     6.5393955     0.0007275     -0.0026100
3.8266289   -60.0000000 CY
 0.0001138         3866.     33984515.     6.5254561     0.0007423     -0.0026702
3.8923542   -60.0000000 CY
 0.0001163         3909.     33624765.     6.5073524     0.0007565     -0.0027310
3.9551108   -60.0000000 CY
 0.0001188         3951.     33270548.     6.4894873     0.0007706     -0.0027919
4.0171579   -60.0000000 CY
 0.0001213         3993.     32930633.     6.4724626     0.0007848     -0.0028527
4.0788346   -60.0000000 CY
 0.0001238         4035.     32604150.     6.4562276     0.0007990     -0.0029135
4.1401399   -60.0000000 CY
 0.0001263         4076.     32287623.     6.4399771     0.0008130     -0.0029745
4.2006517   -60.0000000 CY
 0.0001288         4115.     31959120.     6.4221916     0.0008269     -0.0030356
4.2595228   -60.0000000 CY
 0.0001313         4147.     31594652.     6.4012750     0.0008402     -0.0030973
4.3158200   -60.0000000 CY
 0.0001338         4173.     31203321.     6.3779040     0.0008530     -0.0031595
4.3698758   -60.0000000 CY
 0.0001363         4199.     30814944.     6.3545301     0.0008658     -0.0032217
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4.4230781   -60.0000000 CY
 0.0001388        4224.     30440351.     6.3320663     0.0008786    -0.0032839
4.4759756   -60.0000000 CY
 0.0001413        4249.     30078854.     6.3104681     0.0008914    -0.0033461
4.5285696   -60.0000000 CY
 0.0001438        4274.     29729766.     6.2896905     0.0009041    -0.0034084
4.5808595   -60.0000000 CY
 0.0001463        4299.     29392453.     6.2696917     0.0009169    -0.0034706
4.6328447   -60.0000000 CY
 0.0001488        4324.     29066319.     6.2504327     0.0009298    -0.0035327
4.6845244   -60.0000000 CY
 0.0001588        4422.     27854942.     6.1792909     0.0009810    -0.0037815
4.8876571   -60.0000000 CY
 0.0001688        4491.     26613814.     6.0967079     0.0010288    -0.0040337
5.0720792   -60.0000000 CY
 0.0001788        4544.     25421311.     6.0125139     0.0010747    -0.0042878
5.2442527   -60.0000000 CY
 0.0001888        4597.     24353944.     5.9379230     0.0011208    -0.0045417
5.4124694   -60.0000000 CY
 0.0001988        4649.     23392812.     5.8714929     0.0011670    -0.0047955
5.5766964   -60.0000000 CY
 0.0002088        4701.     22520442.     5.8091554     0.0012127    -0.0050498
5.7347631   -60.0000000 CY
 0.0002188        4751.     21716962.     5.7502383     0.0012579    -0.0053046
5.8867285   -60.0000000 CY
 0.0002288        4787.     20927576.     5.6879248     0.0013011    -0.0055614
6.0278843   -60.0000000 CY
 0.0002388        4814.     20161567.     5.6241443     0.0013428    -0.0058197
6.1599451   -60.0000000 CY
 0.0002488        4838.     19450900.     5.5649358     0.0013843    -0.0060782
6.2879449   -60.0000000 CY
 0.0002588        4862.     18792084.     5.5073741     0.0014250    -0.0063375
6.4100210   -60.0000000 CY
 0.0002688        4886.     18180927.     5.4533157     0.0014656    -0.0065969
6.5280086   -60.0000000 CY
 0.0002788        4910.     17613148.     5.4035182     0.0015062    -0.0068563
6.6428759   -60.0000000 CY
 0.0002888        4933.     17084237.     5.3575427     0.0015470    -0.0071155
6.7545982   -60.0000000 CY
 0.0002988        4956.     16590283.     5.3150091     0.0015879    -0.0073746
6.8631500   -60.0000000 CY
 0.0003088        4979.     16127886.     5.2755867     0.0016288    -0.0076337
6.9685054   -60.0000000 CY
 0.0003188        5002.     15693515.     5.2379940     0.0016696    -0.0078929
7.0698361   -60.0000000 CY
 0.0003288        5024.     15282886.     5.2005505     0.0017097    -0.0081528
7.1659781   -60.0000000 CY
 0.0003388        5045.     14892870.     5.1646750     0.0017495    -0.0084130
7.2582607   -60.0000000 CY
 0.0003488        5062.     14513912.     5.1277634     0.0017883    -0.0086742
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7.3447783   -60.0000000 CY
 0.0003588         5076.     14149134.     5.0910499     0.0018264     -0.0089361
7.4267069   -60.0000000 CY
 0.0003688         5088.     13797622.     5.0545553     0.0018639     -0.0091986
7.5042399   -60.0000000 CY
 0.0003788         5098.     13459731.     5.0186338     0.0019008     -0.0094617
7.5778226   -60.0000000 CY
 0.0003888         5108.     13138599.     4.9846661     0.0019378     -0.0097247
7.6486616   -60.0000000 CY
 0.0003988         5117.     12833361.     4.9526435     0.0019749     -0.0099876
7.7168507   -60.0000000 CY
 0.0004088         5126.     12541364.     4.9195230     0.0020109     -0.0102516
7.7802348   -60.0000000 CY
 0.0004188         5135.     12263002.     4.8879436     0.0020468     -0.0105157
7.8409164   -60.0000000 CY
 0.0004288         5144.     11997444.     4.8580572     0.0020829     -0.0107796
7.8990805   -60.0000000 CY
 0.0004388         5153.     11743814.     4.8297501     0.0021191     -0.0110434
7.9547074   -60.0000000 CY
 0.0004488         5161.     11501313.     4.8029188     0.0021553     -0.0113072
8.0077760    60.0000000 CY
 0.0004588         5170.     11269211.     4.7774691     0.0021917     -0.0115708
8.0582654    60.0000000 CY
 0.0004688         5178.     11046840.     4.7533147     0.0022281     -0.0118344
8.1061541    60.0000000 CY
 0.0004788         5187.     10833588.     4.7303767     0.0022647     -0.0120978
8.1514201    60.0000000 CY
 0.0004888         5195.     10628893.     4.7085825     0.0023013     -0.0123612
8.1940414    60.0000000 CY
 0.0004988         5203.     10432238.     4.6878656     0.0023381     -0.0126244
8.2339953    60.0000000 CY
 0.0005088         5211.     10243147.     4.6681648     0.0023749     -0.0128876
8.2712589    60.0000000 CY
 0.0005188         5219.     10061155.     4.6493532     0.0024119     -0.0131506
8.3057748    60.0000000 CY
 0.0005288         5227.      9885166.     4.6293333     0.0024478     -0.0134147
8.3366002    60.0000000 CY
 0.0005388         5234.      9715567.     4.6102509     0.0024838     -0.0136787
8.3648454    60.0000000 CY
 0.0005488         5242.      9552005.     4.5920571     0.0025199     -0.0139426
8.3904867    60.0000000 CY
 0.0006088         5283.      8679237.     4.4981590     0.0027383     -0.0155242
8.4881317    60.0000000 CY
 0.0006688         5313.      7944432.     4.4172233     0.0029540     -0.0171085
8.4895075    60.0000000 CY
 0.0007288         5330.      7313878.     4.3456133     0.0031669     -0.0186956
8.4811799    60.0000000 CYT
 0.0007888         5339.      6769351.     4.2768276     0.0033733     -0.0202892
8.4610373    60.0000000 CYT
 0.0008488         5346.      6298462.     4.2232275     0.0035845     -0.0218780
```

```
   8.4964224    60.0000000 CYT
    0.0009088         5350.      5887400.     4.1820366     0.0038004    -0.0234621
   8.4651463    60.0000000 CYT
```

Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	0.000	5316.544	0.00300000

Note that the values of moment capacity in the table above are not
factored by a strength reduction factor (phi-factor).

In ACI 318, the value of the strength reduction factor depends on whether
the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction
factor to compute ultimate moment capacity according to ACI 318, Section
9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding
bending stiffnesses computed for common resistance factor values used for
reinforced concrete sections.

Axial Load No.	Resist. Factor for Moment	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in^2
1	0.65	5317.	0.0000	3456.	34911259.
1	0.70	5317.	0.0000	3722.	34618321.
1	0.75	5317.	0.0000	3987.	32974632.

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer	Top of Layer Below	Equivalent Top Depth Below	Same Layer Type As	Layer is Rock or	F0 Integral	F1 Integral

No.	Pile Head ft	Grnd Surf ft	Layer Above	is Below Rock Layer	for Layer lbs	for Layer lbs
1	0.00	0.00	N.A.	No	0.00	43499.
2	6.0000	1.3780	No	No	43499.	109420.
3	9.0000	11.0651	No	No	152918.	896047.
4	23.5000	27.4578	Yes	No	1048966.	4042625.
5	48.5000	54.6897	No	No	5091590.	1856250.
6	65.0000	51.1524	No	No	6947840.	1.69E+07
7	98.5000	142.0442	No	No	2.38E+07	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 1

Pile-head conditions are Displacement and Moment (Loading Type 4)
Displacement of pile head = 0.375000 inches
Moment at pile head = 0.0 in-lbs
Axial load at pile head = 0.0 lbs

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. Es*h	Soil Spr. Lat. Load	Distrib. p
feet	inches	in-lbs	lbs	radians	psi*	in-lb^2	lb/inch	lb/inch	lb/inch
0.00	0.3750	0.00	35867.	-0.00399	0.00	2.56E+11	0.00	0.00	0.00
1.0000	0.3272	430405.	35131.	-0.00398	0.00	2.56E+11	-122.5992	4497.	0.00
2.0000	0.2796	843155.	33139.	-0.00395	0.00	2.55E+11	-209.5244	8994.	0.00
3.0000	0.2324	1225734.	30314.	-0.00390	0.00	2.54E+11	-261.3107	13491.	0.00
4.0000	0.1860	1570684.	27073.	-0.00383	0.00	2.54E+11	-278.8198	17987.	0.00
5.0000	0.1405	1875485.	23821.	-0.00375	0.00	2.53E+11	-263.2014	22484.	0.00

```
    6.0000    0.09600   2142384.     16011.   -0.00334       0.00   3.51E+10
-1038.    129804.       0.00
    7.0000    0.06031   2259748.      3859.   -0.00259       0.00   3.51E+10
-986.8777    196356.       0.00
    8.0000    0.03389   2235001.     -7510.   -0.00182       0.00   3.51E+10
-907.9466    321490.       0.00
    9.0000    0.01663   2079511.    -13854.   -0.00108       0.00   3.51E+10
-149.3350    107732.       0.00
   10.0000    0.00790   1902516.    -15222.  -5.61E-04       0.00   6.85E+10
-78.8002    119702.       0.00
   11.0000    0.00316   1714174.    -15903.  -3.54E-04       0.00   2.54E+11
-34.7169    131672.       0.00
   12.0000  -5.98E-04   1520833.    -16069.  -2.78E-04       0.00   2.54E+11
7.1594    143642.       0.00
   13.0000   -0.00350   1328522.    -15754.  -2.10E-04       0.00   2.54E+11
45.3548    155613.       0.00
   14.0000   -0.00564   1142743.    -15009.  -1.52E-04       0.00   2.55E+11
78.8254    167583.       0.00
   15.0000   -0.00714    968315.    -14114.  -1.02E-04       0.00   2.55E+11
70.2549    117996.       0.00
   16.0000   -0.00810    804003.    -13183.  -6.05E-05       0.00   2.55E+11
84.9373    125863.       0.00
   17.0000   -0.00860    651922.    -12099.  -2.63E-05       0.00   2.55E+11
95.8121    133729.       0.00
   18.0000   -0.00873    513638.    -10906.   1.06E-06       0.00   2.56E+11
103.0052    141596.       0.00
   19.0000   -0.00857    390187.     -9647.   2.23E-05       0.00   2.56E+11
106.7671    149462.       0.00
   20.0000   -0.00820    282111.     -8362.   3.80E-05       0.00   2.56E+11
107.4431    157329.       0.00
   21.0000   -0.00766    189506.     -7084.   4.91E-05       0.00   2.56E+11
105.4405    165195.       0.00
   22.0000   -0.00702    112084.     -5845.   5.62E-05       0.00   2.56E+11
101.1984    173061.       0.00
   23.0000   -0.00631     49236.     -4666.   5.99E-05       0.00   2.56E+11
95.1637    180928.       0.00
   24.0000   -0.00558    90.5121     -3666.   6.11E-05       0.00   2.56E+11
71.6495    154121.       0.00
   25.0000   -0.00485    -38737.     -2847.   6.02E-05       0.00   2.56E+11
64.8273    160543.       0.00
   26.0000   -0.00413    -68230.     -2113.   5.77E-05       0.00   2.56E+11
57.5236    166965.       0.00
   27.0000   -0.00346    -89439.     -1467.   5.40E-05       0.00   2.56E+11
50.0132    173387.       0.00
   28.0000   -0.00284   -103446.  -912.0529   4.95E-05       0.00   2.56E+11
42.5362    179808.       0.00
   29.0000   -0.00227   -111328.  -445.0604   4.44E-05       0.00   2.56E+11
35.2958    186230.       0.00
   30.0000   -0.00177   -114128.   -62.5457   3.91E-05       0.00   2.56E+11
28.4566    192652.       0.00
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   31.0000   -0.00133   -112829.   241.0647   3.38E-05       0.00   2.56E+11
22.1451    199073.       0.00
   32.0000  -9.61E-04   -108342.   472.6474   2.86E-05       0.00   2.56E+11
16.4520    205495.       0.00
   33.0000  -6.47E-04   -101486.   639.9662   2.37E-05       0.00   2.56E+11
11.4345    211917.       0.00
   34.0000  -3.91E-04    -92983.   751.2948   1.92E-05       0.00   2.56E+11
7.1203    218339.       0.00
   35.0000  -1.87E-04    -83455.   815.0851   1.50E-05       0.00   2.56E+11
3.5114    224760.       0.00
   36.0000  -3.06E-05    -73421.   839.6857   1.14E-05       0.00   2.56E+11
0.5887    231182.       0.00
   37.0000   8.51E-05    -63302.   833.1114   8.15E-06       0.00   2.56E+11
-1.6844    237604.       0.00
   38.0000   1.65E-04    -53426.   802.8618   5.42E-06       0.00   2.56E+11
-3.3572    244025.       0.00
   39.0000   2.15E-04    -44033.   755.7875   3.13E-06       0.00   2.56E+11
-4.4885    250447.       0.00
   40.0000   2.40E-04    -35287.   697.9972   1.27E-06       0.00   2.56E+11
-5.1432    256869.       0.00
   41.0000   2.46E-04    -27282.   634.8018  -1.93E-07       0.00   2.56E+11
-5.3894    263291.       0.00
   42.0000   2.36E-04    -20052.   570.6869  -1.30E-06       0.00   2.56E+11
-5.2964    269712.       0.00
   43.0000   2.14E-04    -13585.   509.3086  -2.09E-06       0.00   2.56E+11
-4.9333    276134.       0.00
   44.0000   1.85E-04     -7829.   453.5041  -2.59E-06       0.00   2.56E+11
-4.3675    282556.       0.00
   45.0000   1.52E-04     -2701.   405.3112  -2.84E-06       0.00   2.56E+11
-3.6647    288978.       0.00
   46.0000   1.17E-04      1899.   365.9900  -2.86E-06       0.00   2.56E+11
-2.8889    295399.       0.00
   47.0000   8.36E-05      6083.   336.0412  -2.67E-06       0.00   2.56E+11
-2.1026    301821.       0.00
   48.0000   5.33E-05      9964.   315.2166  -2.29E-06       0.00   2.56E+11
-1.3681    308243.       0.00
   49.0000   2.85E-05     13648.   105.6945  -1.74E-06       0.00   2.56E+11
-33.5522   1.41E+07       0.00
   50.0000   1.15E-05     12501.  -178.2436  -1.13E-06       0.00   2.56E+11
-13.7708   1.44E+07       0.00
   51.0000   1.45E-06      9370.  -271.5271  -6.16E-07       0.00   2.56E+11
-1.7764   1.47E+07       0.00
   52.0000  -3.30E-06      5984.  -257.4540  -2.56E-07       0.00   2.56E+11
4.1220   1.50E+07       0.00
   53.0000  -4.69E-06      3191.  -196.9170  -4.09E-08       0.00   2.56E+11
5.9675   1.53E+07       0.00
   54.0000  -4.29E-06      1258.  -127.7900   6.33E-08       0.00   2.56E+11
5.5536   1.56E+07       0.00
   55.0000  -3.17E-06   124.3146   -69.3509   9.57E-08       0.00   2.56E+11
4.1863   1.58E+07       0.00
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   56.0000  -1.99E-06  -406.4852   -28.2045   8.91E-08       0.00   2.56E+11
2.6715   1.61E+07       0.00
   57.0000  -1.03E-06  -552.5933    -3.6999   6.66E-08       0.00   2.56E+11
1.4126   1.64E+07       0.00
   58.0000  -3.88E-07  -495.2838     8.0192   4.21E-08       0.00   2.56E+11
0.5406   1.67E+07       0.00
   59.0000  -2.26E-08  -360.1334    11.4547   2.20E-08       0.00   2.56E+11
0.03202   1.70E+07       0.00
   60.0000   1.41E-07  -220.3716    10.4325   8.43E-09       0.00   2.56E+11
-0.2024   1.73E+07       0.00
   61.0000   1.80E-07  -109.7541     7.6390   6.96E-10       0.00   2.56E+11
-0.2632   1.76E+07       0.00
   62.0000   1.57E-07   -37.0354     4.6559  -2.74E-09       0.00   2.56E+11
-0.2340   1.79E+07       0.00
   63.0000   1.14E-07     1.9864     2.2183  -3.57E-09       0.00   2.56E+11
-0.1723   1.81E+07       0.00
   64.0000   7.17E-08    16.2038     0.5240  -3.14E-09       0.00   2.56E+11
-0.1101   1.84E+07       0.00
   65.0000   3.86E-08    14.5617    -0.1504  -2.42E-09       0.00   2.56E+11
-0.00226    702364.       0.00
   66.0000   1.37E-08    12.5943    -0.1688  -1.78E-09       0.00   2.56E+11
-8.13E-04    713169.       0.00
   67.0000  -4.16E-09    10.5099    -0.1722  -1.24E-09       0.00   2.56E+11
2.51E-04    723975.       0.00
   68.0000  -1.61E-08     8.4616    -0.1648  -7.95E-10       0.00   2.56E+11
9.85E-04    734780.       0.00
   69.0000  -2.32E-08     6.5551    -0.1502  -4.43E-10       0.00   2.56E+11
0.00144    745586.       0.00
   70.0000  -2.67E-08     4.8565    -0.1314  -1.76E-10       0.00   2.56E+11
0.00168    756392.       0.00
   71.0000  -2.75E-08     3.4006    -0.1108   1.75E-11       0.00   2.56E+11
0.00176    767197.       0.00
   72.0000  -2.63E-08     2.1974   -0.09003   1.49E-10       0.00   2.56E+11
0.00171    778003.       0.00
   73.0000  -2.39E-08     1.2399   -0.07037   2.29E-10       0.00   2.56E+11
0.00157    788808.       0.00
   74.0000  -2.08E-08     0.5085   -0.05263   2.70E-10       0.00   2.56E+11
0.00139    799614.       0.00
   75.0000  -1.74E-08   -0.02330   -0.03726   2.82E-10       0.00   2.56E+11
0.00118    810420.       0.00
   76.0000  -1.40E-08    -0.3858   -0.02444   2.72E-10       0.00   2.56E+11
9.61E-04    821225.       0.00
   77.0000  -1.09E-08    -0.6099   -0.01415   2.49E-10       0.00   2.56E+11
7.55E-04    832031.       0.00
   78.0000  -8.07E-09    -0.7254   -0.00622   2.17E-10       0.00   2.56E+11
5.67E-04    842836.       0.00
   79.0000  -5.66E-09    -0.7592  -4.03E-04   1.83E-10       0.00   2.56E+11
4.03E-04    853642.       0.00
   80.0000  -3.69E-09    -0.7350    0.00361   1.48E-10       0.00   2.56E+11
2.66E-04    864448.       0.00
```

81.0000	-2.12E-09	-0.6726	0.00613	1.15E-10	0.00	2.56E+11	1.55E-04	875253.	0.00
82.0000	-9.35E-10	-0.5879	0.00747	8.51E-11	0.00	2.56E+11	6.91E-05	886059.	0.00
83.0000	-7.97E-11	-0.4933	0.00792	5.97E-11	0.00	2.56E+11	5.96E-06	896864.	0.00
84.0000	4.99E-10	-0.3978	0.00773	3.89E-11	0.00	2.56E+11	-3.77E-05	907670.	0.00
85.0000	8.53E-10	-0.3077	0.00711	2.23E-11	0.00	2.56E+11	-6.53E-05	918476.	0.00
86.0000	1.03E-09	-0.2270	0.00624	9.80E-12	0.00	2.56E+11	-8.01E-05	929281.	0.00
87.0000	1.09E-09	-0.1579	0.00525	0.00	0.00	2.56E+11	-8.53E-05	940087.	0.00
88.0000	1.05E-09	-0.1010	0.00424	-5.29E-12	0.00	2.56E+11	-8.35E-05	950892.	0.00
89.0000	9.61E-10	-0.05620	0.00327	-8.97E-12	0.00	2.56E+11	-7.70E-05	961698.	0.00
90.0000	8.38E-10	-0.02245	0.00241	-1.08E-11	0.00	2.56E+11	-6.79E-05	972503.	0.00
91.0000	7.02E-10	0.00152	0.00165	-1.13E-11	0.00	2.56E+11	-5.75E-05	983309.	0.00
92.0000	5.66E-10	0.01721	0.00103	-1.09E-11	0.00	2.56E+11	-4.69E-05	994115.	0.00
93.0000	4.41E-10	0.02615	5.23E-04	-9.85E-12	0.00	2.56E+11	-3.69E-05	1004920.	0.00
94.0000	3.30E-10	0.02977	1.34E-04	-8.54E-12	0.00	2.56E+11	-2.79E-05	1015726.	0.00
95.0000	2.36E-10	0.02937	-1.54E-04	-7.16E-12	0.00	2.56E+11	-2.02E-05	1026531.	0.00
96.0000	1.58E-10	0.02607	-3.57E-04	-5.86E-12	0.00	2.56E+11	-1.37E-05	1037337.	0.00
97.0000	9.52E-11	0.02080	-4.89E-04	-4.76E-12	0.00	2.56E+11	-8.31E-06	1048143.	0.00
98.0000	4.39E-11	0.01433	-5.62E-04	-3.94E-12	0.00	2.56E+11	-3.88E-06	1058948.	0.00
99.0000	0.00	0.00730	-5.97E-04	-3.43E-12	0.00	2.56E+11	-1.91E-06	3.17E+07	0.00
100.0000	-3.84E-11	0.00	0.00	-3.26E-12	0.00	2.56E+11	1.01E-04	1.59E+07	0.00

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

```
Pile-head deflection              =     0.37500000 inches
Computed slope at pile head       =    -0.00398672 radians
Maximum bending moment            =       2259748. inch-lbs
Maximum shear force               =         35867. lbs
Depth of maximum bending moment   =     7.00000000 feet below pile head
Depth of maximum shear force      =       0.000000 feet below pile head
Number of iterations              =            111
Number of zero deflection points  =              7


--------------------------------------------------------------------------------
                 Computed Values of Pile Loading and Deflection
                   for Lateral Loading for Load Case Number 2
--------------------------------------------------------------------------------

Pile-head conditions are Displacement and Pile-head Rotation (Loading Type 5)
Displacement of pile head                                =     0.375000 inches
Rotation of pile head                                    =    0.000E+00 radians
Axial load on pile head                                  =          0.0 lbs

   Depth    Deflect.    Bending     Shear      Slope      Total     Bending   Soil
Res.  Soil Spr.  Distrib.
     X          y       Moment      Force        S       Stress    Stiffness      p
      Es*h     Lat. Load
   feet      inches     in-lbs       lbs      radians     psi*      in-lb^2
lb/inch    lb/inch    lb/inch
---------- ---------- ---------- ---------- ---------- ---------- ----------
---------- ---------- ----------
      0.00     0.3750  -4194987.     78751.       0.00       0.00   3.09E+10
0.00       0.00       0.00
    1.0000     0.3652  -3259229.     77209.   -0.00145       0.00   3.09E+10
-128.5146      4223.       0.00
    2.0000     0.3402  -2341977.     74908.   -0.00248       0.00   3.51E+10
-254.9908      8994.       0.00
    3.0000     0.3056  -1461444.     71316.   -0.00292       0.00   2.54E+11
-343.5900     13491.       0.00
    4.0000     0.2702   -630388.     66825.   -0.00297       0.00   2.55E+11
-405.0162     17987.       0.00
    5.0000     0.2344    142346.     61759.   -0.00298       0.00   2.56E+11
-439.2248     22484.       0.00
    6.0000     0.1987    851832.     51651.   -0.00296       0.00   2.55E+11
-1246.     75216.       0.00
    7.0000     0.1635   1381958.     36580.   -0.00290       0.00   2.54E+11
-1266.     92942.       0.00
    8.0000     0.1291   1729742.     21372.   -0.00283       0.00   2.53E+11
-1268.    117935.       0.00
    9.0000    0.09560   1894884.     10388.   -0.00270       0.00   1.30E+11
-562.2822     70580.       0.00
```

```
   10.0000    0.06425   1979058.      4213.   -0.00227       0.00   3.52E+10
-466.9575     87217.       0.00
   11.0000    0.04100   1995990.   -888.5054   -0.00160       0.00   3.52E+10
-383.2531    112162.       0.00
   12.0000    0.02594   1957734.     -5051.  -9.22E-04       0.00   3.52E+10
-310.4522    143642.       0.00
   13.0000    0.01888   1874773.     -8382.  -5.44E-04       0.00   2.53E+11
-244.7817    155613.       0.00
   14.0000    0.01288   1756563.    -10930.  -4.58E-04       0.00   2.53E+11
-179.9149    167583.       0.00
   15.0000    0.00789   1612445.    -12475.  -3.78E-04       0.00   2.54E+11
-77.5620    117996.       0.00
   16.0000    0.00381   1457158.    -13180.  -3.06E-04       0.00   2.54E+11
-39.9393    125863.       0.00
   17.0000   5.54E-04   1296120.    -13457.  -2.41E-04       0.00   2.54E+11
-6.1744    133729.       0.00
   18.0000   -0.00197   1134193.    -13355.  -1.83E-04       0.00   2.55E+11
23.1959    141596.       0.00
   19.0000   -0.00384    975607.    -12928.  -1.34E-04       0.00   2.55E+11
47.8784    149462.       0.00
   20.0000   -0.00517    823914.    -12234.  -9.12E-05       0.00   2.55E+11
67.7962    157329.       0.00
   21.0000   -0.00603    681985.    -11329.  -5.58E-05       0.00   2.55E+11
83.0509    165195.       0.00
   22.0000   -0.00651    552014.    -10268.  -2.68E-05       0.00   2.56E+11
93.8893    173061.       0.00
   23.0000   -0.00668    435564.     -9100.  -3.64E-06       0.00   2.56E+11
100.6636    180928.       0.00
   24.0000   -0.00660    333609.     -7988.   1.44E-05       0.00   2.56E+11
84.7344    154121.       0.00
   25.0000   -0.00633    243856.     -6971.   2.79E-05       0.00   2.56E+11
84.6972    160543.       0.00
   26.0000   -0.00593    166300.     -5968.   3.75E-05       0.00   2.56E+11
82.4663    166965.       0.00
   27.0000   -0.00543    100618.     -5003.   4.38E-05       0.00   2.56E+11
78.4517    173387.       0.00
   28.0000   -0.00488     46234.     -4094.   4.72E-05       0.00   2.56E+11
73.0568    179808.       0.00
   29.0000   -0.00430      2370.     -3255.   4.84E-05       0.00   2.56E+11
66.6655    186230.       0.00
   30.0000   -0.00371    -31895.     -2498.   4.77E-05       0.00   2.56E+11
59.6321    192652.       0.00
   31.0000   -0.00315    -57572.     -1826.   4.56E-05       0.00   2.56E+11
52.2741    199073.       0.00
   32.0000   -0.00262    -75722.     -1243.   4.25E-05       0.00   2.56E+11
44.8676    205495.       0.00
   33.0000   -0.00213    -87411.  -748.2086   3.87E-05       0.00   2.56E+11
37.6450    211917.       0.00
   34.0000   -0.00169    -93679.  -337.5734   3.44E-05       0.00   2.56E+11
30.7942    218339.       0.00
```

```
   35.0000   -0.00131    -95513.    -6.0474   3.00E-05       0.00   2.56E+11
24.4601    224760.       0.00
   36.0000  -9.73E-04    -93824.   253.1972   2.55E-05       0.00   2.56E+11
18.7473    231182.       0.00
   37.0000  -6.93E-04    -89436.   448.0197   2.12E-05       0.00   2.56E+11
13.7231    237604.       0.00
   38.0000  -4.63E-04    -83072.   586.8911   1.72E-05       0.00   2.56E+11
9.4221    244025.       0.00
   39.0000  -2.80E-04    -75351.   678.5260   1.35E-05       0.00   2.56E+11
5.8504    250447.       0.00
   40.0000  -1.40E-04    -66787.   731.5675   1.02E-05       0.00   2.56E+11
2.9899    256869.       0.00
   41.0000  -3.66E-05    -57793.   754.3254   7.24E-06       0.00   2.56E+11
0.8031    263291.       0.00
   42.0000   3.40E-05    -48683.   754.5631   4.74E-06       0.00   2.56E+11
-0.7635    269712.       0.00
   43.0000   7.72E-05    -39683.   739.3294   2.67E-06       0.00   2.56E+11
-1.7755    276134.       0.00
   44.0000   9.80E-05    -30939.   714.8274   1.01E-06       0.00   2.56E+11
-2.3082    282556.       0.00
   45.0000   1.01E-04    -22528.   686.3133  -2.39E-07       0.00   2.56E+11
-2.4442    288978.       0.00
   46.0000   9.23E-05    -14468.   658.0165  -1.11E-06       0.00   2.56E+11
-2.2720    295399.       0.00
   47.0000   7.50E-05     -6735.   633.0733  -1.60E-06       0.00   2.56E+11
-1.8852    301821.       0.00
   48.0000   5.38E-05   726.0282   613.4658  -1.74E-06       0.00   2.56E+11
-1.3827    308243.       0.00
   49.0000   3.31E-05      7988.   371.5522  -1.54E-06       0.00   2.56E+11
-38.9363   1.41E+07       0.00
   50.0000   1.69E-05      9643.    16.3763  -1.13E-06       0.00   2.56E+11
-20.2597   1.44E+07       0.00
   51.0000   6.08E-06      8381.  -149.8401  -7.04E-07       0.00   2.56E+11
-7.4430   1.47E+07       0.00
   52.0000  -7.51E-09      6047.  -194.4419  -3.66E-07       0.00   2.56E+11
0.00937   1.50E+07       0.00
   53.0000  -2.69E-06      3714.  -173.8191  -1.37E-07       0.00   2.56E+11
3.4278   1.53E+07       0.00
   54.0000  -3.29E-06      1875.  -127.6471  -5.89E-09       0.00   2.56E+11
4.2676   1.56E+07       0.00
   55.0000  -2.84E-06   650.9597   -79.5792   5.33E-08       0.00   2.56E+11
3.7437   1.58E+07       0.00
   56.0000  -2.01E-06   -34.4421   -40.8814   6.78E-08       0.00   2.56E+11
2.7059   1.61E+07       0.00
   57.0000  -1.21E-06  -330.1943   -14.7156   5.92E-08       0.00   2.56E+11
1.6551   1.64E+07       0.00
   58.0000  -5.92E-07  -387.6168     0.1599   4.24E-08       0.00   2.56E+11
0.8242   1.67E+07       0.00
   59.0000  -1.92E-07  -326.3571     6.7391   2.57E-08       0.00   2.56E+11
0.2723   1.70E+07       0.00
```

```
   60.0000   2.39E-08  -225.8796     8.1670   1.27E-08       0.00   2.56E+11
-0.03436   1.73E+07       0.00
   61.0000   1.13E-07  -130.3498     6.9681   4.37E-09       0.00   2.56E+11
-0.1655   1.76E+07       0.00
   62.0000   1.29E-07   -58.6448     4.8250  -5.44E-11       0.00   2.56E+11
-0.1917   1.79E+07       0.00
   63.0000   1.12E-07   -14.5491     2.6612  -1.77E-09       0.00   2.56E+11
-0.1689   1.81E+07       0.00
   64.0000   8.64E-08     5.2251     0.8518  -1.99E-09       0.00   2.56E+11
-0.1327   1.84E+07       0.00
   65.0000   6.40E-08     5.8940    0.03327  -1.73E-09       0.00   2.56E+11
-0.00375    702364.       0.00
   66.0000   4.49E-08     6.0236   -0.00522  -1.45E-09       0.00   2.56E+11
-0.00267    713169.       0.00
   67.0000   2.92E-08     5.7688   -0.03181  -1.17E-09       0.00   2.56E+11
-0.00176    723975.       0.00
   68.0000   1.68E-08     5.2601   -0.04856  -9.14E-10       0.00   2.56E+11
-0.00103    734780.       0.00
   69.0000   7.30E-09     4.6034   -0.05745  -6.82E-10       0.00   2.56E+11
-4.54E-04    745586.       0.00
   70.0000   4.07E-10     3.8814   -0.06032  -4.84E-10       0.00   2.56E+11
-2.57E-05    756392.       0.00
   71.0000  -4.30E-09     3.1557   -0.05883  -3.19E-10       0.00   2.56E+11
2.75E-04    767197.       0.00
   72.0000  -7.24E-09     2.4696   -0.05436  -1.87E-10       0.00   2.56E+11
4.69E-04    778003.       0.00
   73.0000  -8.79E-09     1.8510   -0.04808  -8.56E-11       0.00   2.56E+11
5.78E-04    788808.       0.00
   74.0000  -9.29E-09     1.3157   -0.04090  -1.14E-11       0.00   2.56E+11
6.19E-04    799614.       0.00
   75.0000  -9.06E-09     0.8696   -0.03351   3.98E-11       0.00   2.56E+11
6.12E-04    810420.       0.00
   76.0000  -8.34E-09     0.5115   -0.02641   7.22E-11       0.00   2.56E+11
5.71E-04    821225.       0.00
   77.0000  -7.33E-09     0.2357   -0.01994   8.97E-11       0.00   2.56E+11
5.08E-04    832031.       0.00
   78.0000  -6.18E-09    0.03294   -0.01429   9.60E-11       0.00   2.56E+11
4.34E-04    842836.       0.00
   79.0000  -5.02E-09    -0.1072   -0.00954   9.43E-11       0.00   2.56E+11
3.57E-04    853642.       0.00
   80.0000  -3.92E-09    -0.1959   -0.00570   8.72E-11       0.00   2.56E+11
2.82E-04    864448.       0.00
   81.0000  -2.93E-09    -0.2440   -0.00272   7.69E-11       0.00   2.56E+11
2.14E-04    875253.       0.00
   82.0000  -2.08E-09    -0.2612  -5.18E-04   6.50E-11       0.00   2.56E+11
1.53E-04    886059.       0.00
   83.0000  -1.37E-09    -0.2564    0.00102   5.29E-11       0.00   2.56E+11
1.02E-04    896864.       0.00
   84.0000  -8.07E-10    -0.2368    0.00200   4.13E-11       0.00   2.56E+11
6.11E-05    907670.       0.00
```

```
   85.0000  -3.78E-10    -0.2085    0.00254   3.09E-11       0.00   2.56E+11
2.89E-05    918476.       0.00
   86.0000  -6.57E-11    -0.1759    0.00274   2.19E-11       0.00   2.56E+11
5.09E-06    929281.       0.00
   87.0000   1.47E-10    -0.1427    0.00270   1.44E-11       0.00   2.56E+11
-1.16E-05    940087.       0.00
   88.0000   2.80E-10    -0.1111    0.00250   8.48E-12       0.00   2.56E+11
-2.22E-05    950892.       0.00
   89.0000   3.51E-10   -0.08269    0.00220   3.94E-12       0.00   2.56E+11
-2.81E-05    961698.       0.00
   90.0000   3.75E-10   -0.05834    0.00185       0.00       0.00   2.56E+11
-3.04E-05    972503.       0.00
   91.0000   3.66E-10   -0.03837    0.00148  -1.64E-12       0.00   2.56E+11
-3.00E-05    983309.       0.00
   92.0000   3.36E-10   -0.02272    0.00114  -3.07E-12       0.00   2.56E+11
-2.78E-05    994115.       0.00
   93.0000   2.92E-10   -0.01107   8.24E-04  -3.86E-12       0.00   2.56E+11
-2.45E-05   1004920.       0.00
   94.0000   2.43E-10   -0.00295   5.53E-04  -4.19E-12       0.00   2.56E+11
-2.06E-05   1015726.       0.00
   95.0000   1.92E-10    0.00221   3.31E-04  -4.21E-12       0.00   2.56E+11
-1.64E-05   1026531.       0.00
   96.0000   1.42E-10    0.00500   1.59E-04  -4.04E-12       0.00   2.56E+11
-1.23E-05   1037337.       0.00
   97.0000   9.51E-11    0.00603   3.57E-05  -3.78E-12       0.00   2.56E+11
-8.30E-06   1048143.       0.00
   98.0000   5.14E-11    0.00586  -4.14E-05  -3.50E-12       0.00   2.56E+11
-4.54E-06   1058948.       0.00
   99.0000   1.11E-11    0.00503  -2.44E-04  -3.24E-12       0.00   2.56E+11
-2.92E-05   3.17E+07       0.00
  100.0000  -2.65E-11       0.00       0.00  -3.13E-12       0.00   2.56E+11
6.99E-05   1.59E+07       0.00
```

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 2:

```
Pile-head deflection             =     0.37500000 inches
Computed slope at pile head      =       0.000000 radians
Maximum bending moment           =      -4194987. inch-lbs
Maximum shear force              =         78751. lbs
Depth of maximum bending moment  =       0.000000 feet below pile head
Depth of maximum shear force     =       0.000000 feet below pile head
Number of iterations             =             95
```

Number of zero deflection points = 7

Summary of Pile-head Responses for Conventional Analyses

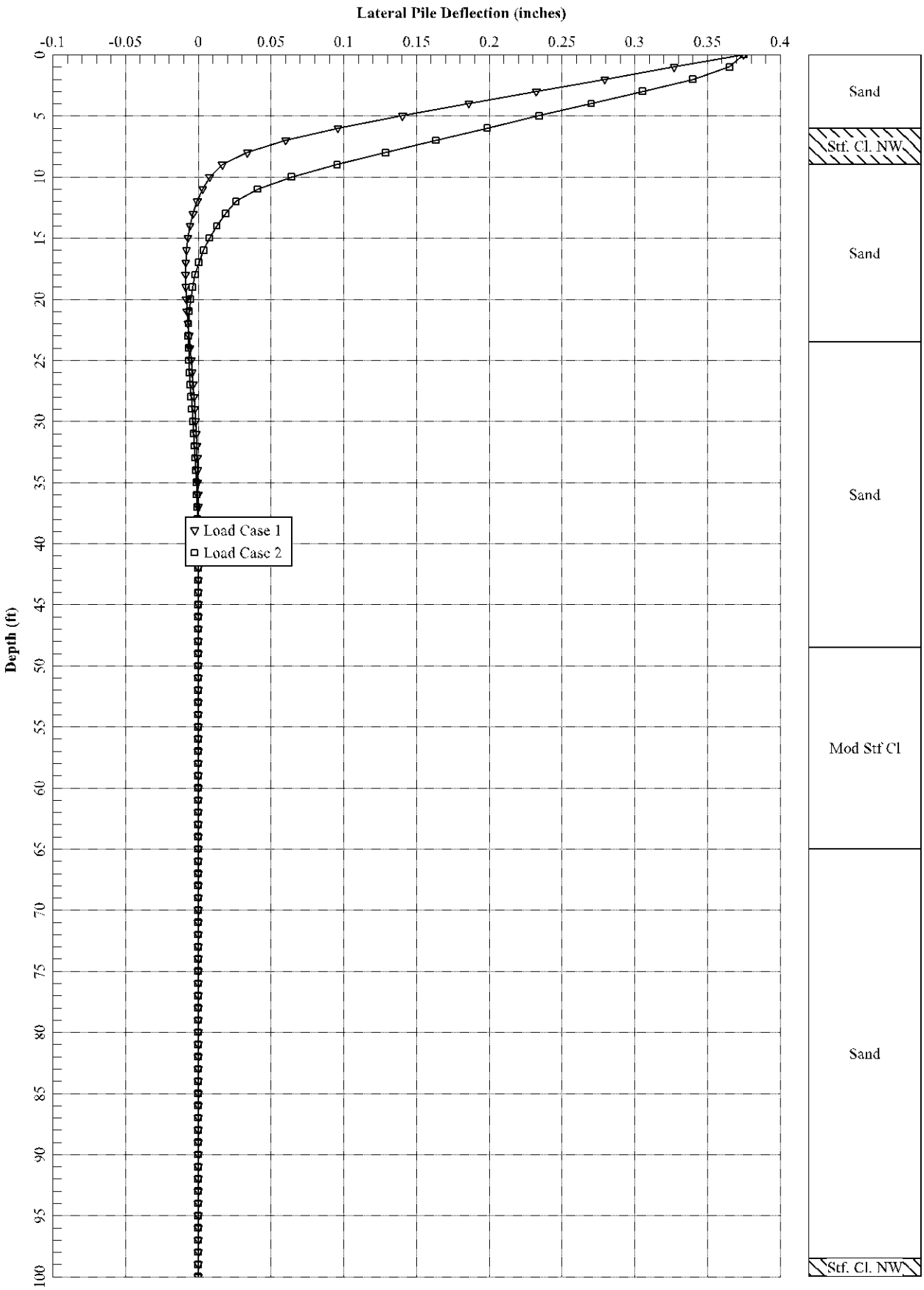
Definitions of Pile-head Loading Conditions:

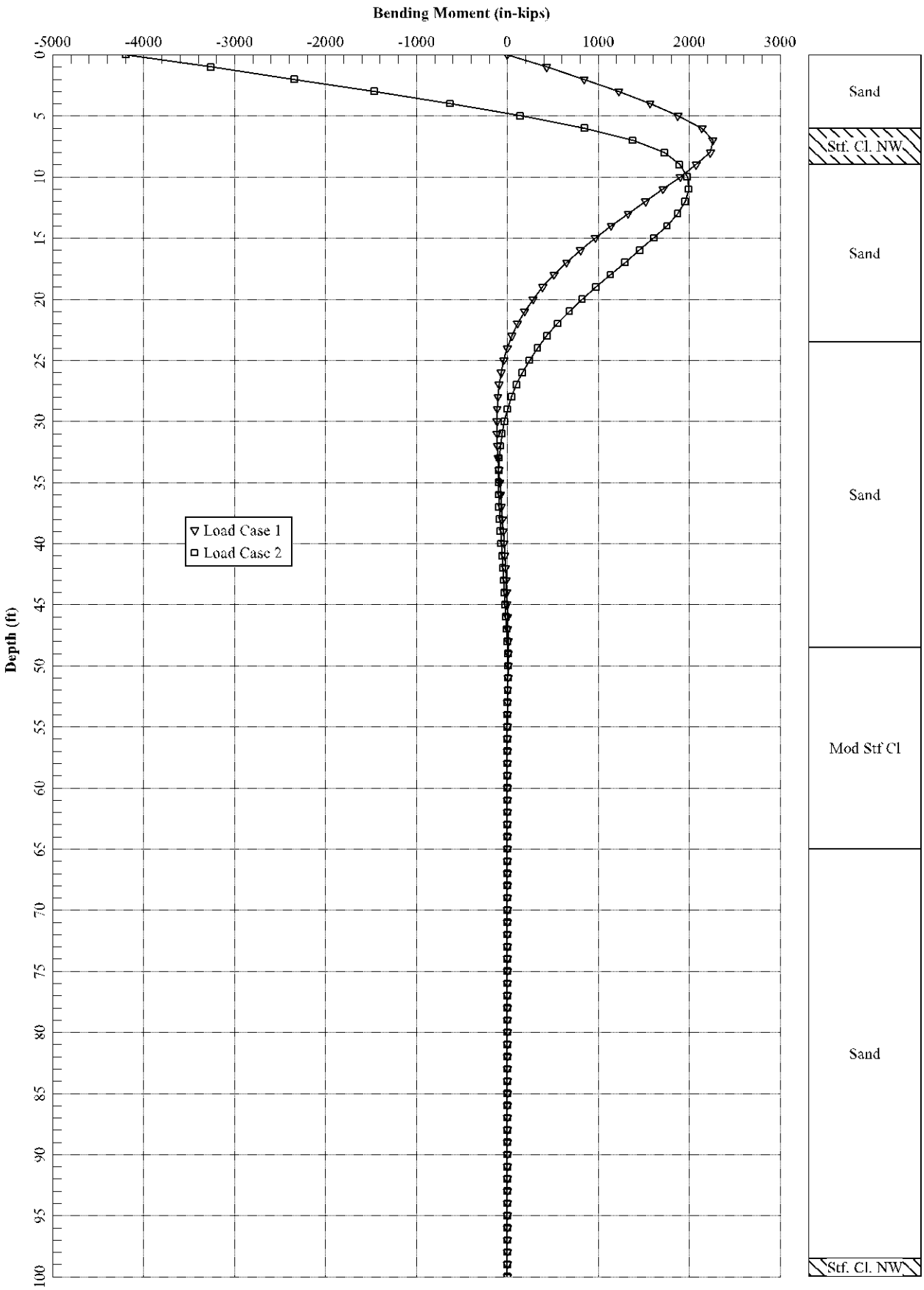
Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

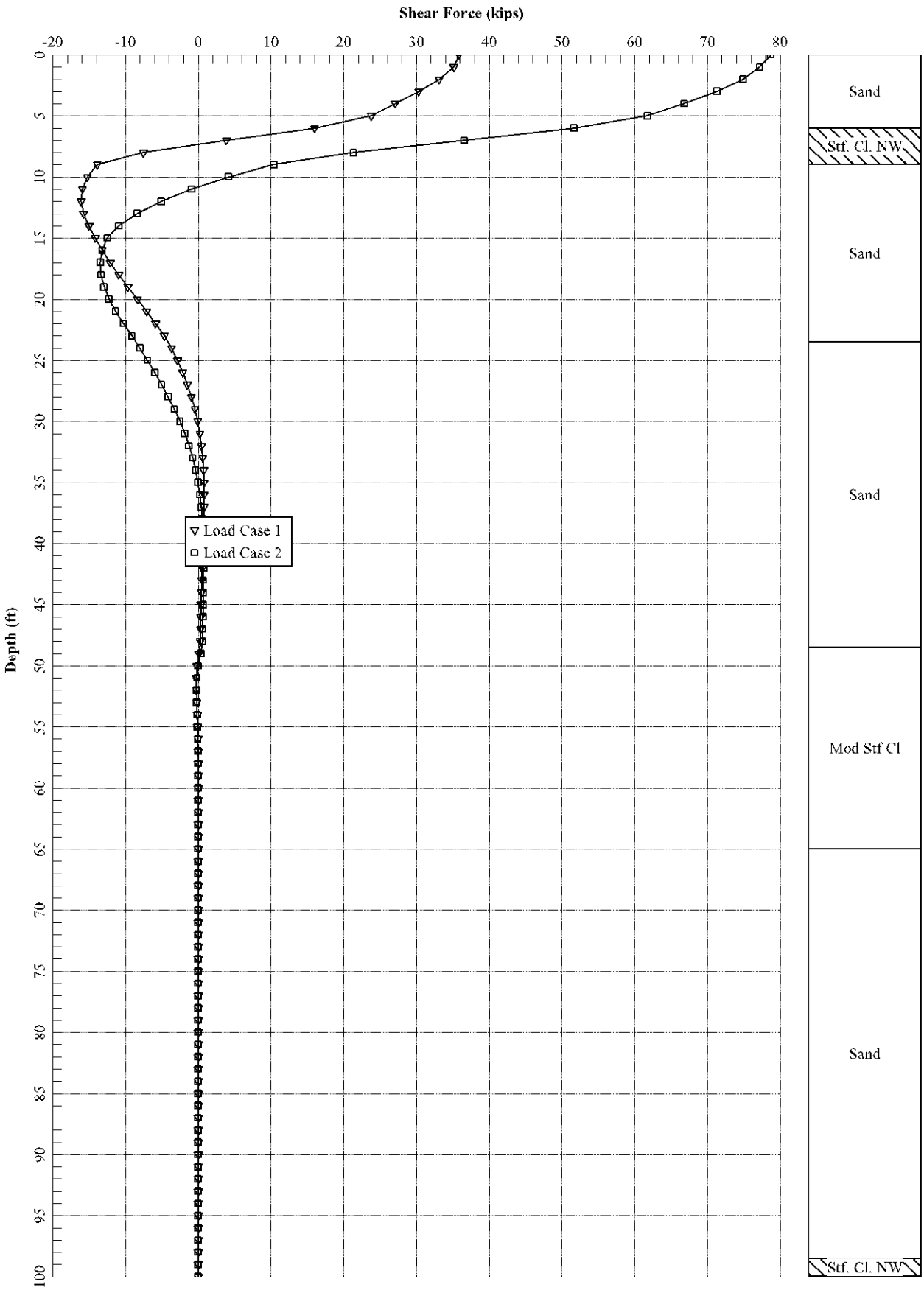
Load Case No.	Load Type	Pile-head Load 1	Load Type	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	y, in	0.3750	M, in-lb	0.00	0.00	0.3750	-0.00399	35867.	2259748.
2	y, in	0.3750	S, rad	0.00	0.00	0.3750	0.00	78751.	-4194987.

Maximum pile-head deflection = 0.3750000000 inches
Maximum pile-head rotation = -0.0039867186 radians = -0.228422 deg.

The analysis ended normally.


Lateral Pile Deflection (inches)
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Depth (ft)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
Load Case 1
Load Case 2
Sand
Stf. Cl. NW
Sand
Sand
Mod Stf Cl
Sand
Stf. Cl. NW


Bending Moment (in-kips)
-5000
-4000
-3000
-2000
-1000
0
1000
2000
3000
Depth (ft)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
Load Case 1
Load Case 2
Sand
Stf. Cl. NW
Sand
Sand
Mod Stf Cl
Sand
Stf. Cl. NW


Shear Force (kips)
-20
-10
0
10
20
30
40
50
60
70
80
Depth (ft)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
Load Case 1
Load Case 2
Sand
Stf. Cl. NW
Sand
Sand
Mod Stf Cl
Sand
Stf. Cl. NW

```
================================================================================

                    LPile for Windows, Version 2018-10.006

                 Analysis of Individual Piles and Drilled Shafts
                Subjected to Lateral Loading Using the p-y Method
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================================================================================

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Nick Mata
Fort Lauderdale

Serial Number of Security Device: 138584418

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--------------------------------------------------------------------------------
                             Files Used for Analysis
--------------------------------------------------------------------------------

Path to file locations:
\Users\cnmata\OneDrive - Terracon Consultants Inc\Desktop\Desktop Projects\Active
PROJECTS\Courthouse\Revised Concept\LPILE\18-inch\

Name of input data file:
New LPile (USCS units).lp10

Name of output report file:
New LPile (USCS units).lp10

Name of plot output file:
New LPile (USCS units).lp10

Name of runtime message file:
New LPile (USCS units).lp10



--------------------------------------------------------------------------------
                           Date and Time of Analysis
--------------------------------------------------------------------------------
```

Date: September 17, 2021 Time: 10:32:37

Problem Title

Project Name: New Courthouse in Fort Lauderdale

Job Number: 34215061

Client: GSA

Engineer: NM

Description: 18 inch diameter ACIP Pile_B-10/B-7

Program Options and Settings

Computational Options:
- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:
- US Customary System Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed	=	500
- Deflection tolerance for convergence	=	1.0000E-05 in
- Maximum allowable deflection	=	100.0000 in
- Number of pile increments	=	100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- Analysis uses layering correction (Method of Georgiadis)
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined	=	1
Total length of pile	=	90.000 ft
Depth of ground surface below top of pile	=	0.0000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	18.0000
2	90.000	18.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile

Length of section	=	90.000000 ft
Shaft Diameter	=	18.000000 in
Shear capacity of section	=	0.0000 lbs

```
--------------------------------------------------------------------------------
                      Ground Slope and Pile Batter Angles
--------------------------------------------------------------------------------

Ground Slope Angle                                    =        0.000 degrees
                                                      =        0.000 radians

Pile Batter Angle                                     =        0.000 degrees
                                                      =        0.000 radians


--------------------------------------------------------------------------------
                      Soil and Rock Layering Information
--------------------------------------------------------------------------------

The soil profile is modelled using 7 layers

Layer 1 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer          =       0.0000 ft
   Distance from top of pile to bottom of layer       =     4.000000 ft
   Effective unit weight at top of layer              =   110.000000 pcf
   Effective unit weight at bottom of layer           =   110.000000 pcf
   Friction angle at top of layer                     =    30.000000 deg.
   Friction angle at bottom of layer                  =    30.000000 deg.
   Subgrade k at top of layer                         =       0.0000 pci
   Subgrade k at bottom of layer                      =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 2 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer          =     4.000000 ft
   Distance from top of pile to bottom of layer       =    10.000000 ft
   Effective unit weight at top of layer              =    52.600000 pcf
   Effective unit weight at bottom of layer           =    52.600000 pcf
   Friction angle at top of layer                     =    30.000000 deg.
   Friction angle at bottom of layer                  =    30.000000 deg.
   Subgrade k at top of layer                         =       0.0000 pci
   Subgrade k at bottom of layer                      =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 3 is stiff clay with user-defined k-value

   Distance from top of pile to top of layer          =    10.000000 ft
```

```
   Distance from top of pile to bottom of layer        =    25.000000 ft
   Effective unit weight at top of layer               =    62.600000 pcf
   Effective unit weight at bottom of layer            =    62.600000 pcf
   Undrained cohesion at top of layer                  =        4000. psf
   Undrained cohesion at bottom of layer               =        4000. psf
   Epsilon-50 at top of layer                          =       0.0000
   Epsilon-50 at bottom of layer                       =       0.0000
   Subgrade k at top of layer                          =       0.0000 pci
   Subgrade k at bottom of layer                       =       0.0000 pci

   NOTE: Default values for Epsilon-50 will be computed for this layer.
   NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer           =    25.000000 ft
   Distance from top of pile to bottom of layer        =    48.500000 ft
   Effective unit weight at top of layer               =    52.600000 pcf
   Effective unit weight at bottom of layer            =    52.600000 pcf
   Friction angle at top of layer                      =    30.000000 deg.
   Friction angle at bottom of layer                   =    30.000000 deg.
   Subgrade k at top of layer                          =       0.0000 pci
   Subgrade k at bottom of layer                       =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 5 is stiff clay with user-defined k-value

   Distance from top of pile to top of layer           =    48.500000 ft
   Distance from top of pile to bottom of layer        =    60.000000 ft
   Effective unit weight at top of layer               =    62.600000 pcf
   Effective unit weight at bottom of layer            =    62.600000 pcf
   Undrained cohesion at top of layer                  =        5000. psf
   Undrained cohesion at bottom of layer               =        5000. psf
   Epsilon-50 at top of layer                          =       0.0000
   Epsilon-50 at bottom of layer                       =       0.0000
   Subgrade k at top of layer                          =       0.0000 pci
   Subgrade k at bottom of layer                       =       0.0000 pci

   NOTE: Default values for Epsilon-50 will be computed for this layer.
   NOTE: Default values for subgrade k will be computed for this layer.

Layer 6 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer           =    60.000000 ft
   Distance from top of pile to bottom of layer        =    98.500000 ft
   Effective unit weight at top of layer               =    52.600000 pcf
   Effective unit weight at bottom of layer            =    52.600000 pcf
   Friction angle at top of layer                      =    31.000000 deg.
   Friction angle at bottom of layer                   =    31.000000 deg.
```

```
   Subgrade k at top of layer                              =       0.0000 pci
   Subgrade k at bottom of layer                           =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 7 is stiff clay with user-defined k-value

   Distance from top of pile to top of layer               =    98.500000 ft
   Distance from top of pile to bottom of layer            =   100.000000 ft
   Effective unit weight at top of layer                   =    62.600000 pcf
   Effective unit weight at bottom of layer                =    62.600000 pcf
   Undrained cohesion at top of layer                      =        5000. psf
   Undrained cohesion at bottom of layer                   =        5000. psf
   Epsilon-50 at top of layer                              =       0.0000
   Epsilon-50 at bottom of layer                           =       0.0000
   Subgrade k at top of layer                              =       0.0000 pci
   Subgrade k at bottom of layer                           =       0.0000 pci

   NOTE: Default values for Epsilon-50 will be computed for this layer.
   NOTE: Default values for subgrade k will be computed for this layer.

 (Depth of the lowest soil layer extends 10.000 ft below the pile tip)
```

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	E50 or kpy krm pci
1	Sand	0.00	110.0000	--	30.0000	--
	default (Reese, et al.)	4.0000	110.0000	--	30.0000	--
	default					
2	Sand	4.0000	52.6000	--	30.0000	--
	default (Reese, et al.)	10.0000	52.6000	--	30.0000	--
	default					
3	Stiff Clay w/o Free Water, using k	10.0000	62.6000	4000.	--	default
	default	25.0000	62.6000	4000.	--	default
	default					
4	Sand	25.0000	52.6000	--	30.0000	--

```
 --          default
           (Reese, et al.)        48.5000      52.6000       --          30.0000
 --          default
  5        Stiff Clay w/o         48.5000      62.6000        5000.       --
default       default
         Free Water, using k      60.0000      62.6000        5000.       --
default       default
  6            Sand               60.0000      52.6000       --          31.0000
 --          default
           (Reese, et al.)        98.5000      52.6000       --          31.0000
 --          default
  7        Stiff Clay w/o         98.5000      62.6000        5000.       --
default       default
         Free Water, using k     100.0000      62.6000        5000.       --
default       default
```

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length
1	4	y = 0.375000 in	M = 0.0000 in-lbs	0.0000000	N.A.
2	5	y = 0.375000 in	S = 0.0000 in/in	0.0000000	N.A.

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

---

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	90.000000	ft
Shaft Diameter	=	18.000000	in
Concrete Cover Thickness (to edge of long. rebar)	=	3.000000	in
Number of Reinforcing Bars	=	6	bars
Yield Stress of Reinforcing Bars	=	60000.	psi
Modulus of Elasticity of Reinforcing Bars	=	29000000.	psi
Gross Area of Shaft	=	254.469005	sq. in.
Total Area of Reinforcing Steel	=	2.640000	sq. in.
Area Ratio of Steel Reinforcement	=	1.04	percent
Edge-to-Edge Bar Spacing	=	4.875000	in
Maximum Concrete Aggregate Size	=	0.750000	in
Ratio of Bar Spacing to Aggregate Size	=	6.50	
Offset of Center of Rebar Cage from Center of Pile	=	0.0000	in

Axial Structural Capacities:

Nom. Axial Structural Capacity = 0.85 Fc Ac + Fy As	=	1442.728	kips
Tensile Load for Cracking of Concrete	=	-136.300	kips
Nominal Axial Tensile Capacity	=	-158.400	kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	0.750000	0.440000	5.625000	0.00000
2	0.750000	0.440000	2.812500	4.871393
3	0.750000	0.440000	-2.812500	4.871393
4	0.750000	0.440000	-5.625000	0.00000
5	0.750000	0.440000	-2.812500	-4.871393
6	0.750000	0.440000	2.812500	-4.871393

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 4.875 inches
between bars 4 and 5.

Ratio of bar spacing to maximum aggregate size = 6.50

Concrete Properties:

Compressive Strength of Concrete	=	6000. psi
Modulus of Elasticity of Concrete	=	4415201. psi
Modulus of Rupture of Concrete	=	-580.947502 psi
Compression Strain at Peak Stress	=	0.002310
Tensile Strain at Fracture of Concrete	=	-0.0001147
Maximum Coarse Aggregate Size	=	0.750000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 1

Number	Axial Thrust Force kips
1	0.000

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.
Y = stress in reinforcing steel has reached yield stress.
T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.
Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
Position of neutral axis is measured from edge of compression side of pile.
Compressive stresses and strains are positive in sign.
Tensile stresses and strains are negative in sign.

Axial Thrust Force = 0.000 kips

Bending Max Conc	Bending Max Steel	Bending Run	Depth to	Max Comp	Max Tens

Curvature rad/in.	Moment Stress in-kip	Stiffness kip-in2	N Axis in	Strain in/in	Strain in/in	Stress ksi	Msg
0.00000125	34.6528208	27722257.	8.9999655	0.00001125	-0.00001125	0.0577124	-0.3229887
0.00000250	69.1956953	27678278.	8.9999655	0.00002250	-0.00002250	0.1151460	-0.6459775
0.00000375	103.6286233	27634300.	8.9999654	0.00003375	-0.00003375	0.1723006	-0.9689662
0.00000500	137.9516050	27590321.	8.9999653	0.00004500	-0.00004500	0.2291764	-1.2919550
0.00000625	172.1646403	27546342.	8.9999652	0.00005625	-0.00005625	0.2857732	-1.6149438
0.00000750	206.2677293	27502364.	8.9999651	0.00006750	-0.00006750	0.3420911	-1.9379325
0.00000875	240.2608718	27458385.	8.9999651	0.00007875	-0.00007875	0.3981301	-2.2609213
0.00001000	274.1440680	27414407.	8.9999650	0.00009000	-0.00009000	0.4538902	-2.5839101
0.00001125	307.9173177	27370428.	8.9999649	0.0001012	-0.0001013	0.5093714	-2.9068989
0.00001250	341.5806211	27326450.	8.9999648	0.0001125	-0.0001125	0.5645737	-3.2298877
0.00001375	341.5806211	24842227.	4.0936161	0.00005629	-0.0001912	0.2825408	-5.5092831 C
0.00001500	341.5806211	22772041.	4.0944207	0.00006142	-0.0002086	0.3079495	-6.0097770 C
0.00001625	341.5806211	21020346.	4.0952263	0.00006655	-0.0002260	0.3333119	-6.5102120 C
0.00001750	341.5806211	19518893.	4.0960331	0.00007168	-0.0002433	0.3586279	-7.0105881 C
0.00001875	341.5806211	18217633.	4.0968410	0.00007682	-0.0002607	0.3838974	-7.5109051 C
0.00002000	341.5806211	17079031.	4.0976500	0.00008195	-0.0002780	0.4091205	-8.0111629 C
0.00002125	341.5806211	16074382.	4.0984601	0.00008709	-0.0002954	0.4342970	-8.5113614 C
0.00002250	341.5806211	15181361.	4.0992713	0.00009223	-0.0003128	0.4594270	-9.0115004 C
0.00002375	341.5806211	14382342.	4.1000837	0.00009738	-0.0003301	0.4845103	-9.5115798 C
0.00002500	341.5806211	13663225.	4.1008971	0.0001025	-0.0003475	0.5095470	-10.0115995 C
0.00002625	341.5806211	13012595.	4.1017117	0.0001077	-0.0003648	0.5345369	-10.5115594 C
0.00002750	341.5806211	12421113.	4.1025274	0.0001128	-0.0003822	0.5594800	-11.0114593 C

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0.00002875   341.5806211     11881065.     4.1033442     0.0001180     -0.0003995
0.5843763   -11.5112992 C
0.00003000   341.5806211     11386021.     4.1041622     0.0001231     -0.0004169
0.6092258   -12.0110788 C
0.00003125   341.5806211     10930580.     4.1049813     0.0001283     -0.0004342
0.6340283   -12.5107982 C
0.00003250   341.5806211     10510173.     4.1058015     0.0001334     -0.0004516
0.6587839   -13.0104570 C
0.00003375   341.5806211     10120907.     4.1066229     0.0001386     -0.0004689
0.6834924   -13.5100553 C
0.00003500   341.5806211      9759446.     4.1074454     0.0001438     -0.0004862
0.7081538   -14.0095929 C
0.00003625   341.5806211      9422914.     4.1082690     0.0001489     -0.0005036
0.7327682   -14.5090696 C
0.00003750   341.5806211      9108817.     4.1090938     0.0001541     -0.0005209
0.7573353   -15.0084853 C
0.00003875   341.5806211      8814984.     4.1099198     0.0001593     -0.0005382
0.7818553   -15.5078400 C
0.00004000   341.5806211      8539516.     4.1107469     0.0001644     -0.0005556
0.8063280   -16.0071334 C
0.00004125   341.5806211      8280742.     4.1115752     0.0001696     -0.0005729
0.8307533   -16.5063655 C
0.00004250   341.5806211      8037191.     4.1124047     0.0001748     -0.0005902
0.8551313   -17.0055361 C
0.00004375   341.5806211      7807557.     4.1132353     0.0001800     -0.0006075
0.8794619   -17.5046451 C
0.00004500   341.5806211      7590680.     4.1140671     0.0001851     -0.0006249
0.9037449   -18.0036924 C
0.00004625   341.5806211      7385527.     4.1149000     0.0001903     -0.0006422
0.9279805   -18.5026777 C
0.00004750   341.5806211      7191171.     4.1157342     0.0001955     -0.0006595
0.9521685   -19.0016011 C
0.00004875   341.5806211      7006782.     4.1165695     0.0002007     -0.0006768
0.9763088   -19.5004623 C
0.00005125   341.5806211      6664988.     4.1182437     0.0002111     -0.0007114
1.0244464   -20.4979977 C
0.00005375   341.5806211      6354988.     4.1199226     0.0002214     -0.0007461
1.0723929   -21.4952830 C
0.00005625   341.5806211      6072544.     4.1216064     0.0002318     -0.0007807
1.1201478   -22.4923170 C
0.00005875   341.5806211      5814138.     4.1232950     0.0002422     -0.0008153
1.1677108   -23.4890986 C
0.00006125   341.5806211      5576826.     4.1249884     0.0002527     -0.0008498
1.2150814   -24.4856268 C
0.00006375   341.5806211      5358127.     4.1266867     0.0002631     -0.0008844
1.2622592   -25.4819004 C
0.00006625   341.5806211      5155934.     4.1283899     0.0002735     -0.0009190
1.3092437   -26.4779183 C
0.00006875   341.5806211      4968445.     4.1300980     0.0002839     -0.0009536
1.3560345   -27.4736795 C
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0.00007125   341.5806211     4794114.     4.1318111     0.0002944     -0.0009881
1.4026313   -28.4691827 C
0.00007375   341.5806211     4631602.     4.1335292     0.0003048     -0.0010227
1.4490335   -29.4644268 C
0.00007625   341.5806211     4479746.     4.1352523     0.0003153     -0.0010572
1.4952407   -30.4594107 C
0.00007875   341.5806211     4337532.     4.1369804     0.0003258     -0.0010917
1.5412526   -31.4541333 C
0.00008125   341.5806211     4204069.     4.1387137     0.0003363     -0.0011262
1.5870685   -32.4485932 C
0.00008375   341.5806211     4078575.     4.1404520     0.0003468     -0.0011607
1.6326882   -33.4427895 C
0.00008625   341.5806211     3960355.     4.1421955     0.0003573     -0.0011952
1.6781111   -34.4367208 C
0.00008875   346.4602750     3903778.     4.1439442     0.0003678     -0.0012297
1.7233368   -35.4303859 C
0.00009125   356.0881101     3902335.     4.1456981     0.0003783     -0.0012642
1.7683648   -36.4237838 C
0.00009375   365.7083865     3900889.     4.1474572     0.0003888     -0.0012987
1.8131947   -37.4169131 C
0.00009625   375.3210744     3899440.     4.1492216     0.0003994     -0.0013331
1.8578261   -38.4097726 C
0.00009875   384.9261437     3897986.     4.1509913     0.0004099     -0.0013676
1.9022584   -39.4023611 C
 0.0001013   394.5235642     3896529.     4.1527663     0.0004205     -0.0014020
1.9464911   -40.3946773 C
 0.0001038   404.1133055     3895068.     4.1545467     0.0004310     -0.0014365
1.9905239   -41.3867200 C
 0.0001063   413.6953367     3893603.     4.1563325     0.0004416     -0.0014709
2.0343563   -42.3784879 C
 0.0001088   423.2696270     3892135.     4.1581237     0.0004522     -0.0015053
2.0779877   -43.3699798 C
 0.0001113   432.8361451     3890662.     4.1599204     0.0004628     -0.0015397
2.1214177   -44.3611942 C
 0.0001138   442.3948596     3889186.     4.1617226     0.0004734     -0.0015741
2.1646458   -45.3521301 C
 0.0001163   451.9457388     3887705.     4.1635303     0.0004840     -0.0016085
2.2076715   -46.3427859 C
 0.0001188   461.4887508     3886221.     4.1653436     0.0004946     -0.0016429
2.2504944   -47.3331604 C
 0.0001213   471.0238633     3884733.     4.1671625     0.0005053     -0.0016772
2.2931139   -48.3232523 C
 0.0001238   480.5510439     3883241.     4.1689870     0.0005159     -0.0017116
2.3355295   -49.3130602 C
 0.0001263   490.0702600     3881745.     4.1708172     0.0005266     -0.0017459
2.3777408   -50.3025828 C
 0.0001288   499.5814784     3880244.     4.1726532     0.0005372     -0.0017803
2.4197472   -51.2918187 C
 0.0001313   509.0846661     3878740.     4.1744948     0.0005479     -0.0018146
2.4615483   -52.2807665 C
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 0.0001338   518.5797894      3877232.     4.1763423     0.0005586    -0.0018489
2.5031435   -53.2694248 C
 0.0001363   528.0668147      3875720.     4.1781956     0.0005693    -0.0018832
2.5445323   -54.2577922 C
 0.0001388   537.5457078      3874203.     4.1800547     0.0005800    -0.0019175
2.5857142   -55.2458673 C
 0.0001413   547.0164345      3872683.     4.1819197     0.0005907    -0.0019518
2.6266887   -56.2336487 C
 0.0001438   556.4789602      3871158.     4.1837907     0.0006014    -0.0019861
2.6674552   -57.2211349 C
 0.0001463   565.9332498      3869629.     4.1856677     0.0006122    -0.0020203
2.7080132   -58.2083245 C
 0.0001488   575.3792684      3868096.     4.1875506     0.0006229    -0.0020546
2.7483623   -59.1952160 C
 0.0001588   613.0799388      3861921.     4.1951434     0.0006660    -0.0021915
2.9076576   -60.0000000 CY
 0.0001688   650.6453621      3855676.     4.2028355     0.0007092    -0.0023283
3.0635653   -60.0000000 CY
 0.0001788   688.0731593      3849360.     4.2106298     0.0007527    -0.0024648
3.2160493   -60.0000000 CY
 0.0001888   725.3608500      3842971.     4.2185289     0.0007962    -0.0026013
3.3650728   -60.0000000 CY
 0.0001988   762.5058663      3836508.     4.2265359     0.0008400    -0.0027375
3.5105975   -60.0000000 CY
 0.0002088   799.4191953      3829553.     4.2342856     0.0008839    -0.0028736
3.6523345   -60.0000000 CY
 0.0002188   825.2621321      3772627.     4.2229481     0.0009238    -0.0030137
3.7772249   -60.0000000 CY
 0.0002288   837.8028699      3662526.     4.1896055     0.0009584    -0.0031591
3.8825006   -60.0000000 CY
 0.0002388   849.3054103      3557300.     4.1577286     0.0009927    -0.0033048
3.9842683   -60.0000000 CY
 0.0002488   860.7595060      3460340.     4.1287776     0.0010270    -0.0034505
4.0837950   -60.0000000 CY
 0.0002588   872.1645695      3370684.     4.1024177     0.0010615    -0.0035960
4.1810635   -60.0000000 CY
 0.0002688   883.5200011      3287516.     4.0783639     0.0010961    -0.0037414
4.2760563   -60.0000000 CY
 0.0002788   894.8251879      3210135.     4.0563724     0.0011307    -0.0038868
4.3687557   -60.0000000 CY
 0.0002888   906.0489993      3137832.     4.0354377     0.0011652    -0.0040323
4.4585388   -60.0000000 CY
 0.0002988   917.2095683      3070158.     4.0158905     0.0011997    -0.0041778
4.5457701   -60.0000000 CY
 0.0003088   928.3200439      3006705.     3.9979311     0.0012344    -0.0043231
4.6307070   -60.0000000 CY
 0.0003188   939.3797836      2947074.     3.9814145     0.0012691    -0.0044684
4.7133307   -60.0000000 CY
 0.0003288   950.3881164      2890914.     3.9662136     0.0013039    -0.0046136
4.7936214   -60.0000000 CY
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 0.0003388   961.3443543      2837917.     3.9522163     0.0013388     -0.0047587
4.8715592   -60.0000000 CY
 0.0003488   972.2477924      2787807.     3.9393236     0.0013738     -0.0049037
4.9471238   -60.0000000 CY
 0.0003588   983.0977076      2740342.     3.9274476     0.0014090     -0.0050485
5.0202944   -60.0000000 CY
 0.0003688   993.8933582      2695304.     3.9165102     0.0014442     -0.0051933
5.0910495   -60.0000000 CY
 0.0003788         1005.      2652449.     3.9064013     0.0014795     -0.0053380
5.1593378   -60.0000000 CY
 0.0003888         1015.      2610082.     3.8957864     0.0015145     -0.0054830
5.2242149   -60.0000000 CY
 0.0003988         1023.      2566106.     3.8829256     0.0015483     -0.0056292
5.2845013   -60.0000000 CY
 0.0004088         1030.      2518781.     3.8659991     0.0015802     -0.0057773
5.3390451   -60.0000000 CY
 0.0004188         1034.      2468128.     3.8440417     0.0016097     -0.0059278
5.3873749   -60.0000000 CY
 0.0004288         1036.      2416495.     3.8200360     0.0016378     -0.0060797
5.4317662   -60.0000000 CY
 0.0004388         1038.      2365530.     3.7956398     0.0016653     -0.0062322
5.4734862   -60.0000000 CY
 0.0004488         1040.      2316733.     3.7724100     0.0016929     -0.0063846
5.5136681   -60.0000000 CY
 0.0004588         1041.      2270026.     3.7503363     0.0017205     -0.0065370
5.5523487   -60.0000000 CY
 0.0004688         1043.      2225274.     3.7293461     0.0017481     -0.0066894
5.5895168   -60.0000000 CY
 0.0004788         1045.      2182355.     3.7093725     0.0017759     -0.0068416
5.6251612   -60.0000000 CY
 0.0004888         1046.      2141155.     3.6903543     0.0018037     -0.0069938
5.6592705   -60.0000000 CY
 0.0004988         1048.      2101334.     3.6706411     0.0018307     -0.0071468
5.6908962   -60.0000000 CY
 0.0005088         1050.      2063042.     3.6518026     0.0018579     -0.0072996
5.7210391   -60.0000000 CY
 0.0005188         1051.      2026194.     3.6338195     0.0018850     -0.0074525
5.7497068   -60.0000000 CY
 0.0005288         1053.      1990709.     3.6166443     0.0019123     -0.0076052
5.7768881   -60.0000000 CY
 0.0005388         1054.      1956509.     3.6002332     0.0019396     -0.0077579
5.8025718   -60.0000000 CY
 0.0005488         1056.      1923524.     3.5845459     0.0019670     -0.0079105
5.8267462   -60.0000000 CY
 0.0006088         1064.      1747693.     3.5030494     0.0021325     -0.0088250
5.9392253    60.0000000 CY
 0.0006688         1071.      1601829.     3.4341539     0.0022966     -0.0097409
5.9938774    60.0000000 CY
 0.0007288         1078.      1479017.     3.3807099     0.0024637     -0.0106538
5.9978951    60.0000000 CY
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 0.0007888         1084.      1373863.     3.3397124     0.0026342    -0.0115633
5.9989238    60.0000000 CY
 0.0008488         1089.      1282518.     3.3059231     0.0028059    -0.0124716
5.9982891    60.0000000 CY
 0.0009088         1093.      1202449.     3.2794859     0.0029802    -0.0133773
5.9950947    60.0000000 CY
 0.0009688         1096.      1131691.     3.2598236     0.0031580    -0.0142795
5.9860713    60.0000000 CYT
 0.0010288         1099.      1068694.     3.2455121     0.0033388    -0.0151787
5.9938637    60.0000000 CYT
 0.0010888         1102.      1012142.     3.2359876     0.0035232    -0.0160743
5.9958364    60.0000000 CYT
 0.0011488         1104.       961130.     3.2300831     0.0037106    -0.0169669
5.9745513    60.0000000 CYT
 0.0012088         1106.       914856.     3.2272129     0.0039009    -0.0178566
5.9980992    60.0000000 CYT
```

Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	0.000	1093.126	0.00300000

Note that the values of moment capacity in the table above are not
factored by a strength reduction factor (phi-factor).

In ACI 318, the value of the strength reduction factor depends on whether
the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction
factor to compute ultimate moment capacity according to ACI 318, Section
9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding
bending stiffnesses computed for common resistance factor values used for
reinforced concrete sections.

Axial Load No.	Resist. Factor for Moment	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in^2
1	0.65	1093.	0.0000	710.531998	3845512.

1	0.70	1093.	0.0000	765.188306	3836002.
1	0.75	1093.	0.0000	819.844613	3784560.

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	0.00	0.00	N.A.	No	0.00	12367.
2	4.0000	4.0000	Yes	No	12367.	57649.
3	10.0000	3.2642	No	No	70016.	608445.
4	25.0000	25.5156	No	No	678461.	2062130.
5	48.5000	46.3914	No	No	2740590.	776250.
6	60.0000	52.8746	No	No	3516840.	5716382.
7	98.5000	98.5000	No	No	9233222.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 1

Pile-head conditions are Displacement and Moment (Loading Type 4)
Displacement of pile head = 0.375000 inches
Moment at pile head = 0.0 in-lbs
Axial load at pile head = 0.0 lbs

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. Es*h	Soil Spr. Distrib. p Lat. Load
feet	inches	in-lbs	lbs	radians	psi*	in-lb^2	lb/inch	lb/inch lb/inch
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      0.00     0.3750       0.00     10389.   -0.00564       0.00   2.77E+10
0.00       0.00       0.00
    0.9000     0.3141    112202.      9931.   -0.00562       0.00   2.77E+10
-84.7540      2914.       0.00
    1.8000     0.2537    214518.      8571.   -0.00555       0.00   2.75E+10
-167.1758      7117.       0.00
    2.7000     0.1942    297335.      6455.   -0.00545       0.00   2.74E+10
-224.5895     12492.       0.00
    3.6000     0.1359    353955.      3913.   -0.00490       0.00   3.90E+09
-246.3196     19572.       0.00
    4.5000    0.08825    381845.      1424.   -0.00388       0.00   3.90E+09
-214.6086     26264.       0.00
    5.4000    0.05201    384703.  -593.1965   -0.00282       0.00   3.90E+09
-158.8552     32989.       0.00
    6.3000    0.02727    369032.     -1982.   -0.00178       0.00   3.90E+09
-98.3402     38941.       0.00
    7.2000    0.01358    341891.     -2815.  -8.67E-04       0.00   4.60E+09
-55.9486     44504.       0.00
    8.1000    0.00854    308223.     -3331.  -4.05E-04       0.00   2.74E+10
-39.6029     50067.       0.00
    9.0000    0.00482    269937.     -3679.  -2.91E-04       0.00   2.74E+10
-24.8366     55630.       0.00
    9.9000    0.00225    228753.     -3863.  -1.93E-04       0.00   2.75E+10
-9.2301     44323.       0.00
   10.8000   6.48E-04    186493.     -4819.  -1.12E-04       0.00   2.75E+10
-167.8697   2799360.       0.00
   11.7000  -1.64E-04    124653.     -5478.  -5.07E-05       0.00   2.76E+10
45.9170   3032640.       0.00
   12.6000  -4.48E-04     68169.     -4499.  -1.30E-05       0.00   2.77E+10
135.4687   3265920.       0.00
   13.5000  -4.45E-04     27485.     -2988.   5.61E-06       0.00   2.77E+10
144.2352   3499200.       0.00
   14.4000  -3.27E-04      3625.     -1600.   1.17E-05       0.00   2.77E+10
112.9146   3732480.       0.00
   15.3000  -1.93E-04     -7065.  -607.0431   1.10E-05       0.00   2.77E+10
70.8762   3965760.       0.00
   16.2000  -8.90E-05     -9487.   -37.3715   7.78E-06       0.00   2.77E+10
34.6185   4199040.       0.00
   17.1000  -2.50E-05     -7872.   204.9215   4.40E-06       0.00   2.77E+10
10.2506   4432320.       0.00
   18.0000   5.97E-06     -5061.   246.3583   1.88E-06       0.00   2.77E+10
-2.5771   4665600.       0.00
   18.9000   1.56E-05     -2550.   194.1940   3.97E-07       0.00   2.77E+10
-7.0830   4898880.       0.00
   19.8000   1.45E-05  -866.1739   118.6507  -2.69E-07       0.00   2.77E+10
-6.9065   5132160.       0.00
   20.7000   9.81E-06    12.4644    55.0420  -4.35E-07       0.00   2.77E+10
-4.8729   5365440.       0.00
   21.6000   5.14E-06   322.7333    14.3526  -3.70E-07       0.00   2.77E+10
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-2.6622   5598720.       0.00
   22.5000   1.82E-06   322.4807    -5.3315  -2.44E-07       0.00   2.77E+10
-0.9830   5832000.       0.00
   23.4000  -1.38E-07   207.5738   -10.2210  -1.41E-07       0.00   2.77E+10
0.07750   6065280.       0.00
   24.3000  -1.22E-06   101.7060    -5.9512  -8.06E-08       0.00   2.77E+10
0.7132   6298560.       0.00
   25.2000  -1.88E-06    79.0285    -1.9937  -4.54E-08       0.00   2.77E+10
0.01964    112821.       0.00
   26.1000  -2.20E-06    58.6417    -1.7589  -1.86E-08       0.00   2.77E+10
0.02385    116850.       0.00
   27.0000  -2.28E-06    41.0369    -1.4921   7.90E-10       0.00   2.77E+10
0.02554    120880.       0.00
   27.9000  -2.19E-06    26.4117    -1.2176   1.39E-08       0.00   2.77E+10
0.02530    124909.       0.00
   28.8000  -1.98E-06    14.7373    -0.9532   2.19E-08       0.00   2.77E+10
0.02366    128938.       0.00
   29.7000  -1.71E-06     5.8222    -0.7116   2.59E-08       0.00   2.77E+10
0.02110    132968.       0.00
   30.6000  -1.42E-06    -0.6323    -0.5003   2.70E-08       0.00   2.77E+10
0.01802    136997.       0.00
   31.5000  -1.13E-06    -4.9844    -0.3232   2.59E-08       0.00   2.77E+10
0.01477    141026.       0.00
   32.4000  -8.62E-07    -7.6138    -0.1809   2.34E-08       0.00   2.77E+10
0.01158    145056.       0.00
   33.3000  -6.25E-07    -8.8923   -0.07176   2.02E-08       0.00   2.77E+10
0.00863    149085.       0.00
   34.2000  -4.26E-07    -9.1638    0.00747   1.67E-08       0.00   2.77E+10
0.00604    153114.       0.00
   35.1000  -2.65E-07    -8.7309    0.06092   1.32E-08       0.00   2.77E+10
0.00386    157144.       0.00
   36.0000  -1.41E-07    -7.8480    0.09312   9.96E-09       0.00   2.77E+10
0.00210    161173.       0.00
   36.9000  -4.99E-08    -6.7196     0.1086   7.13E-09       0.00   2.77E+10
7.64E-04    165202.       0.00
   37.8000   1.29E-08    -5.5021     0.1116   4.75E-09       0.00   2.77E+10
-2.02E-04    169232.       0.00
   38.7000   5.26E-08    -4.3082     0.1060   2.84E-09       0.00   2.77E+10
-8.44E-04    173261.       0.00
   39.6000   7.41E-08    -3.2128    0.09486   1.37E-09       0.00   2.77E+10
-0.00122    177290.       0.00
   40.5000   8.22E-08    -2.2593    0.08084   3.04E-10       0.00   2.77E+10
-0.00138    181320.       0.00
   41.4000   8.07E-08    -1.4667    0.06590  -4.22E-10       0.00   2.77E+10
-0.00139    185349.       0.00
   42.3000   7.31E-08    -0.8357    0.05150  -8.70E-10       0.00   2.77E+10
-0.00128    189378.       0.00
   43.2000   6.19E-08    -0.3542    0.03860  -1.10E-09       0.00   2.77E+10
-0.00111    193408.       0.00
   44.1000   4.93E-08   -0.00208    0.02774  -1.17E-09       0.00   2.77E+10
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-9.01E-04    197437.       0.00
   45.0000   3.66E-08     0.2450    0.01919  -1.12E-09       0.00   2.77E+10
-6.83E-04    201466.       0.00
   45.9000   2.50E-08     0.4124    0.01293  -9.96E-10       0.00   2.77E+10
-4.76E-04    205496.       0.00
   46.8000   1.51E-08     0.5243    0.00878  -8.13E-10       0.00   2.77E+10
-2.93E-04    209525.       0.00
   47.7000   7.43E-09     0.6021    0.00640  -5.94E-10       0.00   2.77E+10
-1.47E-04    213554.       0.00
   48.6000   2.28E-09     0.6627   -0.00874  -3.48E-10       0.00   2.77E+10
-0.00266   1.26E+07       0.00
   49.5000  -8.32E-11     0.4134   -0.02255  -1.38E-10       0.00   2.77E+10
9.89E-05   1.28E+07       0.00
   50.4000  -7.05E-10     0.1756   -0.01741  -2.34E-11       0.00   2.77E+10
8.53E-04   1.31E+07       0.00
   51.3000  -5.88E-10    0.03734   -0.00890   1.81E-11       0.00   2.77E+10
7.23E-04   1.33E+07       0.00
   52.2000  -3.13E-10   -0.01656   -0.00287   2.22E-11       0.00   2.77E+10
3.92E-04   1.35E+07       0.00
   53.1000  -1.08E-10   -0.02470  -6.99E-06   1.41E-11       0.00   2.77E+10
1.38E-04   1.38E+07       0.00
   54.0000  -7.71E-12   -0.01672   7.94E-04   6.08E-12       0.00   2.77E+10
9.99E-06   1.40E+07       0.00
   54.9000   2.27E-11   -0.00756   6.86E-04   1.35E-12       0.00   2.77E+10
-3.00E-05   1.42E+07       0.00
   55.8000   2.14E-11   -0.00190   3.69E-04       0.00       0.00   2.77E+10
-2.86E-05   1.45E+07       0.00
   56.7000   1.20E-11   4.16E-04   1.27E-04       0.00       0.00   2.77E+10
-1.63E-05   1.47E+07       0.00
   57.6000   4.37E-12   8.31E-04   5.84E-06       0.00       0.00   2.77E+10
-6.04E-06   1.49E+07       0.00
   58.5000       0.00   5.42E-04  -2.86E-05       0.00       0.00   2.77E+10
-3.40E-07   1.52E+07       0.00
   59.4000  -1.61E-12   2.13E-04  -1.81E-05       0.00       0.00   2.77E+10
2.29E-06   1.54E+07       0.00
   60.3000  -2.56E-12   1.51E-04  -5.31E-06       0.00       0.00   2.77E+10
8.25E-08    348507.       0.00
   61.2000  -2.87E-12   9.85E-05  -4.35E-06       0.00       0.00   2.77E+10
9.40E-08    353709.       0.00
   62.1000  -2.77E-12   5.70E-05  -3.35E-06       0.00       0.00   2.77E+10
9.21E-08    358910.       0.00
   63.0000  -2.43E-12   2.62E-05  -2.41E-06       0.00       0.00   2.77E+10
8.20E-08    364112.       0.00
   63.9000  -1.98E-12   4.96E-06  -1.60E-06       0.00       0.00   2.77E+10
6.79E-08    369313.       0.00
   64.8000  -1.51E-12  -8.34E-06  -9.48E-07       0.00       0.00   2.77E+10
5.25E-08    374515.       0.00
   65.7000  -1.08E-12  -1.55E-05  -4.59E-07       0.00       0.00   2.77E+10
3.80E-08    379716.       0.00
   66.6000       0.00  -1.83E-05  -1.17E-07       0.00       0.00   2.77E+10
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2.53E-08    384918.       0.00
   67.5000       0.00  -1.80E-05   1.01E-07       0.00       0.00   2.77E+10
1.51E-08    390120.       0.00
   68.4000       0.00  -1.61E-05   2.23E-07       0.00       0.00   2.77E+10
7.38E-09    395321.       0.00
   69.3000       0.00  -1.32E-05   2.73E-07       0.00       0.00   2.77E+10
1.95E-09    400523.       0.00
   70.2000       0.00  -1.02E-05   2.75E-07       0.00       0.00   2.77E+10
-1.53E-09    405724.       0.00
   71.1000       0.00  -7.28E-06   2.48E-07       0.00       0.00   2.77E+10
-3.48E-09    410926.       0.00
   72.0000       0.00  -4.80E-06   2.06E-07       0.00       0.00   2.77E+10
-4.29E-09    416128.       0.00
   72.9000       0.00  -2.83E-06   1.60E-07       0.00       0.00   2.77E+10
-4.34E-09    421329.       0.00
   73.8000       0.00  -1.36E-06   1.15E-07       0.00       0.00   2.77E+10
-3.91E-09    426531.       0.00
   74.7000       0.00  -3.41E-07   7.64E-08       0.00       0.00   2.77E+10
-3.25E-09    431732.       0.00
   75.6000       0.00   2.95E-07   4.53E-08       0.00       0.00   2.77E+10
-2.51E-09    436934.       0.00
   76.5000       0.00   6.38E-07   2.20E-08       0.00       0.00   2.77E+10
-1.80E-09    442136.       0.00
   77.4000       0.00   7.71E-07   5.87E-09       0.00       0.00   2.77E+10
-1.19E-09    447337.       0.00
   78.3000       0.00   7.65E-07  -4.31E-09       0.00       0.00   2.77E+10
-6.96E-10    452539.       0.00
   79.2000       0.00   6.78E-07  -9.84E-09       0.00       0.00   2.77E+10
-3.28E-10    457740.       0.00
   80.1000       0.00   5.52E-07  -1.20E-08       0.00       0.00   2.77E+10
-7.37E-11    462942.       0.00
   81.0000       0.00   4.18E-07  -1.19E-08       0.00       0.00   2.77E+10
8.57E-11    468144.       0.00
   81.9000       0.00   2.94E-07  -1.06E-08       0.00       0.00   2.77E+10
1.71E-10    473345.       0.00
   82.8000       0.00   1.90E-07  -8.52E-09       0.00       0.00   2.77E+10
2.04E-10    478547.       0.00
   83.7000       0.00   1.10E-07  -6.33E-09       0.00       0.00   2.77E+10
2.02E-10    483748.       0.00
   84.6000       0.00   5.37E-08  -4.28E-09       0.00       0.00   2.77E+10
1.78E-10    488950.       0.00
   85.5000       0.00   1.79E-08  -2.54E-09       0.00       0.00   2.77E+10
1.44E-10    494152.       0.00
   86.4000       0.00  -1.11E-09  -1.19E-09       0.00       0.00   2.77E+10
1.05E-10    499353.       0.00
   87.3000       0.00  -7.87E-09  -2.70E-10       0.00       0.00   2.77E+10
6.58E-11    504555.       0.00
   88.2000       0.00  -6.95E-09   2.32E-10       0.00       0.00   2.77E+10
2.73E-11    509756.       0.00
   89.1000       0.00  -2.85E-09   3.22E-10       0.00       0.00   2.77E+10
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-1.07E-11    514958.       0.00
   90.0000       0.00       0.00       0.00       0.00       0.00   2.77E+10
-4.89E-11    260080.       0.00

* This analysis computed pile response using nonlinear moment-curvature rela-
  tionships. Values of total stress due to combined axial and bending stresses
  are computed only for elastic sections only and do not equal the actual
  stresses in concrete and steel. Stresses in concrete and steel may be inter-
  polated from the output for nonlinear bending properties relative to the
  magnitude of bending moment developed in the pile.


Output Summary for Load Case No. 1:

Pile-head deflection             =     0.37500000 inches
Computed slope at pile head      =    -0.00563853 radians
Maximum bending moment           =        384703. inch-lbs
Maximum shear force              =         10389. lbs
Depth of maximum bending moment  =     5.40000000 feet below pile head
Depth of maximum shear force     =       0.000000 feet below pile head
Number of iterations             =             22
Number of zero deflection points =             10



--------------------------------------------------------------------------------
                Computed Values of Pile Loading and Deflection
                  for Lateral Loading for Load Case Number 2
--------------------------------------------------------------------------------

Pile-head conditions are Displacement and Pile-head Rotation (Loading Type 5)
Displacement of pile head                              =     0.375000 inches
Rotation of pile head                                  =    0.000E+00 radians
Axial load on pile head                                =          0.0 lbs

   Depth    Deflect.    Bending     Shear      Slope      Total     Bending   Soil
Res.  Soil Spr.  Distrib.
     X          y       Moment      Force        S       Stress    Stiffness      p
      Es*h     Lat. Load
   feet      inches     in-lbs       lbs      radians     psi*      in-lb^2
lb/inch    lb/inch    lb/inch
---------- ---------- ---------- ---------- ---------- ---------- ----------
---------- ---------- ----------
      0.00     0.3750   -824604.     21886.       0.00       0.00   3.77E+09
0.00       0.00       0.00
    0.9000     0.3623   -593406.     20929.   -0.00203       0.00   3.77E+09
-88.5960      2641.       0.00
    1.8000     0.3312   -372541.     19471.   -0.00339       0.00   3.90E+09
-181.3092      5913.       0.00
    2.7000     0.2889   -172824.     17115.   -0.00394       0.00   2.75E+10
```

```
-254.9701      9530.       0.00
    3.6000     0.2460     -2847.     14111.   -0.00398       0.00   2.77E+10
-301.4214     13234.       0.00
    4.5000     0.2030    131973.     10874.   -0.00395       0.00   2.76E+10
-298.0829     15857.       0.00
    5.4000     0.1606    232023.      7788.   -0.00388       0.00   2.75E+10
-273.2692     18375.       0.00
    6.3000     0.1192    300200.      5056.   -0.00378       0.00   2.74E+10
-232.6655     21083.       0.00
    7.2000    0.07904    341239.      2691.   -0.00347       0.00   7.52E+09
-205.3420     28058.       0.00
    8.1000    0.04419    358327.   685.1195   -0.00273       0.00   3.90E+09
-166.1238     40604.       0.00
    9.0000    0.02004    356038.  -769.4862   -0.00174       0.00   3.90E+09
-103.2476     55630.       0.00
    9.9000    0.00654    341706.     -1472.  -7.90E-04       0.00   4.01E+09
-26.8574      44323.       0.00
   10.8000    0.00298    324241.     -3762.  -2.66E-04       0.00   2.73E+10
-397.2326    1440207.       0.00
   11.7000   7.96E-04    260444.     -7115.  -1.51E-04       0.00   2.74E+10
-223.5838    3032640.       0.00
   12.6000  -2.79E-04    170567.     -7866.  -6.61E-05       0.00   2.75E+10
84.3365    3265920.       0.00
   13.5000  -6.32E-04     90527.     -6306.  -1.50E-05       0.00   2.76E+10
204.7123    3499200.       0.00
   14.4000  -6.03E-04     34366.     -4075.   9.38E-06       0.00   2.77E+10
208.3414    3732480.       0.00
   15.3000  -4.29E-04      2505.     -2099.   1.66E-05       0.00   2.77E+10
157.6242    3965760.       0.00
   16.2000  -2.45E-04    -10971.  -733.0660   1.49E-05       0.00   2.77E+10
95.3110    4199040.       0.00
   17.1000  -1.07E-04    -13330.    19.1489   1.02E-05       0.00   2.77E+10
43.9880    4432320.       0.00
   18.0000  -2.53E-05    -10557.   315.7235   5.52E-06       0.00   2.77E+10
10.9332    4665600.       0.00
   18.9000   1.21E-05     -6510.   345.0098   2.20E-06       0.00   2.77E+10
-5.5098    4898880.       0.00
   19.8000   2.22E-05     -3105.   258.2591   3.27E-07       0.00   2.77E+10
-10.5551    5132160.       0.00
   20.7000   1.92E-05  -931.5336   149.7203  -4.59E-07       0.00   2.77E+10
-9.5446    5365440.       0.00
   21.6000   1.23E-05   128.8021    63.7663  -6.16E-07       0.00   2.77E+10
-6.3728    5598720.       0.00
   22.5000   5.92E-06   445.8181    12.1023  -5.04E-07       0.00   2.77E+10
-3.1946    5832000.       0.00
   23.4000   1.41E-06   390.2126    -9.4385  -3.41E-07       0.00   2.77E+10
-0.7944    6065280.       0.00
   24.3000  -1.45E-06   241.9456    -9.1776  -2.18E-07       0.00   2.77E+10
0.8427    6298560.       0.00
   25.2000  -3.29E-06   191.9770    -4.4413  -1.33E-07       0.00   2.77E+10
```

```
0.03433    112821.       0.00
   26.1000  -4.32E-06   146.0130    -4.0035  -6.73E-08       0.00   2.77E+10
0.04675    116850.       0.00
   27.0000  -4.74E-06   105.5016    -3.4646  -1.83E-08       0.00   2.77E+10
0.05305    120880.       0.00
   27.9000  -4.72E-06    71.1784    -2.8835   1.61E-08       0.00   2.77E+10
0.05454    124909.       0.00
   28.8000  -4.39E-06    43.2170    -2.3059   3.84E-08       0.00   2.77E+10
0.05244    128938.       0.00
   29.7000  -3.89E-06    21.3715    -1.7643   5.10E-08       0.00   2.77E+10
0.04785    132968.       0.00
   30.6000  -3.29E-06     5.1071    -1.2805   5.61E-08       0.00   2.77E+10
0.04174    136997.       0.00
   31.5000  -2.67E-06    -6.2883    -0.8666   5.59E-08       0.00   2.77E+10
0.03491    141026.       0.00
   32.4000  -2.08E-06   -13.6114    -0.5270   5.20E-08       0.00   2.77E+10
0.02798    145056.       0.00
   33.3000  -1.55E-06   -17.6710    -0.2604   4.59E-08       0.00   2.77E+10
0.02139    149085.       0.00
   34.2000  -1.09E-06   -19.2352   -0.06132   3.88E-08       0.00   2.77E+10
0.01547    153114.       0.00
   35.1000  -7.13E-07   -18.9956    0.07820   3.13E-08       0.00   2.77E+10
0.01037    157144.       0.00
   36.0000  -4.15E-07   -17.5462     0.1676   2.42E-08       0.00   2.77E+10
0.00619    161173.       0.00
   36.9000  -1.90E-07   -15.3749     0.2168   1.78E-08       0.00   2.77E+10
0.00291    165202.       0.00
   37.8000  -3.08E-08   -12.8639     0.2351   1.23E-08       0.00   2.77E+10
4.83E-04    169232.       0.00
   38.7000   7.47E-08   -10.2967     0.2312   7.76E-09       0.00   2.77E+10
-0.00120    173261.       0.00
   39.6000   1.37E-07    -7.8692     0.2126   4.22E-09       0.00   2.77E+10
-0.00225    177290.       0.00
   40.5000   1.66E-07    -5.7037     0.1855   1.58E-09       0.00   2.77E+10
-0.00279    181320.       0.00
   41.4000   1.71E-07    -3.8631     0.1546  -2.85E-10       0.00   2.77E+10
-0.00293    185349.       0.00
   42.3000   1.60E-07    -2.3647     0.1236  -1.50E-09       0.00   2.77E+10
-0.00280    189378.       0.00
   43.2000   1.39E-07    -1.1930    0.09508  -2.19E-09       0.00   2.77E+10
-0.00248    193408.       0.00
   44.1000   1.12E-07    -0.3109    0.07058  -2.48E-09       0.00   2.77E+10
-0.00206    197437.       0.00
   45.0000   8.49E-08     0.3316    0.05093  -2.48E-09       0.00   2.77E+10
-0.00158    201466.       0.00
   45.9000   5.89E-08     0.7891    0.03632  -2.26E-09       0.00   2.77E+10
-0.00112    205496.       0.00
   46.8000   3.61E-08     1.1161    0.02649  -1.89E-09       0.00   2.77E+10
-7.00E-04    209525.       0.00
   47.7000   1.80E-08     1.3613    0.02078  -1.41E-09       0.00   2.77E+10
```

```
-3.57E-04    213554.       0.00
   48.6000   5.70E-09     1.5650   -0.01703  -8.38E-10       0.00   2.77E+10
-0.00665   1.26E+07       0.00
   49.5000  -5.72E-11     0.9935   -0.05255  -3.39E-10       0.00   2.77E+10
6.79E-05   1.28E+07       0.00
   50.4000  -1.63E-09     0.4299   -0.04152  -6.21E-11       0.00   2.77E+10
0.00197   1.31E+07       0.00
   51.3000  -1.40E-09    0.09656   -0.02157   4.05E-11       0.00   2.77E+10
0.00172   1.33E+07       0.00
   52.2000  -7.57E-10   -0.03606   -0.00716   5.23E-11       0.00   2.77E+10
9.49E-04   1.35E+07       0.00
   53.1000  -2.69E-10   -0.05801  -1.84E-04   3.39E-11       0.00   2.77E+10
3.42E-04   1.38E+07       0.00
   54.0000  -2.40E-11   -0.04004    0.00183   1.48E-11       0.00   2.77E+10
3.11E-05   1.40E+07       0.00
   54.9000   5.21E-11   -0.01843    0.00163   3.46E-12       0.00   2.77E+10
-6.86E-05   1.42E+07       0.00
   55.8000   5.07E-11   -0.00483   8.93E-04  -1.07E-12       0.00   2.77E+10
-6.79E-05   1.45E+07       0.00
   56.7000   2.89E-11   8.52E-04   3.14E-04  -1.85E-12       0.00   2.77E+10
-3.94E-05   1.47E+07       0.00
   57.6000   1.08E-11    0.00194   2.05E-05  -1.30E-12       0.00   2.77E+10
-1.49E-05   1.49E+07       0.00
   58.5000       0.00    0.00130  -6.59E-05       0.00       0.00   2.77E+10
-1.10E-06   1.52E+07       0.00
   59.4000  -3.76E-12   5.20E-04  -4.29E-05       0.00       0.00   2.77E+10
5.36E-06   1.54E+07       0.00
   60.3000  -6.11E-12   3.69E-04  -1.29E-05       0.00       0.00   2.77E+10
1.97E-07    348507.       0.00
   61.2000  -6.92E-12   2.41E-04  -1.06E-05       0.00       0.00   2.77E+10
2.27E-07    353709.       0.00
   62.1000  -6.71E-12   1.40E-04  -8.16E-06       0.00       0.00   2.77E+10
2.23E-07    358910.       0.00
   63.0000  -5.90E-12   6.53E-05  -5.88E-06       0.00       0.00   2.77E+10
1.99E-07    364112.       0.00
   63.9000  -4.82E-12   1.34E-05  -3.91E-06       0.00       0.00   2.77E+10
1.65E-07    369313.       0.00
   64.8000  -3.69E-12  -1.93E-05  -2.33E-06       0.00       0.00   2.77E+10
1.28E-07    374515.       0.00
   65.7000  -2.64E-12  -3.70E-05  -1.14E-06       0.00       0.00   2.77E+10
9.28E-08    379716.       0.00
   66.6000  -1.74E-12  -4.39E-05  -3.05E-07       0.00       0.00   2.77E+10
6.21E-08    384918.       0.00
   67.5000  -1.03E-12  -4.36E-05   2.31E-07       0.00       0.00   2.77E+10
3.72E-08    390120.       0.00
   68.4000       0.00  -3.90E-05   5.31E-07       0.00       0.00   2.77E+10
1.83E-08    395321.       0.00
   69.3000       0.00  -3.22E-05   6.57E-07       0.00       0.00   2.77E+10
5.06E-09    400523.       0.00
   70.2000       0.00  -2.48E-05   6.65E-07       0.00       0.00   2.77E+10
```

```
-3.49E-09    405724.       0.00
   71.1000       0.00  -1.78E-05   6.02E-07       0.00       0.00   2.77E+10
-8.29E-09    410926.       0.00
   72.0000       0.00  -1.18E-05   5.01E-07       0.00       0.00   2.77E+10
-1.03E-08    416128.       0.00
   72.9000       0.00  -6.95E-06   3.89E-07       0.00       0.00   2.77E+10
-1.05E-08    421329.       0.00
   73.8000       0.00  -3.37E-06   2.81E-07       0.00       0.00   2.77E+10
-9.49E-09    426531.       0.00
   74.7000       0.00  -8.86E-07   1.87E-07       0.00       0.00   2.77E+10
-7.90E-09    431732.       0.00
   75.6000       0.00   6.74E-07   1.11E-07       0.00       0.00   2.77E+10
-6.11E-09    436934.       0.00
   76.5000       0.00   1.52E-06   5.47E-08       0.00       0.00   2.77E+10
-4.40E-09    442136.       0.00
   77.4000       0.00   1.85E-06   1.52E-08       0.00       0.00   2.77E+10
-2.91E-09    447337.       0.00
   78.3000       0.00   1.85E-06  -9.79E-09       0.00       0.00   2.77E+10
-1.71E-09    452539.       0.00
   79.2000       0.00   1.64E-06  -2.34E-08       0.00       0.00   2.77E+10
-8.15E-10    457740.       0.00
   80.1000       0.00   1.34E-06  -2.89E-08       0.00       0.00   2.77E+10
-1.93E-10    462942.       0.00
   81.0000       0.00   1.02E-06  -2.89E-08       0.00       0.00   2.77E+10
1.98E-10     468144.       0.00
   81.9000       0.00   7.19E-07  -2.56E-08       0.00       0.00   2.77E+10
4.09E-10     473345.       0.00
   82.8000       0.00   4.67E-07  -2.07E-08       0.00       0.00   2.77E+10
4.92E-10     478547.       0.00
   83.7000       0.00   2.71E-07  -1.54E-08       0.00       0.00   2.77E+10
4.88E-10     483748.       0.00
   84.6000       0.00   1.33E-07  -1.05E-08       0.00       0.00   2.77E+10
4.32E-10     488950.       0.00
   85.5000       0.00   4.56E-08  -6.23E-09       0.00       0.00   2.77E+10
3.50E-10     494152.       0.00
   86.4000       0.00  -1.30E-09  -2.96E-09       0.00       0.00   2.77E+10
2.56E-10     499353.       0.00
   87.3000       0.00  -1.83E-08  -7.04E-10       0.00       0.00   2.77E+10
1.61E-10     504555.       0.00
   88.2000       0.00  -1.65E-08   5.31E-10       0.00       0.00   2.77E+10
6.77E-11     509756.       0.00
   89.1000       0.00  -6.83E-09   7.65E-10       0.00       0.00   2.77E+10
-2.45E-11     514958.       0.00
   90.0000       0.00       0.00       0.00       0.00       0.00   2.77E+10
-1.17E-10     260080.       0.00

* This analysis computed pile response using nonlinear moment-curvature rela-
  tionships. Values of total stress due to combined axial and bending stresses
  are computed only for elastic sections only and do not equal the actual
  stresses in concrete and steel. Stresses in concrete and steel may be inter-
```

polated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 2:

```
Pile-head deflection              =     0.37500000 inches
Computed slope at pile head       =       0.000000 radians
Maximum bending moment            =       -824604. inch-lbs
Maximum shear force               =         21886. lbs
Depth of maximum bending moment   =       0.000000 feet below pile head
Depth of maximum shear force      =       0.000000 feet below pile head
Number of iterations              =             81
Number of zero deflection points  =             10
```

Summary of Pile-head Responses for Conventional Analyses

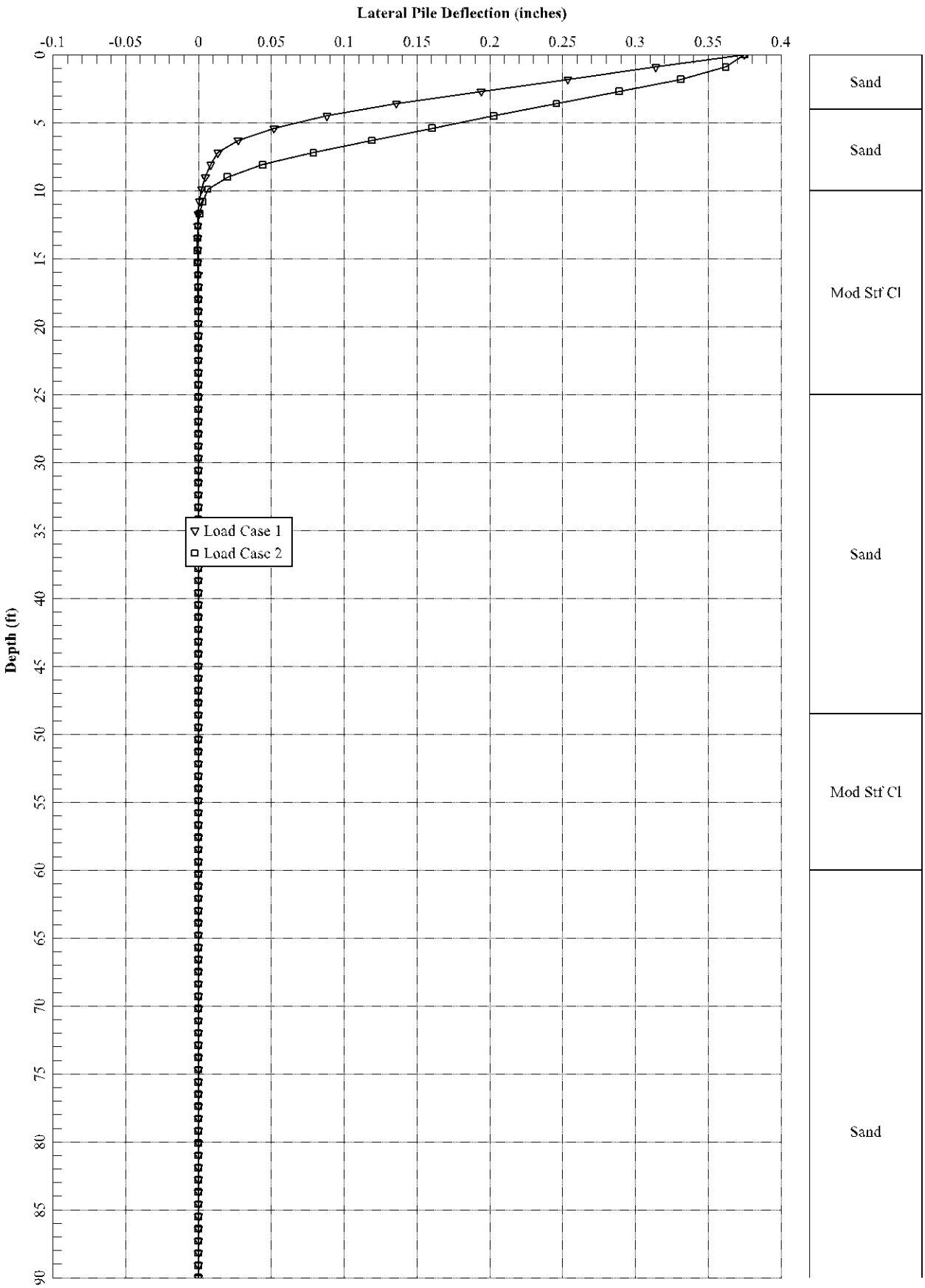
Definitions of Pile-head Loading Conditions:

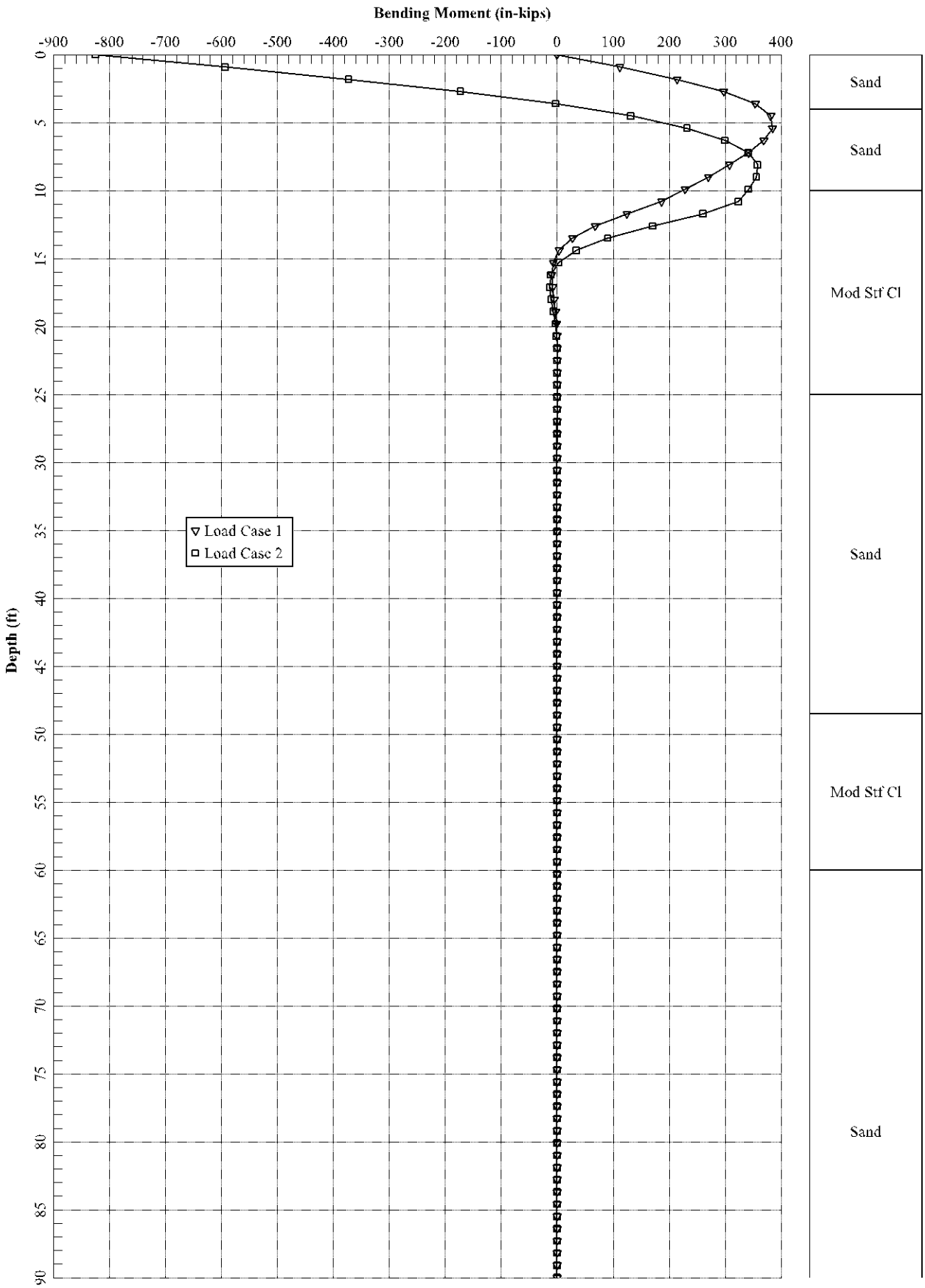
Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

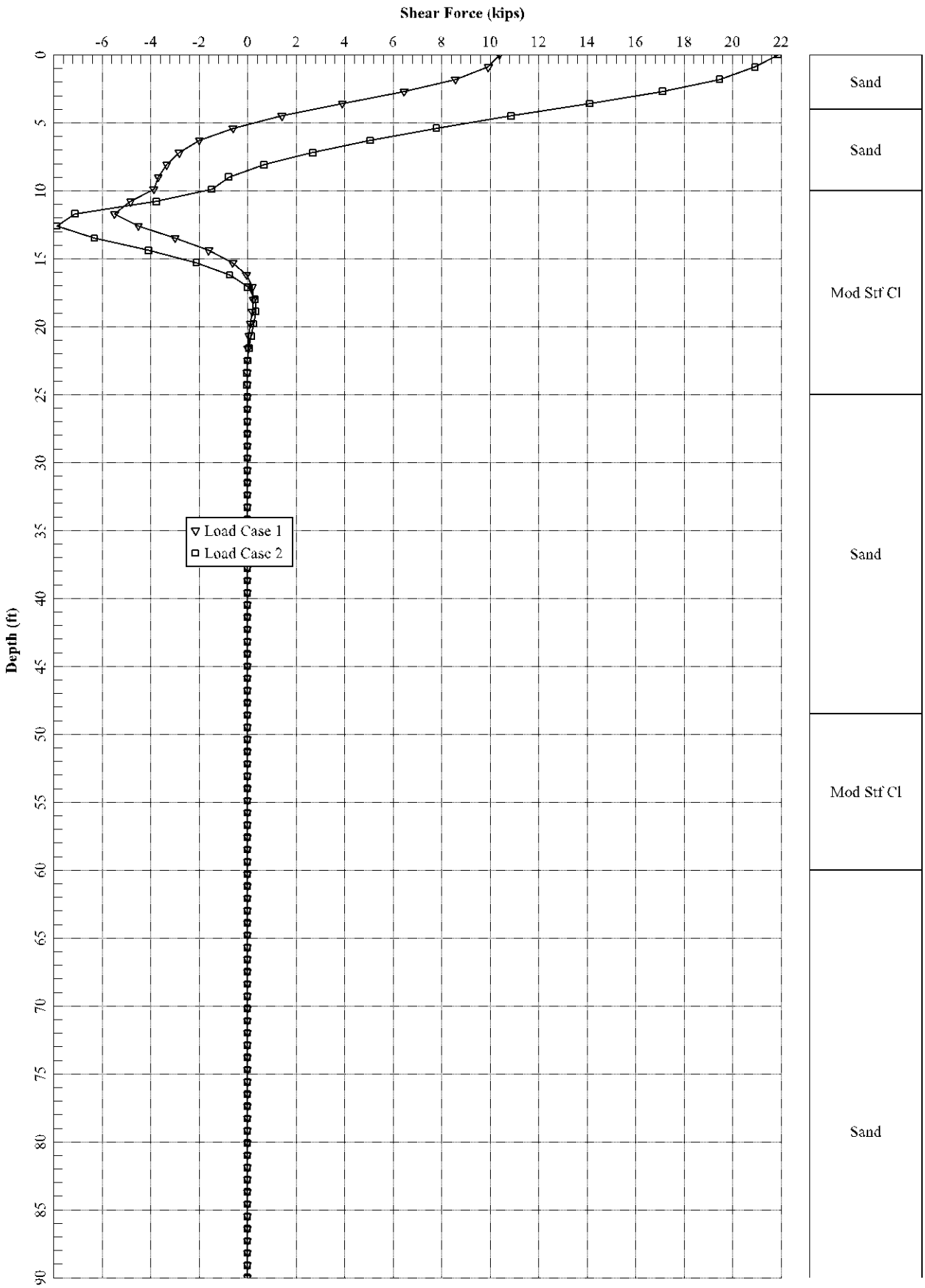
Load Case No.	Load Type	Load 1	Load 2	Pile-head Load 1	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	y, in	0.3750	M, in-lb	0.00	0.00	0.3750	-0.00564	10389.	384703.	
2	y, in	0.3750	S, rad	0.00	0.00	0.3750	0.00	21886.	-824604.	

Maximum pile-head deflection = 0.3750000000 inches
Maximum pile-head rotation = -0.0056385310 radians = -0.323064 deg.

The analysis ended normally.


Lateral Pile Deflection (inches)
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Depth (ft)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
Load Case 1
Load Case 2
Sand
Sand
Mod Stf Cl
Sand
Mod Stf Cl
Sand


Bending Moment (in-kips)
-900
-800
-700
-600
-500
-400
-300
-200
-100
0
100
200
300
400
Depth (ft)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
Load Case 1
Load Case 2
Sand
Sand
Mod Stf Cl
Sand
Mod Stf Cl
Sand


Shear Force (kips)
-6
-4
-2
0
2
4
6
8
10
12
14
16
18
20
22
Depth (ft)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
Load Case 1
Load Case 2
Sand
Sand
Mod Stf Cl
Sand
Mod Stf Cl
Sand

EXPLORATION TESTING AND PROCEDURES

EXPLORATION AND TESTING PROCEDURES

Field Exploration

The field exploration program consists of the following:

Number of SPT Soil Borings	Boring Depth (feet)	Planned Location
3	175	Courthouse Building Soil Boring TB-1, TB-3, and TB-5
2	150	Courthouse Building Soil Boring TB-2 and TB-4
3	50	Courthouse Building Soil Borings B-1, B-8, and B-9
3	100	Courthouse Building Soil Borings B-2, B-5, and B-6
3	10	Courthouse Building Percolation Areas Soil Borings P-1, P-3, and P-6
3	50	Parking Garage Building Soil Borings B-3, B-4, and B-10
2	100	Parking Garage Building Soil Borings B-7 and B-11
4	10	Parking Garage Building Percolation Areas Soil Borings P-2, P-4, P-5, and P-7

Below ground surface.

Subsurface Exploration Procedures: We typically advance the borings with a truck-mounted drill rig. Five samples are obtained in the upper 10 feet of each boring using the split-barrel sampling procedure. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon is driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. We observe and record groundwater levels during drilling and sampling. All borings are backfilled with grout after their completion.

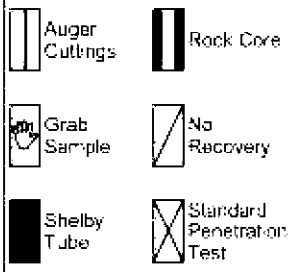
The sampling depths, penetration distances, and other sampling information are recorded on the field boring logs. The samples are placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer. Our exploration team prepares field boring logs as part of the drilling operations. These field logs include visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs are prepared from the field logs. The final boring logs represent the geotechnical engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

SUPPORTING INFORMATION

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING



WATER LEVEL

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(DCP)	Dynamic Cone Penetrometer
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS

(More than 50% retained on No. 200 sieve.)
Density determined by Standard Penetration Resistance

Descriptive Term (Density)	Automatic Hammer SPT N-Value (Blows/Ft.)
Very Loose	< 3
Loose	3 – 8
Medium Dense	8 – 24
Dense	24 – 40
Very Dense	> 40

CONSISTENCY OF FINE-GRAINED SOILS

(50% of more passing the No. 200 sieve)
Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance

Descriptive Term (Consistency)	Unconfined Compressive Strength Qu, (psf)	Automatic Hammer SPT N-Value (Blows/Ft.)
Very Soft	Less than 500	< 1
Soft	500 to 1,000	1 – 3
Medium Stiff	1,000 to 2,000	3 – 6
Stiff	2,000 to 4,000	6 – 12
Very Stiff	4,000 to 8,000	12 – 24
Hard	> 8,000	> 24

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 – 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobble	12 in. to 3 in. (300 mm to 75 mm)
Gravel	3 in. to #4 sieve (75 mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other consituents	Percent of Dry Weight
Trace	< 5
With	5 – 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Particle Size
Non-Plastic	0
Low	1 – 10
Medium	11 – 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests					Soil Classification	
					Group Symbol	Group Name
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines	Cu ≥ 4 and 1 ≤ Cc ≤ 3		GW	Well-graded gravel
			Cu < 4 and/or 1 > Cc > 3		GP	Poorly graded gravel
		Gravels with Fines: More than 12% fines	Fines classify as ML or MH		GM	Silty gravel
			Fines classify as CL or CH		GC	Clayey gravel
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines	Cu ≥ 6 and 1 ≤ Cc ≤ 3		SW	Well-graded sand
			Cu < 6 and/or 1 > Cc > 3		SP	Poorly graded sand
		Sands with Fines: More than 12% fines	Fines classify as ML or MH		SM	Silty sand
			Fines classify as CL or CH		SC	Clayey sand
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A"		CL	Lean clay
			PI < 4 or plots below "A" line		ML	Silt
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OL	Organic clay / Organic silt
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay
			PI plots below "A" line		MH	Elastic Silt
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OH	Organic clay / Organic silt
Highly organic soils:			Primarily organic matter, dark in color, and organic odor		PT	Peat

Based on the material passing the 3-inch (75-mm) sieve

If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

$$Cu = D_{60}/D_{10} \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

If soil contains ≥ 15% sand, add "with sand" to group name.

If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

If fines are organic, add "with organic fines" to group name.

If soil contains ≥ 15% gravel, add "with gravel" to group name.

If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

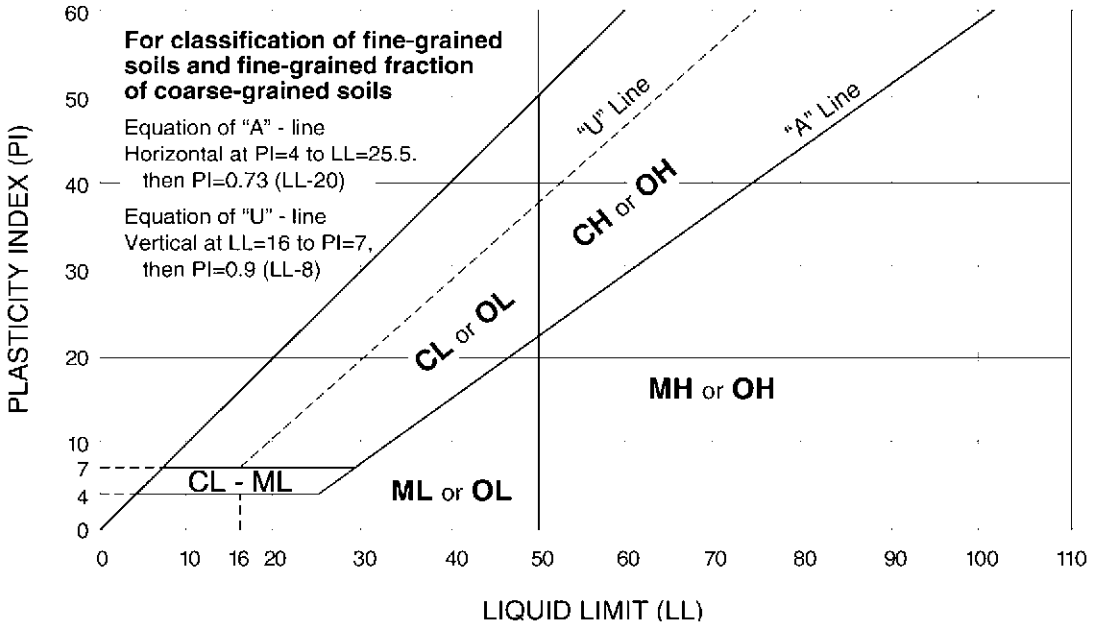
If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

PI ≥ 4 and plots on or above "A" line.

PI < 4 or plots below "A" line.

PI plots on or above "A" line.

PI plots below "A" line.



City of Fort Lauderdale Federal Courthouse Garage Architectural & Engineering Design Criteria Package

APPENDIX D – Environmental Assessment Report