CONSTRUCTION AGREEMENT

THIS AGREEMENT is dated _____ by and between **CITY OF POMPANO BEACH, FLORIDA** (hereinafter called OWNER) and **SHIFF CONSTRUCTION & DEVELOPMENT, INC.** (hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

Article 1. WORK

The Project's Scope of Work (Work) consists of providing all labor, equipment, tools, materials, transportation, and incidentals necessary to construct a new multipurpose natural grass sports field and a 2,500-square-foot, two-story concession building with bathrooms, storage, bleachers and canopy, a second-floor press box, and related track and field amenities, as more particularly set forth in Exhibit "A."

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows: ITB26-032 - Ultimate Sports Park.

Article 2. ARCHITECT

The Project has been designed by **WALTERS ZACKRIA ASSOCIATES, PLLC**, who is hereinafter called ARCHITECT and who is to act as OWNER'S representative, assume all duties and responsibilities, and have the rights and authority assigned to ARCHITECT in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

Article 3. CONTRACT TIME

The Work will be substantially completed within **three hundred thirty-five (335) calendar days** from the date the Contract Time commences upon issuance of a Notice to Proceed, which will not be issued until receipt of all required documents, as provided in EXHIBIT "C" GENERAL CONDITIONS, and completed and ready for final payment in accordance with EXHIBIT "C" GENERAL CONDITIONS within **three hundred sixty-five (365) calendar days** from the date the Contract Time commences to run.

Article 4. PRECONSTRUCTION PHASE REQUIREMENTS

Contractor shall be instructed to commence the Work by written instruction in the form of a Purchase Order issued by the OWNER's General Services Department and two or more Notices to Proceed issued by the Contract Administrator. The first Notice to Proceed and Purchase Order will not be issued until Contractor's submission to OWNER of all required documents and after execution of this Contract by both Parties. Preliminary work, including submission of a project schedule, schedule of values, submittals, submittal schedule, and other documents required for permitting, and performance of work that does not require permits, shall be commenced within ten (10) calendar days after the date of the first Notice to Proceed. Contractor shall have ten (10) days after receipt of signed and sealed contract drawings from Consultant to apply for construction permits to the applicable permitting authority. Issuance of all permits by the permitting authority shall be a condition precedent to the issuance of a second Notice to Proceed for all other Work. Except for the

reimbursement of permit application fees as may be provided in the Contract Documents, Contractor shall not be entitled to compensation of any kind during the permitting process. The Work to be performed pursuant to the second Notice to Proceed shall be commenced within ten (10) calendar days of the Project Initiation Date specified in the second Notice to Proceed.

Article 5. LIQUIDATED DAMAGES

OWNER and CONTRACTOR recognize that time is of the essence of the Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in Article 3, above, plus any extensions thereof allowed in accordance with EXHIBIT "C" GENERAL CONDITIONS. They also recognize the delays, expenses, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER five hundred and 00/100 dollars ($500.00) for each day that expires after the time specified in Article 3 for Substantial Completion, plus any monies paid by the OWNER to the ARCHITECT for additional engineering and inspection services until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay the OWNER three hundred and 00/100 dollars ($300.00) for each day that expires after the time specified in Article 3 for completion of Work and readiness for final payment, plus any monies paid by the OWNER to the ARCHITECT for additional engineering and inspection services.

Article 6. CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents in current funds as follows:

The total sum of the work shall not exceed **six million five hundred ninety thousand dollars ($6,590,000.00).** See BID PROPOSAL attached for line item pricing.

Article 7. PAYMENT PROCEDURES

7.1 CONTRACTOR shall submit Applications for Payment in accordance with EXHIBIT "C" GENERAL CONDITIONS. Applications for Payment will be processed by ARCHITECT as provided in EXHIBIT "C" GENERAL CONDITIONS.

7.2 Progress Payments. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment as recommended by ARCHITECT, on or about the 15th day of each month during construction as provided below. All progress payments will be on the basis of the progress of the Work, measured by the schedule of values established in EXHIBIT "C" GENERAL CONDITIONS (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

7.2.1 Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and such amounts as ARCHITECT shall determine, or OWNER may withhold, in accordance with EXHIBIT "C" GENERAL CONDITIONS.

5% of Work completed will be withheld by OWNER as retainage.

7.2.2 Upon Substantial Completion, in an amount sufficient to increase total payments to CONTRACTOR to 95% of the Contract Price, less such amounts as ARCHITECT shall determine, or OWNER may withhold, in accordance with the EXHIBIT "C" GENERAL CONDITIONS.

7.3 Final Payment. Upon final completion and acceptance of the Work in accordance with EXHIBIT "C" GENERAL CONDITIONS, OWNER shall pay the remainder of the Contract Price as recommended by ARCHITECT as provided in said EXHIBIT "C" GENERAL CONDITIONS.

Article 8. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

8.1 CONTRACTOR has familiarized itself with the nature and extent of the Contract documents,

Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

8.2 CONTRACTOR has studied carefully all reports of explorations and tests of subsurface conditions and drawings of physical conditions which are identified in the bid, and accepts the determination set forth in the bid of the extent of the technical data contained in such reports and drawings upon which CONTRACTOR is entitled to reply.

8.3 CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies in addition to or to supplement physical conditions at or contiguous to the site or otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with other terms and conditions of the Contract Documents, including specifically the provisions of EXHIBIT "C" GENERAL CONDITIONS; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.

8.4 CONTRACTOR has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, or investigations, explorations, tests, reports, studies or similar information or data in respect of said Underground Facilities are or will be required by CONTRACTOR in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents.

8.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

8.6 CONTRACTOR has given ARCHITECT written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ARCHITECT is acceptable to CONTRACTOR.

8.7 By entering into this Contract, the CONTRACTOR becomes obligated to comply with the provisions of Section 448.095, Fla. Stat., "Employment Eligibility." This includes but is not limited to utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Failure to comply will lead to termination of this Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. Any challenge to termination under this provision must be filed in the Circuit Court no later than twenty (20) calendar days after the date of termination. If this contract is terminated for a violation of the statute by the CONTRACTOR, the CONTRACTOR may not be awarded a public contract for a period of 1 (one) year after the date of termination.

Article 9. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the Work consist of this Agreement and the following Exhibits, attached hereto and by reference incorporated herein and made a part hereof:

Exhibit "A" – Invitation to Bid (ITB), including, but not limited to, original ITB, general conditions, specifications, drawings, exhibits to the ITB, and any addenda issued.
Exhibit "B" – Any and all documentation submitted by the CONTRACTOR; including, but not limited to, CONTRACTOR's Bid Pages, CONTRACTOR's sworn statement on drug-free workplace, any documentation submitted by the CONTRACTOR prior and after award in relation to the ITB and this Agreement
Exhibit "C" –GENERAL CONDITIONS
Exhibit "D" – Insurance Requirements and Approved Insurance Certificates

This Agreement and the exhibits listed above, including any approved amendments to the Agreement, comprise the entirety of the Contract documents between the OWNER and CONTRACTOR. This Agreement may only be amended, modified, or supplemented as provided in Exhibit "C," General Conditions.

Any inconsistency in this Agreement and its exhibits listed above shall be resolved by giving precedence in the following order:

a) Exhibit "A," ITB, addenda, and documentation
b) This Agreement
c) Exhibit "B", Contractor's Response
d) Exhibit "C", General Conditions

Article 10. MISCELLANEOUS

10.1 Terms used in this Agreement which are defined in EXHIBIT "C" GENERAL CONDITIONS will have the meanings indicated in EXHIBIT "C" GENERAL CONDITIONS.

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

10.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives with respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.4 Project Web Requirements:

a. This project shall utilize e-Builder Enterprise (Software), a web-based project management software. OWNER shall use the Software to manage all project documents, communications and costs between the CONTRACTOR and OWNER. Training will be provided for the CONTRACTOR and all subcontractors requiring software access.

b. CONTRACTOR shall conduct project controls outlined by the OWNER utilizing the Software. **The designated web-based application license(s) shall be provided by the OWNER to the CONTRACTOR and subcontractors**. No additional software will be required.

c. CONTRACTOR shall have the responsibility for logging in to the project web site on a daily basis, and as necessary to be kept fully apprised of project developments and required action items. These may include but are not limited to: Contracts, Contract Exhibits, Contract Amendments, Drawing Issuances, Addenda, Bulletins, Permits, Insurance & Bonds, Safety Program Procedures, Safety Notices, Accident Reports, Personnel Injury Reports, Schedules, Site Logistics, Progress Reports, Correspondence, Daily Logs, Non-Conformance Notices, Quality Control Notices, Punch Lists, Meeting Minutes, Requests for Information, Submittal Packages, Substitution Requests, Monthly Payment Request Applications, Supplemental Instructions, Owner Change Directives, Potential Change Orders, Change Order Requests, Change Orders and the like. All supporting data including but not limited to shop drawings, product data sheets, manufacturer data sheets and instructions, method statements, safety SDS sheets, Substitution Requests and the like will be submitted in digital format via the Software.

THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed the day and year hereinabove written.

Attest: **CITY OF POMPANO BEACH**

_____ By:_____
KERVIN ALFRED, CITY CLERK REX HARDIN, MAYOR

APPROVED AS TO FORM: By:_____
GREGORY P. HARRISON, CITY MANAGER

_____
MARK E. BERMAN, CITY ATTORNEY

(SEAL)

"CONTRACTOR"

Witnesses:

Shiff Construction & Development, Inc.

_____

By:_____
Justen D. Shiff, President

_____
(Print or Type Name)

_____

_____
(Print or Type Name)

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me, by means of □ physical presence or □ online notarization this ____ day of _____, 2026, by Justen D. Shiff, as President of Shiff Construction & Development, Inc., a Florida Corporation, on behalf of the corporation, who is personally known to me or who has produced _____(type of identification) as identification.

NOTARY'S SEAL:

_____
NOTARY PUBLIC, STATE OF FLORIDA

_____
(Name of Acknowledger Typed, Printed or Stamped)

_____
Commission Number

Procurement and Contracts Department
Mary Rivero, Director
mary.rivero@copbfl.com

ITB #: ITB26-032

Tentative City Commission Meeting Date*: TBD

ITB Title: Ultimate Sports Park

Notified: 1290 # Downloaded: 29

of Responses Rec'd: 13 # of "No Bids": 2

For: Parks and Recreation Department (Department)

ITB Opening Date: 05/07/2026

POSTING OF SOLICITATION RECOMMENDATION/TABULATION: The Recommendation Tabulation will be posted in the eBid System IonWave and will remain posted for 72 hours. Any person who may be adversely affected by the decision or intended decision shall file a notice of protest in writing within 72 hours of posting the notice of the decision or intended decision. The formal written protest shall be filed within ten (10) days after the date the notice of protest is filed. Failure to file a notice of protest or a formal written protest shall constitute a waiver of proceedings under this chapter. Section 120.57(3)(b), Florida Statutes, states that "The formal written protest shall state with particularity the facts and law upon which the protest is based." Saturdays, Sundays, state holidays, and days when the City is closed shall be excluded from the computation of the 72-hour time period provided. Filings shall be at the office of the Director of Procurement and Contracts, 1101 NE 5th Avenue, Pompano Beach, FL 33060. Any person who files an action protesting an intended decision shall post with the City, at the time of filing the formal written protest, a protest bond, payable to the City of Pompano Beach, Florida, in an amount equal to one percent (1%) of the estimated value of the contract. Failure to submit the protest bond within the time allowed for filing a bond shall constitute a waiver of the right to protest. Failure to file a protest within the time prescribed in Section 120.57(3), Florida Statutes, or failure to post the protest bond or other security required by law within the time allowed for filing a bond shall constitute a waiver of proceedings under Chapter 120, Florida Statutes.

(*) The "Cone of Silence" shall terminate upon the City's award or approval of a contract, rejection of all proposals or responses, or any other formal action that concludes the solicitation or other procurement process. For confirmation of the official termination date of the Cone of Silence, contact the Purchasing Agent of record.

RECOMMENDATION TABULATION

The City of Pompano Beach, Florida, received thirteen (13) bids for ITB26-032 – Ultimate Sports Park.

Bidder	Bid Amount	Recommended for Award
Shiff Construction	$6,590,000.00	X
Alexander & Johnson Project Management and Development, Inc.	$6,609,230.34	
H.A. Contracting Corp.	$6,760,010.00	
HG Construction Development & Investment Inc.	$6,874,450.15	
DiPompeo Construction Corp.	$6,877,000.00	
CHARLAND RUREY CONSTRUCTION, INC.	$6,897,271.00	
Vercetti Enterprises	$6,907,821.85	
West Construction, Inc.	$6,968,084.00	
MBR Construction, Inc.	$7,151,636.00	
Waypoint Contacting Inc	$7,917,826.00	
Home Express Corp	$7,977,143.00	
Lunacon Construction Group, Corp	$8,427,427.00	
LEGO Construction Co.	$8,663,140.00	

Shiff Construction is the lowest responsive and responsible bidder and meets all requirements outlined in the ITB. It is the recommendation of the City of Pompano Beach to award '**Shiff Construction**.'

By: Michael Lee (Purchasing Agent) Date: 7/15/2026

Florida's Warmest Welcome

INVITATION TO BID
ITB26-032 - Ultimate Sports Park

Bid Opening: May 7, 2026 (2:00:00 P.M.)

Pre-Bidders Conference: April 15, 2026 (10:00 A.M.)

Virtual Zoom Meeting

For access, go to:
https://pompanobeachfl.gov/pages/meetings

SCHEDULE OF EVENTS

ITB documents and Addenda(s) are available and can be downloaded for free from the eBid System as a PDF at: *https://pompanobeachfl.ionwave.net*

ITB NUMBER:	**ITB26-032**
ITB TITLE:	**Ultimate Sports Park**
RELEASE DATES/TIME:	**April 6, 2026, by 12:00 PM**
NON-MANDATORY PRE-BID CONFERENCE (virtual Zoom meeting)	**April 15, 2026, by 10:00 AM**
WRITTEN QUESTIONS AND INQUIRIES ARE DUE ON OR BEFORE:	**April 27, 2026, at 5:00 PM**
ITB RESPONSE DUE DATE/TIME:	**May 7, 2026, at 2:00:00 PM**
RECOMMENDATION FOR AWARD:	**TBD**
DIRECT ALL INQUIRIES TO:	**https://pompanobeachfl.ionwave.net**
E-BID SUBMITTALS ONLY:	**https://pompanobeachfl.ionwave.net**
BID VIRTUAL OPENING:	**https://pompanobeachfl.gov/pages/meetings**

***The City may amend dates in this schedule in its sole discretion, and no rights shall accrue to any Bid due to such amendment. Proposers may not rely on dates after the Due Date and Time until confirmed by the City. All times listed are Eastern Time (ET)**

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SECTION 1 – Introduction and General Information

1.1 **Introduction:** The City of Pompano Beach ("City") will receive sealed electronic bids for **ITB26-032 – Ultimate Sports Park** until 2:00 p.m. (local time) on **May 7, 2026**, via the City's eBid System. Bids submitted after the specified deadline will not be considered.

In the event of any ambiguity or dispute regarding the time of receipt, such uncertainty shall be resolved in favor of the City and against the Bidder.

1.2 **Scope of Work**: The project is located at 212 NW 16th Street, Pompano Beach, FL 33060. This project entails providing all labor, equipment, tools, and materials necessary to construct a new multipurpose natural grass sports field and a 2500 SF, 2-story concession building with bathrooms, storage, bleachers & canopy, a second-floor press box, and other track and field amenities. The scope of work includes, but is not limited to, sitework, drainage, foundation, concrete structure, mechanical, plumbing, electrical, shade structure, landscape, irrigation, fencing, parking, site lighting, and Poured-in-Place (PIP) track and sports lighting.

All work shall be performed in accordance with the approved plans, specifications, supplementary conditions, and applicable local, state, and federal regulations. The Contractor shall be responsible for providing all labor, materials, equipment, tools, transportation, and incidentals necessary to complete the project professionally.

The Contractor shall also be responsible for maintaining site safety, minimizing public disruption, and ensuring environmental compliance throughout construction.

1.3 Prospective Bidders must be duly registered in the City's eBid System to access solicitation documents and submit responses to this Invitation to Bid (ITB). The solicitation documents can be downloaded for free from the eBid System as a PDF at: https://pompanobeachfl.ionwave.net. The City is not responsible for the accuracy or completeness of any documentation the Bidder receives from any source other than the eBid System. The bidder is solely responsible for downloading all required documents. A list of Bidders will be read aloud in a public forum. To attend the virtual public meeting, go to https://pompanobeachfl.gov/pages/meetings to find the Zoom link.

1.4 **Cone of Silence Notice:** Bidders are hereby notified that this Solicitation is subject to a "Cone of Silence". A Cone of Silence means a prohibition on any communication regarding any particular competitive solicitation between:

- Any person who seeks an award therefrom, including a potential vendor or vendor's representative, and
- Any member of the City Commission, all other city employees, and any non-employee appointed to evaluate or recommend selection in such procurement process. For purposes of this section, Vendor's Representative means an employee, partner, officer, or director of a potential vendor, or consultant, lobbyist, or actual or potential subcontractor or sub-consultant of a vendor.

The "cone of silence" shall terminate at the time the City awards or approves a contract, votes to reject all responses, or otherwise takes action that ends the solicitation or other procurement process. If the City Commission refers the item back to the City Manager and staff for further review, the cone of silence shall remain in effect until an award is made, a contract is approved, or the City Commission takes any other action that ends the solicitation or other procurement process.

1.5 **Line Items:** All bid figures **must** be entered into the City's eBid System Line Items tab.

1.6 **NON-MANDATORY PRE-BIDDERS CONFERENCE:** A non-mandatory pre-bid conference will be held virtually through a Zoom meeting on **April 15, 2026, at 10:00 AM.** For access, go to https://pompanobeachfl.gov/pages/meetings. Attendance is strongly encouraged for all prospective bidders, but it is not mandatory for submitting bids.

It is the responsibility of each Bidder, before submitting a bid, to visit the site to become familiar with local conditions that may affect costs, progress, performance, or the furnishing of the work. The pre-bidders conference will provide an opportunity to discuss project specifications and address any questions.

SECTION 2 - BIDDER'S RESPONSIVENESS AND RESPONSIBILITY

The contract will be awarded to the lowest responsive and responsible bidder. In determining the lowest responsive and lowest responsible Bidder and that the purchase or contract will best serve the interests of the City, the Commission, the City Manager, or the Procurement and Contracts Director, where applicable, shall consider various factors. These factors include, but are not limited to, price and the following:

2.1 Responsiveness: Each bid shall be reviewed in accordance with the conditions provided herein. If a Bidder fails to satisfy these conditions, the city may deem the bid non-responsive and not consider it for further review.

a. Each Bid must be submitted prior to the deadline provided in the eBid System. Submission will not be accepted outside the eBid System, including but not limited to faxed, emailed, or hand-delivered submissions to the City's Procurement and Contracts Department. In the event of any ambiguity or dispute regarding the time of receipt of a bid, such uncertainty shall be resolved in favor of the issuing authority and to the detriment of the Bidder. Bidders shall contact the Purchasing Agent, Eric Seifer, at 954-786-4166, or eric.seifer@copbfl.com in such a case for special permission.

b. Qualification of Bidders form must be completed and uploaded to the Response Attachments tab of the City's eBid System (**see Attachment F**)

2.2 Responsibility Documentation: To demonstrate the Bidder's responsibility, the Bidder must submit the information provided herein to the City. Submittals requested pursuant to this paragraph are in addition to those required elsewhere.

a. **Bid Security Bond**: Each bid requires a cashier's check or Bid Bond executed on the prescribed form, payable to the City of Pompano Beach, P.O. Box 1300, Pompano Beach, Florida 33061, in an amount of five percent (5%) of the bid amount. Bidder shall upload a copy of its Bid Bond or a copy of the cashier's check to the Response Attachments tab in the eBid System. The Awarded Bidder will be required to submit the original executed Bid Bond or cashier's check prior to the execution of the contract and before the commencement of any work (**see Attachment J**).

The bid bond of the Awarded Bidder will be retained until such Bidder has executed the Contract and furnished (if required) contract security (if provided as a cashier's check or certified check), whereupon the bid security will be returned. Suppose the Awarded Bidder fails to execute and deliver the Contract and furnish the required contract security within ten (10) days after the Notice of Award. In that case, the City may annul the Notice of Award, and the bid bond of that Bidder will be forfeited. The bid security bond of other Bidders whom the City believes to have a reasonable chance of receiving the award may be retained by the City until a completed contract has been executed, whereupon bid security furnished by such Bidders will be returned.

If provided, the executed Bid Bond shall be issued by an entity with a registered agent in the State of Florida. If the bid is accepted, the City shall retain this check or bond as liquidated damages should the Bidder refuse or fail to enter into a contract with the City to execute the work embraced in the bid.

b. **Bonding Capacity:** The Proposer must include a letter from a qualified Surety company, licensed to do business in the State of Florida, confirming the Proposer's bonding capacity and financial reliability to perform the scope of work for this Project. The letter must be issued on the Surety company's letterhead, signed by an authorized representative.

c. **Prior Project Experience and References**: Bidder must provide the following verifiable information with the bid at the time it is submitted (**see Attachment K**):

i. Evidence that the Bidder successfully completed at least three (3) projects within the past ten (10) years of similar scope, magnitude, and complexity to the project described in this ITB. The bidder must describe the following:

1) the project and the work completed by Bidder,
2) how the referenced project relates to the ITB,
3) the amount paid to the Bidder for the work completed, and,
4) Date Similar scope was completed;

ii. At least one verifiable contact (client) reference for each project described previously. The bidder must provide the client's name, phone number, and e-mail address for each project. If the Bidder has done work for the City of Pompano Beach, the City may, at its discretion, rely on the City's past performance records or may contact references. The City will only attempt to contact each reference three times.

iii. If **the Bidder fails to provide the previously described items, or if the City is unable to reach a reference after three (3) attempts, the City may deem the Bidder non-responsible**.

iv. The City reserves the right, at its sole discretion, to deem Bidder's response non-responsible and reject it if the references submitted do not conform to the above or are considered unsatisfactory to the City.

v. The Procurement and Contracts Department staff will review and verify all references provided to ensure accuracy and authenticity.

d. License Requirements—When submitting a bid, Bidders must possess and provide proof of an active General Contractor license issued by the State of Florida (such licensure must have been obtained prior to the date of Bid Submission). Failure to demonstrate such licensure will result in the disqualification of the bid.

e. Corporations and Partnerships - The City will review the Bidder's business to confirm that it is in good standing with the Florida Department of State, Division of Corporations, based on the information provided in the Qualification of Bidders Form (refer to the attachments tab of the City's eBid System).

f. Have a satisfactory past and/or current performance record, based on the information gathered by the City regarding Bidder's performance on past or current contracts. The City shall rely on the contractor's periodic performance evaluations and any other reasonable and reliable sources within the City's organization and control from past and present City projects, where applicable.

g. Have the necessary production capacity, construction, and technical equipment and facilities, or the ability to obtain them.

h. Provide satisfactory evidence that such elements as production control procedures, property control systems, quality assurance procedures, and safety programs applicable to work to be produced or services to be performed by the Bidder, Suppliers, and Subcontractors are present.

i. Have the necessary management organization, experience, technical skills, accounting and operational controls, plan, manpower, and financial resources, and be otherwise qualified and eligible to perform the work under applicable laws and regulations.

j. A construction schedule demonstrating the bidder's ability to accomplish the work within the contract time, including major project tasks, durations, and who will complete (bidder or name of subcontractor).

k. **Company Litigation and Dispute History:** Bidders must submit a statement detailing any legal proceedings, claims, arbitrations, or civil actions involving the company, its parent company, subsidiaries, and key personnel. This includes, but is not limited to, all cases over the past five (5) years related to construction, contracts, or business operations. The bidder must provide the following information in a separate, clearly labeled letter and attach it as part of the Responses Attachments Tab in IonWave:

- Name of the case (e.g., litigation, arbitration, civil action) and the case identification number.
- The jurisdiction (state and county) where the case was filed.
- A summary of the claim or dispute.
- The final resolution or current status of the case (e.g., pending, settled, judgment awarded, dismissed).

If the bidder has no litigation history to report, they must submit a letter on company letterhead stating such. This letter must be signed and certified by an authorized company representative, affirming the accuracy and completeness of the statement.

l. The City does not consider social, political, or ideological interest in determining the Contractor's responsibility in compliance with Florida Statute 287.05701.

2.3. **Completeness and Non-Responsiveness**

Notwithstanding that certain attributes referenced in the Attributes TAB in IonWave may be addressed in attachments, it is required that all sections of the Bid Document, including every form, attributes, and all requested information, be fully completed and submitted. Incomplete bids, partial responses, or missing attachments may be deemed the bid as non-responsive.

SECTION 3 - AWARD OF SOLICITATION AND RESULTING CONTRACT

3.1 The contract will be awarded to the lowest responsive and responsible bidder.

The City reserves the right to reject any and all bids, to waive any and all informalities not involving price, time, and changes in the work, and to negotiate contract terms with the Awarded Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced, or conditional bids. Also, the City reserves the right to reject the bid of any Bidder if the City believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the bid is not responsible, or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the City. Therefore, discrepancies between the indicated sum of any column of figures and the correctly tabulated sum of any column will be resolved in favor of the correctly tabulated sum of any column.

The City requires that all bidders submit cost estimates consistent with fair market pricing. All bids will be reviewed to ensure that proposed costs align with current industry standards for similar projects. Suppose any submitted bid is substantially higher or lower than what is deemed reasonable by prevailing market conditions. Suppose any submitted bid is found to be substantially higher or lower than what is considered reasonable by prevailing market conditions. In that case, the City reserves the right to reject the bid. Such determinations will consider both the overall project cost and individual line items within the bid. The City may rely on independent evaluations, cost databases, or comparative analyses to establish fair market ranges.

In submitting a bid, each bidder acknowledges and agrees that:

1. Submitted proposed costs reflect competitive pricing within the industry.
2. Bidder understands and accepts that bids with significantly inflated or deflated costs, relative to fair market standards, may be excluded from consideration without further recourse.

3.2 In evaluating bids, the City will consider the bidders' qualifications, whether or not the bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the ITB or before the Notice of Award.

3.3 The City may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. The City may also consider operating costs, maintenance requirements, performance data, and guarantees for major items of materials and equipment proposed for incorporation into the work, when such data must be submitted before the Notice of Award.

3.4 Procurement and Contracts Department, may conduct investigations as the City deems necessary to assist in the evaluation of any bid and to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, and other persons and organizations to perform and furnish the work in accordance with the Contract resulting from the ITB to the City’s satisfaction within the prescribed time.

3.5 If the Bid is to be awarded, it will be awarded to the lowest responsive and responsible Bidder. The Awarded Bidder will receive an automatically generated notice of award from the eBid System or an email notification from the City's Procurement and Contracts Department.

3.6 **City reserves the right to postpone the award of the Contract for a period which shall not exceed one hundred twenty (120) days from the Bid unsealing date.** City may, at its sole discretion, release any bid and return the Bid Security prior to that date. City also reserves the right to ask for additional postponement time, for which the Bidder may provide a written binding acceptance. An email from an authorized agent of the Bidder to the purchasing agent shall be considered a written, binding acceptance of the postponement period.

3.7 The Awarded Bidder shall furnish all necessary additional bonds to ensure the faithful performance of the Contract Documents. All Bid Bonds, Performance Bonds, Payment Bonds, Insurance Contracts, and Certificates of Insurance must be executed or countersigned by a licensed resident agent of the surety or insurance company, with a principal place of business in the State of Florida, and must fully comply with the insurance laws of the State of Florida. The insurance company must be duly licensed and authorized to conduct business within the State of Florida.

Bid Bonds shall be required for all bid submissions. In accordance with Section 255.05, Florida Statutes, Performance and Payment Bonds shall be required for all public construction contracts exceeding two hundred thousand dollars ($200,000.00). These bonds must be recorded in the public records of Broward County prior to contract award.

Insurance coverage is required for all bids and must comply with applicable provisions of Chapter 624, Florida Statutes, governing insurance contracts and agents.

Should the Awarded Bidder fail to execute the Contract, furnish the required bonds, or meet any other conditions necessary for contract execution within the time specified, the Bid Bond shall be forfeited to the City as liquidated damages, not as a penalty, pursuant to the terms of the solicitation. This forfeiture shall serve to compensate the City for administrative costs and delays resulting from Bidder's non-performance. Additionally, failure to perform in accordance with the terms of the Contract may result in forfeiture of the Performance and/or Payment Bonds, subject to the terms and conditions of said bonds and applicable law under Section 255.05, Florida Statutes.

SECTION 4 - INSTRUCTIONS TO BIDDERS AND SPECIFIC CONDITIONS

4.1 Defined Terms: Terms used in these Instructions to Bidders have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a bid directly to the City, as distinct from a sub-bidder, who submits a bid to a Bidder. The term "Awarded Bidder" means the lowest, qualified, responsible, and responsive Bidder to whom the City (based on the City's evaluation as hereinafter provided) makes an award. The term "ITB Documents" includes the ITB, attachments, and all addenda issued prior to receipt of bids. Refers to Section 2 for additional definitions.

4.2 Copies of ITB Documents:

a. Complete sets of the ITB Documents may be obtained from the City's website at no charge.

b. Complete sets of ITB Documents must be used in preparing bids; the City assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of ITB Documents.

c. City, in making copies of ITB Documents available on the above terms, does so only to obtain bids on the work and does not confer a license or grant for any other use.

4.3 Qualifications of Bidders: To demonstrate qualifications to perform the work and to be considered for the award, each bidder must submit the **Attachment F Bidders Qualification Statement**. This form is used to verify the bidder's ability to undertake a project. The information helps the City to assess eligibility, reliability, and risk, ensuring bidders have the resources, certifications, and track record to perform the work on time and within budget. **Attachment F** is available in the "Attachments" tab of the City's eBid System (**see IonWave Attachments and Response Attachments tabs**)

4.4 Public Entity Crimes: In accordance with Section 287.133 (2)(a), Florida Statutes: A person or affiliate 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 a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a Contractor, Supplier, Subcontractor or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided Section 287.017, Florida Statutes for CATEGORY TWO for a period of thirty-six (36) months from the date of being placed on the convicted vendor list.

4.5 Drug-Free Workplace: In accordance with Section 287.087, State of Florida Statutes, preference shall be given to businesses with Drug-Free Workplace Programs.

4.6 Anti-Kickback Act: The Awarded Bidder must comply with the Copeland "Anti-Kickback Act" (19 U.S.C. Section 874), as supplemented in the United States Department of Labor Regulations DOL 29 CFR, Part 3 (https://www.ecfr.gov/current/title-29/subtitle-A/part-3).

4.7 Examination of ITB Documents and Sites:

4.7.1 It is the responsibility of each Bidder before submitting a bid to:

a. Examine the ITB Documents thoroughly,
b. Visit the site to become familiar with local conditions that may affect costs, progress, performance, or furnishing of the work,
c. Consider Federal, State, and Local Laws and Regulations that may affect the cost, progress, performance, or furnishing of the work,
d. Study and carefully correlate Bidder's observations with the ITB Documents, and,
e. Notify the City of all conflicts, errors, or discrepancies in the ITB Documents.

4.7.2 Information and data reflected in the ITB Documents concerning or contiguous to the site are based upon information and data furnished to the City by owners of such facilities or others, and the City does not assume responsibility for accuracy or completeness thereof unless it is expressly provided otherwise.

4.7.3 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, underground facilities, and other physical conditions, and possible changes in the ITB Documents due to differing conditions appearing in the General Conditions section of the ITB.

4.7.4 Before submitting a bid, each Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests, and studies and obtain any further information and data that pertain to the physical conditions (surface, subsurface, and underground facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the work and which Bidder deems necessary to determine its bid for performing and furnishing the work in accordance with the time, price and other terms and conditions of the ITB Documents.

4.7.5 On request in advance, the City will provide each Bidder with access to the site to conduct such explorations and tests as each Bidder deems necessary for the submission of a bid. Bidder shall fill all holes, clean up, and restore the site to its former condition, or better, upon completion of such explorations.

4.7.6 The lands upon which the work is to be performed, rights-of-way and easements for access thereto, and other lands designated for use by the Contractor in performing the work are identified in the ITB Documents. The Contractor will provide all additional lands and access required for temporary construction facilities or storage of materials and equipment. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by the City unless otherwise provided in the Contract resulting from the ITB.

4.7.7 The electronic submission of a bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the ITB Documents, that without exception, the bid is premised upon performing and furnishing the work required by the ITB Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the ITB Documents, and that the ITB Documents are sufficient in scope and detail to demonstrate and convey understanding of all terms and conditions for performance and furnishing of the work.

4.8 Interpretations and Addenda

a. All questions must be submitted using the Questions feature in the eBid System. All questions must be submitted by 5:00:00 P.M. on the date specified in IonWave. No further questions will be accepted after this date. Oral and other interpretations or clarifications will be without legal effect.

b. If any addendum is issued to the ITB, the addendum will be issued via the eBid System. It shall be the responsibility of each Bidder, before submitting its bid, to contact the Purchasing Agent, Eric Seifer at (954) 786 – 4098, or eric.seifer@copbfl.com, to determine if any addendum was issued and to make such addendum a part of its bid. The addendum will be posted in the eBid System.

c. An addendum may also be issued to modify the ITB as deemed advisable by the City.

4.9 Contract Time: The number of calendar days within which, or the dates by which, the work is to be substantially completed, and final completed and ready for final payment (the Contract Time). The contract terms will be finalized and specified separately for each project. Bidders are advised that contractual requirements, scope, and obligations may vary depending on the specific project and will be detailed in the individual contract agreements issued upon award.

4.10 Liquidated Damages: Provisions for liquidated damages, if any, are outlined in the General Conditions of the Contract (**see Attachments Tab in IonWave**).

4.11 **Indemnification:** All Bidders must enter in the "Line Items" tab of the City's eBid System the amount of consideration required by the Bidder in return for the Bidder's promise of indemnity contained in the General Conditions section of the ITB.

4.12 Substitute or "Or-Equal" Items: The Contract, if awarded, shall be based on materials and equipment described in the drawings or specified in the specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by the Awarded Bidder/Contractor if acceptable to the City, application for such acceptance will not be considered by the City until after the effective date of the Contract.

4.13 Subcontractors, Suppliers, and Others.

a. Each bid must identify the names and addresses of Subcontractors, Suppliers, and other persons and organizations, including those who are to furnish the principal items of material and equipment listed in the "Line Items" tab of the City's eBid System. If requested, the apparent lowest Bidder, and any other Bidder so requested, shall, within seven (7) days after the ITB opening, submit to the City a list of all such Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the work for which such identification is required. Such a list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each Subcontractor, Supplier, other persons, or organization, if requested by the City. Suppose the City has a reasonable objection to any proposed Subcontractor, Supplier, other person, or organization. In that case, it may, before the Notice of Award is given, request the apparently lowest Bidder to submit an acceptable substitute without an increase in Bid Price. If the apparent lowest Bidder declines to make any such substitution, the City may award

the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, and other persons and organizations. The decline to make requested substitutions will not constitute grounds for sacrificing the Bid Security of any Bidder. Any Subcontractor, Supplier, other person, or organization listed and to whom the City does not make a written objection before giving the Notice of Award will be deemed acceptable to the City, subject to revocation of each acceptance after the Effective Date of Contract.

b. In contracts where the Contract Price is based on the cost of the work plus a fee, the apparent lowest Bidder, prior to the Notice of Award, shall identify in writing to the City those portions of the work that such Bidder proposes to subcontract, and after the Notice of Award, may only subcontract other portions of the work with the City's written consent.

c. No Contractor shall be required to employ any Subcontractor, Supplier, other person, or organization against whom the Contractor has a reasonable objection.

4.14 Bidder Acknowledgment (See SECTION 7)

a. The Bidder Acknowledgement is included with the ITB.

b. All requested information on the Bidder Acknowledgement will be provided electronically using the City's eBid System.

c. In case of a discrepancy between unit prices and totals, unit prices will prevail.

4.15 Submission of Bids

a. Bids shall be submitted electronically using the City's eBid System on or before the due date and time specified herein.

b. More than one bid received for the same work from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one bid for the same work will cause the rejection of all such bids in which the Bidder is interested. If there are reasonable grounds for believing that collusion exists among the Bidders, the bids of participants in such collusion will not be considered.

c. Bid tabulations will be posted for the bid in the City's eBid System following the procedures and guidelines of the Procurement and Contracts Department Procedures Manual.

d. All procurement activities must be conducted per the guidelines and procedures outlined in the Procurement and Contracts Department Procedures Manual. These standards ensure transparency, accountability, and alignment with organizational and regulatory expectations.

4.16 Modification and Withdrawal of Bids

a. Bids may be modified or withdrawn at any time before the due date and time of the opening of bids by using the "Retract" feature of the City's eBid System.

b. After bids are opened, and the Awarded Bidder defaults on a City Contract, the Awarded Bidder may be banned from doing business with the City for thirty-six (36) months from the default date.

4.17 Unsealing of Bids: All sealed bids received by the deadline stated in this ITB shall be publicly opened and read aloud at the date, time, and location specified herein. In accordance with Florida Statute §255.0518, the bid opening shall be conducted during a public meeting compliant with the Florida Sunshine Law (F.S. 286.011). The name of each bidder and the price submitted shall be announced and recorded. Bid tabulations will be made available upon request.

Subsequently, the Recommendation Tabulation, reflecting the City's intended award decision, will be posted in accordance with the City's procurement procedures and applicable laws.

The results announced following the public bid opening are preliminary in nature and do not constitute a final award or approval. All bids are subject to further evaluation by the City's Procurement and Contracts Department to determine **responsiveness** and **responsibility** in accordance with applicable procurement regulations, including **Chapter 287, Florida Statutes**, and relevant City ordinances.

The City reserves the right to accept or reject any or all bids, to waive informalities and minor irregularities, and to award the contract in the best interest of the organization. Final award decisions will be made based on a fair, competitive, and transparent evaluation process, consistent with the principles outlined in **Section 287.057, Florida Statutes**, governing the procurement of commodities and contractual services.

The City reserves the right, at its sole discretion, to extend or modify the opening date and time for bids and any other activities related to the solicitation process. This includes, but is not limited to, submission deadlines, site visits, pre-bid conferences, and clarification or question-and-answer periods.

a. Any such extensions or modifications will be communicated promptly to all registered or interested Bidders via the City's eBid System or other official communication channels. All changes shall apply uniformly to all respondents to ensure fairness and transparency.

b. The City shall determine, as necessary, the appropriate duration of any extension to allow Bidders sufficient time to prepare their responses adequately and objectively. It is the sole responsibility of each Bidder to monitor official communications for updates or changes to the solicitation schedule.

4.18 Bids to Remain Subject to Acceptance

a. All bids will remain subject to acceptance for one hundred twenty (120) days after the bid deadline, but the City may, in its sole discretion, release any bid and return the Bid Security prior to that date.

b. Extensions of time when bids shall remain open beyond the one hundred and twenty (120) day period may be made only by mutual agreement between the City, the apparent lowest responsive and lowest responsible bidder, and the surety, if any, for the Awarded Bidder.

4.19 **Contract Security:** For contracts exceeding **two hundred thousand dollars ($200,000.00),** both Performance Bonds and Payment Bonds shall be mandatory and must be recorded with Broward County prior to contract award. Insurance coverage is required for all bids, regardless of contract value.

4.20 **Execution of Contract:** When the City recommends awarding a vendor a contract to the lowest responsible and responsive bidder, the signed Contract by the vendor will be presented to the commission for approval. Within ten (10) days thereafter, the Contractor shall provide all required documents to the City with the required Bonds. Within fifteen (15) days thereafter, the City shall deliver one fully signed counterpart to the Contractor.

4.21 **Employment Eligibility:** By entering into a resulting contract with the City, the Contractor must comply with the provisions of **Section 448.095, Fla. Stat., "Employment Eligibility".** This includes, but is not limited to, the use of the E-Verify System to verify the work authorization status of all newly hired employees and requires all subcontractors to provide an affidavit attesting that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. Failure to comply will lead to termination of the Contract, or if a subcontractor knowingly violates the statute, the subcontract must be terminated immediately. Any challenge to termination under this provision must be filed in the Circuit or County Court no later than 20 calendar days after the termination date. If the Contractor terminates this awarded contract for violating the statute, the Contractor may not be awarded a public contract for 1 year after the termination date.

4.22 **Taxes:** The Contractor shall pay all applicable sales, consumer, use, and other similar taxes required by law. The Contractor is responsible for reviewing pertinent state statutes regarding sales tax and complying with all requirements.

4.23 **Notice To Contractor:** Pursuant to Chapter 8, CFR 274a.2" (see link) https://www.govinfo.gov/content/pkg/CFR-2017-title8-vol1/pdf/CFR-2017-title8-vol1-sec274a-2.pdf, the employment of unauthorized aliens by any Contractor is considered a violation of the Immigration and Nationality Act. If the Contractor knowingly employs unauthorized aliens, such a violation shall cause unilateral cancellation of the Contract.

4.24 **Non-Discrimination:** There shall be no discrimination as to race, color, sex, religion, national origin, disability, age, marital status, political affiliation, sexual orientation, pregnancy, or gender identity and expression in the operations conducted under the Contract.

4.25 **Occupational Health and Safety:** In compliance with Section 442, Florida Statutes, any items included in the latest edition of "Florida Substance List", which are delivered from a Contract resulting from the ITB, must be accompanied by a Safety Data Sheet (SDS). The SDS must be maintained by the City and must include the following information:

a. The chemical name and the common name of the toxic substance.
b. The hazards or other risks in the use of toxic substances, including:
    i. The potential for fire, explosion, corrosiveness, and reactivity.
    ii. The known acute and chronic health effects of risks from exposure, including the medical conditions that are generally recognized as being aggravated by exposure to the toxic substance; and
    iii. The primary routes of entry and symptoms of overexposure.

c. The proper precautions, handling practices, necessary personal protective equipment, and other safety precautions in the use of or exposure to toxic substances, including appropriate emergency treatment in case of overexposure.
d. The emergency procedure for spills, fire disposal, and first aid.
e. A description in lay terms of the known specific potential health risks the toxic substance poses is intended to alert any person reading this information.
f. The year and month, if available, the information was compiled, as well as the name, address, and emergency telephone number of the manufacturer responsible for preparing the information.

Any questions regarding Section 442, Florida Statutes, should be directed to:

Department of Labor and Employment Security, Division of Safety, 2002 Old St. Augustine Road, Tallahassee, Florida, 32399; telephone: 1-800-367-4378.

ALL TOXIC SUBSTANCES MUST BE LABELED FOR IDENTIFICATION, IN ACCORDANCE WITH OSHA STANDARDS.

Notice: For us to process payment, your invoice must reference the federal ID number. Please note the ID number on the Bid Response page.

4.26 Waste Removal Services: The City has contracted Coastal Waste & Recycling, Inc., for residential and commercial solid waste collection and disposal services. The City has granted Coastal Waste & Recycling, Inc., the sole and exclusive right, franchise, license, and privilege to provide non-hazardous solid waste collection, removal, and disposal services within the corporate limits of the City, including collection and removal of certain Construction and Demolition Debris. The Awarded Bidder/Contractor shall coordinate with Coastal Waste & Recycling, Inc. regarding the level and type of service to be provided and the manner of collection charges. Any Contractor or Subcontractor performing construction work within the City of Pompano Beach must use the City's franchised hauler for garbage removal services, including removal of Construction and Demolition Debris generated over ten (10) cubic yards, with the exception of Source Separated Recovered Materials as defined in Section 403.703(24), Florida Statutes, and Chapter 96 of the City Ordinance. The City's current franchised hauler is Coastal Waste & Recycling, Inc., which may be contacted directly for dumpsters and/or roll-offs at:

Coastal Waste & Recycling, Inc.
1840 NW 33rd Street
Pompano Beach, FL 33064
(954) 947-4000

4.27 Permits and Fees: The Contractor awarded the project, which is the scope of the ITB, shall be required to obtain and pay for the permits and/or fees indicated on the chart below in the amounts set forth or pursuant to the formula for percent or unit method, which is indicated.

Fees cannot be waived and must be collected by the City from the Contractor. Contact the City Department below for additional details regarding the required permit and fee.

FEE OR PERMIT	CITY DEPARTMENT	COST (SET FEE OR PERCENT OF PROJECT AMOUNT)
All construction within the City right-of-way	Engineering	Waived
All utilities tie-ins to City water, sewers, and drainage	Engineering	Waived
Paving	Engineering	Waived
Fire plan review for new construction, additions, and alterations	Building Inspection	See City Code of Ordinances 95.14
Fire alarm and fire sprinkler plan review (new installations)	Fire Plan Review	See City Code of Ordinances 95.14
Fire hydrant flow test	Fire Plan Review	See City Code of Ordinances 95.14
Business Tax Receipt (only if the Contractor has a temporary office in the City of Pompano Beach)	Zoning	See City Code of Ordinances
Site plan review	Zoning	See City Code of Ordinances
Rezoning	Zoning	See City Code of Ordinances
Variance	Zoning	See City Code of Ordinances
Tree Permit application fee	Zoning	See Zoning Code/City Code of Ordinances
Landscape reinspection fee	Zoning	See Zoning Code/City Code of Ordinances
Capital recovery fees	Customer Service	See City Code of Ordinances 50.13 and 51.11
Tapping fee	Customer Service	See City Code of Ordinances
Deposits (water bill)	Customer Service	Deposit based upon size of meter (only applies if Contractor responsible for water bills during period between meter installation and City acceptance of project.)
Administrative fee	Customer Service	See City Code of Ordinances
Building permit	Building Inspection	See Bldg. Fee Schedule/City Code of Ordinances
Building Reinspection Fee	Building Inspection	See Bldg. Fee Schedule/City Code of Ordinances
Certificate of occupancy	Building Inspection	See Bldg. Fee Schedule/City Code of Ordinances
Lien law	Building Inspection	$5.00
Surcharge Bro. Co. Bd. of Rules & Appeals	Building Inspection	$0.60 per $1,000 valuation
Surcharge Fla. Statute 553.721	Building Inspection	1.5% of permit fees, minimum $2.00
Surcharge Fla. Statute 468.631	Building Inspection	1.5% of permit fees, minimum $2.00

4.28 Project Web Requirements

4.28.1 This project will utilize a web-based project management tool. This web-based application is a collaboration tool that will allow all project team members continuous access to important project data and up-to-the-minute decision and approval status information via the Internet.

4.28.2 This web-based application is a comprehensive Project and Program Management system that the City will use to manage all project documents, communications, and costs between

the Lead Consultant, Sub-Consultants, Design Consultants, Contractor, and Owner. Training will be provided for all Consultants selected to offer services to the City of Pompano Beach.

4.28.3 Lead and Sub-Consultants shall conduct project controls outlined by the Owner, Project Manager, and/or Construction Manager, utilizing the City-provided **web-based application license(s) at no cost to the Consultant and the awarded Contractor.** No additional software will be required.

4.28.4 Lead Consultant and Sub-Consultants shall be responsible for logging in to the project website on a daily basis and, as necessary, being kept fully apprised of project developments and required action items. These may include but are not limited to: Contracts, Contract Exhibits, Contract Amendments, Drawing Issuances, Addenda, Bulletins, Permits, Insurance & Bonds, Safety Program Procedures, Safety Notices, Accident Reports, Personnel Injury Reports, Schedules, Site Logistics, Progress Reports, Correspondence, Daily Logs, Non-Conformance Notices, Quality Control Notices, Punch Lists, Meeting Minutes, Requests for Information, Submittal Packages, Substitution Requests, Monthly Payment Request Applications, Supplemental Instructions, Owner Change Directives, Potential Change Orders, Change Order Requests, Change Orders and the like. All supporting data, including but not limited to shop drawings, product data sheets, manufacturer data sheets and instructions, method statements, material safety data sheets, Substitution Requests, and the like, will be submitted in digital format via web-based project management tool.

4.29 **Conflict of Interest**: Section 112.313 (3) and (7), Florida Statutes, sets forth restrictions on the ability of City employees acting in a private capacity to rent, lease, or sell any realty, goods, or services to the City. It also places restrictions on the City employees concerning outside employment or contractual relationships with any business entity that is doing business with the City. Each Proposer is to disclose any employees who are also City employees with its bid. Any employees identified by the Proposer should obtain legal advice as to their obligations and restrictions under Section 112.313 (3) and (7), Florida Statutes.

4.30 **Protesting of Bid Conditions/Specifications**: Any person desiring to protest the conditions/specifications in this ITB, or any Addenda subsequently released thereto, shall file a notice of intent to protest, in writing, within 72 hours after the electronic release of the competitive solicitation or Addendum and shall file a formal written protest within ten (10) calendar days after the date the notice of protest was filed. Fridays, Saturdays, Sundays, state holidays, or days during which the City administration is closed shall be excluded from the computation of the 72 hours. Suppose the tenth calendar day falls on a Friday, Saturday, Sunday, a state holiday, or a day the City administration is closed. In that case, the formal written protest must be received on or before 5:00 p.m. ET of the following calendar day that is not a Friday, Saturday, Sunday, state holiday, or day during which the City administration is closed. Section 120.57(3)(b), Florida Statutes, as currently enacted or as amended from time to time, states that "The formal written protest shall state with particularity the facts and law upon which the protest is based." Failure to file a notice of protest or to file a formal written protest within the time prescribed by Section 120.57(3), Florida Statutes, shall constitute a waiver of proceedings. Notices of protest, formal written protests, and the bonds required by the General Services Procedures Manual shall be filed at the office of the Director, Procurement and Contracts Department, 1010 NE 3 Avenue, Pompano Beach, FL 33060.

4.31 **Posting of Bid Recommendations/Tabulations**: ITB Recommendations and Tabulations will be posted on http://www.pompanobeachfl.ionwave.net and will remain posted for 72 hours. Any change to the date and time established herein for the ITB Recommendations/Tabulations posting shall be posted at http://www.pompanobeachfl.ionwave.net. If the date and time of the posting of ITB Recommendations/Tabulations are changed, each Bidder is responsible for ascertaining the revised date of the posting of ITB Recommendations/Tabulations. Any person desiring to protest the intended decision shall file a notice of protest, in writing, within 72 hours after the posting of the ITB tabulation and shall file a formal written protest within ten (10) calendar days after the date the notice of protest was filed. Fridays, Saturdays, Sundays, state holidays, and days during which the City administration is closed shall be excluded from the computation of the 72 hours. Suppose the tenth calendar day falls on a Friday, Saturday, Sunday, a state holiday, or a day the City administration is closed. In that case, the formal written protest must be received on or before 5:00 p.m. ET of the following calendar day that is not a Friday, Saturday, or Sunday, a state holiday, or a day during which the City administration is closed. No submissions made after the Bid opening, amending or supplementing the Bid shall be considered. Section 120.57(3)(b), Florida Statutes, as currently enacted or as amended from time to time, states that "The formal written protest shall state with particularity the facts and law upon which the protest is based". Any person who files an action protesting an intended decision shall physically deliver and post with the City, at the time of filing the formal written protest, an original bid protest bond, payable to the City, in an amount equal to one percent (1%) of the City's estimate of the total volume of the contract. The City shall provide the estimated contract amount to the Proposer within 72 hours, excluding Fridays, Saturdays, Sundays, and other days during which the City administration is closed, of receipt of notice of intent to protest. The estimated contract amount is not subject to protest pursuant to Section 120.57(3), Florida Statutes. The bid protest bond shall be conditioned upon the payment of all costs which may be adjudged against the protester in an Administrative Hearing in which the action is brought and in any subsequent appellate court proceeding. In lieu of a bid protest bond, the City may accept a cashier's check, official bank check, or money order in the amount of the bond. If, after completion of the Administrative Hearing process and any appellate court proceedings, the City prevails, the City shall recover all costs and charges, which shall be included in the Final Order or judgment, including charges made by the Division of Administrative Hearings, but excluding attorney's fees. The bid protest bond shall be returned upon payment of such costs and charges by the protestant. If the protester prevails, then the protester shall recover from the City all costs and charges incurred by the City. Payment options can be made by electronic check (e-check), Visa, MasterCard, or by using an established escrow account code.

SECTION 5 - LOCAL BUSINESS PROGRAM

On March 13, 2018, the City Commission approved Ordinance 2018-46, establishing a Local Business Program, a policy to increase the participation of City businesses in the City's procurement process.

For purposes of this solicitation, "Local" will be defined as follows:

1. **TIER 1 LOCAL VENDOR**. POMPANO BEACH BUSINESS EMPLOYING POMPANO BEACH RESIDENTS. A business entity that has maintained a permanent place of business within the city limits and maintains a staffing level, within this local office, of at least ten percent (10%) who are residents of the City of Pompano Beach or includes subcontracting commitments to Local Vendor Subcontractors for at least ten percent of the contract value. The permanent place of business may not be a post office box. The business must be located in a non-residential zone and must actually distribute goods or services from that location. The business must be staffed with full-time employees within the limits of the City. In addition, the business must have a current business tax receipt from the City for a minimum of one year prior to the date of issuance of the current solicitation.

2. **TIER 2 LOCAL VENDOR**. BROWARD COUNTY BUSINESS EMPLOYING POMPANO BEACH RESIDENTS OR UTILIZING LOCAL VENDOR SUBCONTRACTORS. A business entity, which has maintained a permanent place of business within Broward County and maintains a staffing level, within this local office, of at least fifteen percent (15%) who are residents of the City of Pompano Beach or includes subcontracting commitments to Local Vendor Subcontractors for at least twenty percent (20%) of the contract value. The permanent place of business may not be a post office box. The business must be located in a non-residential zone and must actually distribute goods or services from that location. The business must be staffed with full-time employees within the limits of the city. In addition, the business must have a current business tax receipt from the respective Broward County municipality for a minimum of one year prior to the date of issuance of a solicitation.

3. **LOCAL VENDOR SUBCONTRACTOR**. POMPANO BEACH BUSINESS. A business entity, which has maintained a permanent place of business within the city limits of the City of Pompano Beach. The permanent place of business may not be a post office box. The business must be located in a non-residential zone and must actually distribute goods or services from that location. The business must be staffed with full-time employees within the limits of the city. In addition, the business must have a current business tax receipt from the City of Pompano Beach for a minimum of one year prior to the date of issuance of a solicitation.

You can view the list of City businesses that have a current Business Tax Receipt on the City's website and locate local firms that are available to perform the work required by the ITB specifications. The business information, sorted by business use classification, is posted on the webpage for the Business Tax Receipt Division: www.pompanobeachfl.gov by selecting the Pompano Beach Business Directory in the section "Shop Pompano!".

The City of Pompano Beach is strongly committed to ensuring the participation of City Businesses as Contractors and Subcontractors for the procurement of goods and services, including labor, materials, and equipment. Bidders are required to participate in the City of Pompano Beach's Local Business Program by including, as part of their package, the Local Business Participation Form (Exhibit A) listing the local businesses that will be used on the Contract, and the Letter of Intent Form (Exhibit B) from each local business that will participate in the Contract.

For a list of certified minority businesses with the State of Florida please see the following link: https://www.dms.myflorida.com/business_operations/state_purchasing/office_of_supplier_development_osd/certified_vendor_reports

If a Prime Contractor/Vendor is not able to achieve the level of goal attainment of the Contract, the Prime Contractor/Vendor will be requested to demonstrate and document that good faith efforts were made to achieve the goal by providing the Local Business Unavailability Form (Exhibit C), listing firms that were contacted but not available, and the Good Faith Effort Report (Exhibit D), describing the efforts made to include local business participation in the Contract. This documentation shall be provided to the City Commission for acceptance.

The Awarded Bidder/Contractor will be required to submit "Local Business Subcontractor Utilization Reports" during projects and after projects have been completed. The reports will be submitted to the assigned City project manager of the project. The Local Business Subcontractor Utilization Report template and instructions have been included in the ITB document.

Failure to meet Local Vendor Goal commitments will result in an "unsatisfactory" compliance rating. Unsatisfactory ratings may impact the award of future projects if a sanction is imposed by the City Commission.

The City shall award a Local Vendor preference based upon vendors, Contractors, or Subcontractors who are local with a preference as follows:

1. For bid evaluation purposes, Tier 1 businesses, as defined by this subsection, shall be granted a preference in the amount of five percent (5%) of any bid. If the Tier 1 business submits a second bid that is at least one percent (1%) lower than that lowest responsive bid, then the award will go to the Tier 1 business. If not, the award will be made to the business that submits the lowest responsive bid. If the lowest responsive and responsible Bidder is also a Tier 1 business, the award will be made to that business, and no other Bidders will be given an opportunity to submit additional bids as described herein.

2. For bid evaluation purposes, Tier 2 businesses, as defined by this subsection, shall be granted a preference in the amount of two and one-half percent (2-1/2 %) of any bid or any proposal score. If the Tier 2 business submits a second bid, which is at least one percent lower than that lowest responsive bid, then the award will go to the Tier 2 business. If not, the award will be made to the business that submits the lowest responsive bid. If the lowest responsive and responsible Bidder is also a Tier 1 business, the award will be made to that business and no other Bidders will be given an opportunity to submit additional bids as described herein.

3. If there is a Tier 1 business and/or Tier 2 business participating in the same ITB and all businesses qualify to submit a second bid as previously detailed, the Tier 1 business will be given the first option, and the Tier 2 business will be given the second option. If the Tier 1 business is not the lowest bid received by at least one percent (1%), then an opportunity will be given to the Tier 2 business. If the Tier 2 business is not the lowest bid by at least one percent (1%), then the bid will be awarded to the lowest Bidder regardless of the geographic location of the business.

4. The awarded Bidder/Contractor is responsible for complying with all Tier 1 & 2 guidelines and ensuring that all requirements are met before executing a Contract.

If the Bidder is applying for Tier 1 or Tier 2 under the Local Vendor Program, a valid Business Tax Receipt issued by the City of Pompano Beach or Broward County must be included with the bid submission.

Additionally, all proposed local Subcontractors must provide a copy of their current City of Pompano Beach issued Business Tax Receipt. The Business Tax Receipt from the City of Broward County must be for a minimum of one year prior to the date of issuance of the current solicitation.

To be considered responsive, all bidders must complete Forms A, B, C, and D for the Local Vendor Program (see Attachments Tab and Response Attachments Tab in IonWave). If a bidder is not claiming participation in any Local Vendor Program Tier, the same forms must still be submitted and marked "Not Applicable" throughout. The amount Bids submitted without the required documentation will be deemed nonresponsive and ineligible for award.

SECTION 6 - BIDDER ACKNOWLEDGEMENT

6.1 By submitting a Bid, the Bidder acknowledges and agrees that, if the City accepts its Bid, it shall enter into a Contract in the form provided within the Invitation to Bid (ITB) documents. The Bidder further agrees to perform and furnish all labor, materials, equipment, and services required to complete the Work as specified or indicated in the Sample Contract Documents, for the Contract Price and within the Contract Time stated in its Bid, and in full accordance with all terms, conditions, and requirements outlined in the resulting Contract.

6.2 Bidder accepts all of the terms and conditions of the ITB Documents, including, without limitation, those dealing with the disposition of Bid Security and the Sample Contract. The bid will remain subject to acceptance for one hundred twenty (120) days after the Bid unsealing. Bidder will sign and submit the Contract with the bonds and other documents required by Bidding Requirements within ten (10) days after the City's Notice of Award date.

6.3 In submitting its bid, Bidder represents, as more fully set forth in the Contract, that:

a. Bidder has examined copies of all the ITB documents and the addendum/addenda.

b. Bidder has familiarized itself with the nature and extent of the ITB Documents, work, site, locality, and all local conditions, laws, and regulations that may affect the cost, progress, performance, or furnishing of the work in any manner.

c. Bidder has studied carefully all reports and drawings of physical conditions that are identified in the ITB.

d. Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, and studies [in addition to or to supplement those referred to in (c) above], which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the work as Bidder considers necessary for the performance or furnishing of the work at the Contract Price within the Contract Time and in accordance with the other terms and conditions of the ITB Documents, and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder for such purposes.

e. Bidder has reviewed and checked all information and data shown or indicated on the ITB Documents with respect to existing site conditions and assumes responsibility for such. No additional examinations, investigations, explorations, tests, reports, or similar information or data in respect of said site area will be required by Bidder in order to perform and furnish the work at the Contract Price, within the Contract Time, and in accordance with other terms and conditions of the ITB Documents.

f. Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the ITB Documents.

g. Bidder has given City written notice of all conflicts, errors, or discrepancies that it has discovered in the ITB Documents, and the written resolution thereof by the City is acceptable to Bidder.

h. This bid is genuine and not made in the interest or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham bid; Bidder has not solicited or induced any person, firm or corporation to refrain from Bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over the City.

6.4 **Bidder shall provide the Project's substantial and final completion timeframes through the City's eBid (IonWave) system. The Bidder agrees to be bound by the number of calendar days for substantial and final completion submitted electronically as part of their bid.**

6.5 Bidder accepts the provisions of the Contract as per the liquidated damages in the event of failure to complete the work on time.

6.6 Bidder agrees that all Federal, State, and Local sales and use taxes are included in the stated Bid Prices for the work.

6.7 Bidder further proposes to accept as full payment for the work proposed herein the amounts computed under the provisions of the Contract Documents and based on the unit prices herein (if applicable) represent a true measure of the labor, materials, equipment and any other incidentals required to perform the work, including all allowances for overhead and profit for each type and unit of work called for in these Contract Documents.

6.8 The Bid Line-Item pricing includes, but is not limited to, the following elements: labor, materials, equipment, permits and fees, excavation and backfill, grading and site preparation, restoration and final surface, removal and disposal, and final cleanup. Bidders shall include all costs associated with these elements within each line item and shall not omit any component necessary for the complete and proper execution of the work.

6.9 At the preconstruction conference, the Bidder shall submit a complete, detailed schedule of shop drawing submittals, which will show lead time for the following:

- Date of planned submittal.
- Date of anticipated receipt of review (usually three weeks after submittal).
- Delivery lead time.
- Anticipated installation date.

SECTION 7 – INSURANCE

Exhibit B outlines the insurance requirements applicable to this Invitation to Bid (ITB) and forms an integral part of the Bidder's submission. Upon award of the contract, the Bidder shall obtain and maintain, at its sole expense, insurance coverage that meets or exceeds the limits and conditions specified in **Exhibit B**. These requirements reflect the coverage deemed necessary by the City for the scope and nature of the contracted work.

The awarded Contractor shall be responsible for submitting to the City, in a timely manner, Certificates of Insurance evidencing that all required coverage is in full force and effect. Each certificate must name the City as an additional insured on a primary and non-contributory basis for all applicable policies. All insurance documentation is subject to the City's review and written approval or disapproval before commencement of any work under the Contract.

For contracts exceeding **two hundred thousand dollars ($200,000.00),** both Performance Bonds and Payment Bonds shall be mandatory and must be recorded with Broward County prior to contract award. Insurance coverage is required for all bids, regardless of contract value.

SECTION 8 – ATTRIBUTES, EXHIBITS & ATTACHMENTS

This TAB includes the following Exhibits and Attachments:

1. ITB26-032 Ultimate Sports Park
2. Ultimate Sports Park - Bid Drawings_2026.03.23
3. CIP#19-370 Ultimate Sports Park - Technical Specifications_2026.03.23
4. Ultimate Sports Park Bid Tab_2026.03.23
5. Exhibit B - Insurance Requirements
6. Attachment F - Qualification of Bidders Form
7. Attachment G - Workers' Compensation Affidavit
8. Attachment H - W9
9. Attachment I - Construction Agreement (TEMPLATE) and General Conditions
10. Attachment J - Bid Bond
11. Attachment K – Construction Reference Sheet
12. Attachment P - Payment and Performance Bonds Forms.
13. Local Vendors Program forms (A, B, C, and D)

This TAB includes the following Attributes:

- Terms & Conditions
- Acknowledgment of Addenda
- Vendor Certification Regarding Scrutinized Companies Lists (Any Dollar Amount)
- Drug-Free Workplace
- Conflict of Interest
- Local Business Program Participation & Documentation.
- Business in Good Standing (Florida Division of Corporations)
- Substantial Completion (Calendar Days)
- Final Completion (Calendar Days)
- Have you ever failed to complete work awarded to you? If yes, please explain.
- Contractor affirms that it has reviewed the proposed scope of work and has developed a
  complete plan for its performance.
- Does the Contractor intend to subcontract any portion of the work?
- Does the contractor intend to subcontract any portion of the work?
- Contractor affirms that it has, or will have, all necessary equipment and resources available to perform the work in accordance with the solicitation requirements.
- Has your organization (including parent, subsidiaries, or key personnel) been involved in any litigation? I certify that all litigation **information provided is true and complete.**
- E-Verify / Employment Eligibility Compliance
- Non-Collusion Certification.

City of Pompano Beach
Procurement and Contracts Department
1010 N.E. 3rd Avenue
Pompano Beach, Florida, 33060

April 28, 2026

ADDENDUM #1

ITB26-032 Ultimate Sports Park

To Whom It May Concern,

Addendum #1 has been issued and posted on the City's eBid System.

Proposers are reminded to acknowledge receipt of this Addendum by completing the Addendum Attribute in the Attributes tab within the eBid System.

The City is issuing this Addendum to provide the attendees' list from the Non-Mandatory Pre-Bid Conference.

Proposers are responsible for reviewing all newly posted documents and incorporating this information into their proposals as applicable.

The remainder of the solicitation is unchanged at this time.

Sincerely,

Michael Lee,
Purchasing Agent

cc: website

Online Questions & Answers

Event Information

Number:	ITB26-032 Addendum 1
Title:	Ultimate Sports Park
Type:	Invitation To Bid
Issue Date:	4/6/2026
Question Deadline:	4/27/2026 05:00 PM (ET)
Response Deadline:	5/7/2026 02:00 PM (ET)
Notes:	The City of Pompano Beach (“City”) will receive sealed electronic bids for ITB26-032 – Ultimate Sports Park until 2:00 p.m. (local time) on May 7, 2026, via the City’s eBid System. Bids submitted after the specified deadline will not be considered. In the event of any ambiguity or dispute regarding the time of receipt, such uncertainty shall be resolved in favor of the City and against the Bidder. Scope of Work: The project is located at 212 NW 16th Street, Pompano Beach, FL 33060. This project entails providing all labor, equipment, tools, and materials necessary to construct a new multipurpose natural grass sports field and a 2500 SF, 2-story concession building with bathrooms, storage, bleachers & canopy, a second-floor press box, and other track and field amenities. The scope of work includes, but is not limited to, sitework, drainage, foundation, concrete structure, mechanical, plumbing, electrical, shade structure, landscape, irrigation, fencing, parking, site lighting, and Poured-in-Place (PIP) track and sports lighting. All work shall be performed in accordance with the approved plans, specifications, supplementary conditions, and applicable local, state, and federal regulations. The Contractor shall be responsible for providing all labor, materials, equipment, tools, transportation, and incidentals necessary to complete the project professionally. The Contractor shall also be responsible for maintaining site safety, minimizing public disruption, and ensuring environmental compliance throughout construction. Prospective Bidders must be duly registered in the City’s eBid System to access solicitation documents and submit responses to this Invitation to Bid (ITB). The solicitation documents can be downloaded for free from the eBid System as a PDF at: https://pompanobeachfl.ionwave.net. The City is not responsible for the accuracy or completeness of any documentation the Bidder receives from any source other than the eBid System. The bidder is solely responsible for downloading all required documents. A list of Bidders will be read aloud in a public forum. To attend the virtual public meeting, go to https://pompanobeachfl.gov/pages/meetings to find the Zoom link. Cone of Silence Notice: Bidders are hereby notified that this Solicitation is subject to a “Cone of Silence”. A Cone of Silence means a prohibition on any communication regarding any particular competitive solicitation between: • Any person who seeks an award therefrom, including a potential vendor or vendor's

representative, and
• Any member of the City Commission, all other city employees, and any non-employee appointed to evaluate or recommend selection in such procurement process. For purposes of this section, Vendor's Representative means an employee, partner, officer, or director of a potential vendor, or consultant, lobbyist, or actual or potential subcontractor or sub-consultant of a vendor.

The "cone of silence" shall terminate at the time the City awards or approves a contract, votes to reject all responses, or otherwise takes action that ends the solicitation or other procurement process. If the City Commission refers the item back to the City Manager and staff for further review, the cone of silence shall remain in effect until an award is made, a contract is approved, or the City Commission takes any other action that ends the solicitation or other procurement process.

Any firm or lobbyist for a firm is prohibited from having any communications concerning any solicitation for a competitive procurement with any member of the City Commission, City Clerk, City Manager's Office, any Evaluation Committee Member, or any other City of Pompano Beach employee after Procurement and Contracts releases a solicitation to the General Public. All communications must go through the eBid System (IonWave) or the Purchasing Agent assigned to this solicitation, Eric Seifer, at 954-786-4166, or eric.seifer@copbfl.com, No other member of the City Commission, City Clerk, City Manager's Office, any Evaluation Committee Member, or any other City of Pompano Beach employee should contact any potential proposer or vendor, or any vendor should not contact any other department other than Procurement concerning this ITB. Any information that amends any portion of this ITB received by any method other than an Addendum issued to the ITB is not binding on the City of Pompano Beach.

No questions published

Public Questions & Answers

Event Information

Number:	ITB26-032 Addendum 1
Title:	Ultimate Sports Park
Type:	Invitation To Bid
Issue Date:	4/6/2026
Question Deadline:	4/27/2026 05:00 PM (ET)
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Published Questions

Question:	what is the depth of the exfiltration trench inside the field parking area?
Answer:	All exfiltration trench to be the same size as shown in detail on sheet C1.2.
Asked:	4/27/2026 04:59 PM (ET)
Question:	According to Sheet C1.2, the asphalt thickness in the parking lot is 1-1/2 inches. Is this correct? Should we apply two 3/4-inch lifts of asphalt in the parking lot?
Answer:	Yes, (2) 3/4" layers is correct. Same sheet also has the City standard detail for roadway section.
Asked:	4/27/2026 04:58 PM (ET)
Question:	Will a signage schedule be provided for the ADA signs?
Answer:	All exterior room signage to meet ADA requirements. ADA signage required at the Accessible parking stalls per detail on Civil sheets.
Asked:	4/27/2026 04:42 PM (ET)

Question: Could you please clarify the intended mounting/installation method for the dedication plaque specified under Section 10999-2?

Answer: Plaque to be wall mounted to building exterior; Blind Mount-Standard Studs. Location to be confirmed during construction. Contractor to confirm City seal & Official names for plaque with shop drawing.

Asked: 4/27/2026 04:42 PM (ET)

Question: Please confirm that the post and panel signage in sheet A1.11 is to be both furnished and installed by the contractor. If so, what are the dimensions of the panels?

Answer: Yes, to be provided by contractor. Panel sizes provided on detail 1 on sheet A1.11.

Asked: 4/27/2026 04:39 PM (ET)

Question: Can you identify the type of aggregate base that will be used beneath the asphalt on the running track—specifically, either #57 stone or LBR 100?

Answer: Provide #57 stone for the aggregate base below the asphalt.

Asked: 4/27/2026 04:29 PM (ET)

Question: A1.12 The field layout plan shows a 3-foot separation line between the fence and the synthetic surface, concrete to asphalt surface transition edge; typical sections on Sheet C1.1 show a 30-foot track, and according to Sheet A1.13, there are 8 lanes of 42 inches, plus 2 inches for lane markings, plus 4 inches on each end, for a total of 28'-10". Could you please indicate the total width of the running track, excluding the 3-foot clearance to the concrete curb that divides the artificial turf from the natural Bermuda grass?

Answer: Dimensions for track surface shown on details 1 & 2 on sheet A1.13 are to be followed. Layout of the track and all other sports fields and events shall be in accordance with NFSHSA standards.

Asked: 4/27/2026 04:23 PM (ET)

Question: Does the asphalt in the 3-foot separation strip located between the fence and the synthetic surface have a total thickness of 3.5 inches or 3 inches?

Answer: Asphalt in this area to be a little more than 3 inches, to be flush with the surface finish for the synthetic running track. Graded as shown in the sections on A1.13 and Civil plans.

Asked: 4/27/2026 03:00 PM (ET)

Question: Could you provide the asphalt specifications for the running tracks?

Answer: Base course to be S-I and surface course to be S-III.

Asked: 4/27/2026 02:49 PM (ET)

Question: The asphalt thickness for the running tracks, according to Detail 1/A1.13, is 3 inches in total. Could you please confirm if this is correct?

Answer: Correct, per details 1 & 2 on sheet A1.13.

Asked: 4/27/2026 02:45 PM (ET)

Question: Several vendors and subcontractors have requested more time to provide pricing. For this reason, we cordially request a two-week extension for this solicitation.

Answer: No additional time will be granted.

Asked: 4/27/2026 02:34 PM (ET)

Question: Is the chain-link fence guard railing integrated with the bleachers at both ends? or Should we submit one shop drawing for the bleachers and another for the chain-link guard railing?

Answer: Chain link fence guard integrated with the bleacher system.

Asked: 4/27/2026 02:17 PM (ET)

Question: Does the 4-inch concrete sidewalk have a thickened edge and any reinforcement?

Answer: 4" thick concrete sidewalk not to have a thickened edge. See Legend on 1/A1.17 for reinforecement information.

Asked: 4/27/2026 01:50 PM (ET)

Question: Which line item should we use to include the 6-inch-thick concrete pavement and the 12-inch-thick concrete pavement for the bleachers?

Answer: Contractor's purview. We have provided line items for Concrete sidewalk & Bleachers.

Asked: 4/27/2026 01:43 PM (ET)

Question: According to Detail 1/A1.13, the 6-inch concrete pavement for vehicular traffic features a thickened edge that includes a #4 rebar. Should we include this thickened edge along the entire perimeter of the concrete slab—completely surrounding the field—or only in specific areas?

Answer: Thickened edge detail with #4 to be considered for 6" thick concrete sidewalk all around the field.

Asked: 4/27/2026 01:34 PM (ET)

Question: Could you extend the deadline for the question by at least one more week?

Answer: No

Asked: 4/27/2026 01:11 PM (ET)

Question: We are very interested in this project. However, upon a thorough review of the technical specifications and the total project scope, it is clear that to deliver an accurate, and competitive estimate, we require additional time. Could you please extend the deadline for submitting offers by two more weeks? Thank you.

Answer: No additional time will be granted

Asked: 4/27/2026 11:29 AM (ET)

Question: Pg 11 4.3 of ITB - Qualifications of bidders : see IonWave attachments and response attachements tabs) - were can we find these. Pg 11 4.4 Public entity crimes - is there a form for this to sign and submit with bid Pg 11 4.5 Drug Free WOrkplace - is there a form for this to sign and submit with bid Pg 11 4.6 Anti-Kickback Act - is there a form for this to sign and submit with bid Pg 17 4.26 Waste removal services " Coastal Waste & ReCYCLING" please provide fee charges from Coastal Waste. Permit fee's. Are permit fees reimbursable to the GC

Answer:

Page 11 4.3 of ITB – Qualifications of bidders : see IonWave attachments and response attachments tabs) – were can we find these. **SEE ATTACHMENTS Tab, Line 7 Attachment F-Bidders Qualification Statement.pdf**

Pg 11 4.4 Public entity crimes – is there a form for this to sign and submit with bid. **See Attributes Tab, Line 18 Public Entity Crimes Certification**

Pg 11 4.5 Drug Free Workplace – is there a form for this to sign and submit with bid. **See Attributes Tab, Line 4 Drug-Free Workplace**

Pg 11 4.6 Anti-Kickback Act – is there a form for this to sign and submit with bbid. **No. With the acceptance of the Terms and Conditions, Attributes Tab, Line 1, the bidders accept all requirements included in the bid.**

Asked: 4/24/2026 03:14 PM (ET)

Question: The plans do not provide a design for neither the scoreboard, nor goal posts foundations. The scoreboard has a design/build criteria specification on A1.14 for a specialty engineer to design this foundation. The goal posts have nothing. These costs are significant. Is the City going to establish an allowance for the design and construction of these foundations? Or will these costs come out of the project contingency?

Answer: Detail 6/A1.14 has basis of design for the scoreboard with foundations to be provided as a sign and sealed engineered drawing by contractor. Football goal foundations to be provided by contractor with a sign and sealed engineered drawing. Installation per manufacturer instructions for natural grass. Cost of foundation for scoreboard and football goal to be included in the product (purchase/fabrication & installation) price. Contingency allowances are set only for owner directed change orders.

Asked: 4/24/2026 12:39 PM (ET)

Question: When this was previously bid under the RFP, the questions were put into excel format so that they could be transmitted to the lower tier vendors. Can you please do the same again? The current format is very tedious to "screen print" each question page and then create a .pdf. The lower tier vendors are not going to register and log into this system to track questions/responses. Providing accurate information to all parties is critical to the bid process. Thank you.

Answer: All current and prospective vendors are advised to refer to our portal for the most up-to-date information on a bid. Vendors would be notified of response updates if they are registered, thus eliminating the need to track responses.

Asked: 4/24/2026 11:13 AM (ET)

Question: The life safety notes reference a building equipped with an automatic sprinkler system and emergency voice/alarm system; however, no fire protection drawings or specifications are included in the bid set. Please clarify: 1. Whether a fire sprinkler system is required for this project 2. Whether a fire alarm system is required 3. If required, whether design-build fire protection is part of the contractor's scope 4. If not, whether these systems will be provided under a separate contract

Answer: A BDA survey is NOT required, nor is a BDA System. Fire Sprinkler system not required for this building.

Asked: 4/24/2026 09:38 AM (ET)

Question: Root barriers are required near utilities. Please confirm extent and responsibility where utilities are unknown.

Answer: Root barrier may be installed along a five (5) foot section between the new tree root and existing or proposed utility. Not required for shrubs. See Root Barrier detail, sheet L2.0. All unforeseen items will be discussed should they arise.

Asked: 4/24/2026 09:32 AM (ET)

Question: Confirm scope for sports lighting (Musco). Is it owner furnished or contractor provided? Additionally, please provide information for the foundation responsibility and installation scope.

Answer: Contractor provided, basis of design & lighting levels shown on electrical drawings.

Asked: 4/24/2026 09:30 AM (ET)

Question: Grease interceptor is shown. Confirm size, responsibility, and coordination with kitchen equipment vendor.

Answer: See Plumbing fixture schedule on sheet P2.41 and sheet P5.01 for Grease interceptor information. Contractor's purview to coordinate division of scope with their subcontractors. Location and connections shown on sheets P2.11 and P9.00.

Asked: 4/24/2026 09:29 AM (ET)

Question: Confirm full extent of demolition for fencing, utilities, and structures shown as "TYP.", is removal complete or partial?

Answer: Contractor is responsible for all scope identified on the plans and specifications.

Asked: 4/24/2026 09:27 AM (ET)

Question: Confirm if contractor is responsible for all utility relocations and associated costs.

Answer: Contractor is responsible for all scope identified on the plans and specifications.

Asked: 4/24/2026 09:26 AM (ET)

Question: Confirm whether all permits (city, county, utility) are to be obtained by the contractor or if any will be owner-provided.

Answer: City & Design team have received County permits (Surface Water Management License, Environemntal & Development Review certificates). Building department has completed a dry run and review comments have been resolved. Contractor will have to take over the process and submit all the applications and insurance related deocuments to process the permit.

Asked: 4/24/2026 09:25 AM (ET)

Question: At the time of bid submission last year, there was a requirement to hold pricing for 120 days. Please confirm whether this requirement is still in effect or if it has been revised.

Answer: Based on the language in the solicitation. All bids will remain subject to acceptance for 120 days after the bid deadline

Asked: 4/24/2026 08:26 AM (ET)

Question: Please confirm if this project is subject to Prevailing Wage, DBE, and/or SBE requirements.

Answer: There'd be no prevailing wage consideration since this project isn't using federal or state funding. DBE requirements apply only to transportation projects, and funding is usually provided by U.S. DOT programs such as FHWA, FAA, or FTA. Based on the solicitation requirement for Local Business Tier 1 and Tier 2. This project is only subject to SBE requirements.

Asked: 4/23/2026 04:36 PM (ET)

Question: QUESTION: Please clarify, are proposers required to submit a “Construction Schedule” as part of their bid submittal or upon award of the project? "...Per the ITB Section2.2 Responsibility Documentation: To demonstrate the Bidder’s responsibility the Bidder must submit the information provided herein to the City….. (j.) A construction schedule demonstrating the bidder’s ability to accomplish the work within the contract time, including major project tasks, durations, and who will complete (bidder or name of subcontractor)."

Answer: A construction schedule is not required, however the bidder needs to identify the number of days for construction to substantial completion and final completion.

Asked: 4/21/2026 03:51 PM (ET)

Question: QUESTION: For clarification and bidding purposes, what is the City’s anticipated project completion date and duration of construction for this project? "....Per the ITB Technical Specifications, Section 1.11 Time for Performance, the work is to be completed within Two Hundred and Seventy (270) calendar days from the Project Initiation Date specified in the Notice to Proceed."

Answer: The contractor is to provide the construction duration. The reference of 270 days is in error and should be removed.

Asked: 4/21/2026 09:16 AM (ET)

Question: Can you please provide the attendance list for the Pre-Bid Conference?

Answer: This will be provided via addenda.

Asked: 4/20/2026 05:35 PM (ET)

Question: As this is a re-bid, please describe any/all changes from the original bid plans & Specifications.

Answer: For your bid preparation, do not consider it as a re-bid.

Asked: 4/16/2026 01:22 PM (ET)

Question: Could the City consider an extension to the due date for this project?

Answer: The due date will remain as scheduled. Any project extension would be communicated through Ionwave.

Asked: 4/16/2026 10:55 AM (ET)

Question: Sheet A1.10 shows (1) flagpole and Sheet A1.14/Detail #1 shows (2) new 25' -0"/(1) 30'-0" aluminum flag poles. What is the correct information and quantity?

Answer: (1) 30'-0" tall flagpole to be provided with illumination at the north end of the park.

Asked: 4/14/2026 03:52 PM (ET)

Question: How many bench do we need to supply for this project? How many trash receptacle do we need to supply for this project? How many bike rack do we need to supply for this project? How many scoreboard do we need to supply for this project?

Answer: See 'KEYNOTES FOR PROPOSED FEATURES' on Sheet A1.10 for quantities.

Asked: 4/14/2026 03:36 PM (ET)

Question: How many flagpoles do we need to supply for this project?

Answer: One 30'-0" tall flagpole to be provided with illumination at the north end of the park as indicated by note 13 on the proposed site plan, sheet A1.10. See Electrical site plan for light fixture information.

Asked: 4/14/2026 03:33 PM (ET)

Question: what is the engineer's estimate for this project?

Answer: Architects estimate is $7M

Asked: 4/13/2026 04:10 PM (ET)

Question: COULD YOU PROVIDE FLAG POLE MANUFACTURER?

Answer: Contractor to follow guidelines and sizes shown on drawings. City & WZA to review engineered shop drawings provided by Contractor.

Asked: 4/13/2026 02:13 PM (ET)

Question: Could you provide the bleacher manufacturer?

Answer: Contractor to follow guidelines and sizes shown on drawings and technical specifications. City and WZA to review engineered shop drawings provided by contractor.

Asked: 4/13/2026 02:12 PM (ET)

Question: What is the budget for this project?

Answer: Architects estimate is $7M

Asked: 4/13/2026 12:59 PM (ET)

Question: The pipe diameters for the exfiltration trenches in the parking lot and in the field are not specified on Drawing C-1.0. Is the pipe diameter 15" HDPE for all of them?

Answer: Exfiltration Trench detail on sheet C1.2 to be followed for all trench and HDPE pipe size.

Asked: 4/13/2026 11:15 AM (ET)

Question:	Budget for this project
Answer:	Architects estimate is $7M
Asked:	4/12/2026 08:06 PM (ET)

Question:	WHAT IS THE ENGINEERING BUDGET FOR THIS JOB?
Answer:	Architects estimate is $7M
Asked:	4/9/2026 11:13 AM (ET)

Question:	Can you please confirm if this is the same project previously advertised as RFP25-073 (Ultimate Sports Park) back in November 2025? If so, could you provide insight into why the previous solicitation was not awarded? We appreciate your clarification and look forward to your response.
Answer:	Do not consider it as a rebid. The City of Pompano Beach received eleven (11) proposals in response to that solicitation, all of which were deemed responsive and responsible. Pursuant to Section 8.1 of the RFP (Conditions and Provisions), the City reserves the right to reject all proposals if it is determined to be in the City's best interest. Based on that authority, the City elected to reject all proposals. This is a NEW project, new specifications and plans.
Asked:	4/8/2026 05:06 PM (ET)

Question:	What is the estimated price / Budget for this project?
Answer:	Architects estimate is $7M
Asked:	4/8/2026 04:53 PM (ET)

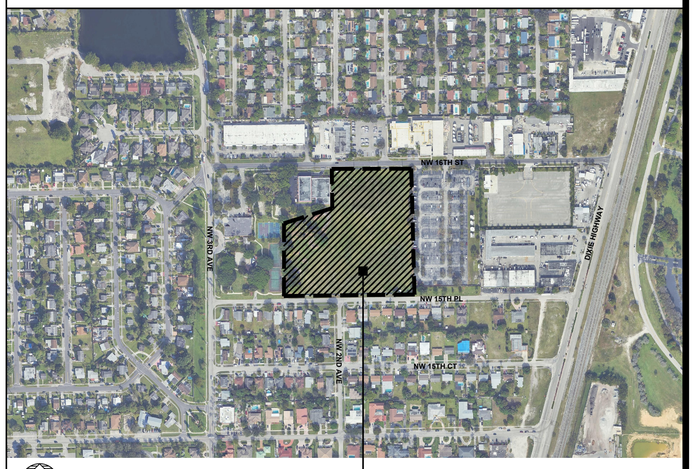
BID Set
MARCH 23, 2026

pompano beach SM
Florida's Warmest Welcome

CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK

212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

LOCATION MAP



PROJECT TEAM

ARCHITECT:	**WALTERS ZACKRIA ASSOCIATES** 5813 N ANDREWS WAY, FORT LAUDERDALE, FLORIDA 33309 Ph. (954) 522-4123 Fx. (954) 522-4128
CIVIL ENGINEERING:	**ARCADIS** 7000 NORTH FEDERAL HIGHWAY, 2ND FLOOR, BOCA RATON, FL 33487 Ph. (954) 974-2200 ext. 52114
LANDSCAPE/ IRRIGATION :	**ARCADIS** 7000 NORTH FEDERAL HIGHWAY, 2ND FLOOR, BOCA RATON, FL 33487 Ph. (954) 974-2200 ext. 52114
STRUCTURAL ENGINEERING:	**SAAD EL-HAGE ENGINEERS** 5601 NW 9TH AVENUE, SUITE 206 FT. LAUDERDALE, FL 33309 Ph. (954) 771-8149
MEP ENGINEERING:	**BILDWORX DESIGN** 300 SE 2nd STREET, SUITE 600 FORT LAUDERDALE, FLORIDA 33301 Ph. (954) 933-8246

CITY COMMISSION

MAYOR:	**REX HARDIN**
VICE-MAYOR:	**ALISON FOURNIER**
COMMISSIONER:	**RHONDA SIGERSON-EATON** **BEVERLY PERKINS** **AUDREY FESIK** **DARLENE SMITH**
CITY MANAGER:	**GREG HARRISON**

CITY CIP TEAM

CITY ENGINEER:	**JOHN SFIROPOULOS**
CIP MANAGER:	**DR. TAMMY GOOD**
PROJECT MANAGER:	**CHRISTOPHER SCHLAGETER**

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CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: TN
CHECKED BY: AZ
DATE: 05/19/2025
REVISIONS:
1
2
3
4
5
6

2406

SHEET
A0.00

COVER SHEET

SCOPE OF WORK

1. NEW MULTIPURPOSE NATURAL TURF GRASS FIELD.
2. NEW RUNNING TRACK WITH SYNTHETIC SURFACE.
3. NEW FIELD EVENTS WITH SYNTHETIC SURFACING AND SPORTS EQUIPMENT.
4. BLEACHERS WITH SHADE.
5. SPORTS LIGHTING TO ILLUMINATE THE FIELD AND TRACK.
6. CONCESSION / RESTROOM / STORAGE BUILDING WITH INTEGRATED PRESS BOX.
7. PEDESTRIAN SITE LIGHTING, WALKWAYS, PLAZAS, PATHS AND PARKING LOT.

BUILDING CODE INFORMATION

CONSTRUCTION TO COMPLY WITH,
1. FLORIDA BUILDING CODE EIGHTH (2023) EDITION WITH THE LATEST REVISIONS
2. FLORIDA FIRE PREVENTION CODE EIGHTH (2023) EDITION

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE & VERIFY ALL EXISTING SITE CONDITIONS, INCLUDING UTILITY SERVICE LOCATIONS IN ALL AREAS INCLUDED IN THE SCOPE OF WORK PRIOR TO COMMENCING CONSTRUCTION.
2. ANY EXISTING ITEMS THAT ARE DISTURBED, DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW OR REPAIRED TO THE OWNERS SATISFACTION AND LIKE NEW CONDITION.
3. DO NOT DISTURB ANY STRUCTURAL COMPONENTS OF EXISTING BUILDINGS ON OR AROUND PROJECT SITE WITHOUT PRIOR WRITTEN APPROVAL BY ARCHITECT.
4. DO NOT DISTURB ANY EXISTING UTILITIES, FACILITIES, EQUIPMENT OR ITEMS TO REMAIN UNLESS SPECIFICALLY STATED ON PLANS, WITHOUT PRIOR WRITTEN APPROVAL BY ARCHITECT.
5. EACH CONTRACTOR SHALL USE ALL POSSIBLE CARE TO PROTECT ALL EXISTING MATERIALS, SURFACES, AND FURNISHINGS ON OR AROUND PROJECT SITE FROM DAMAGE DURING ALL PHASES OF CONSTRUCTION.
6. ALL UNANTICIPATED AND UNFORESEEN DEMOLITION AND OR NEW CONSTRUCTION CONDITIONS WHICH REQUIRE DEVIATION FROM THE PLANS AND NOTES HEREIN SHALL BE REPORTED TO THE ARCHITECT, IN WRITING, PRIOR TO COMMENCING SAID WORK.
7. ALL NEW MATERIAL AND/OR PATCHWORK SHALL BE PROVIDED TO MATCH EXISTING MATERIALS AND/OR ADJOINING WORK WHERE PRACTICAL, EXCEPT AS SPECIFICALLY NOTED HEREIN.
8. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL FURNISH WRITTEN GUARANTEES FOR ALL TRADES FOR A MINIMUM OF ONE YEAR. DEFECTIVE MATERIALS OR WORKMANSHIP SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
9. GENERAL CONTRACTOR IS TO THOROUGHLY REVIEW ALL DRAWINGS AND PROVIDE OVERVIEW TO ALL TRADES. ALL SUBCONTRACTORS ARE TO REVIEW ALL DRAWING SHEETS - GENERAL CONTRACTOR TO PROVIDE COMPLETE SETS OF PLANS TO ALL SUBCONTRACTORS FOR REVIEW. ITEMS SHOWN ON ARCHITECTURAL DRAWINGS ARE REQUIRED TO BE COMPLETELY INSTALLED REGARDLESS OF IF THEY ARE NOT SPECIFICALLY DESIGNATED ON MECHANICAL, ELECTRICAL, PLUMBING, POOL ENGINEERING DRAWINGS. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED ITEMS WITH ALL SUBCONTRACTORS AND THROUGHOUT ALL PHASES OF CONSTRUCTION. ALL SCHEDULES PROVIDED SHALL BE VERIFIED WITH THE PLANS. ANY DISCREPANCY SHALL BE BROUGHT UP TO THE ARCHITECT'S NOTICE AND VERIFIED.
10. ALL WORK SHALL BE DONE IN ACCORDANCE W/ ALL APPLICABLE NATIONAL CODES, FBC 2023 w/ LATEST SUPPLEMENTS AND STATE & LOCAL CODES AND ORDINANCES. WORK SHALL BE DONE IN A WORKMAN LIKE MANNER AS PER STANDARD BUILDING TECHNIQUES AND PRACTICES.
11. GENERAL CONTRACTOR IS RESPONSIBLE TO FILE AND OBTAIN ALL JURISDICTIONAL PERMITS, INCLUDING BUT NOT LIMITED TO BROWARD COUNTY, BUILDING DEPARTMENT, ENGINEERING PERMITS, ETC. UNLESS NOTED OTHERWISE.
12. GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY CONDITIONS RELATING TO JOB CONSTRUCTION.
13. GENERAL CONTRACTOR TO BE RESPONSIBLE FOR ALL HOISTING RELATED TO WORK IN THIS CONTRACT.
14. GENERAL CONTRACTOR IS TO VISIT THE SITE AND CAREFULLY INSPECT THE EXISTING CONDITIONS AFFECTING THE WORK. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND EXISTING CONDITIONS MUST BE REPORTED TO ARCHITECT IN WRITING.
15. GENERAL CONTRACTOR IS TO COORDINATE ALL CUTTING AND PATCHING FOR SERVICES AS CALLED FOR ON DRAWINGS.
16. GENERAL CONTRACTOR SHALL MAINTAIN DAILY SITE CLEANUP TO PREVENT DIRT, DEBRIS AND DUST FROM THE PREMISES AND SURROUNDING AREAS, THAT MAY BE AFFECTED NEGATIVELY, FROM DAILY CONSTRUCTION ACTIVITY.
17. GENERAL CONTRACTOR TO UTILIZE LASER GUIDED GRADING AND CONCRETE SCREEDING EQUIPMENT AND DIGITAL SMART LEVELS TO PROVIDE FULLY ADA COMPLIANT FLOOR, WALKWAY AND PAVEMENT SLOPES.
18. GENERAL CONTRACTOR SHALL INSTALL APPROPRIATE SIGNAGE AROUND THE PARK AND CONSTRUCTION AREA TO NOTIFY THE PATRONS OF THE ONGOING CONSTRUCTION ACTIVITES.
19. GENERAL CONTRACTOR SHALL DEMOLISH AND REMOVE ALL EQUIPMENTS NOTED IN THE CONSTRUCTION DOCUMENTS AND DISCARD IT.
20. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK EITHER IMPLIED OR REASONABLE INFERRED FROM THE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS.

DRAWING INDEX

SHEET NO.	SHEET NAME	ISSUED / REV. NO.						
		90% SET 02/14/2025	PERMIT SET 05/19/2025	REV. 01 08/04/2025	REV. NO.	REV. NO.	REV. NO.	REV. NO.
GENERAL								
A0.00	COVER SHEET	X	X					
A0.01	SHEET INDEX AND GENERAL NOTES	X	X					
A0.02	LIFE SAFETY PLAN	X	X					
SHEET 1 OF 1	SURVEY, SURVEY NOTES, LEGAL DESCRIPTIONS AND GENERAL INFORMATION	X	X					
CIVIL								
C0.1	DEMOLITION PLAN	X	X					
C1.0	PAVING, GRADING & DRAINAGE PLAN	X	X	X				
C1.1	TYPICAL SECTIONS	X	X					
C1.2	PAVING, GRADING & DRAINAGE DETAILS	X	X	X				
C2.0	WATER & SEWER PLAN	X	X	X				
C2.1	WATER & SEWER DETAILS	X	X	X				
C3.0	PAVEMENT MARKING & SIGNAGE PLAN	X	X	X				
C3.1	PAVEMENT MARKING & SIGNAGE DETAILS	X	X	X				
C4.0	STORMWATER POLLUTION PREVENTION PLAN	X	X					
LANDSCAPE & IRRIGATION								
TM1.0	TREE MANAGEMENT PLAN	X	X					
TM2.0	TREE MANAGEMENT DETAILS & SPECIFICATIONS	X	X					
L1.0	LANDSCAPE PLANS	X	X	X				
L2.0	LANDSCAPE DETAILS & SPECIFICATIONS	X	X	X				
IR1.0	IRRIGATION PLAN		X	X				
IR2.0	IRRIGATION DETAILS & SPECIFICATIONS		X					
ARCHITECTURAL								
A1.09	SITE PLAN - DEMOLITION	X	X					
A1.10	SITE PLAN - PROPOSED	X	X	X				
A1.11	SITE PLAN - SIGNAGE	X	X					
A1.12	FIELD LAYOUT PLAN	X	X					
A1.13	SITE DETAILS	X	X					
A1.14	SITE DETAILS	X	X					
A1.15	SITE DETAILS		X					
A1.16	BLEACHER DETAILS	X	X					
A1.17	CONCRETE PAVEMENT PLAN	X	X					
A2.11	CONCESSIONS BUILDING FLOOR PLAN - DIMENSIONS	X	X					
A2.12	CONCESSIONS BUILDING FLOOR PLAN - NOTES	X	X					
A2.13	CONCESSIONS BUILDING REFLECTED CEILING PLAN	X	X					
A2.14	CONCESSIONS BUILDING ROOF PLAN	X	X					
A2.20	CONCESSIONS BUILDING EXTERIOR ELEVATIONS	X	X					
A2.30	CONCESSIONS BUILDING SECTIONS	X	X					
A2.31	CONCESSIONS BUILDING SECTIONS	X	X					
A2.32	CONCESSIONS BUILDING WALL SECTION DETAILS	X	X					
A2.33	CONCESSIONS BUILDING WALL SECTION DETAILS	X	X					
A2.40	CONCESSIONS BUILDING INTERIOR ELEVATIONS - RESTROOMS	X	X					
A2.41	CONCESSIONS BUILDING INTERIOR ELEVATIONS - CONCESSIONS	X	X					
A2.70	CONCESSIONS BUILDING WALL TYPES	X	X					
A2.80	CONCESSIONS BUILDING ROOM FINISH SCHEDULE	X	X					
A2.90	CONCESSIONS BUILDING DOOR SCHEDULE	X	X					
A2.91	CONCESSIONS BUILDING WINDOW SCHEDULE	X	X					
STRUCTURAL								
S-0	STRUCTURAL NOTES	X	X					
S-1	CONCESSION FOUNDATION PLAN	X	X					
S-1A	CONCESSION CONTROL JOINT PLAN	X	X					
S-2	CONCESSION SECOND FLOOR FRAMING PLAN	X	X					
S-3	CONCESSION ROOF FRAMING PLAN	X	X					
S-4	CONCESSION SECTIONS	X	X					
S-5	CONCESSION SECTIONS	X	X					
S-6	CONCESSION SECTIONS	X	X					
S-7	CONCESSION SECTIONS	X	X					
S-8	CONCESSION DETAILS	X	X					
S-9	CONCESSION SCHEDULES	X	X					
S-10	CONCESSION WIND PRESSURES	X	X					
MECHANICAL								
M-0.1	MECHANICAL LEGEND & GENERAL NOTES	X	X					
M-2.11	MECHANICAL PROPOSED FIRST AND SECOND FLOOR PLAN	X	X					
M-2.12	MECHANICAL PROPOSED ROOF PLAN	X	X					
M-2.13	MECHANICAL CONCESSION ROOM PLAN	X	X					
M-5.0	MECHANICAL DETAILS	X	X					
M-5.1	MECHANICAL DETAILS	X	X					
M-5.2	MECHANICAL DETAILS	X	X					
M-6.0	MECHANICAL EQUIPMENT SCHEDULES - VRF	X	X					
M-6.1	KITCHEN HOOD DRAWINGS	X	X					
M-6.2	KITCHEN HOOD DRAWINGS	X	X					

DRAWING INDEX

SHEET NO.	SHEET NAME	ISSUED / REV. NO.						
		90% SET 02/14/2025	PERMIT SET 05/19/2025	REV. 01 08/04/2025	REV. NO.	REV. NO.	REV. NO.	REV. NO.
M-6.3	KITCHEN HOOD DRAWINGS	X	X					
M-6.4	KITCHEN HOOD DRAWINGS	X	X					
M-6.5	MECHANICAL EQUIPMENT SCHEDULES	X	X					
M-6.6	MECHANICAL EQUIPMENT SCHEDULES	X	X					
ELECTRICAL								
E0.01	ELECTRICAL LEGEND AND GENERAL NOTES	X	X	X				
E0.02	ELECTRICAL SPECIFICATIONS	X	X					
DE0.03	ELECTRICAL DEMO SITE PLAN	X	X					
E0.03	ELECTRICAL PROPOSED SITE PLAN	X	X	X				
E0.04	ELECTRICAL SITE PLAN LIGHTING PHOTOMETRICS	X	X	X				
E2.11	ELECTRICAL PROPOSED POWER FLOOR PLAN	X	X					
E2.12	ELECTRICAL PROPOSED ROOF PLAN	X	X					
E2.13	ELECTRICAL PROPOSED LIGHTING CEILING PLAN	X	X					
E2.14	LIGHTING NORMAL PHOTOMETRICS PLAN	X	X					
E2.15	LIGHTING EMERGENCY PHOTOMETRICS PLAN	X	X					
E2.41	ELECTRICAL PROPOSED CONCESSION ROOM POWER PLAN	X	X					
E5.00	ELECTRICAL DETAILS	X	X					
E6.00	ELECTRICAL RISER	X	X					
E7.00	ELECTRICAL SCHEDULES	X	X	X				
E7.01	LIGHTING FIXTURE SCHEDULES	X	X	X				
E8.00	MUSCO LIGHTING	X	X	X				
E8.01	MUSCO LIGHTING	X	X	X				
E8.02	MUSCO LIGHTING			X				
E8.03	MUSCO LIGHTING			X				
PLUMBING								
P-0.00	PLUMBING LEGEND & GENERAL NOTES	X	X					
P-2.11	PLUMBING SANITARY / WATER FLOOR PLAN	X	X					
P-2.41	PLUMBING ENLARGED KITCHEN & SCHEDULES	X	X					
P-2.51	PLUMBING ROOF PLAN & ISOMETRIC	X	X					
P-5.00	PLUMBING DETAILS	X	X					
P-5.01	PLUMBING GREASE	X	X					
P-9.00	PLUMBING SANITARY ISOMETRIC	X	X					
P-9.01	PLUMBING WATER ISOMETRIC	X	X					

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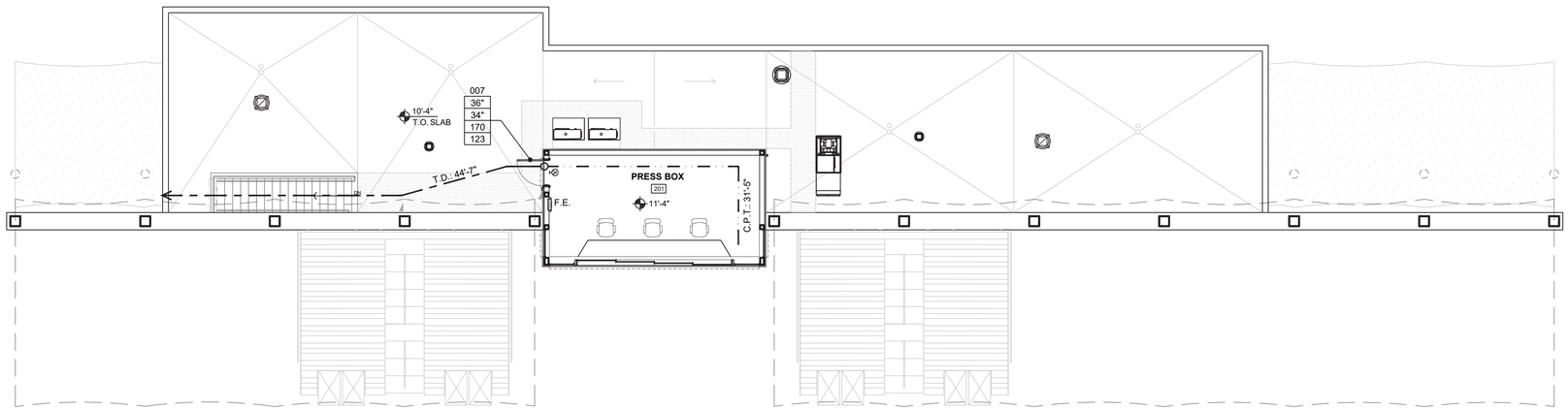
CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: TN
CHECKED BY: AZ
DATE: 05/19/2025
REVISIONS:
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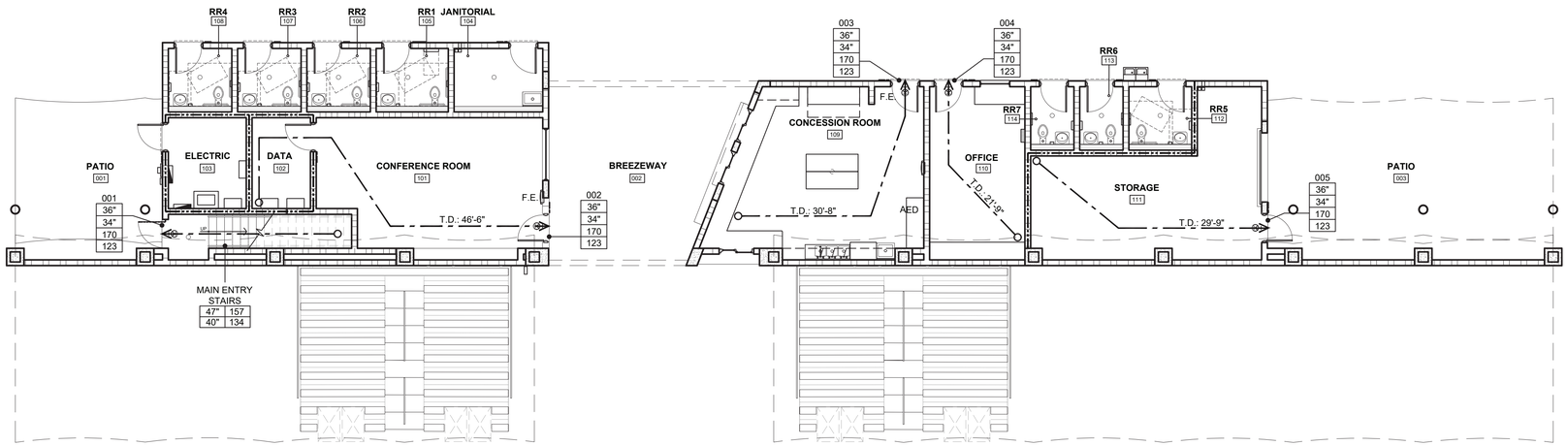
SHEET INDEX AND GENERAL NOTES



2 SECOND LEVEL PLAN

NORTH

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

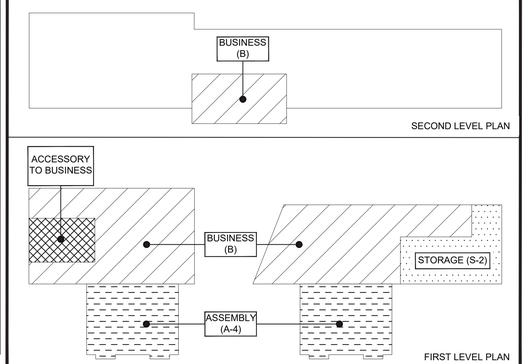


1 FIRST LEVEL PLAN

NORTH

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

OCCUPANCY PLAN



BUILDING INFORMATION

CONSTRUCTION :	TYPE V(B), 1 STORY
OCCUPANCY :	STORAGE (S), BUSINESS (B), ACCESSORY TO BUSINESS, ASSEMBLY (A-4)
OCCUPANT LOAD :	288
NEW BUILDING HEIGHT :	21'-9" (ALLOWED: 40'-0" PER FBC TABLE 504.3)
NEW BUILDING AREA :	
1ST FLOOR =	2,533.30 GSF (ALLOWED: 9000 SF)
2ND FLOOR =	343.20 GSF (ALLOWED: 9000 SF)
TOTAL =	2,876.50 GSF
NEW BUILDING STORIES :	1 (ALLOWED: 2)

ALL NEW CONSTRUCTION TO COMPLY WITH THE **FLORIDA BUILDING CODE 2023 8TH EDITION (FBC)** AND **FLORIDA FIRE PREVENTION CODE 2023 8TH EDITION (FFPC).**

CONTRACTOR SHALL PROVIDE A SURVEY TO DETERMINE IF THE BUILDING REQUIRES AN EMERGENCY RESPONDER RADIO COVERAGE (BDA) PER FBC 917.1

LIFE SAFETY NOTES

OCCUPANT LOAD CALCULATIONS BASED ON FBC TABLE 1004.5

ALLOWABLE EGRESS CALCULATIONS ARE BASED ON FBC SECTION 1005. FOR A BUILDING EQUIPPED THROUGHOUT WITH AUTOMATIC SPRINKLER SYSTEM AND AN EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM.

EGRESS CALCULATIONS AREA FOR ACTUAL CAPACITIES ARE CUMULATIVE FOR ALL AREAS USING THAT CORRIDOR OR DOORWAY FOR EGRESS.

EGRESS CALCULATIONS

FBC CHAPTER 10, SECTION 1005: CORRIDORS / RAMPS / DOORS AT 0.2" PER PERSON, STAIRWAYS AT 0.3" PER PERSON

36" DOOR	**34"/0.2" = 170 PEOPLE**
47" STAIR	**40"/0.3" = 134 PEOPLE**

FIRE EXTINGUISHER

F.E.		
FE	**REQUIRED**	**(1) PER 2,500 S.F. = (2)**
	PROVIDED	**(3) FIRE EXTINGUISHERS**

LEGEND

ROOM TAG	NAME / 101 — ROOM NAME / ROOM NUMBER
STAIR/RAMP EGRESS TAG	NAME, 00 00 / 00 00 — STAIR NAME; PROVIDED CLEAR OPENING; EGRESS LOAD; EGRESS CAPACITY; PROVIDED ROUGH OPENING
DOOR EXITING TAG	999A, 000.0, 00, 00, 00 — DOOR NUMBER; EGRESS LOAD; EGRESS CAPACITY; PROVIDED ROUGH OPENING; PROVIDED CLEAR OPENING
EXITING LOAD	(8) — DIGIT INDICATES THE CUMULATIVE EXITING LOAD TO AN EXIT PORTAL. ARROW INDICATES DIRECTION OF EXIT
EXITING	COMMON PATH OF TRAVEL (CPT); MAXIMUM TRAVEL DISTANCE (MTD)

LEGEND

EXIT SIGN	CEILING MOUNTED EXIT LIGHT FIXTURE – DIRECTION ARROWS AS SHOWN (SHADED QUADRANT INDICATES FACES OF FIXTURE) REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
MAXIMUM OCCUPANT LOAD SIGNAGE	MOL — MAXIMUM OCCUPANT LOAD SIGNAGE WILL BE PROVIDED IN SPACES WITH OCCUPANT LOADS GREATER THAN 50
FIRE EXTINGUISHER	FE — FIRE EXTINGUISHER CABINET
FIRE RATED DOOR TAG	B1 = 90 MIN. RATED B2 = 60 MIN. RATED C = 45 MIN. RATED

WALL LEGEND

- (1) HOUR FIRE RATED WALL
- (2) HOUR FIRE RATED WALL
- FULL HEIGHT PARTITION - STC 55
- CMU WALL

PLUMBING FIXTURE CALCULATIONS

TABLE 403.1 FBC PLUMBING, OCCUPANCY (A3 & B)

REQUIRED

MEN (145)

WATER CLOSETS	LAVS	SHOWERS	URINALS	CAPACITY
2	2	-	1	-

WOMEN (143)

WATER CLOSETS	LAVS	SHOWERS	URINALS	CAPACITY
4	2	-	N/A	-

DRINKING FOUNTAINS: 2
SERVICE SINK: 2

PROVIDED

UNISEX (288)

WATER CLOSETS	URINALS	LAVS	SHOWERS	CAPACITY
7	-	7	-	-

DRINKING FOUNTAINS: 1
MOP SINK: 1
HAND SINK: 4
FLOOR DRAIN: 7

OCCUPANCY DATA

TRAVEL DISTANCE INFORMATION

OCCUPANCY (NON-SPRINKLERED)	FBC (1020.5)	FFPC (36.2.5.3.2) (Table 42.2.5)	FBC (Table 1006.2.1)	FFPC (36.2.5.2.2) (Table 42.2.5)	FBC (Table 1017.2)	FFPC (36.2.6.2) (Table 42.2.6)	FBC (Table 1020.2)	FFPC (38.3.6.1)	FBC (113.4)	FFPC (7.1.3.2.1)
	MAX. DEAD END CORRIDORS		MAX. COMMON PATH OF TRAVEL		MAX. TRAVEL DISTANCE		FIRE RATING OF EXIT CORRIDORS		FIRE RATING OF SHAFT ENCLOSURE	
B - BUSINESS	50'	20'	100'	100'	200'	200'	1-HOUR	0-HOUR	1-HOUR	1-HOUR
S - STORAGE	50'	50'	100'	50'	200'					

BUILDING OCCUPANCY

ROOM NUMBER	AREA NAME	NET AREA (SF)	GROSS AREA (SF)	OCCUPANCY LOAD FACTOR	OCCUPANT LOAD
A-4 - Assembly					
	BLEACHERS (10 ROWS)	405 LF	-	1:1.5 L.F	270
B - Business					
109	CONCESSION ROOM	-	550 SF	150	4
101	CONFERENCE ROOM	-	466 SF	150	4
110	OFFICE	-	263 SF	150	2
201	PRESS BOX	-	344 SF	150	3
Accessory to Business					
103	ELECTRIC ROOM		123 SF	300	1
102	DATA ROOM		96 SF	300	1
104	JANITORS ROOM		109 SF	300	1
S - Storage					
111	STORAGE		444 SF	300	2
TOTAL OCCUPANT LOAD					288

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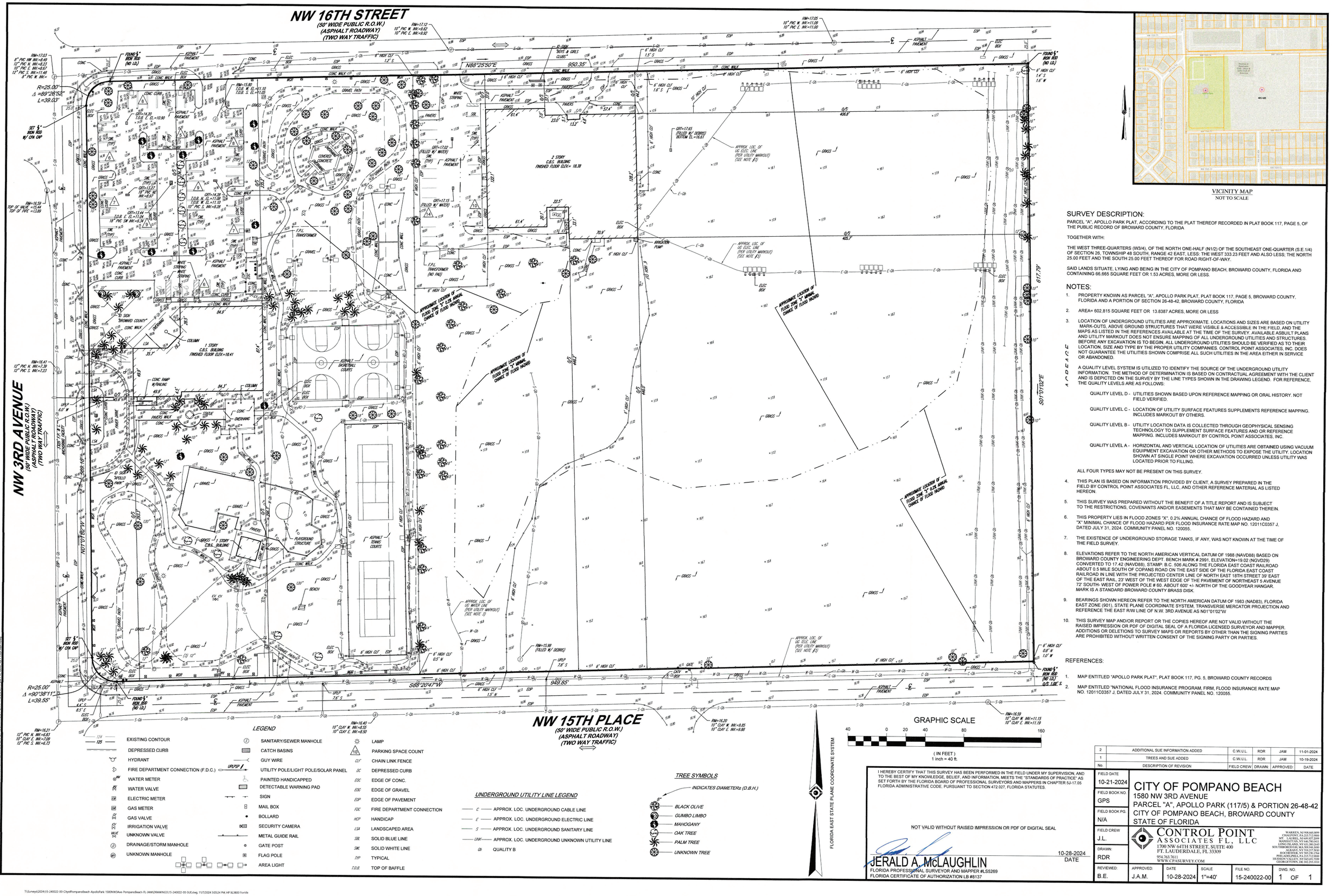
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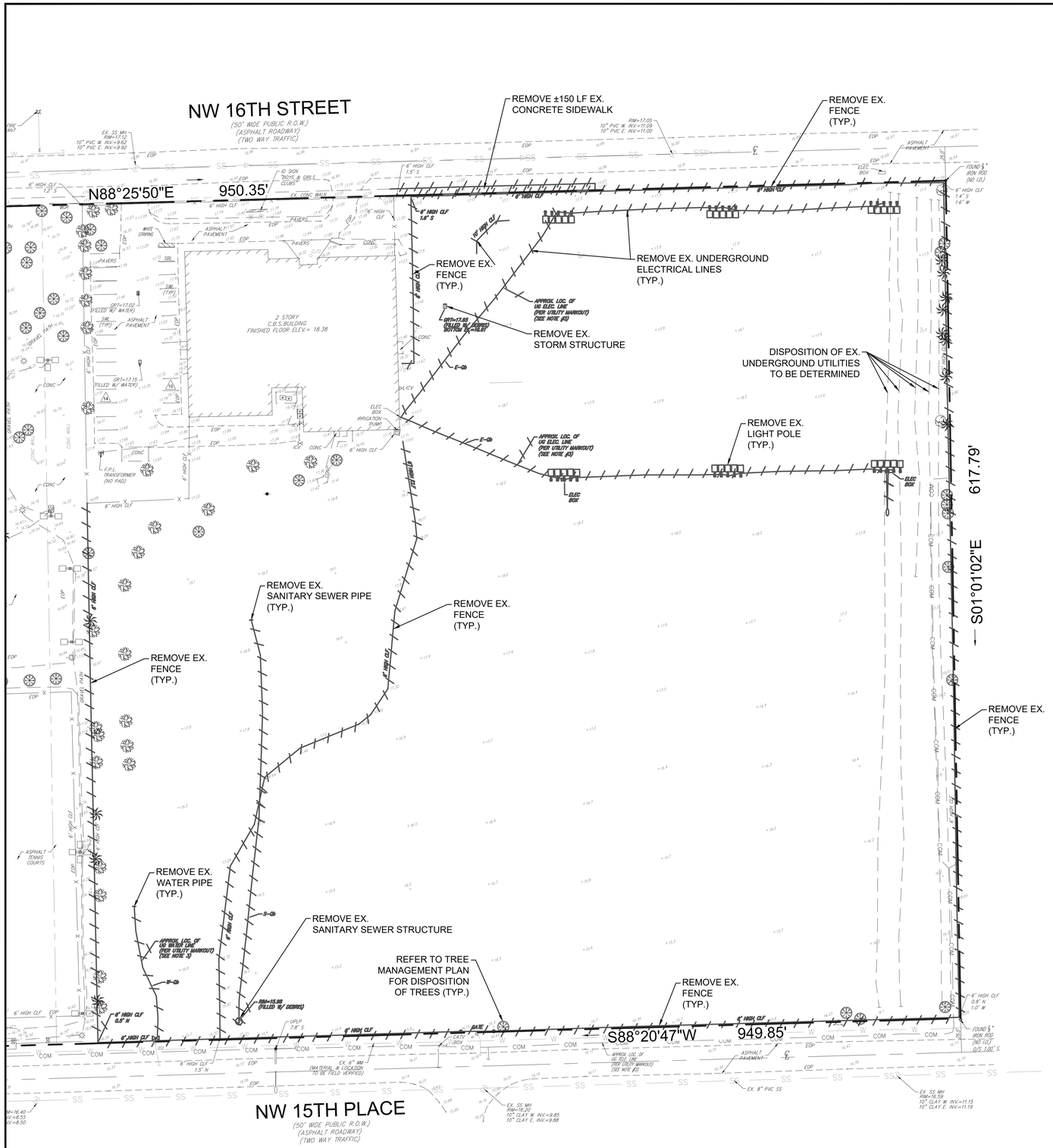
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LIFE SAFETY PLAN


NW 16TH STREET
(50' WIDE PUBLIC R.O.W.)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)
NW 3RD AVENUE
(50' WIDE PUBLIC R.O.W.)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)
NW 15TH PLACE
(50' WIDE PUBLIC R.O.W.)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)
N88°25'50"E 950.35'
S88°20'47"W 949.85'
S01°01'02"E 617.79'
R=25.00'
Δ =89°26'52"
L=39.03'
R=25.00'
Δ =90°38'11"
L=39.55'
2 STORY C.B.S. BUILDING FINISHED FLOOR ELEV.= 18.38
1 STORY C.B.S. BUILDING FINISHED FLOOR ELEV.=18.41
1 STORY C.B.S. BUILDING
F.P.L. TRANSFORMER
F.P.L. TRANSFORMER (NO PAD)
IRRIGATION PUMP
COVERED CONCRETE PLANTER
PLAYGROUND STRUCTURE
ASPHALT TENNIS COURTS
ASPHALT BASKETBALL COURTS
PAVERS WALK
GRAVEL PATH
GRAVEL
CONC. WALK
CONC. CURB
CONC. RAMP W/RAILING
CANOPY
STATUE
BENCH
FLAGPOLE
TRASH CAN
SIGN "TROPHY COURT"
SIGN "TROPHY COURT" OVERHANG
SIGN "TO APOLLO PARK"
SIGN "TO SWIM TROPHY COURT"
SIGN "TO SWIM"
SIGN "TO TROPHY COURT"
SIGN "TO TENNIS"
SIGN "TO BASKETBALL"
SIGN "TO PLAYGROUND"
SIGN "TO PARK"
SIGN "TO POOL"
SIGN "TO PARKING"
SIGN "TO PARK ENTRANCE"
SIGN "TO PARK ENTRANCE" OVERHANG
SIGN "TO PARK" OVERHANG
SIGN "TO POOL" OVERHANG
SIGN "TO PARKING" OVERHANG



NOTES:

1. DURING DEMOLITION AND CONSTRUCTION, ANY TEMPORARY CLOSURE OR OBSTRUCTION OF PUBLIC SIDEWALKS OR ROADWAY LANES SHALL REQUIRE ADVANCED APPROVAL BY THE CITY TRAFFIC ENGINEER.

2. UTILITY EASEMENTS SHALL BE VACATED WHEN UTILITIES ARE REMOVED.

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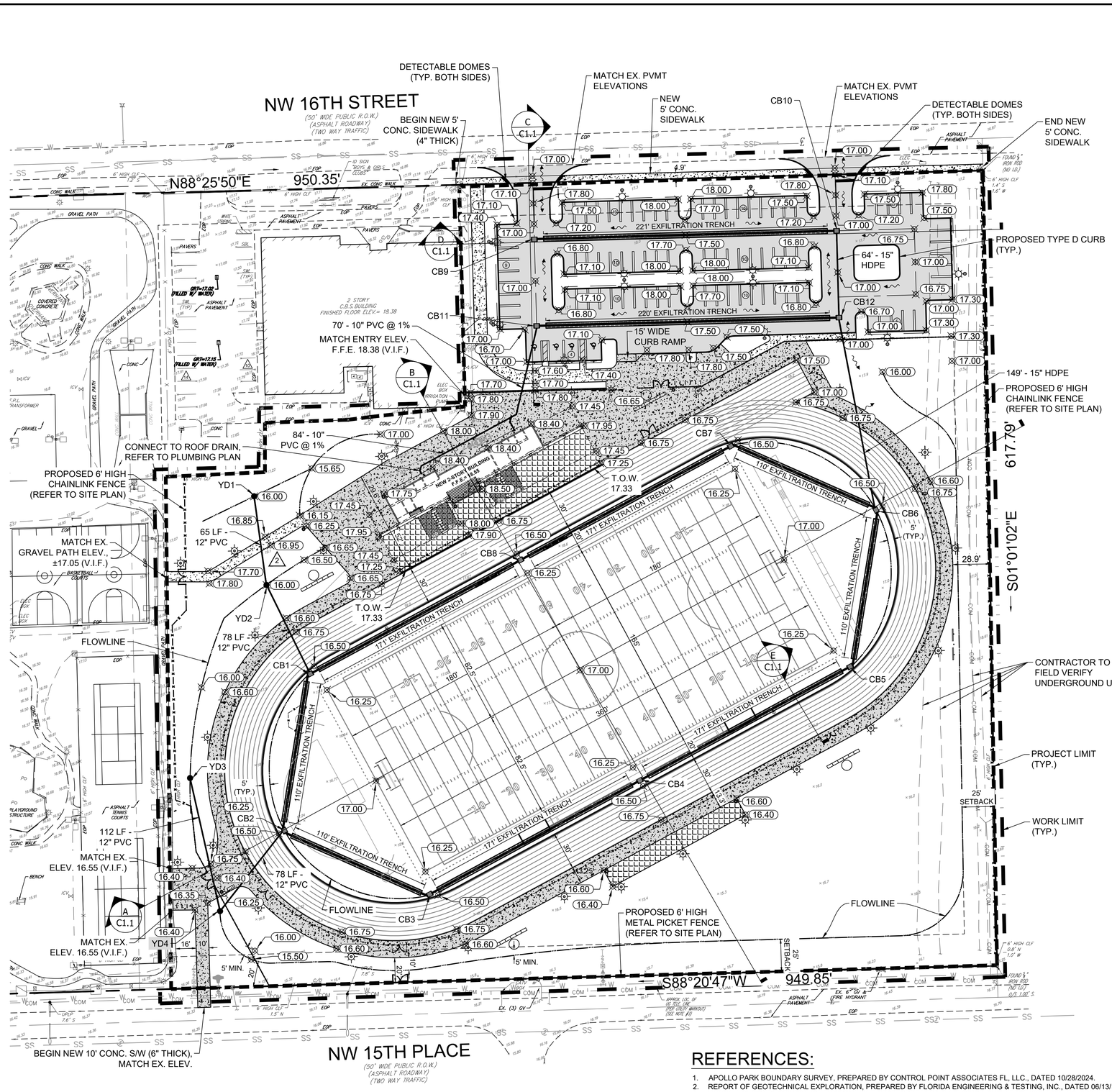
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DEMOLITION PLAN



LEGEND

- NEW ASPHALT PAVEMENT
- NEW 4" THICK CONCRETE SIDEWALK
- NEW 6" THICK CONCRETE SIDEWALK
- NEW 12" THICK CONCRETE FOR BLEACHERS
- PROPOSED STORM SEWER W/ EXFILTRATION TRENCH
- PROPOSED DRAINAGE FLOW ARROW
- PROPOSED CATCH BASIN (TYPE C INLET)
- PROPOSED YARD DRAIN
- PROPOSED FLOWLINE
- PROPOSED PROJECT AREA
- PROPOSED WORK LIMITS

True North | Project North

0 40 80 Feet

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Site Area Breakdown

Site Area	9.47 Acres / 412,513 SQ. FT. (100%)
Building Area	0.49 Acres / 21,228 SQ. FT. (5%)
Impervious Area	3.95 Acres / 172,029 SQ. FT. (42%)
Pervious Landscape Area	2.74 Acres / 119,546 SQ. FT. (29%)
Athletic Field	2.30 Acres / 100,159 SQ. FT. (24%)

⚠2 DRAINAGE SCHEDULE

STRUCTURE	TYPE	GRATE ELEV	PIPE INVERT	PIPE SIZE	ORIENTATION	PRB
CB1	C	16.05	12	15	E, SW	Yes, both ends
			12	12	NW	No
CB2	C	16.05	12	15	NE, SE	Yes, both ends
			12	12	SW	No
CB3	C	16.05	12	15	NW, NE	Yes, both ends
CB4	C	16.05	12	15	SW, NE	Yes, both ends
CB5	C	16.05	12	15	SW, NE	Yes, both ends
CB6	C	16.05	12	15	SW, NW	Yes, both ends
	C	16.05	12	15	N	No
CB7	C	16.05	12	15	SW, SE	Yes, both ends
CB8	C	16.05	12	15	SW, NE	Yes, both ends
CB9	C	16.50	12	15	E	Yes
CB10	C	16.50	12	15	W	Yes
			12	15	S	No
CB11	C	16.50	12	15	E	Yes
		N/A	12	10	SW	No
CB12	C	16.50	12	15	W	Yes
			12	15	S	No
YD1	C	16.00	12	12	S	No
YD2	C	16.20	12	12	N	No
YD3	C	16.00	12	12	S	No
YD4	C	16.00	12	12	N	No

GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM WITH THE FOLLOWING:
   A) PLANS AND SPECIFICATIONS PREPARED BY ARCADIS.
   B) PAVING, GRADING AND DRAINAGE: MINIMUM STANDARDS OF THE CITY OF POMPANO BEACH, AND THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT.
   C) ROADS AND STREETS: CITY OF POMPANO BEACH.
   D) WATER DISTRIBUTION: THE REQUIREMENTS OF THE FIRE MARSHALL, HEALTH DEPARTMENT AND CITY OF POMPANO BEACH.
   E) SANITARY SEWER: CITY OF POMPANO BEACH AND BROWARD COUNTY E.P.G.M.D.
   F) ALL APPLICABLE LOCAL, COUNTY AND STATE CODES AND ORDINANCES.
   G) WHEN CONFLICTS, OMISSIONS OR MODIFICATIONS EXIST, THE STRICTER PROVISION SHALL GOVERN.
   H) FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (LATEST EDITION) AND FEDERAL ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (LATEST EDITION).
   I) IN THE EVENT OF CONFLICT OR OMISSION BETWEEN THE PLANS AND THESE CODES/GUIDELINES, CONSTRUCTION SHALL BE EXECUTED IN CONFORMANCE WITH THE STRICTEST PROVISIONS OF THE CODES/GUIDELINES.
2. SEPARATE PERMITS SHALL BE REQUIRED FOR ANY IMPROVEMENT WORK IN THE PUBLIC RIGHT- OF-WAY.
3. THESE PLANS SHOW THE APPROXIMATE LOCATION OF ALL KNOWN UTILITIES AND STORM DRAINS FOR THE PURPOSE OF AIDING THE OWNER AND HIS CONTRACTOR IN THE CONNECTION TO THOSE FACILITIES OR THE REMOVAL OR AVOIDANCE OF THOSE FACILITIES WHICH CONFLICT WITH THE PROPOSED CONSTRUCTION. THE PLANS HAVE BEEN PREPARED WITH THE BEST INFORMATION AVAILABLE. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND EXPOSE EXISTING FACILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO SAID FACILITIES AS A RESULT OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL LOCATE AND EXPOSE ALL EXISTING UTILITIES AND STORM DRAINS TO BE CONNECTED SUFFICIENTLY AHEAD OF CONSTRUCTION TO ALLOW REDESIGN BY THE ENGINEER, IF SUCH INSTALLATIONS ARE FOUND TO BE DIFFERENT THAN SHOWN ON THESE PLANS. CONTRACTOR SHALL CONTACT CALL SUNSHINE @ 1-800-432-4770 AND ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION.
4. ALL MATERIALS REMOVED FROM THE SITE ARE THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF-SITE.
5. THE CONTRACTOR SHALL MAINTAIN ALL UTILITIES WITHOUT INTERRUPTION IN SERVICE UNLESS AUTHORIZED BY THE OWNER AND ENGINEER.
6. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR PROTECTING ALL SURVEY STAKES AND MONUMENTS. REPLACEMENT COSTS OF ALL STAKES SHALL BE BORNE BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF APPROVED CONSTRUCTION PLANS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION.
8. THE CONTRACTOR SHALL CONFIRM ALL MEASUREMENTS IN THE FIELD AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCY WITH THE DRAWINGS PRIOR TO PERFORMING THE WORK. ALL QUANTITIES SHALL BE PAID ON THE BASIS OF FIELD MEASUREMENTS OF COMPLETED WORK, UNLESS THE CONTRACT PROVIDES FOR A LUMP SUM. PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
9. PAVEMENT MARKING AND TRAFFIC SIGNS SHALL CONFORM TO LOCAL REGULATIONS AND TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS". PAVEMENT MARKINGS SHALL BE HIGHLY REFLECTIVE THERMOPLASTIC UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL HAVE COMPLETE RESPONSIBILITY FOR THE QUALITY AND EXECUTION OF THE WORK, THE TECHNIQUES AND SEQUENCES OF CONSTRUCTION, PROJECT SECURITY AND THE MAINTENANCE OF SAFETY DEVICES AND PRACTICES IN ACCORDANCE WITH O.S.H.A. AND ALL OTHER APPLICABLE STANDARDS. THE ENGINEER HAS NO DUTY IN CONNECTION THEREWITH THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPERVISION OF THE WORK AND SHALL SCHEDULE ALL REQUIRED TESTS AND INSPECTIONS.
11. THE CONTRACTOR SHALL ENSURE THAT EXISTING AND PROPOSED TRAFFIC CONTROL SIGNS ARE NOT OBSCURED BY EXISTING OR PROPOSED LANDSCAPING.

REFERENCES:

1. APOLLO PARK BOUNDARY SURVEY, PREPARED BY CONTROL POINT ASSOCIATES FL, LLC., DATED 10/28/2024.
2. REPORT OF GEOTECHNICAL EXPLORATION, PREPARED BY FLORIDA ENGINEERING & TESTING, INC., DATED 06/13/19.
3. HYDRAULIC CONDUCTIVITY USUAL OPEN-HOLE TEST, PREPARED BY FLORIDA ENGINEERING & TESTING, INC., DATED 06/13/19.
4. ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
5. EXISTING WATER & SEWER MAINS AND SERVICES ARE BASED ON DATA PROVIDED BY CITY OF POMPANO BEACH.
6. EXISTING FRANCHISE UTILITIES (ELECTRIC, COMMUNICATIONS, NON-POTABLE WATER MAINS, GAS OR GASEOUS MATERIAL) ARE BASED ON INFORMATION PROVIDED BY BLOODHOUND UNDERGROUND UTILITY LOCATORS.
7. FEMA FLOOD ZONES: X & AH (PER FIRM COMMUNITY PANELS 12011C0357H & 12011C0376H)
8. BOYS & GIRLS CLUB FINISHED FLOOR ELEVATION IS IDENTIFIED ON APOLLO PARK BOUNDARY SURVEY (REFERENCED IN NOTE #1).

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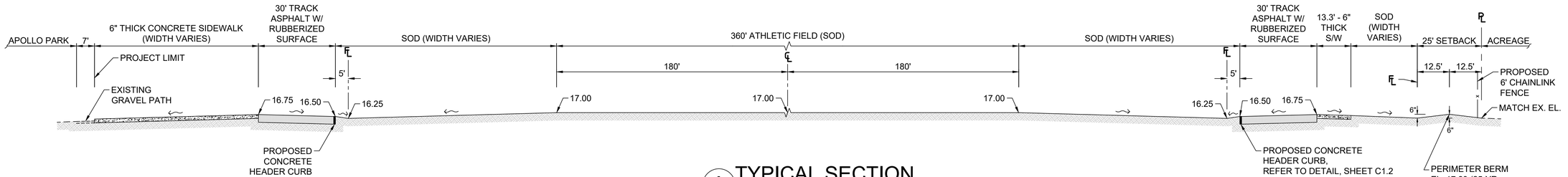
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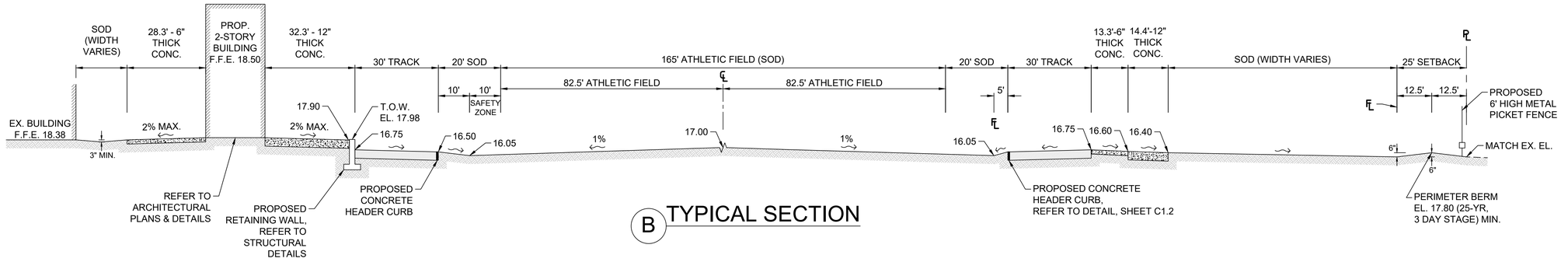
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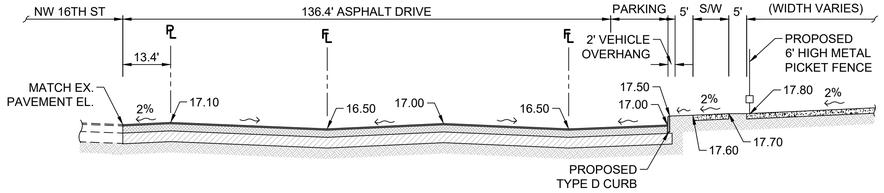
PAVING, GRADING & DRAINAGE PLAN



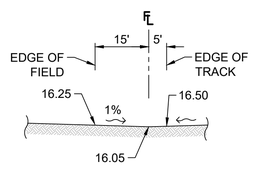
A TYPICAL SECTION



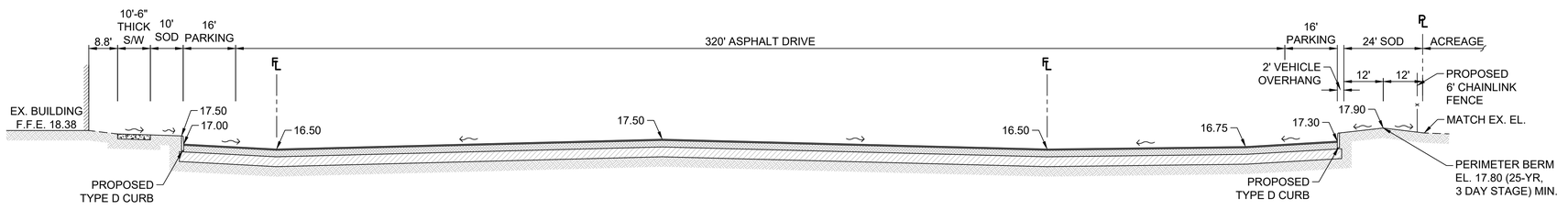
B TYPICAL SECTION



C TYPICAL SECTION



E TYPICAL SECTION



D TYPICAL SECTION

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212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

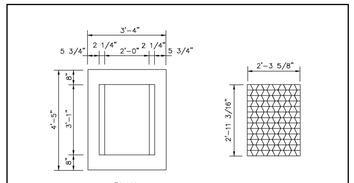
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CHECKED BY: PFR
DATE: 05/19/2025

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2406

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C1.1

TYPICAL SECTIONS

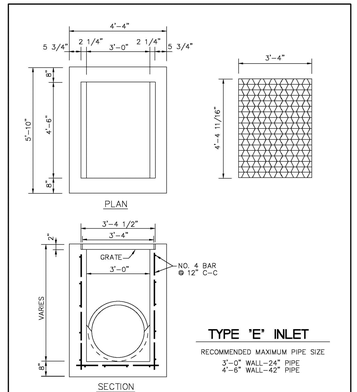


TYPE 'C' INLET

RECOMMENDED MAXIMUM PIPE SIZE
2'-0" WALL-18" PIPE
3'-1" WALL-24" PIPE

ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	TYPE 'C' INLET
S.S.	09--11		DATE: JUNE 2022
		SCALE: N.T.S.	DWG. NO. 400-1B

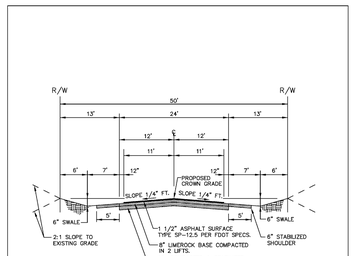


TYPE 'E' INLET

RECOMMENDED MAXIMUM PIPE SIZE
3'-0" WALL-24" PIPE
4'-6" WALL-42" PIPE

ENGINEERING STANDARDS 2025

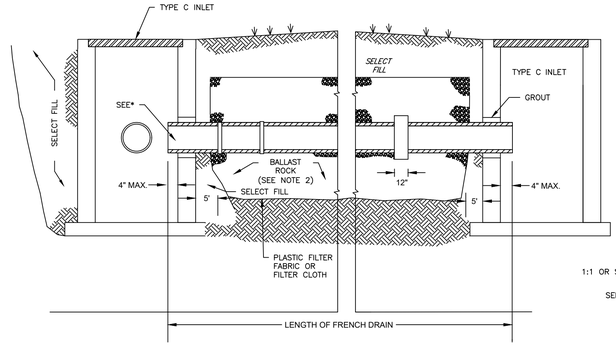
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	TYPE 'E' INLET
S.S.	09--11		DATE: JUNE 2022
		SCALE: N.T.S.	DWG. NO. 402-1

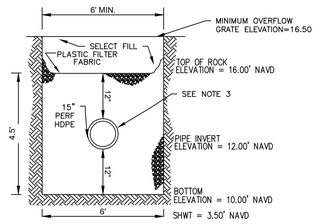


TYPICAL ROADWAY SECTION

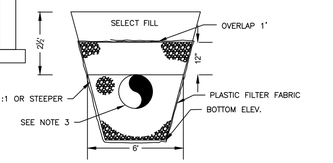
ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	TYPICAL ROADWAY SECTION
S.S.	JUNE 2005		DATE: MAY 2022
S.S.	JAN. 2018	SCALE: N.T.S.	DWG. NO. 305-1





TRANSVERSE SECTION



ALT. TRANS. SECTION

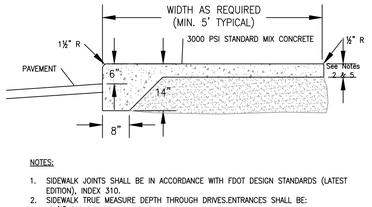
MAY BE USED IN AREAS WHERE TRENCH WALLS WILL NOT STAND VERTICAL OR WHERE CAVE IN BELOW THE WATER TABLE IS LIKELY TO OCCUR. TO BE USED AT THE ENGINEER'S DISCRETION.

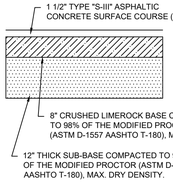
LONGITUDINAL SECTION

NOTES:

1. PLASTIC FILTER FABRIC OR FILTER CLOTH (AT EA. SIDE, TOP AND BOTTOM) SHALL BE USED IN SANDY AREAS AS NOTED IN PLANS AND/OR AS DIRECTED BY THE ENGINEER.
2. IF BALLAST ROCK IS NOT PRE-WASHED, AFTER IT HAS BEEN PLACED TO THE PROPER ELEVATION, IT SHALL BE CAREFULLY WASHED DOWN WITH CLEAN WATER IN ORDER TO ALLOW FOR INITIAL SETTLEMENT THAT MAY OCCUR. IF IT DOES TAKE PLACE, ADDITIONAL BALLAST ROCK WILL BE ADDED TO RESTORE THE BALLAST ROCK TO THE PROPER ELEVATION, SO THAT THE EXFILTRATION TRENCH BE COMPLETED IN ACCORDANCE WITH THE DETAILS.
3. INVERT ELEVATION TO BE AS SHOWN IN PLANS.
4. REFER TO FIELDTURF DETAILS FOR PANEL DRAIN CONNECTIONS.

EXFILTRATION TRENCH DETAIL





TYPICAL PAVEMENT SECTION @ PARKING/ROAD

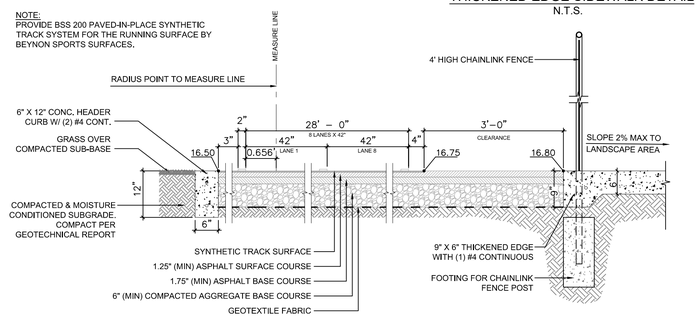
N.T.S.

NOTES:

1. SIDEWALK JOINTS SHALL BE IN ACCORDANCE WITH FDOT DESIGN STANDARDS (LATEST EDITION), INDEX 310.
2. SIDEWALK TRUE MEASURE DEPTH THROUGH DRIVES.ENTRANCES SHALL BE:
   5 ½" FOR RESIDENTIAL DRIVEWAYS.
   6" FOR COMMERCIAL TURNOUTS.
   7 ¾" FOR INDUSTRIAL TURNOUTS.
3. CONCRETE STRENGTH SHALL BE 3,000 PSI MINIMUM AND SHALL HAVE A MINIMUM 470 LB/CY OF PORTLAND CEMENT AND A MAXIMUM WATER TO CEMENT RATIO OF 0.55 LBS/LB.
4. MINIMUM SIDEWALK THICKNESS SHALL BE 5 ½" INCHES.

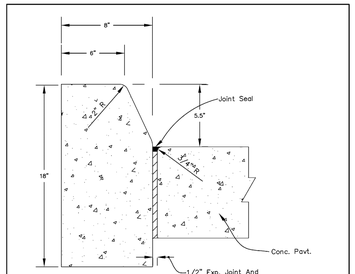
THICKENED EDGE SIDEWALK DETAIL

N.T.S.



PAVEMENT SECTION @ TRACK DETAIL

N.T.S.



TYPE "D" CURB

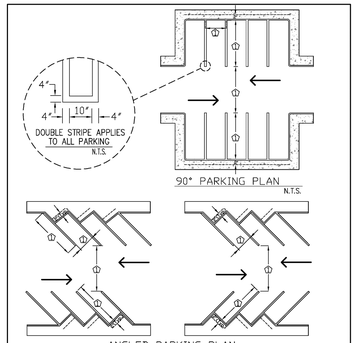
NOTE

FOR USE ADJACENT TO CONCRETE OR FLEXIBLE PAVEMENT, CONCRETE SHOWN. EXPANSION JOINT, PREFORMED JOINT FILLER AND JOINT SEAL ARE REQUIRED BETWEEN CURBS AND CONCRETE PAVEMENT ONLY.

CONCRETE CURB DETAIL

ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	CONCRETE CURB
S.S.	01--2014		DATE: MAY 2022
S.S.	08--2015		
S.S.	07--2016	SCALE: N.T.S.	DWG. NO. 300-2

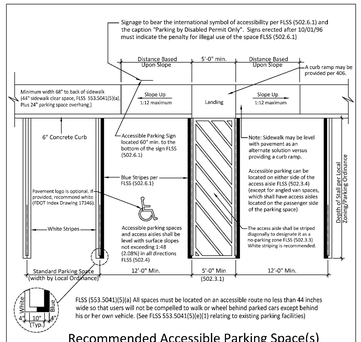


NOTES

1. INDICATED DIMENSION BY LOCAL ZONING ORDINANCE.
2. CURBING APPLIES TO ALL PARKING.
3. EACH SPACE SHALL BE DESIGNATED BY FOUR 4 INCH WIDE VISIBLE STRIPING CONSISTING OF WHITE PAINT OR AS APPROVED BY THE CITY.

ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	STANDARD PARKING SPACES
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 300-3



FLSS (553.5041)(5)(a) All spaces must be located on an accessible route no less than 44 inches wide so that users will not be compelled to walk or wheel behind parked cars except behind his or her own vehicle. (See FLSS 553.5041(5)(e)(1) relating to existing parking facilities)

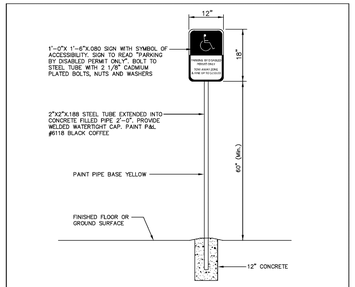
Recommended Accessible Parking Space(s) Design for Double Line Requirements

N.T.S.

THIS TECHNICAL ASSISTANCE DOCUMENT IS INTENDED TO PROVIDE INFORMAL GUIDANCE AND DOES NOT CONSTITUTE A LEGAL INTERPRETATION OF STATUTORY OR REGULATORY CRITERIA.

ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	ACCESSIBLE PARKING SPACES
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 300-4



ACCESSIBLE PARKING SPACE SIGN

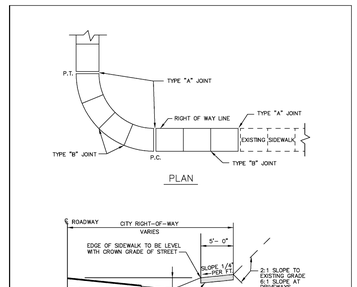
N.T.S.

SIGN NOTE

ACCESSIBLE PARKING SPACES SHALL BE POSTED WITH A FIXED PARKING SIGN NO LESS THAN 60" Min. TO THE BOTTOM OF THE SIGN AND WHICH BEARS THE INTERNATIONAL SYMBOL OF ACCESSIBILITY MEETING THE REQUIREMENTS OF THE STANDARDS AND THE CAPTION "PARKING BY DISABLED PERMIT ONLY," AND MUST INDICATE THE PENALTY FOR ILLEGAL USE OF THE SPACE.

ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	ACCESSIBLE SPACE SIGN
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 300-5

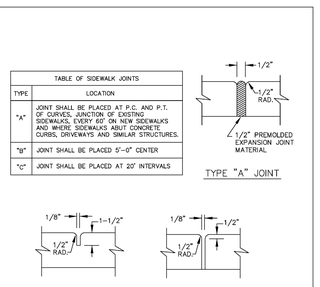


SIDEWALK DETAILS

ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	SIDEWALK DETAILS
		SCALE: N.T.S.	DATE: JUNE 2022 DWG. NO. 301-1

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
"A"	JOINT SHALL BE PLACED AT P.C. AND P.T. OF CURVES, JUNCTION OF EXISTING SIDEWALKS, EVERY 60' ON NEW SIDEWALKS AND WHERE SIDEWALKS ABUT CONCRETE CURBS, DRIVEWAYS AND SIMILAR STRUCTURES.
"B"	JOINT SHALL BE PLACED 5'-0" CENTER
"C"	JOINT SHALL BE PLACED AT 20' INTERVALS

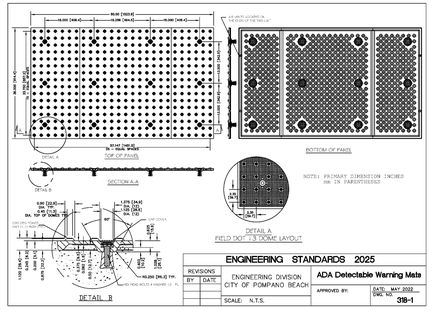


NOTE: SIDEWALK SHALL BE 4" THICK EXCEPT IN DRIVEWAYS WHERE THE THICKNESS SHALL BE 6".

SIDEWALK DETAILS

ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	SIDEWALK DETAILS
		SCALE: N.T.S.	DATE: JUNE 2022 DWG. NO. 301-2



REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	ADA Detectable Warning Mats
		SCALE: N.T.S.	APPROVED BY: DATE: MAY 2022 DWG. NO. 318-1

ARCADIS
7000 N Federal Highway
Boca Raton FL 33487 USA
tel 561 393 6555
www.arcadis.com

SEAL

NOT TO BE FILED FOR RECORD UNLESS SIGNED AND DATED WITH THE ORIGINAL SEAL OF PATRICIA F. RAMUDO, FLORIDA P.E. #35798 FOR THE FIRM.

WALTERS ZACKRIA ARCHITECTS
5813 N. ANDREWS WAY
FORT LAUDERDALE, FL 33309
PHONE: (954) 522-4123
FAX: (954) 522-4128
www.wza-architects.com
Abbas H. Zackria, FL AR 91520

CORPORATE NAME: WALTERS ZACKRIA ASSOCIATES, PLLC REGISTERED IN THE STATE OF FLORIDA. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. THESE DRAWINGS ARE THE PROPERTY OF WALTERS ZACKRIA ASSOCIATES, PLLC AND SHALL NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION FROM A PRINCIPAL OF THE FIRM OR BE LIABLE FOR THE FULLEST LEGAL RECOURSE. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO EXECUTION OF WORK.

CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

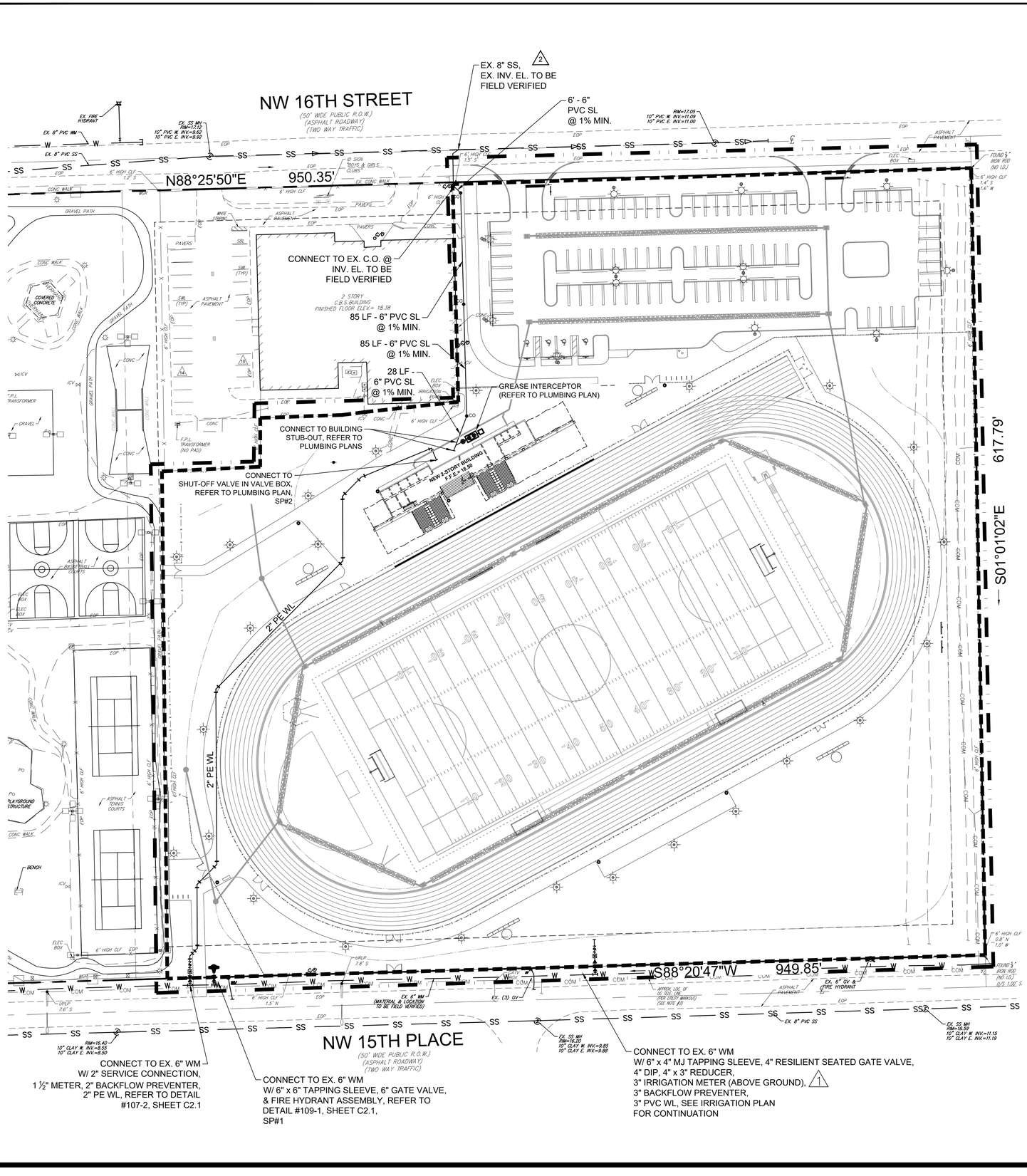
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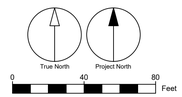
PAVING, GRADING & DRAINAGE DETAILS

PATRICIA F. RAMUDO, STATE OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. 35789
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY PATRICIA F. RAMUDO ON THE DATE INDICATED HERE.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



NOTE:

1. ANY EXISTING WATER AND/OR SEWER CONNECTION TO THE SUBJECT LOTS NOT UTILIZED MUST BE CUT AND CAPPED AT THE WATER MAIN IF A WATER SERVICE AND CUT OUT AND SLEEVED IF A SEWER LATERAL.
2. TO RETIRE OLD LATERALS: IF THE EXISTING MAIN IS CLAY PIPE AND HAS A CIPP LINER CURRENTLY INSTALLED, INSTALL A SECTIONAL LINER IN THE MAIN OVER THE OLD LATERAL THUS ELIMINATING THE LATERAL; IF THE EXISTING MAIN IS CLAY PIPE, DIG DOWN, CUT OLD CLAY PIPE, SLEEVE BACK IN WITH PVC AND CITY APPROVED COUPLINGS; IF THE EXISTING MAIN IS CLAY PIPE, AND YOU ARE REQUIRED TO RETIRE MULTIPLE LATERALS FOR A PROJECT, IT MAY BE CHEAPER FOR THE CONTRACTOR TO INSTALL A CITY APPROVED CIPP LINER FROM MANHOLE TO MANHOLE AND NOT CUT OUT THE LATERALS THAT THEY ARE RETIRING; IF THE EXISTING MAIN IS PVC PIPE, REMOVE THE LATERAL PIPE FROM THE PVC WYE FITTING, INSTALL A PLUG INTO THE WYE AND INSTALL A GREEN LOCATING MARKING BALL AT THE LATERAL LOCATING, NO DEEPER THAN 4 FT. BELOW GRADE.
3. TOTAL SITE (POTABLE) WATER CONSUMPTION = 1,000 GPD
   TOTAL SITE WASTEWATER DISCHARGE = 1,000 GPD



WATER SYSTEM NOTES

1. IN THE EVENT OF CONFLICT OR OMISSION BETWEEN THE PLANS AND THESE CODES/GUIDELINES, CONSTRUCTION SHALL BE EXECUTED IN CONFORMANCE WITH THE STRICTEST PROVISIONS OF THE CODES/GUIDELINES.
2. ALL PVC WATER MAINS SHALL BE CLASS 150 AND DR 18 AWWA C900-07 (OR LATEST REVISION) AND SHALL BE DESIGNED FOR 250 PSI WORKING PRESSURE. WATER MAIN INSTALLATION SHALL BE IN ACCORDANCE WITH ANSI/AWWA C600-99 STANDARD.
3. ALL DIP WATER MAINS SHALL BE DUCTILE IRON CLASS 350. ALL DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C151-09 (OR LATEST REVISION) AND BE CEMENT LINED AND SEAL COATED PER ANSI/AWWA C104/A21.4-03.
4. FITTINGS SHALL BE CAST IRON OR DUCTILE IRON MEETING ANSI/AWWA C-153-00 /A21.53 (OR LATEST REVISION) SPECIFICATIONS, WITH 350 PSI MINIMUM WORKING PRESSURE. FITTINGS MUST BE CEMENT LINED AND SEAL COATED PER ANSI/AWWA C104/A21.4-03.
5. GATE VALVES 4" AND LARGER SHALL BE RESILIENT SEAT AND SHALL MEET ANSI/AWWA C-509-01 (OR LATEST REVISION) SPECIFICATIONS, LATEST REVISION. VALVES MUST BE MUELLER (O.A.E.). VALVE BOXES SHALL BE OPELIKA #19 (O.A.E.).
6. PAVEMENT RESTORATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF POMPANO BEACH.
7. ALL TRENCHING, PIPE LYING, BACKFILL, PRESSURE TESTING, AND DISINFECTING MUST COMPLY WITH THE CITY OF POMPANO BEACH REQUIREMENTS.
8. BACTERIOLOGICAL TESTS SHALL BE CONDUCTED BY THE CONTRACTOR.
9. ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE UNDER THE DIRECTIONS OF THE CITY. CITY WATER USED FOR FILLING AND FLUSHING OF MAINS SHALL BE METERED, AND THE COST OF WATER AND TEMPORARY METER SHALL BE BORNE BY THE CONTRACTOR.
10. ALL PIPE ETC. SHALL BE TESTED UNDER A CONSTANT PRESSURE OF 150 PSI (FIRE MAINS TO BE TESTED TO 200 PSI) FOR 2 HOURS AND SHALL NOT EXCEED THE LEAKAGE REQUIREMENTS AS PER ANSI/AWWA SPECIFICATIONS OF C600-10 (OR LATEST REVISION) LEAKAGE FORMULA:

$$Q = \frac{SD\sqrt{P}}{148{,}000}$$

Q=ALLOWABLE LEAKAGE IN GALLONS PER HOUR.
S=TOTAL LENGTH OF PIPE TESTED IN FEET.
D=DIAMETER OF THE PIPE TESTED IN INCHES.
P=AVERAGE TEST PRESSURE IN POUNDS PER SQUARE INCH.

11. THE MINIMUM DEPTH OF COVER OVER WATER MAINS IS 30"(D.I.P) OR 36"(PVC).
12. DISINFECTION OF MAINS SHALL COMPLY WITH ANSI/AWWA C-651-05 STANDARD (OR LATEST REVISION). BACTERIOLOGICAL SAMPLING POINTS SHALL BE AS DESIGNATED ON THE ENGINEERING PLANS.
13. MINIMUM CLEARANCE BETWEEN STORM STRUCTURES AND WATER MAINS SHALL BE 2', AND MAXIMUM DEFLECTION PER EACH JOINT SHALL BE 3° WHERE DEFLECTION IS REQUIRED.
13. 48 HOURS PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONTACT, "CALL SUNSHINE" (1-800-432-1770), F.P. & L., AND CABLE TV IN ORDER TO LOCATE EXISTING UNDERGROUND UTILITIES.
15. THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE PLANS IS APPROXIMATE ONLY AND IS BASED ON AS-BUILT INFORMATION. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION. ALL CONFLICTS WITH EXISTING UTILITIES SHALL BE REPORTED TO THE ENGINEER AND CITY. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
16. TAPPING SLEEVES SHALL BE MUELLER H-615 (O.A.E.). TAPPING VALVES 4" AND LARGER SHALL BE RESILIENT WEDGE TYPE MEETING ANSI/AWWA C-509-01 (OR LATEST REVISION). ALL TAPPING VALVES SHALL HAVE A CAST-IN ALIGNMENT RING AND BE CAPABLE OF ACCEPTING A FULL-SIZE CUTTER.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING CONFLICTS BETWEEN STORM DRAINS AND WATER MAINS PLACED AT MINIMUM COVER. IN CASE OF CONFLICT, WATER MAIN SHALL BE LOWERED TO PASS UNDER STORM DRAIN WITH 18" MINIMUM SEPARATION. NO ADDITIONAL PAYMENT SHALL BE DUE TO CONTRACTOR FOR LOWERING THE MAIN OR THE ADDITIONAL FITTINGS USED THEREON.
18. PIPE JOINT RESTRAINT SHALL BE PROVIDED BY THE USE OF DUCTILE IRON FOLLOWER GLANDS MANUFACTURED TO ASTM A 536-80. TWIST-OFF NUTS SHALL BE USED TO ENSURE PROPER ACTUATING OF THE RESTRAINING DEVICES. THE MECHANICAL JOINT RESTRAINING DEVICES SHALL HAVE A WORKING PRESSURE OF 250 PSI MINIMUM, WITH A MINIMUM SAFETY FACTOR OF 2:1, AND SHALL BE EBAA IRON INC., MEGALUG OR EQUAL. JOINT RESTRAINTS SHALL BE PROVIDED AT A MINIMUM OF TWO JOINTS FROM ANY FITTING.
19. ANY EXISTING WATER AND/OR SEWER CONNECTION TO THE SUBJECT LOTS NOT UTILIZED MUST BE CUT AND CAPPED AT THE WATER MAIN IF A WATER SERVICE AND CUT OUT AND SLEEVED IF A SEWER LATERAL. SEWER LATERALS THAT ARE CUT AND CAPPED WILL NEED TO BE AS-BUILT PER OUR ENGINEERING AS-BUILT STANDARDS.
HOW TO RETIRE OLD LATERALS
IF THE EXISTING MAIN IS CLAY PIPE AND HAS A CIPP LINER CURRENTLY INSTALLED. (INSTALL A SECTIONAL LINER IN THE MAIN OVER THE OLD LATERAL THUS ELIMINATING THE LATERAL)
IF THE EXISTING MAIN IS CLAY PIPE. (DIG DOWN CUT OLD CLAY PIPE, SLEEVE BACK IN WITH PVC AND CITY APPROVED COUPLINGS)
IF THE EXISTING MAIN IS CLAY PIPE AND YOU ARE REQUIRED TO RETIRE MULTIPLE LATERALS FOR A PROJECT (IT MAY BE CHEAPER FOR THE CONTRACTOR TO INSTALL A CITY APPROVED CIPP LINER FROM MANHOLE TO MANHOLE AND NOT CUT OUT THE LATERALS THAT THEY ARE RETIRING)
IF THE EXISTING MAIN IS PVC PIPE. (REMOVE THE LATERAL PIPE FROM THE PVC WYE FITTING AND INSTALL A PLUG INTO THE WYE. INSTALL A GREEN LOCATING MARKING BALL AT THE LATERAL LOCATING, NO DEEPER THAN 4 FT. BELOW GRADE)
20. WHENEVER IT IS NECESSARY, IN THE INTEREST OF SAFETY, TO BRACE THE SIDES OF A TRENCH, THE CONTRACTOR SHALL FURNISH, PUT IN PLACE AND MAINTAIN SUCH SHEETING OR BRACING AS MAY BE NECESSARY TO SUPPORT THE SIDES OF THE EXCAVATION TO ENSURE PERSONNEL SAFETY, AND TO PREVENT MOVEMENT WHICH CAN IN ANY WAY DAMAGE THE WORK OR ENDANGER ADJACENT STRUCTURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SEQUENCE, METHODS AND MEANS OF CONSTRUCTION, AND FOR THE IMPLEMENTATION OF ALL OSHA AND OTHER SAFETY REQUIREMENTS.
21. SUBSECTION 62-555.320(21)(b)(3), F.A.C. -ALL WATER MAIN PIPE, INCLUDING FITTINGS, INSTALLED ON OR AFTER AUGUST 28, 2003, EXCEPT PIPE INSTALLED UNDER A CONSTRUCTION PERMIT FOR WHICH THE HEALTH DEPARTMENT RECEIVED A COMPLETE APPLICATION BEFORE AUGUST 28, 2003, SHALL BE COLOR CODED OR MARKED USING BLUE AS A PREDOMINANT COLOR TO DIFFERENTIATE DRINKING WATER FROM RECLAIMED OR OTHER WATER. UNDERGROUND PLASTIC PIPE SHALL BE SOLID-WALL BLUE PIPE, SHALL HAVE A CO-EXTENDED BLUE EXTERNAL SKIN, OR SHALL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE SHALL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE SHALL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90 DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPES WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT SHALL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVE GROUND PIPE AT DRINKING WATER TREATMENT PLANTS SHALL BE COLOR CODED AND LABELED IN ACCORDANCE WITH SUBSECTION 62-555.320(10), F.A.C., AND ALL OTHER ABOVEGROUND PIPE SHALL BE PAINTED BLUE OR SHALL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.
22. SUBSECTION 62-555.320(1), F.A.C.- COLOR CODING OF PIPING AT DRINKING WATER TREATMENT PLANTS: ALL NEW OR ALTERED, ABOVEGROUND PIPING AT DRINKING WATER TREATMENT PLANTS SHALL BE COLOR CODED AND LABELED AS RECOMMENDED IN SECTION 2.14 OF 'RECOMMENDED STANDARDS FOR WATER WORKS' AS INCORPORATED INTO RULE 62-555.330, F.A.C. IN ADDITION, ALL UNDERGROUND WATER MAIN PIPE THAT IS INSTALLED AT DRINKING WATER TREATMENT PLANTS ON OR AFTER AUGUST 28, 2003, AND THAT IS CONVEYING FINISHED DRINKING WATER SHALL BE COLOR CODED AS REQUIRED UNDER SUBPARAGRAPH 62-555.320(21)(b)(3)., F.A.C. THIS SUBSECTION DOES NOT APPLY TO DRINKING WATER TREATMENT PLANT PIPING INSTALLED OR ALTERED UNDER A CONSTRUCTION PERMIT FOR WHICH THE DEPARTMENT RECEIVED A COMPLETE APPLICATION BEFORE AUGUST 28, 2003.

"CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE OFFICE OF ENVIRONMENTAL SERVICES MINIMUM DESIGN AND CONSTRUCTION STANDARDS."

SANITARY SEWER COLLECTION SYSTEM NOTES

1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CITY OF POMPANO BEACH.
2. ALL GRAVITY SEWER PIPE SHALL BE POLYVINYL CHLORIDE(PVC) PIPE CONFORMING TO ASTM D3034, SDR 35 PIPE.
3. ALL FITTINGS AND ACCESSORIES SHALL BE AS MANUFACTURED OR SUPPLIED BY THE PIPE MANUFACTURER OR APPROVED EQUAL.
4. IRON CASTINGS SHALL CONFORM TO ASTM A-48 AND IN GENERAL SHALL BE CLASS 30. FRAMES AND GRATES MAY BE CLASS 20. ALL CLEAN-OUT COVERS SHALL BE SHALL BE LABELED "SANITARY SEWER".
5. PRECAST CONCRETE MANHOLES SHALL CONFORM TO THE REQUIREMENT OF ASTM C-478 & 64 T. BASE SECTION TO BE MONOLITHIC.
6. P.V.C. SEWER PIPE SHALL BE LAID IN ACCORDANCE WITH ASTM D 2321 AND THE UNI-BELL PLASTIC PIPE ASSOCIATION'S RECOMMENDED PRACTICE FOR THE INSTALLATION.
7. BACKFILL MATERIAL SHALL BE WELL GRADED GRANULAR MATERIAL, WELL TAMPED IN LAYERS NOT TO EXCEED 6 INCHES TO A HEIGHT OF 12 INCHES ABOVE PIPE AS SHOWN ON THE PLANS AND IN 12" LAYERS THEREAFTER. BACKFILL SHALL BE COMPACTED ON EACH 12" LIFT TO MINIMUM OF 98% OF THE MAXIMUM DENSITY (AASHTO T180).
8. WHENEVER IT IS NECESSARY, IN THE INTEREST OF SAFETY, TO BRACE THE SIDES OF A TRENCH, THE CONTRACTOR SHALL FURNISH, PUT IN PLACE AND MAINTAIN SUCH SHEETING OR BRACING AS MAY BE NECESSARY TO SUPPORT THE SIDES OF THE EXCAVATION TO ENSURE PERSONNEL SAFETY, AND TO PREVENT MOVEMENT WHICH CAN IN ANY WAY DAMAGE THE WORK OR ENDANGER ADJACENT STRUCTURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SEQUENCE, METHODS AND MEANS OF CONSTRUCTION, AND FOR THE IMPLEMENTATION OF ALL OSHA AND OTHER SAFETY REQUIREMENTS.
9. MANHOLE LIFT HOLES AND GRADE ADJUSTMENT RINGS SHALL BE SEALED WITH NON-SHRINKING MORTAR OR OTHER APPROPRIATE MATERIAL. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATER TIGHT CONNECTION OR ANOTHER WATERTIGHT CONNECTION ARRANGEMENT THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL. WATERTIGHT MANHOLE COVERS SHALL BE USED.
10. AN AS-BUILT SURVEY OF THE SYSTEM, PREPARED BY A REGISTERED SURVEYOR, SHALL BE PROVIDED TO THE ENGINEER PRIOR TO FINAL INSPECTIONS. THE AS-BUILT SURVEY SHALL SHOW LOCATIONS, PIPE ELEVATIONS AND LENGTHS AT EACH CLEANOUT, VALVE, FITTING, BEND AND AT INTERVALS NOT TO EXCEED 100 FT.
11. MANHOLES SHALL BE INSPECTED AND TESTED FOR WATERTIGHTNESS OR DAMAGE PRIOR TO PLACING INTO SERVICE. AIR TESTING SHALL CONFORM TO THE TEST PROCEDURES DESCRIBED IN ASTM.

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SEAL

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FORT LAUDERDALE, FL 33309
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FAX: (954) 522-4128
www.wza-architects.com
Abbas H. Zackria, FL AR 91520

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CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

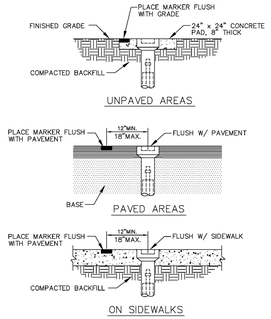
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DATE: 05/19/2025

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1 08/04/25 PERMIT CO-OR
2 10/06/25 ADDENDUM 3 CO-ORD
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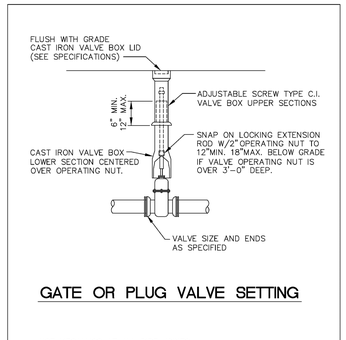
SHEET
C2.0

WATER & SEWER PLAN



VALVE BOX SETTINGS

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	VALVE BOX SETTINGS
S.S.	04-2005		
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 102-1

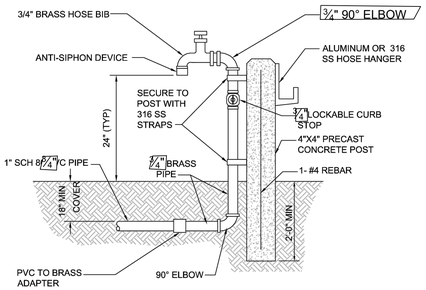


GATE OR PLUG VALVE SETTING

USE MEGALUGS AT ALL PIPE JOINTS

ALL D.I.P. TO BE PAINTED BLUE ON TOP HALF OF PIPE.

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	GATE OR PLUG VALVE SETTINGS
S.S.	04-2005		
T.W.	11-2007		
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 103-1

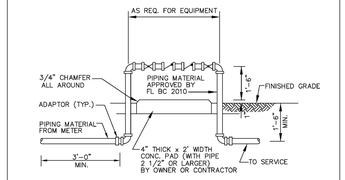


NOTE:

PROVIDE 50 FEET OF 3/4" INDUSTRIAL HOSE.

HOSE BIB DETAIL

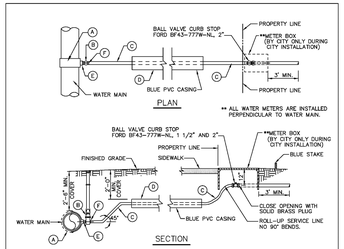
N.T.S.



BACKFLOW PREVENTER

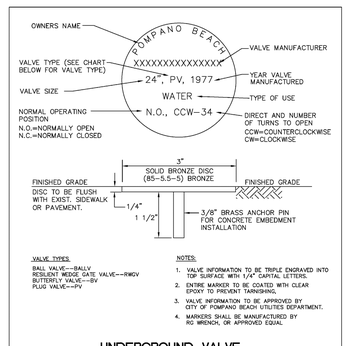
USE MEGALUGS AT ALL PIPE JOINTS 3" AND LARGER
PLEASE SEE METER INSTALL DIMENSION LIST ON STANDARD NO. 106-4
SMALL UNITS UNI-STRUT SUPPORT

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	BACKFLOW PREVENTER
T.W.	04-2008		
S.S.	03-2009		
S.S.	11-2012		
S.S.	01-2013	SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 106-1



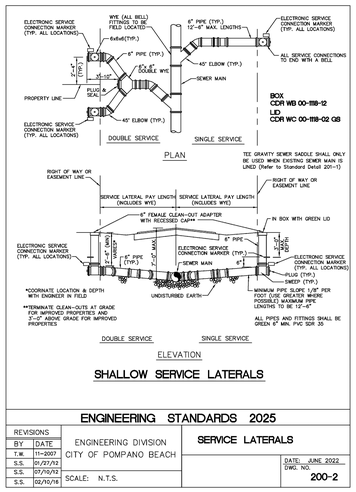
TYPICAL 1 1/2" AND 2" WATER SERVICE

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	TYPICAL 2" WATER SERVICE
S.S.	06-2011		
S.S.	05-2012		
S.S.	11-2018		
A.S.	08-2021	SCALE: N.T.S.	DATE: APRIL 2022 DWG. NO. 107-2



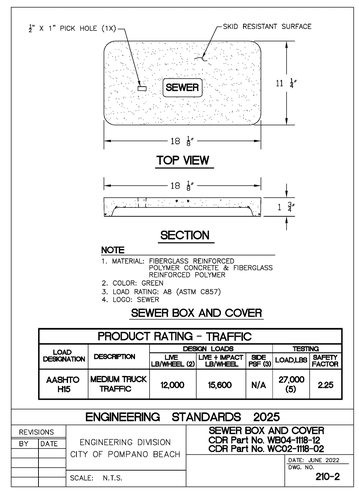
UNDERGROUND VALVE IDENTIFICATION MARKER

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	UNDERGROUND VALVE IDENTIFICATION MARKER
S.S.	JUNE 2005		
T.W.	11-2007		
T.W.	02-2008		
S.S.	1-24-12	SCALE: N.T.S.	DATE: FEB. 2022 DWG. NO. 115-1



SHALLOW SERVICE LATERALS

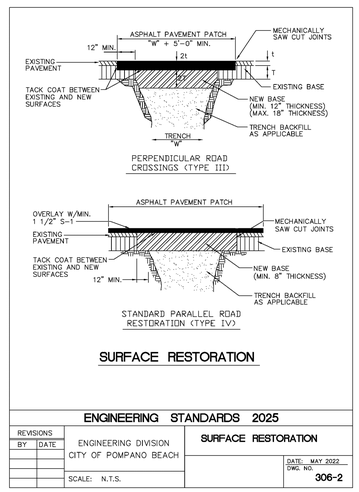
ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	SERVICE LATERALS
T.W.	11-2007		
S.S.	01/27/12		
S.S.	07/10/13		
S.S.	02/10/14	SCALE: N.T.S.	DATE: JUNE 2022 DWG. NO. 200-2



SEWER BOX AND COVER

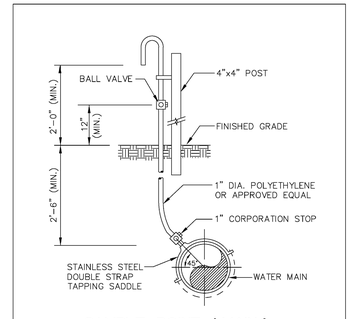
PRODUCT RATING - TRAFFIC						
LOAD DESIGNATION	DESCRIPTION	DESIGN LOADS: LIVE LB/WHEEL (2)	DESIGN LOADS: LIVE + IMPACT LB/WHEEL	DESIGN LOADS: SIDE PSF (3)	TESTING: LOAD,LBS	TESTING: SAFETY FACTOR
AASHTO H15	MEDIUM TRUCK TRAFFIC	12,000	15,600	N/A	27,000 (5)	2.25

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	SEWER BOX AND COVER CDR Part No. WB04-1118-12 CDR Part No. WC02-1118-02
		SCALE: N.T.S.	DATE: JUNE 2022 DWG. NO. 210-2



SURFACE RESTORATION

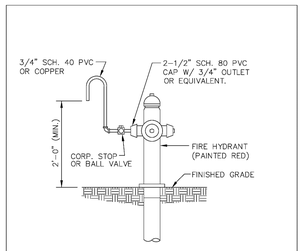
ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	SURFACE RESTORATION
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 306-2



SAMPLE POINT (MAIN)

ALL D.I.P. TO BE PAINTED BLUE ON TOP HALF OF PIPE.

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	SAMPLE POINT (MAIN)
S.S.	04-2005		
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 100-1

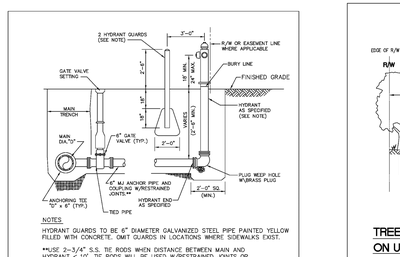


SAMPLE POINT (HYDRANT)

ALL POMPANO BEACH HYDRANTS SHALL BE PAINTED RED.

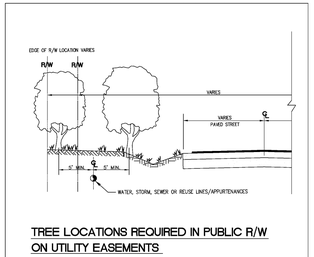
ALL D.I.P. TO BE PAINTED BLUE ON TOP HALF OF PIPE.

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	SAMPLE POINT (HYDRANT)
S.S.	04-2005		
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 101-1



TYPICAL FIRE HYDRANT ASSEMBLY

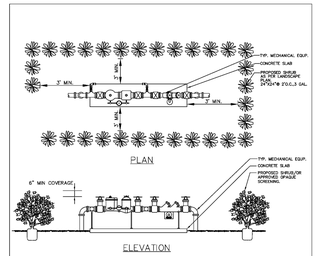
ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	FIRE HYDRANT ASSEMBLY
T.W.	11-2007		
T.W.	10-2010		
S.S.	2-2012		
S.S.	11-2012	SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 109-1



TREE LOCATIONS REQUIRED IN PUBLIC R/W ON UTILITY EASEMENTS

NOTES
PLEASE NOTE THAT AS PER CITY ORDINANCE(S) 50.02(A) (4) AND 100.35(E), STREET TREES SHALL NOT BE PLACED ON TOP OF OR 5' OF EITHER SIDE OF ANY CITY OWNED UTILITY INFRASTRUCTURE. ALSO, PLEASE NOTE THAT NO TREES SHRUBBERY OR OBSTRUCTION SHALL BE PLACED WITHIN A 3' RADIUS OF A CITY OWNED LATERAL CLEANOUT OR WATER & OR REUSE METER.

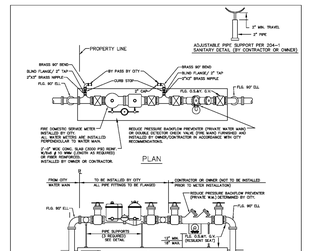
ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	REQUIRED TREE LOCATIONS
		SCALE: N.T.S.	APPROVED BY: DATE: MAY 2022 DWG. NO. 316-1



TYPICAL SCREEN FOR UTILITIES

NOTES:
PLEASE NOTE THAT AS PER CITY ORDINANCE(S) 50.02(A) (4) AND 100.35(E), STREET TREES SHALL NOT BE PLACED ON TOP OF OR 5' OF EITHER SIDE OF ANY CITY OWNED UTILITY INFRASTRUCTURE. ALSO, PLEASE NOTE THAT NO TREES SHRUBBERY OR OBSTRUCTION SHALL BE PLACED WITHIN A 3' RADIUS OF A CITY OWNED LATERAL CLEANOUT OR WATER & OR REUSE METER.

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	TYPICAL SCREEN FOR UTILITIES
TCW	APRIL 2010		
		SCALE: N.T.S.	APPROVED BY: DATE: MAY 2022 DWG. NO. 315-1



MASTER METER AND BACKFLOW DEVICE DETAILS FIRE AND DOMESTIC COMBINED SOURCE

NOTES:
1. THE BACKFLOW PREVENTOR FOR THE BY-PASS SHALL BE DDCV OR RPZ.
2. PLEASE NOTE THAT WATER METERS 3" AND LARGER ARE SUBJECT TO AN APPROPRIATE ORDER LEAD TIME OF 60 TO 75 DAYS AFTER FULL PAYMENT. PLEASE CONTACT CUSTOMER SERVICE AT 954-786-4637 TO ARRANGE FOR METER PROCUREMENT AND INSTALLATION.
3. USE MEGALUGS AT ALL PIPE JOINTS
4. PLEASE SEE METER INSTALL DIMENSION LIST ON STANDARD NO. 106-4

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	MASTER METER AND BACKFLOW DEVICE
S.S.	05-2011		
S.S.	11-2012		
S.S.	12-2013		
S.S.	11-2018	SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 106-2

FIRE METERS - OS & Y VALVES, GASKETS & METER (NEPTUNE MACH 10 Ultrasonic Meter)					
SIZE	VALVES (2)	GASKETS (4)	METER w/ Strainer	TOTAL LENGTH	
3" w/ 4" X 3" Reducer **	16"	1/2"	30" **	46 1/2"	
4"	18"	1/2"	27 1/2"	46"	
6"	21"	1/2"	33"	54 1/2"	
8"	23"	1/2"	30"	53 1/2"	
10"	26"	1/2"	41"	67 1/2"	
FIRE &/or Domestic Water SERVICE METERS - TEES, OS & Y VALVES, GASKETS & METERS (NEPTUNE MACH 10 Ultrasonic Meter)				Meter w/	TOTAL
SIZE	TEES (2)	VALVES (2)	GASKETS (6)	Strainer	LENGTH
3" w/ 4" X 3" Reducer **	3" X 3" - 22"	16"	3/4"	30" **	69 3/4"
4"	4" X 3" - 28"	18"	3/4"	27 1/2"	72 1/4"
6"	6" X 4" - 32"	21"	3/4"	33"	86 3/4"
8"	8" X 4" - 36"	23"	3/4"	30"	89 3/4"
10"	10" X 6" - 44"	26"	3/4"	41"	111 3/4"

*All fittings, valves and meters are flanged & all dimensions are from face of flange to face of flange.

NOTE:
PLEASE NOTE THAT WATER METERS 3" AND LARGER ARE SUBJECT TO AN APPROXIMATE ORDER LEAD TIME OF 60 TO 75 BUSINESS DAYS AFTER FULL PAYMENT. PLEASE CONTACT CUSTOMER SERVICE AT 954-786-4637 TO ARRANGE FOR METER PROCUREMENT AND INSTALLATION. LARGE METERS MUST BE AT MINIMUM ORDERED PRIOR TO INITIAL INSPECTIONS.

ENGINEERING STANDARDS 2025			
REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	METER INSTALL DIMENSION LIST
T.W.	10-2008		
S.S.	11-2016		
A.S.	01-2022	SCALE: N.T.S.	DATE: JAN. 2022 DWG. NO. 106-4

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FLORIDA P.E. #35798 FOR THE FIRM.

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Abbas H. Zackria, FL AR 91520

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CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: CMP
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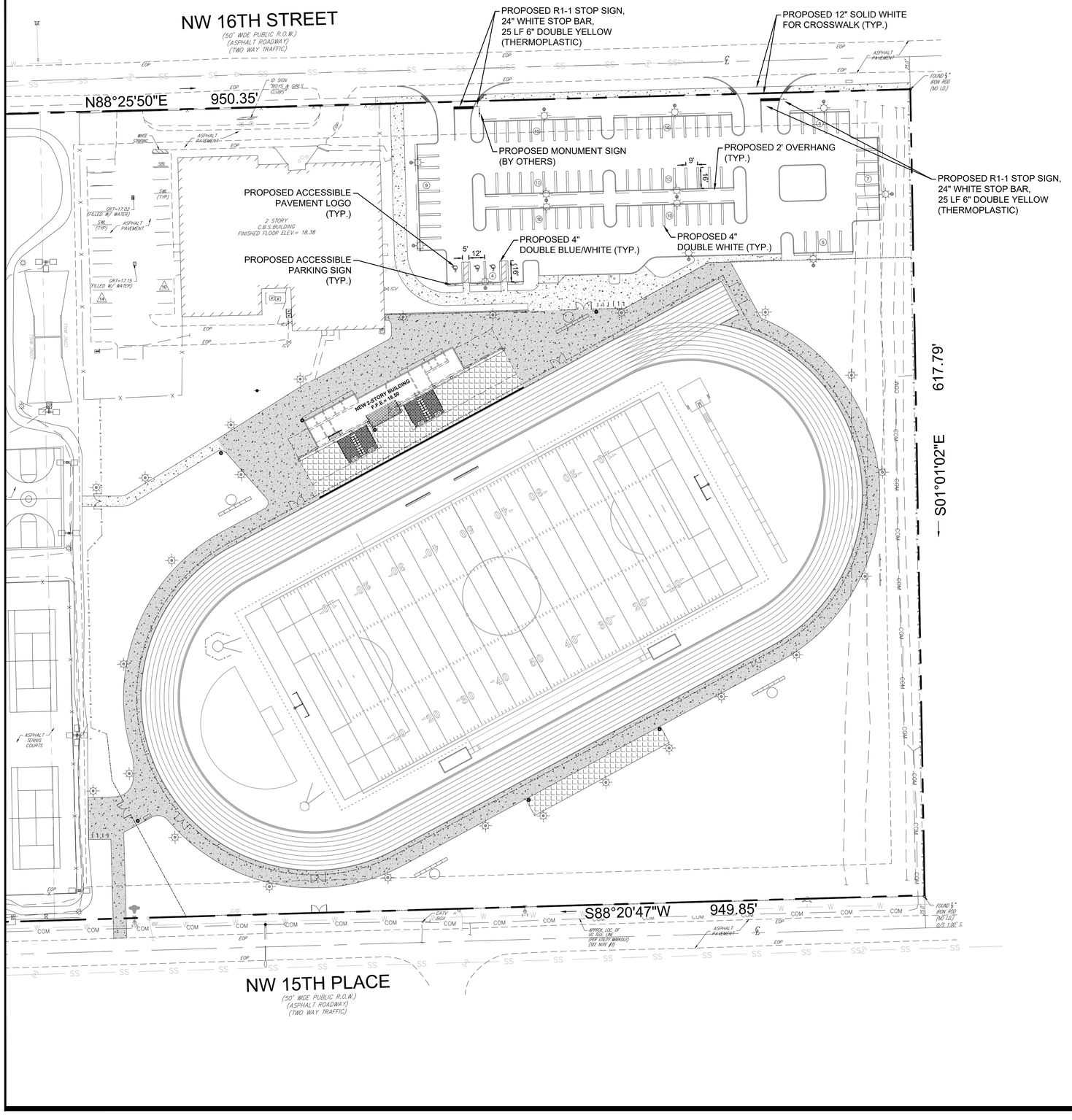
REVISIONS:
⚠ 08/04/25 PERMIT CO-OR
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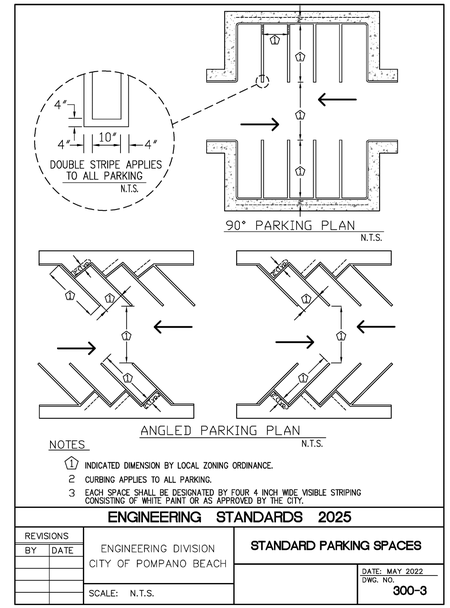
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WATER & SEWER DETAILS

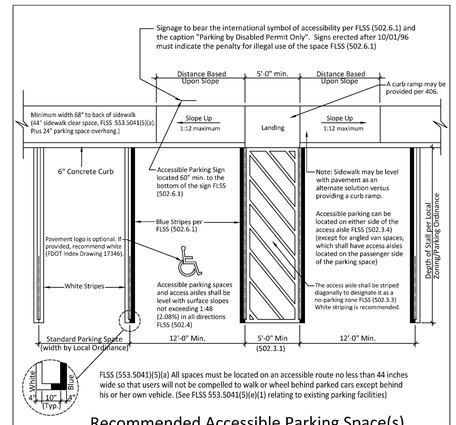
Exhibit A





ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	STANDARD PARKING SPACES
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 300-3



Recommended Accessible Parking Space(s)
Design for Double Line Requirements N.T.S.

THIS TECHNICAL ASSISTANCE DOCUMENT IS INTENDED TO PROVIDE INFORMAL GUIDANCE AND DOES NOT CONSTITUTE A LEGAL INTERPRETATION OF STATUTORY OR REGULATORY CRITERIA.

ENGINEERING STANDARDS 2025

REVISIONS BY	DATE	ENGINEERING DIVISION CITY OF POMPANO BEACH	ACCESSIBLE PARKING SPACES
		SCALE: N.T.S.	DATE: MAY 2022 DWG. NO. 300-4

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PHONE: (954) 522-4123
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Abbas H. Zackria, FL AR 91520

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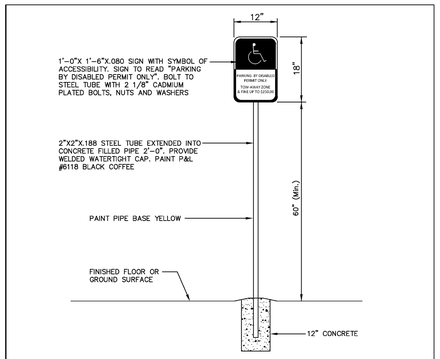
CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

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PAVEMENT MARKING AND SIGNAGE PLAN



ACCESSIBLE PARKING SPACE SIGN

N.T.S.

SIGN NOTE

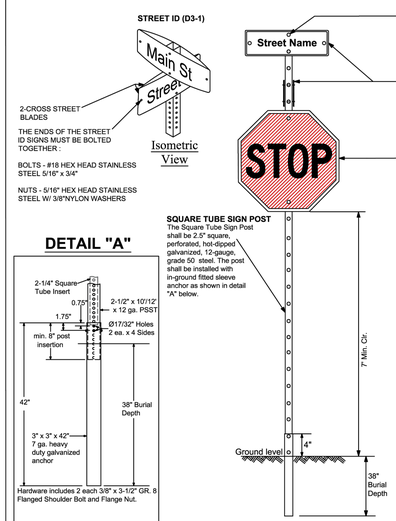
ACCESSIBLE PARKING SPACES SHALL BE POSTED WITH A FIXED PARKING SIGN NO LESS THAN 60" Min. TO THE BOTTOM OF THE SIGN AND WHICH BEARS THE INTERNATIONAL SYMBOL OF ACCESSIBILITY MEETING THE REQUIREMENTS OF THE STANDARDS AND THE CAPTION "PARKING BY DISABLED PERMIT ONLY." AND MUST INDICATE THE PENALTY FOR ILLEGAL USE OF THE SPACE.

ENGINEERING STANDARDS 2025

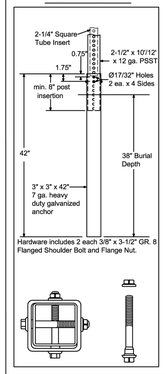
REVISIONS		ENGINEERING DIVISION CITY OF POMPANO BEACH	ACCESSIBLE SPACE SIGN
BY	DATE		
			DATE: MAY 2022
		SCALE: N.T.S.	DWG. NO. 300-5

FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA

Typical Details



DETAIL "A"



STREET ID (D3-1) MATERIALS:

LETTERS
WHITE TYPE XI SHEETING
LETTERING OF STREET NAME SIGNS SHALL BE COMPOSED OF A COMBINATION OF LOWERCASE LETTERS WITH INITIAL UPPERCASE LETTERS

BORDER
BORDER WIDTHS WILL VARY BASED ON LETTER HEIGHTS

LETTER HEIGHTS - BORDER WIDTHS
4 INCH LETTER = 0.375 INCH BORDER WIDTH
6 INCH LETTER = 0.500 INCH BORDER WIDTH
8 INCH LETTER = 0.750 INCH BORDER WIDTH

GREEN BACKGROUND
GREEN TRANSLUSCENT INK SILK-SCREENED CLEAR-COATED OR ELECTRO-CUT (EC) FILM OR EQUIVALENT

LETTER SIZES
SEE MUTCD TABLE 2D-2 (PG 163)
FOR MINIMUM LETTER HEIGHTS
LENGTH VARIES BY STREET NAME

HARDWARE
BOLTS - #18 HEX HEAD STAINLESS STEEL 5/16" x 3"
NUTS - 5/16" STAINLESS STEEL W/ NYLON WASHERS.

REGULATORY SIGN
WHEN NO STREET ID IS PRESENT
THE STOP SIGN SHALL BE MOUNTED FLUSH TO THE TOP OF THE POST WHILE MAINTAINING 7 FEET MIN. CLEARANCE BETWEEN BOTTOM OF SIGN AND GROUND LEVEL. ANY SIGN INSTALLED BACK TO BACK WITH THE STOP SIGN SHALL BE SMALLER THAN THE STOP SIGN.

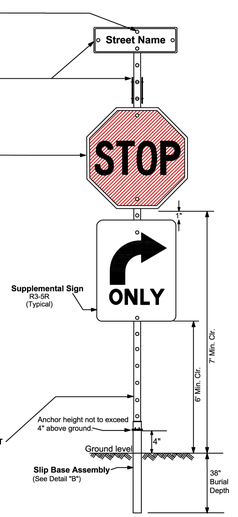
STOP, DO NOT ENTER OR YIELD
WHITE TYPE XI SHEETING
PRESSURE-SENSITIVE RED TRANSLUCENT INK SILK-SCREENED CLEAR-COATED OR ELECTRO-CUT (EC) FILM OR EQUIVALENT.

HARDWARE
FRONT: #18 HEX HEAD STAINLESS STEEL 5/16" x 3" BOLT W/ 3/8" NYLON WASHER
BACK: 5/16" HEX HEAD STAINLESS STEEL NUT W/ 3/8" STAINLESS STEEL WASHER.

NOTES:
1. ALL TYPE XI SHEETING UTILIZED MUST BE ON THE FDOT APL LIST.
2. SEE BCTED TECHNICAL POLICY MEMO #TPM - 16-001 - SPECIFICATIONS FOR RETROFLECTIVE TRAFFIC SIGN MATERIALS.

FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN

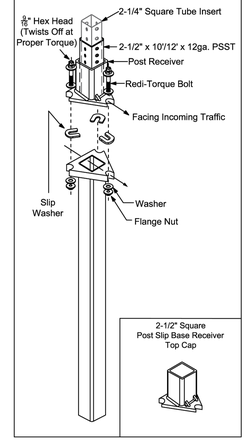
Typical Details



SQUARE TUBE SIGN POST
The Square Tube Sign Post shall consist of a 6 foot x 2.25" square tube insert inserted into a 2.5" square post receiver. Both tubes will be perforated, hot-dipped galvanized, 12-gauge, grade 50 steel. The post shall be installed into the slip base assembly shown in detail "B".

DETAIL "B"

Triangular Slip Base Assembly For 2-1/2" Perforated Square Steel Tube Sign Post



Notes:
1. Dimensions and certain details for the parts used to assemble the slip base connections are intentionally not shown. Slip base connections are patented manufactured products that are in compliance with NCHRP 350 crash test criteria. The base connection details are only shown on this plan to illustrate how the parts are assembled. The complete assembly must be designed to withstand 150 mph Base Wind Speed per 2013 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th edition and interims.
2. For standard ground sign installation, see detail entitled " Ground Sign Assembly Details".

REVISIONS	
DATE	DESCRIPTION
02-28-2020	ADDED ISOMETRIC VIEW
02-05-2021	UPDATED POST BASE HEIGHT
06-22-2023	UPDATED SIGN POST NOTES

BROWARD COUNTY FLORIDA

PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION

DESIGN BY: CARMELO CARATOZZOLO, P.E.	SCALE: NTS
DRAWN BY: STEPHON RAMOUTAR	
CHECKED BY: CARMELO CARATOZZOLO, P.E.	

STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS

SHEET NO. 1 OF 1

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CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

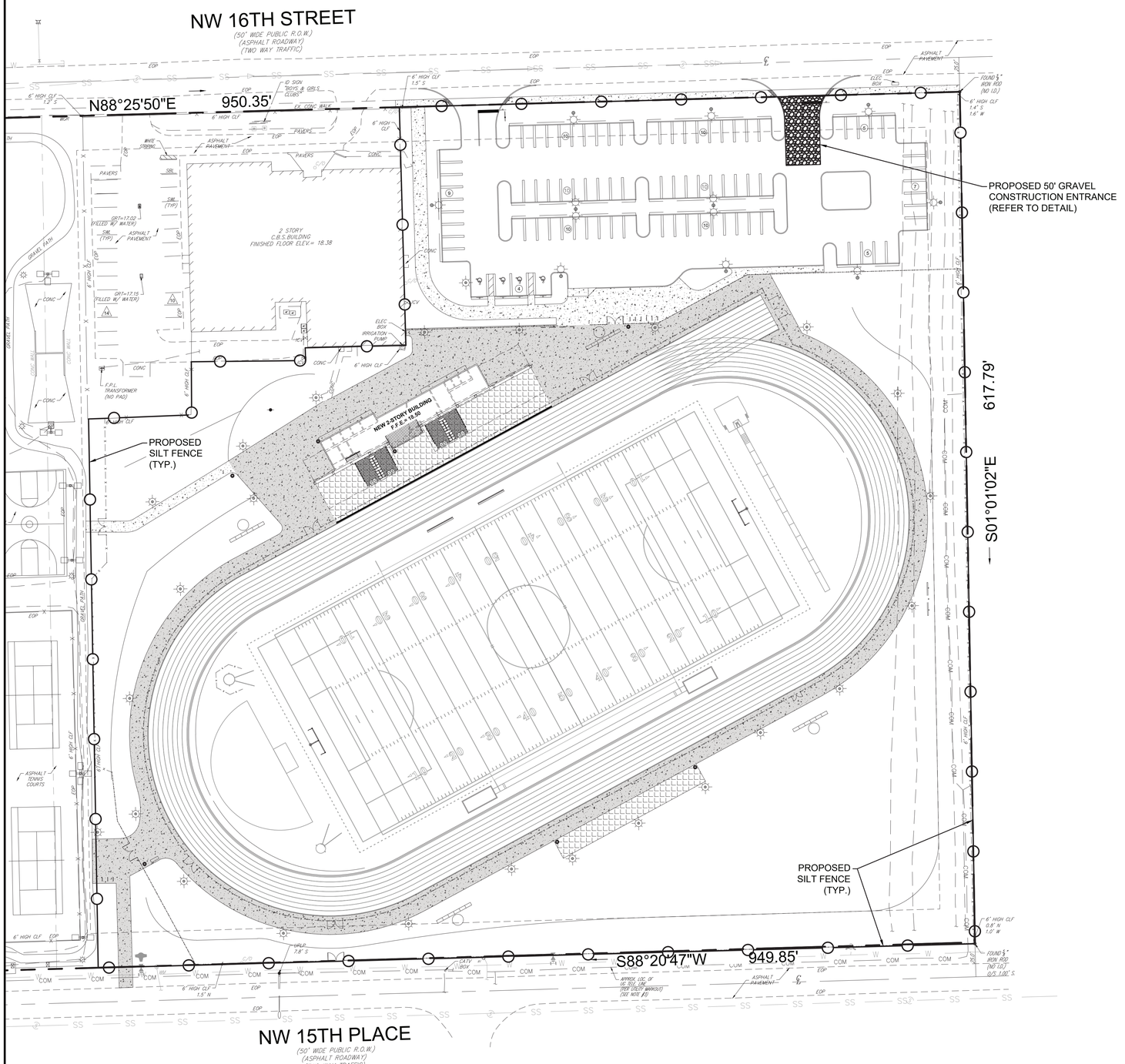
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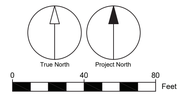
REVISIONS:
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PAVEMENT MARKING AND SIGNAGE DETAILS





EROSION CONTROL NOTES

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM WITH LOCAL CITY/COUNTY AND WATER MANAGEMENT DISTRICT SPECIFICATIONS, SUBJECT TO AUTHORIZED AND APPROVED VARIANCES, WAIVERS AND/OR CONDITIONAL CHANGES.

2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN, CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTATION OF SILT OFF THE SITE.

3. CONTRACTOR SHALL KEEP ANY AND ALL SAND, SILT OR OTHER DEBRIS FROM MOVING OFF-SITE. USE AND MAINTAIN SILT FENCE JUST INSIDE OF PROPERTY LINE.

4. CONTRACTOR SHALL BLOCK INTRUSION OF SAND, SILT OR OTHER DEBRIS INTO ANY DRAINAGE OR SANITARY SEWER STRUCTURE OR PIPING ON OR ADJACENT TO SITE.

5. ALL CLEARED AREAS FOR IMPROVEMENT AND/OR CONSTRUCTION SHALL BE WATERED TO PREVENT WIND EROSION.

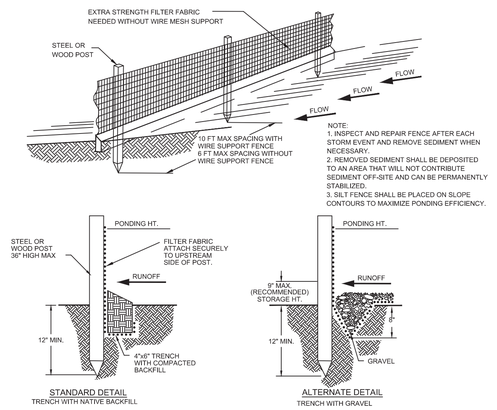
6. ALL AREAS AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THESE PLANS AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.

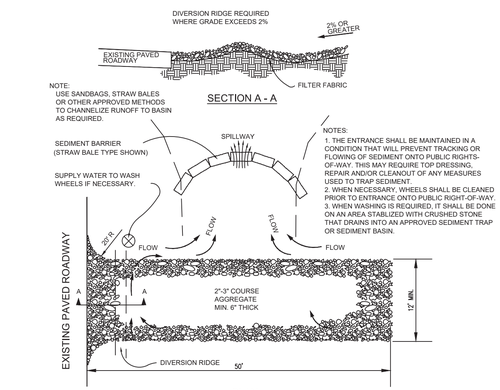
8. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PROVIDE TREE PROTECTION BARRIERS TO MEET THE REQUIREMENTS OF LOCAL SPECIFICATIONS.

9. THE CONTRACTOR SHALL SELECTIVELY CLEAR ONLY THE AREAS REQUIRED FOR CONSTRUCTION AND STABILIZE ANY POTENTIAL EROSION AREAS IMMEDIATELY FOLLOWING COMPLETION OF CONSTRUCTION.

10. CONTRACTOR IS REQUIRED BY NPDES TO KEEP A LOG ON SITE FOR THE SOIL EROSION AND SEDIMENT CONTROL MEASURES INDICATED ON THE PLAN. THE LOG SHALL CONTAIN DATES FOR: INSTALLATION OF CONTROL MEASURES, MAJOR SITE CONSTRUCTION ACTIVITIES, INSPECTION ON AT LEAST A WEEKLY BASIS AND INSPECTION AFTER ANY RAINFALL EVENT THAT IS 1/2" OR GREATER.



SILT FENCE DETAIL



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

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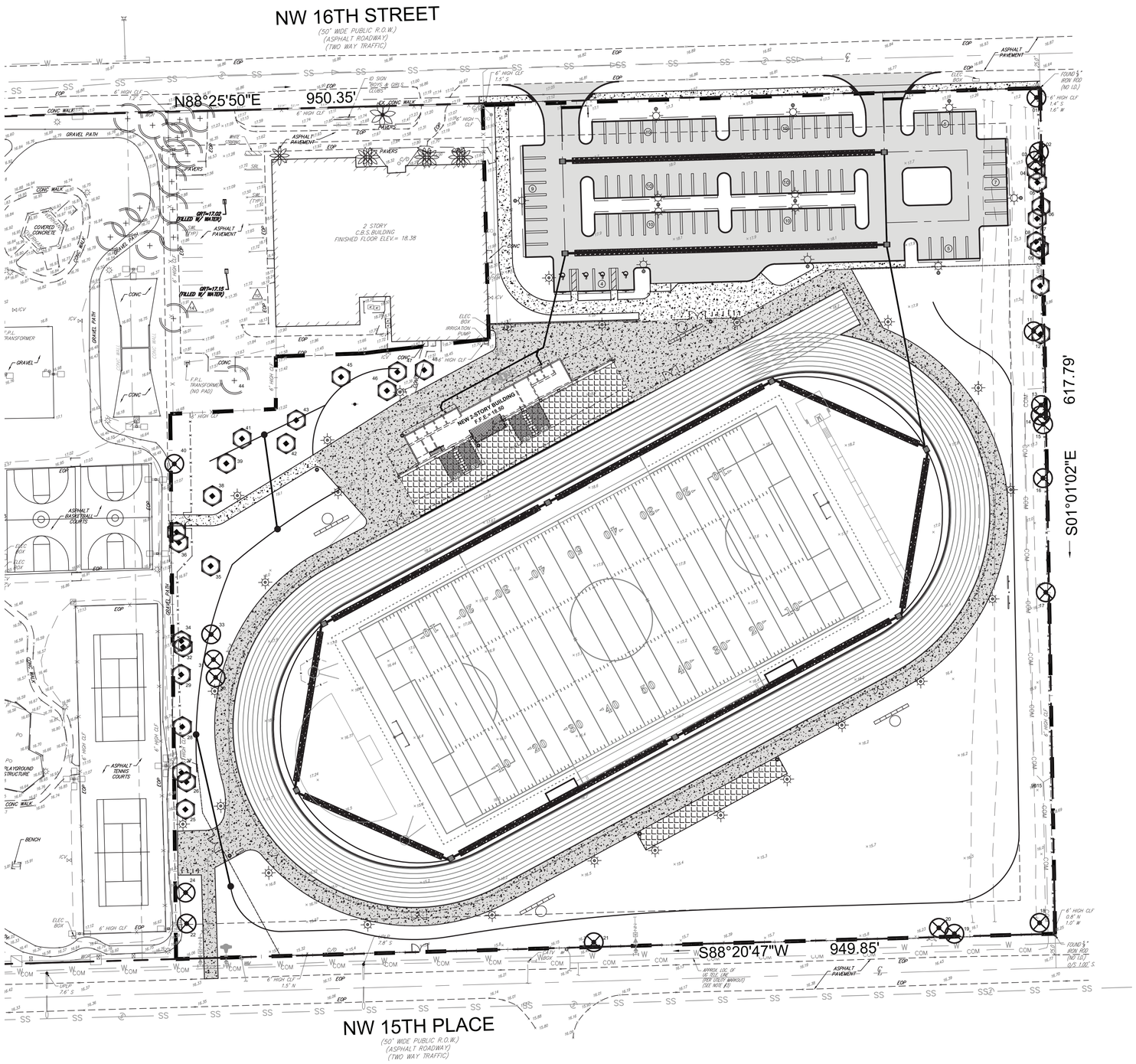
CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

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STORMWATER POLLUTION PREVENTION PLAN



LEGEND:

- TREE TO BE SAVED
- TREE TO BE REMOVED

EXISTING OFF-SITE, ON-SITE FOR LS PLAN REPRESENTATION OR BEYOND LIMITS OF CONSTRUCTION (LOC); ALL ARE

- EXISTING LARGE TREE
- EXISTING SMALL TREE
- EXIST. LARGE PALM
- EXISTING SMALL PALM
- EXISTING PALM-DOUBLE

True North | Project North

0 40 80 Feet

TREE DISPOSITION LEGEND

NO.	SPECIES	CALIPER @ DBH	HEIGHT	CANOPY SPREAD	COND.	RECOMMENDED DISPOSITION
01	Quercus virginiana	12"	15'	15'	Poor	***REMOVE - imbedded fence rail in trunk***
02	Ficus aurea/Strangler Fig	16"	30'	25'	Poor	***REMOVE***
03	Ficus aurea/Strangler Fig	10"	20'	15'	Poor	***REMOVE***
04	Sabal palmetto / Cabbage Palm	16"	6'		Fair	REMAIN - PROTECT DURING CONST.
05	Sabal palmetto / Cabbage Palm	10"	8'		Fair	REMAIN - PROTECT DURING CONST.
06	Sabal palmetto / Cabbage Palm	10"	10'		Good	REMAIN - PROTECT DURING CONST.
07	Sabal palmetto / Cabbage Palm	20"	TBD		TBD	REMAIN - PROTECT DURING CONST.
08	Sabal palmetto / Cabbage Palm	8"	TBD		TBD	REMAIN - PROTECT DURING CONST.
09	Sabal palmetto / Cabbage Palm	8"	TBD		TBD	REMAIN - PROTECT DURING CONST.
10	Sabal palmetto / Cabbage Palm	10"	TBD		TBD	REMAIN - PROTECT DURING CONST.
11	Quercus virginiana	12"	28'	18'	Poor	***REMOVE***
12	Sabal palmetto / Cabbage Palm	10"	10' OA		Good	REMAIN - PROTECT DURING CONST.
13	TBD - No access	10"	TBD			***REMOVE***
14	Ficus aurea/Strangler Fig	18"	30'	20'	Fair	***REMOVE***
15	TBD - No access	10"	TBD	TBD		***REMOVE***
16	TBD - No access	10"	TBD	TBD		***REMOVE***
17	Schinus terebenthifoli/Brazilian Pepper	10"	N/A	N/A	N/A	***REMOVE - PROHIBITED SPECIES***
18	Schinus terebenthifoli/Brazilian Pepper	10"	N/A	N/A	N/A	***REMOVE - PROHIBITED SPECIES***
19	Cupaniopsis anacardioises/Carrotwood	16"	N/A	N/A	N/A	***REMOVE - PROHIBITED SPECIES***
20	Cupaniopsis anacardioises/Carrotwood	10"	N/A	N/A	N/A	***REMOVE - PROHIBITED SPECIES***
21	Schinus terebenthifoli/Brazilian Pepper	10"	N/A	N/A	N/A	***REMOVE - PROHIBITED SPECIES***
22	Bucida buceras / Black Olive	16"	25'	25'	Poor	***REMOVE***
23	NUMBER NOT USED					
24	Swietenia mahagoni/Mahogany	14"	28'	20'	Poor	***REMOVE***
25	Bucida buceras / Black Olive	14"	26'	30'	Fair	REMAIN - PROTECT DURING CONST.
26	Bucida buceras / Black Olive	24"	30'	30'	Good	REMAIN - PROTECT DURING CONST.
27	Sabal palmetto / Cabbage Palm	12"	14'		Good	REMAIN - PROTECT DURING CONST.
28	Sabal palmetto / Cabbage Palm	20"	8'			REMAIN - PROTECT DURING CONST.
29	Bucida buceras / Black Olive	22"	40'	32'	Fair	REMAIN - PROTECT DURING CONST.
30	Bucida buceras / Black Olive	18"	30'	30'	Fair	***REMOVE***
31	Bucida buceras / Black Olive	18"	36'	22'	Fair	***REMOVE***
32	Bucida buceras / Black Olive	22"	40'	30'	Fair	REMAIN - PROTECT DURING CONST. (Co-Dom.)
33	Bucida buceras / Black Olive	12"	25'	22'	Poor	***REMOVE***
34	Bucida buceras / Black Olive	22"	35'	20'	Poor	REMAIN - PROTECT DURING CONST. (Co-Dom.)
35	Bucida buceras / Black Olive	10"	28'	20'	Poor	REMAIN - PROTECT DURING CONST.
36	Bucida buceras / Black Olive	16"	35'	20'	Good	REMAIN - PROTECT DURING CONST.
37	Sabal palmetto / Cabbage Palm	10"	14'			REMAIN - PROTECT DURING CONST.
38	Bucida buceras / Black Olive	14"	26'	40'	Good	REMAIN - PROTECT DURING CONST.
39	Bucida buceras / Black Olive	14"	26'	17'	Poor	REMAIN - PROTECT DURING CONST.
40	Ficus microcarpa	24"	45'	35'	Poor	***REMOVE***
41	Bucida buceras / Black Olive	20"	30'	36'	Fair	REMAIN - PROTECT DURING CONST.
42	Pongamia pinnata/Pongam	10"	18'	10'	Poor	REMAIN - PROTECT DURING CONST.
43	Bucida buceras / Black Olive	20"	37'	40'	Poor	REMAIN - PROTECT DURING CONST.
44	Bucida buceras / Black Olive	14"	N/A	N/A		OUTSIDE LIMITS OF CONSTRUCTION
45	Bucida buceras / Black Olive	10"	20'	18'	Poor	REMAIN - PROTECT DURING CONST.
46	Calophyllum braziliensis/Braz. Beautyleaf	16"	32'	34'	Poor	REMAIN - PROTECT DURING CONST.
47	Bucida buceras / Black Olive	24"	37'	35'	Fair	REMAIN - PROTECT DURING CONST.
48	Calophyllum braziliensis/Braz. Beautyleaf	18"	30'	33'	Poor	REMAIN - PROTECT DURING CONST.

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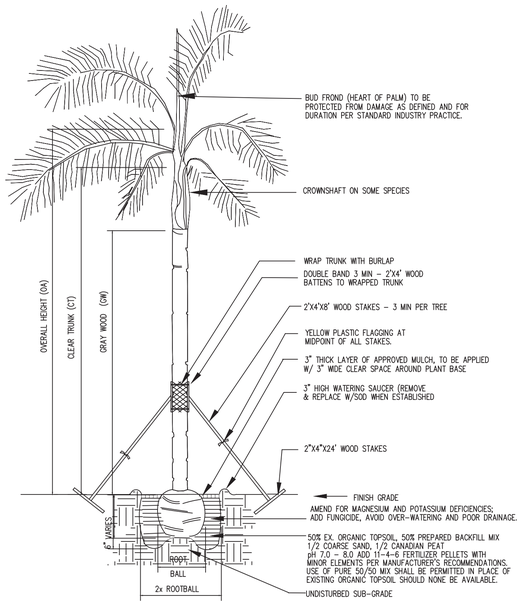
CITY OF POMPANO BEACH
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CHECKED BY: PFR
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TREE MANAGEMENT PLAN



TYPICAL PALM PLANTING DETAIL

NOT TO SCALE

GENERAL:

The CONTRACTOR will remove all existing exotic tree species located within the project boundaries when exempt from local county removal permits and required for removal. Such exotic species are not included for calculations of tree caliper/canopy replacement. Exotic species shall be as determined by the US-EPA; Florida Department of Environmental Protection; and the Florida EPPC (Florida Exotic Pest Plant Council) Category 1. Statutory law prevails over local ordinance.

GENERAL TREE MANAGEMENT NOTES AND SPECIFICATIONS

TREE PROTECTION, RELOCATION & REMOVAL NOTES

1. The Tree Management Plan, sheet TM-1.0 may be based on or contain elements or features from the certified "Property and Tree Survey" prepared by a Florida registered surveyor. Coordinates of tree locations, identification of species, description of size and health of same is conditional on the accuracy and completeness of survey data. The Tree Management Plan does not warrant the accurate location of trees in relation to proposed development.

2. The GENERAL CONTRACTOR is responsible for ensuring that the on-site tree relocation activity or management of trees does not conflict with proposed development.

3. The GENERAL CONTRACTOR shall protect every tree to be preserved/saved by installing a barrier around the individual trees, groups of trees or entire preserve area in accordance with the tree protection detail on this sheet. The barrier shall be a minimum of five feet (5') radius from the tree trunk or following the drip-line (edge of tree canopy), whichever is greater. The barriers shall be placed prior to clearing, shall remain in place and in good condition for the duration of construction AND until receipt of certificate of occupancy from the permitting agency.

4. The GENERAL CONTRACTOR is responsible to prevent spillage into protected trees of concrete, mortar, slurry, contaminated water and/or noxious chemicals from construction activity and is responsible for daily clean-up of debris inside and at the perimeter of the tree protection barriers. The GENERAL CONTRACTOR shall provide financial compensation to the Owner or jurisdiction for accidental damage to protected trees and/or for careless damage to protected trees by their crews, subcontractors and trades. Compensation to the Owner will be calculated from the ISA tree value provided by a Certified Arborist or the City or County of recorded jurisdiction, plus legal fees, professional time and expenses incurred to recover damages.

5. The LANDSCAPE CONTRACTOR will provide backfill mix as noted on the planting details. Backfill mix will be free of all debris & stones over 1" diameter and sanitized of nematodes & parasites. Alternative backfill material as noted in details on this page may be used. Native sand or sandy soil may be used for backfilling palms only, and must be approved by Landscape Architect or Certified Arborist prior to installation.

6. All plant material proposed in sandy soils or fast draining sites will receive 'Terrasorb' or other approved soil supplement (humectant and hygroscopic compounds), thoroughly incorporated into the backfill mix according to the manufacturer's recommendations and as noted on details, this page.

7. All trees and palms will be guyed or staked according to the details as shown, or by alternative methods as required by the jurisdictional city or county. Guying & staking requirements will be strictly enforced. All trees and palms will be plumb in all directions at time of inspection.

8. All transplanted trees and palms will receive mulch approved by the Landscape Architect and which complies with all applicable land development, zoning and building codes. Depth of mulch will be 3" at time of inspection. A 36" ring of mulch, measured radially from trunk center, with a 6" clear zone of mulch around the tree or palm base shall be provided and maintained around all trees and palms.

9. No fertilizer other than specified in details, this page, shall be applied to any tree or palm at time of transplant. Additional fertilization shall be applied after 60 to 90 days from date of transplant.

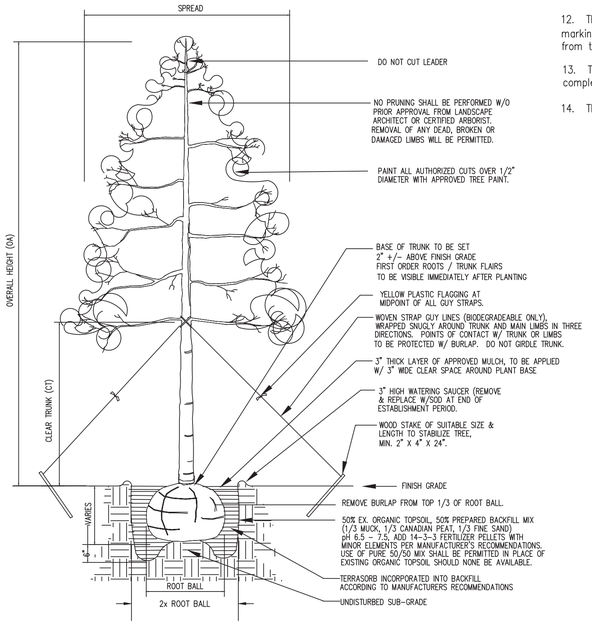
10. All trees and palms in areas of sustained winds of more than 10 knots, and all coastal areas, will be sprayed with 'Wilt-Pruf' or other approved surfactant, according to the manufacturer's recommendations, to prevent windburn and excessive water loss through transpiration.

11. All plantings will be covered by an underground irrigation system that provides 100% coverage with 100% overlap and includes a rain sensor automatic shut-off, such as the "MiniClik II" or approved equal, installed per the manufacturer's specifications. The irrigation system will comply with all applicable land development and building codes. Water source will be rust free OR the Contractor will provide an in-line rust inhibitor filter. No overspray on paving.

12. The LANDSCAPE CONTRACTOR is responsible for any damage to underground work which is properly marked or for which he has not obtained proper marking through the ONE CALL SYSTEM – 48 HOURS BEFORE DIGGING – CALL TOLL FREE 1 (800) 432-4770, markings from local utility departments, or from the General Contractor.

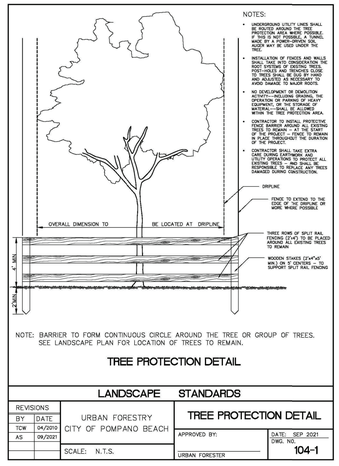
13. The LANDSCAPE CONTRACTOR will provide written care instructions for the first year to the Owner's representative at the time of the substantial completion inspection and prior to final acceptance.

14. The Superintendent or Crew Chief on job site will have a minimum of two (2) years experience.



TYPICAL TREE PLANTING DETAIL

NOT TO SCALE



NOTE: BARRIER TO FORM CONTINUOUS CIRCLE AROUND THE TREE OR GROUP OF TREES. SEE LANDSCAPE PLAN FOR LOCATION OF TREES TO REMAIN.

TREE PROTECTION DETAIL

LANDSCAPE STANDARDS

REVISIONS			
BY	DATE	URBAN FORESTRY	TREE PROTECTION DETAIL
TCW	04/2010	CITY OF POMPANO BEACH	
AS	09/2021		APPROVED BY:
		SCALE: N.T.S.	URBAN FORESTER
			DATE: SEP. 2021
			DWG. NO. 104-1

TREE PROTECTION BARRIER DETAIL

NOT TO SCALE

TREE RELOCATION PROCESS

The tree relocation contractor shall be licensed and insured per State or County regulations, and shall be approved by the Certified Arborist of Record for the project, or Landscape Architect prior to acceptance of contract.

ANSI PREPARATION, EQUIPMENT, IRRIGATION & BARRIER GUIDELINES

The General Contractor and Tree Professional shall refer to and comply with the AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) specification A-300 for all tree relocation work as a condition of license approval from Broward County – Dept. of Preservation and Environmental Protection (BC-DPEP).

TREE PREPARATION, FERTILIZATION AND PEST CONTROL

Tree preparation to be performed three weeks prior to first stage of root pruning schedule. Application of water solubile tank mix applied through ground drench. Fertilizer to include supplemental mycorrhizae and macro/micro nutrient treatment in mix. During first application an appropriate systemic insecticide also shall be applied to inhibit infestation of Borers or Beetles due to stressful conditions of relocation process.

Additional application of fertilization treatment shall be performed at end of first week of root pruning schedule and at end of third phase of root pruning schedule.

A second application of systemic insecticide shall be applied in same manner at third phase of root pruning schedule.

CANOPY CLEANING

Remove dead, diseased and damaged tree branches or palm fronds. Lesser tree branches that rub on major branches, branches with V-crotches or included bark and other visibly weak branches may be removed if necessary to the health and survival of the tree. All debris shall be disposed of in a manner that will comply with all applicable land development, zoning and building codes, either by hauling or chipping.

ROOT PRUNING:

Prune palm roots for anticipated root ball of 18" radius (36" diameter) minimum. Prune tree roots for anticipated root ball of 24" radius (48" diameter) minimum for all trees less than 6" caliper at DBH. Root ball size for trees greater than 6" caliper measured at DBH will be determined based on 8" minimum of root ball diameter for each inch of trunk diamter measured at DBH height.

At no time shall the use of an axe to cut roots be accepted. All root cuts shall be performed either by hand pruning shears or sharpened shovel for smaller roots, or by saw for larger roots.

TREES W/ 8" CALIPER OR LESS

Root pruning schedule for trees w/ 8" caliper or less: Prune 35% of root ball at week one. Prune additional 35% of root ball at week six; then remaining 30% of root ball to be pruned at week twelve. Tree root system will be hardened off and eligible for final dig of root system, root ball containment and transport at end of Week eighteen (six weeks from final root prune).

TREES W/ 8" CALIPER OR GREATER

Root pruning schedule for trees w/ 8" caliper or greater: Prune 25% of root ball at week one. Prune additional 25% of root ball at week six; prune additional 25% of root ball at week twelve, then remaining 25% of root ball to be pruned at week eighteen. Tree root system will be hardened off and eligible for final dig of root system, root ball containment and transport at end of Week twenty-four (six weeks from final root prune). Deviation from this schedule and/or option to prepare trees for transport after week eighteen shall be approved by the Owner or Certified Arborist prior to commencement of any relocation activities.

For trees 18" caliper or greater, minimum hardening time from root pruning prior to relocation shall be 12 weeks.

WATERING

The preferred method of irrigation shall be an overhead mist system. This method is effective in alleviateing loss of canopy and insure sufficient moisture to root ball. Schedule for irrigation shall be daily and shall take place between the hours of 5:00 a.m. and 10:00 a.m. Any deviation from this method, shall be presented in writing to the Owner or Certified Arborist for approval prior to commencement of any root pruning activities.

VERIFICATION

Root ball on each tree shall be inspected by Certified Arborist prior to scheduling of final relocation to determine presence of active and viable new root growth.

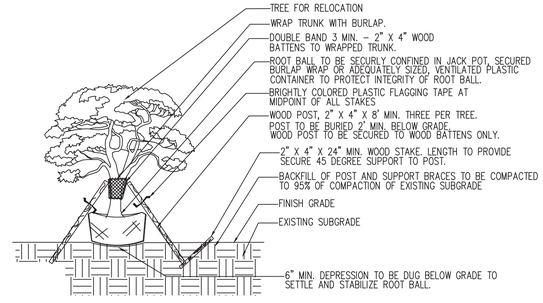
TREE AND PALM MOVING

Excavate proposed locations an adequate depth to accommodate the root ball of the identified tree or palm.

Preparation of root ball prior to commencement of relocation shall be to cut the botom roots of the tree. This shall be performed by mechanical means and physical cuts of the roots only and at no time shall the root ball be pulled from the ground.

The root ball shall be contained by any means necessary to preserve the integrity of the root ball for it to remain intact. The method of containment shall be determined by the Certified Arborist and shall be on an individual basis for each tree or palm.

The method of transport for tree relocation shall be determined by the Certified Arborist, and shall be decided on a case by case basis dependent upon actual site conditions. Prior to commencement of tree relocation activities, the Tree Relocation Contractor may submit, in writing, a method of transport to the Owner or Certified Arborist for evaluation and approval.



INTERIM RELOCATED TREE BRACING SYSTEM DETAIL

NOT TO SCALE

ARCADIS
7000 N Federal Highway
Boca Raton FL 33487 USA
tel 561 393 8555
www.arcadis.com

SEAL

NOT TO BE FILED FOR RECORD UNLESS SIGNED AND DATED WITH THE ORIGINAL SEAL OF DEBRA L. HERNANDEZ. FLORIDA L.A. #6666975 FOR THE FIRM.

WALTERS ZACKRIA ARCHITECTS
5813 N. ANDREWS WAY
FORT LAUDERDALE, FL 33309
PHONE: (954) 522-4123
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www.wza-architects.com
Abbas H. Zackria, FL AR 91520

CORPORATE NAME: WALTERS ZACKRIA ASSOCIATES, PLLC REGISTERED IN THE STATE OF FLORIDA. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. THESE DRAWINGS ARE THE PROPERTY OF WALTERS ZACKRIA ASSOCIATES, PLLC AND SHALL NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION FROM A PRINCIPAL OF THE FIRM OR BE LIABLE FOR THE FULLEST LEGAL RECOURSE. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO EXECUTION OF WORK.

CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

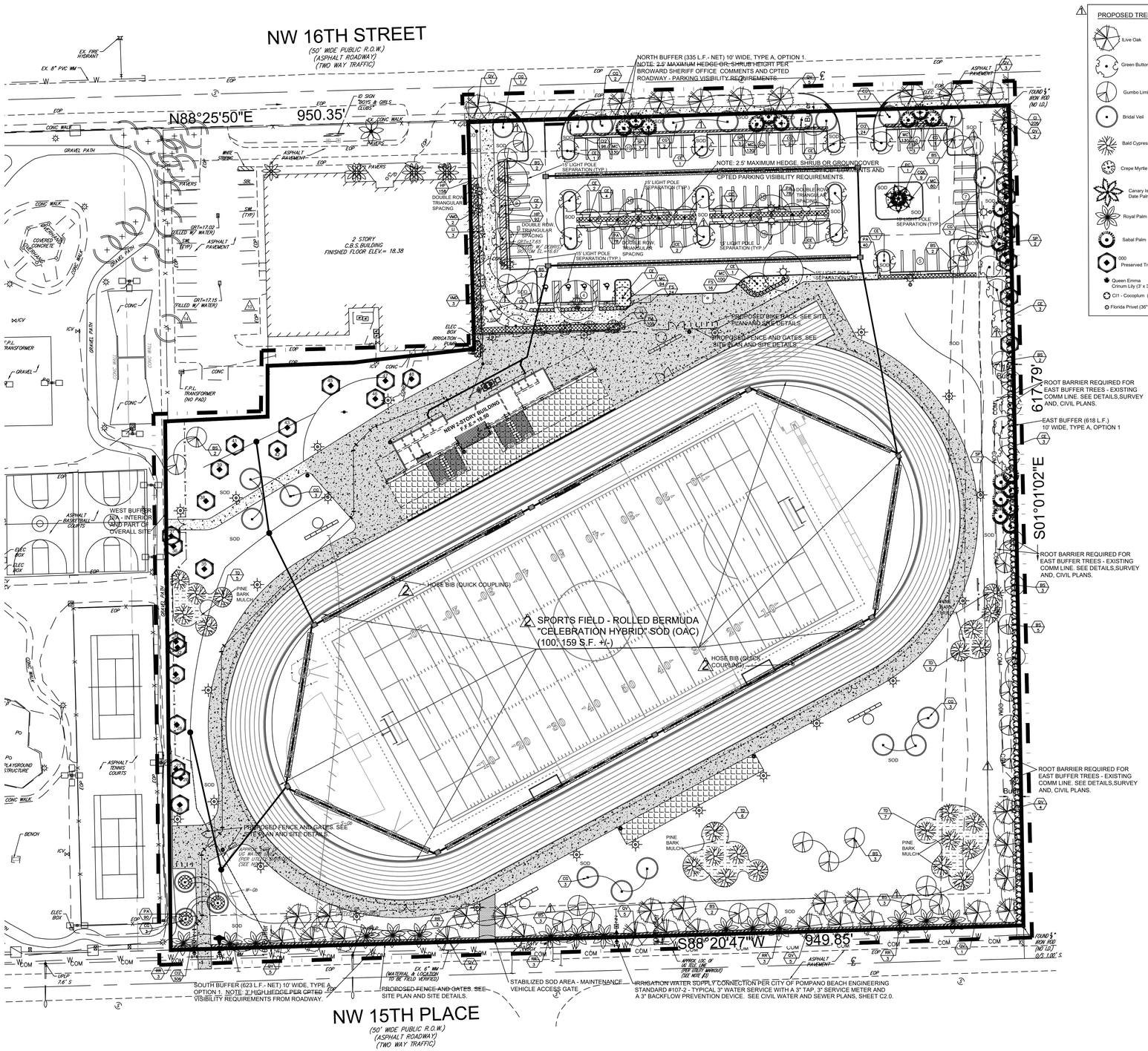
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CHECKED BY: PFR
DATE: 05/19/2025
REVISIONS:
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2406

SHEET
TM2.0

TREE MANAGEMENT DETAILS AND SPECIFICATIONS

Exhibit A



PROPOSED TREE LEGEND

- ILive Oak
- Green Buttonwood
- Gumbo Limbo
- Bridal Veil
- Bald Cypress
- Crepe Myrtle
- Canary Island Date Palm
- Royal Palm
- Sabal Palm
- 000 Preserved Tree
- Queen Emma Crinum Lily (3' x 3')
- C11 - Cocoplum (4' x 3', 36" OC)
- Florida Privet (36" x 24", 30" OC)

True North | Project North

0 40 80 Feet

ONE INCH = 40 FEET (1:40)

Ultimate Sports Park - Expansion

PLANT MATERIALS LIST — Hardiness Zone 10b

Native plants and ecological communities as determined by the *FDOACS, UF/IFAS, FDEP-Florida Land Use Cover Classification System.*
Xeriscape principles as determined by the South Florida Water Management District "Waterwise" Xeriscape Plant Guide
Compliance for planting adjacent to overhead electrical wires as determined by *Florida Power & Light, Administrative Services.*

Key	Scientific Name	Common Name	Native	Xeri	Height x Spread / Description	Spacing	Qty	SUBT
	LARGE TREES	greater than 35 ft. at maturity						
QV	Quercus virginiana	Live Oak	Yes	High	14' high x 7' spread, 2-1/2" cal., 4-1/2" CT, field grown	per plan	35	
BS	Bursera simaruba	Gumbo Limbo	Yes	High	14' high x 7' spread, 2-1/2" cal., 4-1/2" CT, field grown	per plan	31	
CE	Conocarpus erectus	Green Buttonwood	Yes	High	14' high x 7' spread, 2-1/2" cal., 4-1/2" CT, field grown	per plan	31	
TD	Taxodium distichum	Bald Cypress	Yes	High	14' high x 8' spread, 2-1/2" cal., 4-1/2" CT., field grown or container (girdled roots will be rejected)	per plan	23	**120**
	UNDERSTORY TREES	less than 35 ft. at maturity						
CG	Caesalpiia granadillo	Bridalveil Tree	No	High	10' high x 4' spread, 2" cal., single trunk, 4' CT, field grown or 45 gal. container min. Girdled roots will be rejected.	per plan	23	
LI	Lagerstroemia indica	Crepe Myrtle "Natchez"	No	High	10' high x 4' spread, single trunk, 2" cal., 4' CT, field grown or 45 gal. container min. Girdled roots will be rejected.	per plan	7	**30**
	PALMS							
SP	Sabal palmetto	Cabbage Palm	Yes	High	Staggered heights up 3' = 10 @ 22' OA, 8 @ 19' OA, 8 @ 16' OA, booted at top third of trunk, field grown	per plan	18	
RR	Roystonea regia	Royal Palm	Yes	High	12' GW, thick trunk, heavy crown shaft, full canopy, field grown	per plan	15	
PC	Phoenix canariensis	Canary Island Date Palm	No	High	10' CT, 18' OA Min., heavy, straight trunk, trimmed trunk and shaped crown base, Florida Fancy (specimen), field grown	per plan	1	
VMD	Veitchia mongtomeryana	Montgomery Palm - Double	No	High	Double trunk - both at 14' OA min., matched heights and girth, full heads, field grown	per plan	5	**39**
	SHRUBS							
COE	Crinum augustum "Queen Emma"	Queen Emma Crinum	No	High	Min. 36" x 36", full to base, Colored foliage, no leaf spot	per plan	9	
CI	Chrisobalanus icaco	Cocoplum "Red Tip"	Yes	High	4' high x 3' spread, full to base	36" OC	206	
CI2	Chrysobalanus icaco	Cocoplum "Red Tip"	Yes	High	24" high x 18" spread, full to base	24" OC	402	
FS	Forestiera segregata	Florida Privet	Yes	High	36" high x 30" spread, full to base	30" OC	40	
PA	Plumbago auriculata	Plumbago	No	High	24" high x 24" spread, full to base	24" OC	391	
HP	Hamela patens	Firebush	Yes	High	24" high x 24" spread, full to base - plant in double row, triangular spacing	24" OC	250	
MC	Muhlenbergia capillaris	Muhly Grass	Yes	High	18" OA, full to base	18" OC	664	**1,962**
							Total	**2,151**

NOTE: ALL AREAS INDICATED FOR SOD SHALL BE INSTALLED WITH ST. AUGUSTINE "FLORITAM" SOD UNLESS ALTERNATE NOTED.

NOTE: ALL PLANTS SHALL BE INSTALLED AT SIZE INDICATED UNDER THE SPECIFICATIONS.

NOTE: ALL BALD CYPRESS BEDS TO RECEIVE PINE BARK MULCH ONLY.

SEE PROPOSED TREE SYMBOL LEGEND FOR TREE IDENTIFICATION, SHEET L1.0.

Total Native Plants 1,715
Native % of Total 79.7%

Total Drought Tolerant Plants 2,151
Drought Tol. % of Total 100.0%

CODE COMPLIANCE TABLE

ZONE DISTRICT: PR

CODE SECTION:	REQUIREMENT	QTY. REQUIRED	QTY. PROVIDED
SITE - SEC. 155.5203(C)			
Project Area = 350,714 s.f. (8.05 AC.)	Two (2) trees per each 2,000 s.f. of lot area	351 trees	216 trees (189 new trees and palms plus 27 existing to remain). Deficit in site trees provided as response to existing approved Development Order.
	Five (5) shrubs per each 2,000 s.f. of lot area	880 Shrubs	1,298 Shrubs (groundcovers not included)
STREET TREES - SEC. 155.5203 (G)			
North (NW 16th Street): Net length 335 l.f. (total length of = 407 l.f. less driveways)	1 tree per 40 l.f.	9 trees	9 Live Oaks
South (NW 15 Place): Net length 623 l.f. (total length = 635 l.f. less walkway and maintenance gate access)	1 tree per 40 l.f.	16 trees	12 Live Oaks and 4 Gumbo Limbo = 16 trees
PERIMETER BUFFERS: 155.5203 (F)(3)			
North: Net length 335 l.f. -10' wide buffer, Type A, Option 1 (407 l.f. - less driveway widths)	1 tree per 30 l.f. plus continuous hedge, 4' high	12 trees, plus hedge	9 Bridalveil plus 9 Sabal Palms (@ 3:1) = 12 trees. Hedge & shrubs to be at 3' maximum height per CPTED guidelines.
South: Net length 623 l.f. -10' wide buffer, Type A, Option 1 (645 l.f. less walkway and maintenace access widths)	1 tree per 30 l.f. plus continuous hedge, 4' high	22 trees, plus hedge	8-Live Oak, 4 Gumbo Limbo and 10-Royal Palms = 22 trees. Hedge and shrubs to be at 3' maximum height per CPTED guidelines.
East: Net length 618 l.f. - 10' wide buffer (type A, Option 1)	1 tree per 30 l.f. plus continuous hedge, 4' high	21 trees, plus hedge	6 Live Oak, 6 Green Buttonwood, 10 Gumbo Limbo = 22 trees, plus hedge
West: N/A - interior to overall park site		N/A	
PARKING (VUA) - SEC. 155.5203 (D) (4) (b) - Landscape Islands in Parking Bays			
Parking Lot - Terminal and interior Islands at min. 8' wide interior width = 16 total	One (1) tree for each parking bay island	16 trees	16 Green Buttonwood
Parking Lot Median Strip - 12' total width (8' wide interior width - 2' vehicle overhang excluded), 190 l.f.	Trees @ 1:40 l.f. maximum plus continuous hedge	5 trees	8 Green Buttonwood

NOTE: Type A buffer hedge required at 4' high. Hedges and shrubs along north and south perimeter buffers and in parking area to be maintained at 3' high due to C.P.T.E.D. requirements - visibility into site from roadway.

NOTE: Existing water service in swale impedes street tree installation on NW 15th Place. Street trees provided within south buffer area behind site security fencing.

NOTE: PER CITY ORD. 50.02(AQ) AND 100.35(E), NO LANDSCAPING MATERIALS OTHER THAN SOD ARE NOT ALLOWED WITHIN FIVE (5) FEET OF AN PORTION OF CITY OWNED UTILITIES WITHIN THE PUBLIC STREET RIGHT-OF-WAY INCLUDING METERS, HYDRANTS, SERVICE LINES, ETC ENGINEERING STANDARD. FURTHERMORE, NO TREES, SHRUBERY OR OBSTRUCTION SHALL BE PLACED WITHIN A THREE (3) FOOT RADIUS OF CITY-OWNED SEWER LATERAL CLEANOUT OR WATER AND/OR REUSE METER. IN ADDITION REFER TO ENGINEERING DIV. STREET TREE DETAIL #316-1, SHEET L2.0.

2 NOTE: SPORTS FIELD SOD TO BE BURMUDA "CELEBRATION HYBRID". SOD TO BE INSTALLED ON TOP OF NATIVE SOILD WITH A LAYER OF "GYPSOM BIOSLUDGE" APPLIED ON TOP OF SOIL PRIOR TO SOD INSTALLATION. APPROXIMATELY 700 TO 800 LBS. OF GYPSUM BIOSLUDGE WOULD BE REQUIRED FOR A 100,000 S.F. SPORTS FIELD AREA. CONTRACTOR TO FOLLOW MANUFACTURER'S RECOMMENDATIONS.

ARCADIS
7000 N Federal Highway
Boca Raton FL 33487 USA
tel 561 393 6555
www.arcadis.com

SEAL

NOT TO BE FILED FOR RECORD UNLESS SIGNED AND DATED WITH THE ORIGINAL SEAL OF DEBRA L. HERNANDEZ. FLORIDA L.A. #6666975 FOR THE FIRM.

WALTERS ZACKRIA ARCHITECTS
5813 N. ANDREWS WAY
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Abbas H. Zackria, FL AR 91520

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CITY OF POMPANO BEACH
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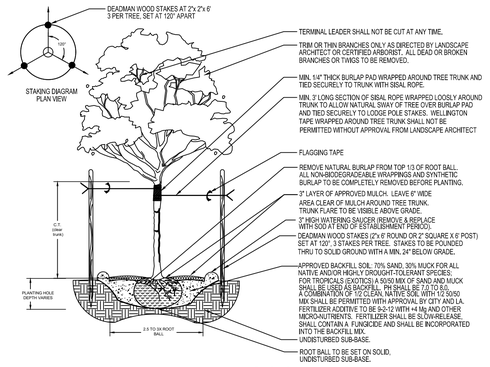
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2 10/6/25 ADDENDUM 3 CO-ORD
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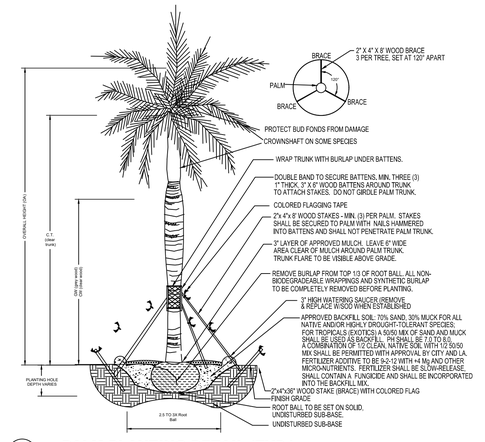
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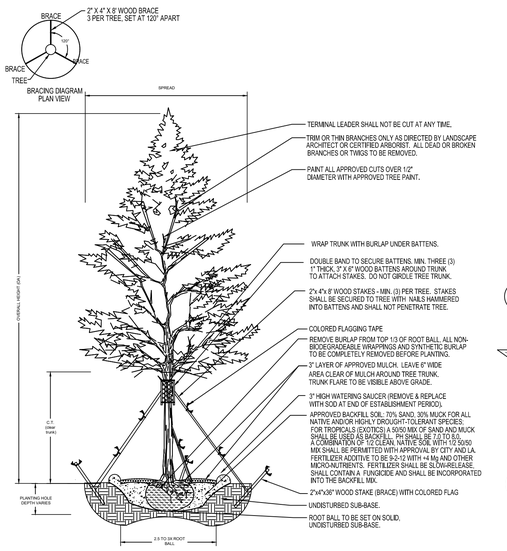
LANDSCAPE PLAN



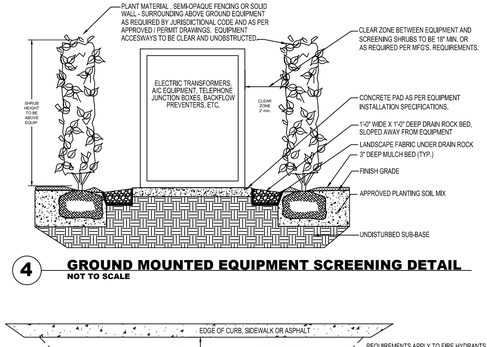
TYPICAL TREE PLANTING & STAKING DETAIL
3" CAL. OR LESS (WITH SISAL ROPE AND BURLAP) — 1
NOT TO SCALE



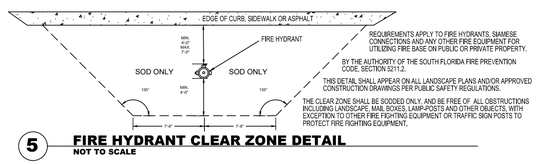
PALM PLANTING DETAIL (TYP.) — 3
NOT TO SCALE



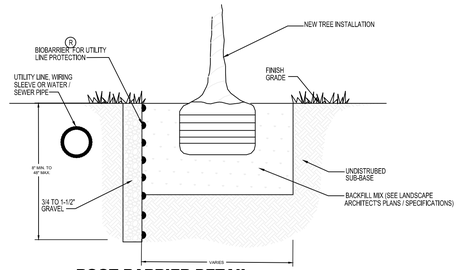
LARGE TREE PLANTING & STAKING DETAIL
3" CAL. OR GREATER — 2
NOT TO SCALE



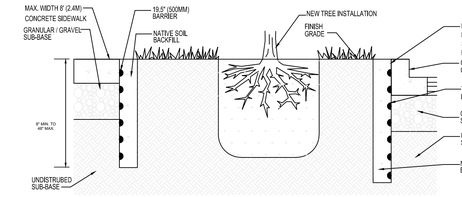
GROUND MOUNTED EQUIPMENT SCREENING DETAIL — 4
NOT TO SCALE



FIRE HYDRANT CLEAR ZONE DETAIL — 5
NOT TO SCALE



ROOT BARRIER DETAIL - UNDERGROUND UTILITY LINES — 7
NOT TO SCALE



ROOT BARRIER DETAIL - PAVING / CURBING — 8
NOT TO SCALE

GENERAL NOTES, LANDSCAPE INSTALLATION SPECIFICATIONS

REFER TO SITE PLAN FOR SITE DATA AND UTILITIES. REFER TO ARCHITECTURAL PLANS FOR BUILDING FOOTPRINTS, ARCHITECTURAL INFORMATION AND DESIGNATION OF ELEVATIONS. REFER TO IRRIGATION PLANS FOR REQUIRED MATERIALS, SPECIFICATIONS, DETAILS AND COORDINATION ITEMS. REFER TO ENGINEERING PLANS FOR ALL GRADING, SITE WORK AND COORDINATION ITEMS. REFER TO WATER AND SEWER PLANS FOR ADDITIONAL/UNDERGROUND AND ABOVE-GROUND UTILITIES AND COORDINATION ITEMS.

PLANT MATERIALS ARE SPECIFIED FOR COMPLIANCE WITH MINIMUM CODE REQUIREMENTS AND GOVERNING AGENCY REVIEW COMMENTS AS OF THE DATE OF SUBMITTAL.

SUBCONTRACTORS ARE BOUND TO THE GENERAL CONTRACTOR AND ARE TO ASSUME ALL OBLIGATIONS AND RESPONSIBILITIES BY WHICH THE GENERAL CONTRACTOR IS BOUND TO THE OWNER. BOTH SHALL BE FAMILIAR WITH AND HAVE FULLY INVESTIGATED ALL LOCAL CODES AND ORDINANCES.

LANDSCAPE PROPOSALS SHALL PROVIDE UNIT COSTS AND SHALL INCLUDE: EXCAVATIONS, PLANT MATERIAL LISTED, DELIVERY AND INSTALLATION (LABOR), TURF SOD, SEEDING, TOP SOIL & FINE GRADING, SOIL BACKFILL, SOIL SUPPLEMENTS, FOLIAR SPRAYS, FERTILIZERS, GUYING AND STAKING, REQUIRED PRUNING, CLEAN-UP, WATERING AND ALL TAXES AND FEES NECESSARY TO SUCCESSFULLY ESTABLISH THE PROPOSED LANDSCAPE AND ECOLOGICAL COMMUNITIES.

THE CONTRACTOR/BIDDER SHALL HAVE CAREFULLY READ AND FULLY UNDERSTAND ALL DRAWINGS (TREE PRESERVATION, LANDSCAPE AND IRRIGATION, PLUS RELATED ENGINEERING AND ARCHITECTURAL), DETAILS, SPECIFICATIONS AND NOTES OF SUCH LANDSCAPE/PLANTING PLANS FOR THE IDENTIFIED PROJECT AND LOCATION; AND CONTRACTOR / BIDDERS ACKNOWLEDGES SAME BY SIGNATURE, DATE & COMPANY NAME BELOW THAT THE BID SUMITTED REFLECTS AN ACCURATE INSTALLATION OF THE LANDSCAPE IN COMPLIANCE WITH ALL CONDITIONS SET FORTH, INCLUDING COORDINATION WITH RELATED TRADES, PROPERLY SEQUENCING WORK AND OFFICIAL ADDENDA. SO SWORN:

1. THE TERM "CONTRACTOR" REFERS TO THE PRINCIPAL COMPANY, OR OWNER/DEVELOPER, INCLUDING LANDSCAPING, OBLIGATED WITH THE RESPONSIBILITY FOR COORDINATING AND PERFORMING THE SITE WORK AND SECURING THE WORK OF SUBCONTRACTORS; DISCHARGING TO COMPLY WITH LOCAL BUILDING CODES AND ZONING ORDINANCES, AND WHICH IS THE ENTITY OF RECORD FOR OBTAINING PERMITS, SCHEDULING INSPECTIONS AND SECURING COMPLETION CERTIFICATES.

2. THE CONTRACTOR SHALL CUT, CLEAR, STUMP GRIND, EXCAVATE AND REMOVE ALL EXOTIC, INVASIVE AND DESIGNATED TREES FROM THE SITE AND AREAS THAT HAVE EVIDENCE OF PREVIOUSLY EXISTING TREES AND/OR PALMS. THE CONTRACTOR SHALL ALSO REMOVE ALL ROAD ROCK, CONCRETE, ASPHALT AND OTHER NON-NATURAL MATERIALS, INCLUDING REMOVING DEBRIS, LITTER AND STONES OVER 1" DIAMETER IN ALL PLANTING AREAS AND BE REPLACED WITH PLANTING SOIL PRIOR TO LANDSCAPE INSTALLATION.

3. THE CONTRACTOR SHALL REFER TO ALL TREE PRESERVATION PLANS, DETAILS AND SPECIFICATIONS IN CONJUNCTION WITH THE SITE/PROJECT TO LOCATE AND TAG ANY AND ALL EXISTING TREES AND/OR PALMS PROPOSED FOR PRESERVATION OR RELOCATION. THE CONTRACTOR SHALL ADHERE TO ALL DIRECTIVES AND AS SHOWN ON THE TREE PRESERVATION PLANS REGARDING ALL TREE OR PALM RELOCATIONS AND TREE REMOVAL.

GENERAL NOTES, LANDSCAPE INSTALLATION SPECIFICATIONS (cont.)

4. THE CONTRACTOR SHALL EXCAVATE ALL UNEROCK FROM INTERIOR PARKING LANDSCAPE STRIPS AND ISLANDS TO A MIN. 2 1/2' DEPTH AND EXCAVATE ALL NON-ORGANIC SOILS WITHIN MIN. 10 FT. WIDTH OF THE ENTIRE BUILDINGS PERIMETER TO A MIN. 12 INCHES DEPTH. THE CONTRACTOR WILL BACKFILL THE STRIPS, ISLANDS AND BUILDING PERIMETERS WITH THE APPROVED 50/50 TOPSOIL MIX TO FINISHED GRADES. THE LANDSCAPE OR IRRIGATION PROFESSIONAL SHALL NOT PROCEED WITH WORK IN THESE DESIGNATED AREAS UNTIL SITE PREPARATION IS COMPLETE AND INSPECTED BY THE LANDSCAPE ARCHITECT AND/OR PERMITTING AGENCY.

5. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND UTILITIES WHICH ARE PROPERLY MARKED OR FOR WHICH HE HAS NOT OBTAINED PROPER MARKINGS THROUGH THE ONE CALL SYSTEM – 72 HOURS BEFORE DIGGING – CALL TOLL FREE 1 (800) 432-4770 OR FROM LOCAL UTILITY DEPARTMENTS. ALL ELECTRICAL, GAS, TELEPHONE, FIBER OPTICS, CABLE, WATER AND SEWER SERVICES LOCATED ON-SITE, ON ADJACENT PROPERTIES WITHIN 10' AND WITHIN ADJACENT R.O.W.'S SHALL BE CLEARLY MARKED.

6. THE CONTRACTOR SHALL PROVIDE ALL PROPOSED PLANTS AT FLA #1 GRADE OR BETTER AS DESCRIBED IN GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION AS PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, AND WILL PROVIDE CERTIFICATION FOR ANY AND ALL PLANTS IN DISPUTE. ALL PLANT MATERIAL PROVIDED SHALL MEET OR EXCEED THE MINIMUM SPECIFIED SIZE (HEIGHT, SPREAD, CALIPER, CLEAR TRUNK, ETC.) AS SHOWN ON THE LANDSCAPE PLANS. THE CONTRACTOR SHALL INSTALL PLANTS ACCORDING TO LANDSCAPE PLANS FOR SPACING AND PLACEMENT, AND PER THE LANDSCAPE DETAILS WITHOUT EXCEPTION. SHOULD ANY PLANT BE UNAVAILABLE THE CONTRACTOR WILL CONTACT THE LANDSCAPE ARCHITECT FOR RECOMMENDATIONS AND/OR APPROVAL OF ANY AND ALL SPECIES SUBSTITUTIONS.

7. THE CONTRACTOR SHALL PROVIDE PROPER TRANSPORT AND DELIVERY OF PLANT MATERIAL TO THE JOB SITE. PLANT MATERIAL SHALL NOT BE DROPPED, SCARRED OR OTHERWISE DAMAGED AT ANY TIME. DAMAGED PLANT MATERIALS SHALL BE REJECTED BY THE OWNER OR OWNER'S REPRESENTATIVE, REMOVED AND REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. ANY PLANTS OTHER THAN FL. #1 GRADE OR WITH INDICATIONS OF DISEASE, INSECT INFESTATION, BROKEN BRANCHES, LACK OF WATER, GIRDLING OR SCARRING AT DELIVERY SHALL BE REJECTED.

8. THE CONTRACTOR SHALL PROVIDE CERTIFIED ST. AUGUSTINE 'FLORITAM' SOD, UNLESS OTHERWISE INDICATED, TO ALL OPEN AREAS INSIDE THE PROPERTY NOT RECEIVING PLANT MATERIAL OR OTHER FORM OF GROUNDCOVER, LIVING OR NON-LIVING. THE CONTRACTOR WILL PROVIDE SOD TO ALL DAMAGED TURF AREAS, TO EDGE OF PAVEMENT AND TO THE EDGE OF WATER AT ALL WATER BODIES. ALL SOD SEAMS WILL BE BUTT JOINTS WITH ADJACENT ROWS STAGGERED AND ALL EDGE PIECES ABUTTING TIGHTLY, LEAVING NO GAPS. THE CONTRACTOR SHALL REPAIR AND REPLACE ALL SOD ON ADJACENT PROPERTIES DAMAGED BY LANDSCAPE INSTALLATION WORK, AND SHALL NOTIFY THE OWNER OF THE ADJACENT PROPERTY, AND OBTAIN PERMISSION TO PERFORM SOD REPAIRS.

9. THE CONTRACTOR SHALL PROVIDE IMPORTED ORGANIC BACKFILL MIX AS NOTED ON THE PLANTING DETAILS WHICH WILL BE FREE OF ALL DEBRIS AND STONES OVER 1" DIAMETER. BACKFILL MIX WILL BE SANITIZED FROM HARMFUL BIOLOGICAL ORGANISMS, INCLUDING NEMATODES AND PARASITES AND WILL BE PH 7.0 – 8.0 RANGE AS DESCRIBED IN THE TREE OR PALM PLANTING DETAILS. NATIVE SOIL MAY BE MIXED WITH 50/50 MIX PER DETAILS ONLY IF APPROVED BACKFILL MIX IS NOT AVAILABLE. THE CONTRACTOR SHALL SUBMIT WRITTEN LAB RESULTS, CERTIFICATION OF SOIL CONTENT AND TRUCKING RECEIPTS WITH TYPE AND VOLUME OF SOIL TO THE OWNER OR OWNER'S REPRESENTATIVE FOR VERIFICATION. BACKFILL WILL BE TESTED FOR CONTENT BY THE LANDSCAPE ARCHITECT AT ANY TIME. FAILURE TO PROVIDE APPROVED BACKFILL CERTIFICATION OF SOIL CONTENT AND/OR TRUCKING RECEIPTS MAY RESULT IN REJECTION OF ENTIRE LANDSCAPE WITH REMOVAL AND REPLACEMENT COSTS BORN SOLELY BY THE CONTRACTOR.

10. THE CONTRACTOR WILL PROVIDE FERTILIZER FOR ALL PLANTS UPON INSTALLATION AS SPECIFIED ON THE PLANTING DETAILS. FERTILIZER WILL BE THOROUGHLY INCORPORATED INTO THE BACKFILL MIX.

11. THE CONTRACTOR WILL PROVIDE "TERRASORB" OR OTHER APPROVED SOIL SUPPLEMENT (HUMECTANT AND HYGROSCOPIC COMPOUNDS), THOROUGHLY INCORPORATED INTO THE BACKFILL MIX ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS FOR ALL PROPOSED PLANT MATERIAL IN EXISTING SANDY SOIL OR ON FAST DRAINING SITES. CONTRACTOR WILL BE FAMILIARIZED WITH THE SITE AND THE ENGINEERING SOIL REPORT.

12. UNLESS OTHERWISE DICTATED BY CITY OR COUNTY CODE, THE CONTRACTOR SHALL LOCATE ALL TREES WITH A MATURE HEIGHT OF OVER 20' NO CLOSER THAN 15 FEET TO ANY LIGHT POLES. PALMS WILL NOT BE CLOSER THAN 10 FEET TO ANY LIGHT POLE. THE CONTRACTOR MAY FIELD ADJUST HORIZONTAL LOCATION OF TREES AND PALMS FOR BEST FIT WHEN COORDINATED WITH AND CONSENT GIVEN BY THE OWNER OR OWNER'S REPRESENTATIVE. THE LANDSCAPE/IRRIGATION CONTRACTOR SHALL NOT PROCEED WITH WORK UNTIL SITE LIGHTING LOCATIONS ARE COMPLETELY STAKED-OUT TO CONFIRM APPLICABLE SEPARATION.

13. THE CONTRACTOR SHALL INSURE THAT ALL PLANT MATERIAL LOCATED WITHIN THE SIGHT TRIANGLE DISTANCE AREAS AT ROADWAY INTERSECTIONS AND ACCESS POINTS PROVIDE AN UNOBSTRUCTED CROSS VISIBILITY AT A HORIZONTAL LEVEL BETWEEN 30" AND 8' IN HEIGHT. SEE LANDSCAPE PLANS FOR SIGHT TRIANGLES.

14. THE CONTRACTOR SHALL INSURE THAT ALL TREES OR PALMS LOCATED ADJACENT TO ANY OVERHEAD POWER LINES BE INSTALLED IN ACCORDANCE WITH FLORIDA POWER AND LIGHTS "RIGHT TREE, RIGHT PLACE" GUIDELINES. ANY INSTANCES OF INSUFFICIENT SEPARATION BETWEEN TREES OR PALMS AND OVERHEAD LINES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR RESOLUTION BEFORE INSTALLATION.

15. THE CONTRACTOR SHALL LOCATE ALL TREES AND PALMS CLEAR OF ALL TRAFFIC SIGNS AND IN SUCH A MANNER TO PREVENT BOTH THE TREE CANOPY AND PALM FRONDS FROM OBSTRUCTING ANY PORTION OF TRAFFIC SIGNS. THE LANDSCAPE/IRRIGATION CONTRACTOR SHALL NOT PROCEED WITH WORK UNTIL TRAFFIC SIGNAGE AND GUARDRAILS ARE COMPLETELY STAKED-OUT TO CONFIRM SEPARATION AND CLEAR VISIBILITY OF SIGNS.

16. THE CONTRACTOR WILL PROVIDE "WILT-PRUF" OR OTHER APPROVED SURFACANT TO BE SPRAYED ON ALL PROPOSED TREES AND PALMS IN AREAS OF SUSTAINED WINDS OF MORE THAN 10 KNOTS AND ALL COASTAL AREAS, ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, TO PREVENT WINDBURN AND EXCESSIVE WATER LOSS THROUGH TRANSPIRATION.

17. THE CONTRACTOR SHALL PROVIDE INTERIM SUPPLEMENTAL IRRIGATION, I.E. REGULAR THOROUGH, DEEP WATERING, TO ALL INSTALLED PLANT MATERIAL UNTIL SUCH TIME AS THE IRRIGATION SYSTEM IS INSTALLED AND HAS BEEN INSPECTED BY THE LANDSCAPE ARCHITECT AND DEMONSTRATED TO BE 100% OPERATIONAL, OR UNTIL THE CITY'S OR COUNTY'S FINAL INSPECTION, ACCEPTANCE AND PERMIT CLOSE-OUT.

18. THE CONTRACTOR SHALL PROVIDE ROOT BARRIER AT A VERTICAL DEPTH OF 18" MIN. TO 48" MAX. FOR ANY SHADE TREES OR LARGE PALMS WHICH ARE INSTALLED AS FOLLOWS: LESS THAN FIVE (5) FEET FROM ADJACENT ASPHALT OR CONCRETE PAVEMENT, WITHIN CURBED PARKING INSLANDS LESS THAN NINE (9) FEET INTERIOR WIDTH OR WITHIN SIX (6) FEET PROXIMITY TO UNDERGROUND UTILITY OR INFRASTRUCTURE. ROOT BARRIER SHALL BE "BIOBARRIER", "DEEPROOT PARTNERS, LP", OR APPROVED EQUAL. INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SEE DETAIL, THIS PAGE.

19. THE CONTRACTOR SHALL PROVIDE GUYING OR STAKING TO ALL TREES AND PALMS ACCORDING TO THE DETAILS SHOWN IN THIS SHEET. GUYING AND STAKING REQUIREMENTS WILL BE STRICTLY ENFORCED THROUGHOUT CONSTRUCTION AND THE WARRANTY PERIOD. ALL TREES AND PALMS WILL BE PLUMB VERTICAL AT TIME OF INSPECTION. ALL GUYING OR STAKING SHALL BE REMOVED AFTER NINE MONTHS OR AT THE END OF HURRICANE SEASON, WHICHEVER IS GREATER.

20. THE CONTRACTOR SHALL PROVIDE APPROVED MULCH TO ALL TREES, SHRUBS AND PLANT BEDS. CONTRACTOR SHALL INSTALL MULCH AT A DEPTH OF 3", MIN., AND MAINTAIN A 48" DIAMETER RING AROUND FREE STANDING TREES. ALL TREES SHALL HAVE A 6" MOC RING CLEAR OF MULCH AROUND THE TREE TRUNK. DO NOT MULCH ANNUAL FLOWER BEDS. APPROVED MULCH WILL BE NON-CYPRESS, STERILIZED NATURAL CELLULOSE FRAGMENTS AS RECOMMENDED BY SFWMD XERISCAPE PLANT GUIDE II AND WHICH COMPLIES WITH ALL APPLICABLE LAND DEVELOPMENT, ZONING AND BUILDING CODES. ALL PINUS ELLIOTTI / SLASH PINE PLANTINGS SHALL RECEIVE PINE STRAW MULCH ONLY.

21. THE CONTRACTOR WILL PROVIDE SCREEN HEDGE MATERIALS AT ALL GROUND MOUNTED, FREE-STANDING UTILITY EQUIPMENT OR ENCLOSURES SUCH AS TRANSFORMERS, AIR CONDITIONING COMPRESSORS, BACKFLOW PREVENTERS AND OTHER MECHANICAL EQUIPMENT NOT DETERMINED PRIOR TO SITE PLAN APPROVAL. SCREEN PLANT MATERIAL WILL BE LOCATED AT ALL NON-ACCESSIBLE PORTION OF SAID EQUIPMENT AND WILL BE EQUAL TO THE HEIGHT OF SUCH ELEMENTS (REFER TO GROUND MOUNTED EQUIPMENT SCREENING DETAIL). INSTALLATION SHALL BE PERFORMED PRIOR TO INSPECTION BY THE PERMITTING AGENCY. THE CONTRACTOR SHALL CONSULT WITH THE LANDSCAPE ARCHITECT FOR APPROPRIATE PLANT SPECIES, SIZE AND QUANTITY OF ALL SCREENING SHRUBS. THE CONTRACTOR SHALL SUBMIT A R.C.O. (REQUEST FOR CHANGE ORDER) FOR ALL ADDITIONAL REQUIRED SHRUBS TO SCREEN GROUND MOUNTED EQUIPMENT TO THE OWNER OR OWNER'S REPRESENTATIVE FOR CONSENT AND TO THE CITY FOR APPROVAL.

22. THE CONTRACTOR WILL, WITH ALL QUOTATIONS OR PROPOSAL/AGREEMENTS, PROVIDE A BINDING LETTER AND WRITTEN REPLACEMENT WARRANTY FOR ALL INSTALLED PLANT MATERIAL AFTER FINAL INSPECTION AND ACCEPTANCE BY THE OWNER. WARRANTY SHALL BE FOR 1 YEAR FOR ALL TREES AND PALMS, 120 DAYS FOR SHRUBS. WHERE INCREMENTAL COMPLETION CERTIFICATES OR TCO'S ARE ISSUED, CONTRACTOR MAY PETITION OWNER & AUTHORITY TO ACCEPT WORK IN CORRESPONDING INCREMENTAL SECTIONS. ALL PLANT MATERIAL SHALL NOT BE BOUND UNDER WARRANTY SHOULD IT BE CONFIRMED THAT DAMAGE OR DEATH TO PLANT MATERIAL BE THE RESULT OF AN "ACT OF GOD".

23. THE CONTRACTOR WILL PROVIDE A WRITTEN AGREEMENT TO COVER THE WARRANTY PERIOD AT TIME OF THE COMPLETION, INSPECTION AND PRIOR TO FINAL ACCEPTANCE. CONTRACTOR SHALL ALSO DEFINE INSPECTION DATES AND TIMES THROUGHOUT THE WARRANTY PERIOD TO MONITOR PLANTINGS UNDER WARRANTY. MAINTENANCE AGREEMENT WORK SHALL BE PERFORMED BY A QUALIFIED LANDSCAPE/IRRIGATION CONTRACTOR.

24. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY OF OBTAINING FROM GROWERS STATEWIDE, AND INTERSTATE, SPECIFIED PLANT MATERIALS IN ADVANCE OF RELEASING SITE TO LANDSCAPE PROFESSIONAL AWARD OF THE CONTRACT IS BASED ON THE CONTRACTOR PROVIDING THE MATERIALS AT BID PRICE. CONTRACTOR WILL PROVIDE OFF-SITE INTERIM NURSERY FACILITIES FOR RECEIVING, MAINTAINING AND GROWING PLANT MATERIALS AT HIS OWN COST, WHEN SPECIAL CONDITIONS EXIST OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED PLANT MATERIALS. ONLY REGIONAL (TRI-COUNTY) AGRICULTURAL DAMAGE AS DETERMINED BY FLORIDA D.O.A. AND/OR THE LOCAL COOPERATIVE EXTENSION SERVICE IN WRITING WILL BE CONSIDERED BY AUTHORITY. IN THIS CASE, THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING AND OBTAINING WRITTEN MODIFICATION FROM THE LANDSCAPE ARCHITECT AND THE PERMITTING JURISDICTION FOR ACCEPTABLE PLANT SUBSTITUTIONS.

25. THE CONTRACTOR ACCEPTS THE LANDSCAPE PLAN, PLANT LIST, QUANTITIES AND SPECIFICATIONS CONTAINED HEREIN AS REQUIRED FOR SITE PLAN APPROVAL, ZONING AND LANDSCAPE PERMITTING. FINAL ARCHITECTURE, ENGINEERING IN PLANS AND UTILITY PROVIDERS MAY CREATE CONFLICTS AND OCCURANCE OF DISCREPANCIES BETWEEN PLANT LOCATIONS, COUNTS ON PLAN, AND THE LIST. BIDDERS AND CONTRACTORS SHALL REPORT IN WRITING ANY AND ALL DESIGN CONFLICTS TO THE LANDSCAPE ARCHITECT FOR RESOLUTION, AND AS REQUIRED BY CODE.

SIGNATURE OF CONTRACTOR/BIDDER — DATE

COMPANY NAME, ADDRESS & PHONE

CONTRACTOR AND/OR LANDSCAPE & IRRIGATION PROFESSIONAL MUST HAVE THIS SIGNED DRAWING IN THE BUILDING PERMIT SET OF PLANS AND THE JOB SITE SET OF PLANS AT ALL TIMES.

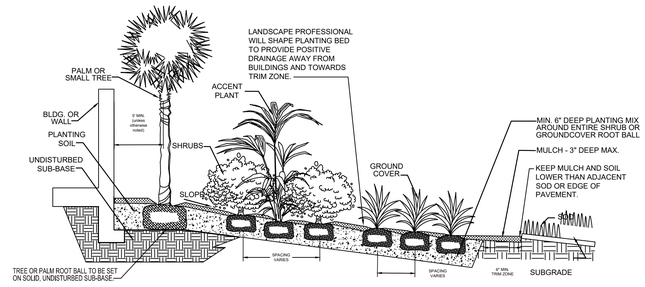
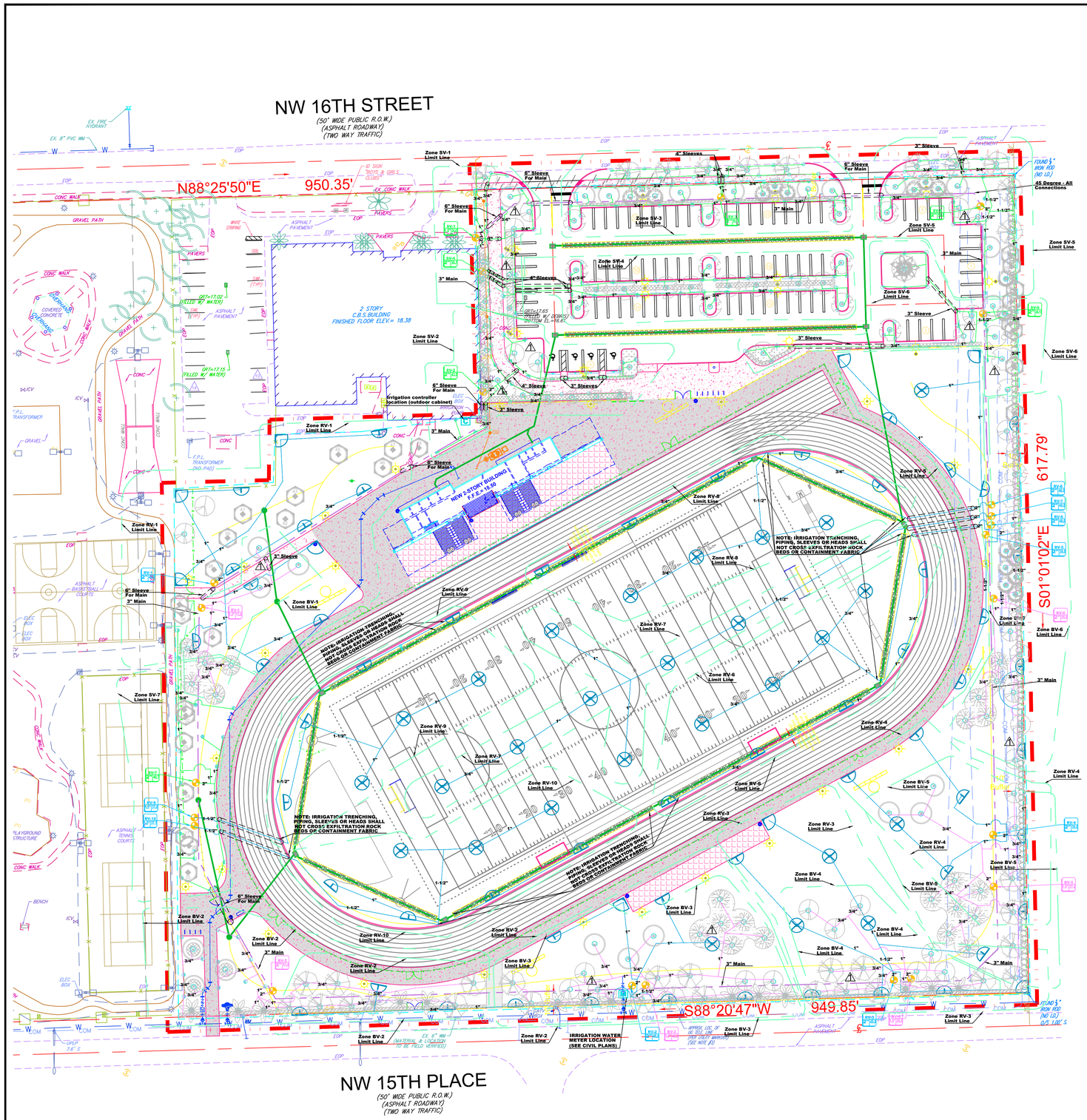

LANDSCAPE PROFESSIONAL WILL SHAPE PLANTING BED TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND TOWARDS TRIM ZONE.
PALM OR SMALL TREE
ACCENT PLANT
BLDG. OR WALL
PLANTING SOIL
UNDISTURBED SUB-BASE
6" MIN. (unless otherwise noted)
SHRUBS
SLOPE
GROUND COVER
MIN. 6" DEEP PLANTING MIX AROUND ENTIRE SHRUB OR GROUNDCOVER ROOT BALL
MULCH - 3" DEEP MAX.
KEEP MULCH AND SOIL LOWER THA

Exhibit A



IRRIGATION HEAD LEGEND

Qty.	Symbol	Description	Throw Radius/Flow GPM
189		RAINBIRD Plastic 1400 Series (1404) Full Circle (360°), Umbrella Pattern	1 to 3 ft./ 1.7
07		RAINBIRD Plastic MPR (5-HB) Nozzle, 5 Series MPR Stream Bubbler, 180°	5.00 ft / 1.0
20		RAINBIRD Plastic MPR (8Q) Nozzle, 8 Series, 10 deg. Trajectory, 90° Throw	8.00 ft / 0.26
70		RAINBIRD Plastic MPR (8H) Nozzle, 8 Series, 10 deg. Trajectory, 180° Throw	8.00 ft / 0.52
03		RAINBIRD Plastic MPR (12Q) Nozzle, 12 Series, 30 deg. Trajectory, 90° Throw	12.00 ft / .65
29		RAINBIRD Plastic MPR (12H) Nozzle, 12 Series, 30 deg. Trajectory, 180° Throw	12.00 ft / 1.30
16		RAINBIRD Plastic MPR (15Q) Nozzle, 15 Series, 30 deg. Trajectory, 90° Throw	15.00 ft / .92
02		RAINBIRD Plastic MPR (15T) Nozzle, 15 Series, 30 deg. Trajectory, 120° Throw	15.00 ft / 1.23
65		RAINBIRD Plastic MPR (15H) Nozzle, 15 Series, 30 deg. Trajectory, 180° Throw	15.00 ft / 1.85
03		RAINBIRD Plastic MPR (15F) Nozzle, 15 Series, 30 deg. Trajectory, 360° Throw	15.00 ft / 3.70
09		HUNTER PGP-ULTRA: 4" Pop-up, Adjustable Arc - ONE QUARTER (90 degree), CV; #6.0 Blue NOZZLE	40.00 ft / 2.0
56		HUNTER PGP-ULTRA: 4" Pop-up, Adjustable Arc - HALF (180 degree), CV; #6.0 Blue NOZZLE	40.00 ft / 4.0
27		HUNTER PGP-ULTRA: 4" Pop-up, Adjustable Arc - FULL (360 degree), CV; #6.0 Blue NOZZLE	40.00 ft / 7.0

IRRIGATION SYMBOL LEGEND

RV-0 2" 00.0 — Valve Number / Size / GPM

RV-0 ROTORS VALVE (BLUE)
SV-0 SPRAY HEADS VALVE (GREEN)
BV-0 BUBBLERS VALVE (PINK)

ZONE VALVE AND BOX LOCATION

M — WATER METER LOCATION (SEE CIVIL PLANS)

C — IRRIGATION CONTROLLER LOCATION

1-1/2" — LATERAL (PVC) PIPE SIZE - TYP.

ZONE (VALVE) AREA LIMIT LINE

IRRIGATION MAIN

IRRIGATION LATERAL LINE - ROTORS (BLUE)

IRRIGATION LATERAL LINE - SPRAY HEADS (GREEN)

IRRIGATION LATERAL LINE - BUBBLERS (PINK)

NOTE: ALONG IRRIGATION MAIN LINE ALL JOINT CONNECTIONS SHALL BE SET AT A 45 DEGREE ANGLE TO AVOID EXCESSIVE WATER HAMMER. NO 90 DEGREE CONNECTIONS (CORNERS).

NOTE: PER CITY ORD. 50.02(AQ) AND 100.35(E), NO LANDSCAPING MATERIALS OTHER THAN SOD ARE NOT ALLOWED WITHIN FIVE (5) FEET OF AN PORTION OF CITY OWNED UTILITIES WITHIN THE PUBLIC STREET RIGHT-OF-WAY INCLUDING METERS, HYDRANTS, SERVICE LINES, ETC ENGINEERING STANDARD. FURTHERMORE, NO TREES, SHRUBERY OR OBSTRUCTION SHALL BE PLACED WITHIN A THREE (3) FOOT RADIUS OF CITY-OWNED SEWER LATERAL CLEANOUT OR WATER AND/OR REUSE METER.

NOTE: AN IRRIGATION SYSTEM SHALL BE PROVIDED FOR ALL TREE AND PALM RELOCATIONS AND ALL NEW LANDSCAPE MATERIALS. IRRIGATION SYSTEM SHALL PROVIDE CONSISTENT WATER APPLICATION AND SHALL PROVIDE 100% COVERAGE WITH 50% OVERLAP. IRRIGATION WATER SUPPLY TO BE PROVIDED BY CONNECTION AND METER TO THE CITY WATER DISTRIBUTION LINE ON N.W. 15TH PLACE. (SEE CIVIL PLANS FOR SIZE, SPECIFICATIONS).

NOTE: ALL UNDERGROUND UTILITY LINES SHALL BE ROUTED AROUND THE TREE PROTECTION AREA WHERE POSSIBLE. IF NOT, A TUNNEL MADE BY A POWER-DRIVEN SOIL AUGER MAY BE USED UNDER THE TREE.

True North / Project North
0 40 80 Feet

ARCADIS
7000 N Federal Highway
Boca Raton FL 33487 USA
tel 561 393 6555
www.arcadis.com

SEAL

NOT TO BE FILED FOR RECORD UNLESS SIGNED AND DATED WITH THE ORIGINAL SEAL OF DEBRA L. HERNANDEZ. FLORIDA L.A. #6666975 FOR THE FIRM.

WALTERS ZACKRIA ARCHITECTS
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CORPORATE NAME: WALTERS ZACKRIA ASSOCIATES, PLLC REGISTERED IN THE STATE OF FLORIDA. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. THESE DRAWINGS ARE THE PROPERTY OF WALTERS ZACKRIA ASSOCIATES, PLLC AND SHALL NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION FROM A PRINCIPAL OF THE FIRM OR BE LIABLE FOR THE FULLEST LEGAL RECOURSE. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO EXECUTION OF WORK.

CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

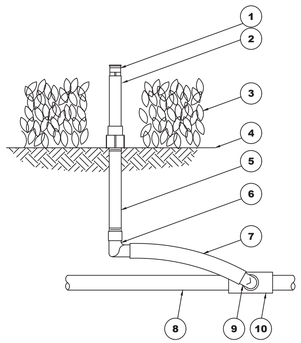
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CHECKED BY: PFR
DATE: 05/19/2025

REVISIONS:
⚠08/04/2025 PERMIT CO-ORD.
⚠10/6/25 ADDENDUM 3 CO-ORD

2406

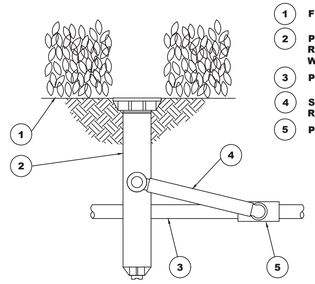
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IRRIGATION PLAN



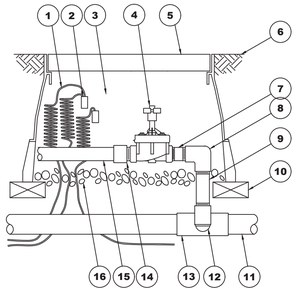
1. PLASTIC NOZZLE: 180° 5 SERIES MPR STREAM BUBBLER
2. PLASTIC SHRUB ADAPTER: RAIN BIRD MODEL PA-8S-PRS
3. PLANT MATERIAL
4. FINISH GRADE/TOP OF MULCH
5. UV RADIATION RESISTANT PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
6. 1/2-INCH FEMALE NPT x 0.490-INCH BARB ELBOW: RAIN BIRD MODEL SBFE-050
7. SWING PIPE, 12-INCH LENGTH: RAIN BIRD MODEL SP-100
8. PVC LATERAL PIPE
9. 1/2-INCH MALE NPT x .490-INCH BARB ELBOW: RAIN BIRD MODEL SBE-050
10. PVC SCH 40 TEE OR ELL

PRESSURE COMPENSATING BUBBLER DETAIL
RAINBIRD 5 SERIES MPR ON 1806 POP-UP RISER
not to scale



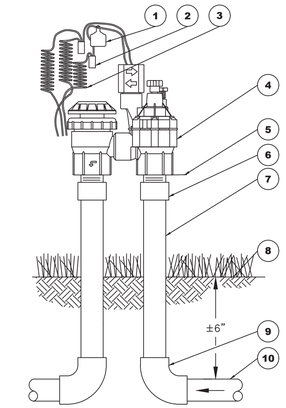
1. FINISH GRADE/TOP OF MULCH
2. POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-PRS WITH PLASTIC MPR NOZZLE
3. PVC LATERAL PIPE
4. SWING ASSEMBLY: RAIN BIRD MODEL SA 6050
5. PVC SCH 40 TEE OR ELL

PRESSURE COMPENSATING SPRAY NOZZLE DETAIL
RAINBIRD MPR NOZZLE ON 1806 POP-UP RISER
not to scale



1. 30-INCH LINEAR LENGTH OF WIRE, COILED
2. WATERPROOF CONNECTION RAIN BIRD SPLICE-1 (1 OF 2)
3. ID TAG: RAIN BIRD VID SERIES
4. REMOTE CONTROL VALVE: RAIN BIRD PESB-PRS-D
5. VALVE BOX WITH COVER: RAIN BIRD VB-STD
6. FINISH GRADE/TOP OF MULCH
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
13. PVC SCH 40 TEE OR ELL
14. PVC SCH 40 MALE ADAPTER
15. PVC LATERAL PIPE
16. 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

RAINBIRD ELECTRIC REMOTE CONTROL VALVE
PEB OR PEBS SERIES WITH PRS-D PRESSURE REGULATING MODULE AND VB-STD. - STANDARD VALVE BOX
not to scale

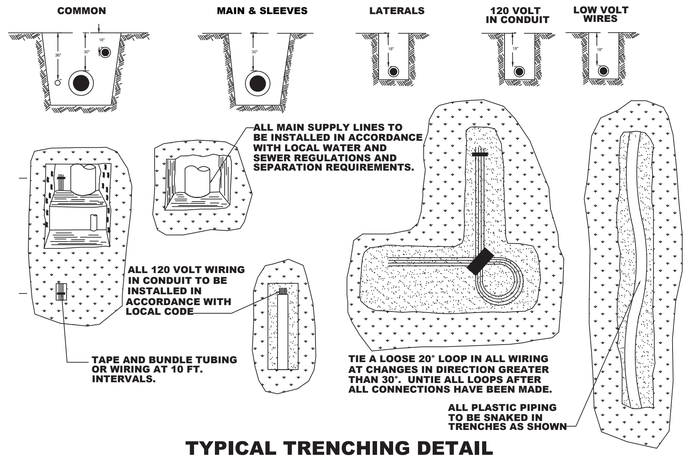


1. ID TAG: RAIN BIRD VID SERIES
2. WATERPROOF CONNECTION: RAIN BIRD SPLICE-1 (1 OF 2)
3. 30-INCH LINEAR LENGTH OF WIRE, COILED
4. REMOTE CONTROL VALVE: RAIN BIRD 100-ASVF
5. INSTALL 6-INCH MIN. ABOVE HIGHEST POINT OF DISCHARGE
6. UV RADIATION RESISTANT PVC SCH 40 MALE ADAPTER (1 OF 2)
7. UV RADIATION RESISTANT PVC SCH 40 PIPE (1 OF 2)
8. FINISH GRADE/TOP OF MULCH
9. PVC SCH 40 ELL (1 OF 2)
10. PVC LATERAL PIPE (1 OF 2)

ELECTRIC REMOTE CONTROL VALVE
ASVF SERIES
not to scale

GENERAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE FLORIDA BUILDING CODE – PLUMBING, APPENDIX F.
2. ALL IRRIGATION MAINS AND LATERALS UNDER PAVED AREAS SHALL BE SLEEVED; 2 NOMINAL SIZES LARGER THAT PIPING.
3. REFER TO LANDSCAPE PLANS FOR REQUIRED LANDSCAPE SPECIFICATIONS AND COORDINATION ITEMS.
4. REFER TO ENGINEERING PLANS FOR ALL SITE WORK AND COORDINATION ITEMS.
5. REFER TO ELECTRICAL PLANS FOR ALL POWER AND COORDINATION ITEMS.
6. CONTRACTOR SHALL LOCATE ANY ZONE / CIRCUIT VALVES IN TURF OR MULCHED AREAS, INSIDE SPECIFIED VALVE BOXES.
7. ZONE / CIRCUIT VALVES AND PIPING ARE DIAGRAMMATIC.
8. CONTRACTOR TO FIELD VERIFY CONDITION AND LOCATION OF ALL EXISTING PIPEWORK, HEADS, MAIN LINES, ZONES AND GPM, PUMP AND WATER SOURCE.
9. WHERE INDICATED BY DESIGN, ALL PROPOSED IRRIGATION SHALL BE NEW AND ATTACHED TO EXISTING SYSTEM.
10. ALL LANDSCAPE AREAS TO RECEIVE IRRIGATION BY AN AUTOMATIC, UNDERGROUND SYSTEM. IRRIGATION TO BE RUST-FREE AND SHALL PROVIDE 100% COVERAGE WITH 100% OVERLAP.
11. IRRIGATION SYSTEM SHALL NOT OVERSPRAY ONTO WALKWAYS OR STREETS.
12. CONTRACTOR SHALL LOCATE AND VERIFY OPERATIONAL INTEGRITY OF EXISTING RAIN SENSOR.
13. ALL IRRIGATION (PVC) RISERS SHALL BE PAINTED FLAT BLACK UNLESS NOTED OTHERWISE.
14. ALL EXISTING IRRIGATION PIPING, HEADS AND OTHER COMPONENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND/OR RESTORED TO 100% OPERATIONAL INTEGRITY PRIOR TO FINAL INSPECTION.
15. EXISTING LANDSCAPE SHALL BE MAINTAINED WITH CONSISTENT SUPPLEMENTAL WATER / IRRIGATION DURING CONSTRUCTION.
16. CONTRACTOR SHALL PROVIDE TEMPORARY BUBBLERS FOR ALL RELOCATED TREES OR PALMS (SEE TREE MANAGEMENT PLANS OR LANDSCAPE PLANS).
17. CONTROL VALVES TO BE CONNECTED TO MAIN SUPPLY LINE.



TYPICAL TRENCHING DETAIL
not to scale

IRRIGATION TECHNICAL SPECIFICATIONS

Sources:

A. Proposed meter from City water supply, max. flow – 50 GPM, at min. 35 psi. Refer to Civil Engineer / drawings for location, pipe sizing and connection requirements.

Points of connection:

A. One (1) manifold to be constructed in strict accordance with:
   1. All requirements set forth in the technical specifications.
   2. All requirements of the City of jurisdiction, Broward County and the Florida Building Code Plbg. Appendix F regulations and policies.
   3. In strict accordance with the related RPZ backflow preventer detail. Refer to Water & Sewer Engineering plans.

B. All components and piping for each manifold shall be sized as drawn.

C. Location as drawn (approximate); location to be approved by appropriate owner's representative prior to construction.

Automatic control systems (low-voltage electric):

A. Automatic Irrigation Controller.
   1. Rainbird LXME2/PRO (48 station capability), IQ4 Central Control capability (O.A.E.).
   2. Installation: Controller to be mounted in strict accordance with manufacturer's recommendations.
      1. Outdoor Stainless Steel Cabinet, electrical stub–out to be provided.
      2. Cabinet lock per Owner's request. See sheet L1.0 for controller location.

B. Automatic Control Valves:
   1. All Remote Control normally closed low voltage valves. (O.A.E.)
   2. Models and Options.
      a. Master Valve, 3", required: Rainbird 300–BPES Brass, with PRS pressure regulating option.
      b. Zone control valves, 1": Rainbird PESB series: 100–PESB–PRS–D (to 40 GPM) Rainbird PESB series: 150–PESB–PRS–D (30 to 125 GPM) Rainbird PESB series: 200–PESB–PRS–D (75 to 175 GPM)
   3. Installation:
      a. All to be mounted in the appropriate configuration.
      b. Each to be mounted directly above its supply or main line by means of a PVC nipple (Schedule 40 use–rated) threaded directly into both the valve base and the service outlet (facing up) of its service or main–line fitting, each nipple to be of the length required to leave the valve outlet at the depth of the line served.
      c. Each control valve shall be mounted by means of a separate main–line fitting; valves shall not be manifolded.
      d. See related detail,
   4. Locations, as drawn (approximate).

C. System Valve Control Wiring (low voltage):
   1. Wire:
      a. All solid copper direct burial (UF or approved for irrigation).
      b. Sizing to follow controller and valve manufacturer's recommendations, but to be not smaller than:
         1. Commons, No.12 AWG.
         2. Valve hot wires and spares, No.14 AWG.
   2. Installation:
      a. All to be laid in the main–line trenches, bundled, and taped to the pipe forty–five degrees (45°) off bottom center without noticeable slack.
      b. Spares shall be routed throughout the sites.
      c. Bundled wires shall be routed through sleeves when crossing paved areas.
      d. Wiring connections below grade, whether splices or to valves, shall be made:
         1. Only at valve locations, within the boxes.
         2. By means of "Scotchcast" resin, or approved equal.

D. Valve boxes:
   1. Rainbird VB–STD standard square valve box with green cover, (O.A.E.), lock option per Owner request.
   2. Each valve shall be equipped with a separate box.
   3. Installation:
      a. Each to be set flush to final grade with the valve centered within the box's dimensions.
      b. See related (valve) detail.

A. Spray and Rotary: all Rain Bird products, 2015–2016 Landscape Irrigation Products and Specifications Manual. (O.A.E.)
   1. Total counts by type as shown on plan – Irrigation Head Legend:
      a. Sprays: refer to head table on plan.
      b. Bubblers: to be provided on all relocated and proposed trees.
      c. Rotors: refer to head table on plan.
   2. Bodies, nozzles and installation:
      a. Sprays:
         1. Bodies: 1806–PRS Series, 6" Pop–up model or Shrub Adapter and riser, as required (O.A.E.).
         2. Nozzles, Plastic MPR Series, or as shown on plans, or approved equal:
            a. Standard Patterns

5Q	12H
5H	12F
5F	15Q
8Q	15T
8H	15H
8F	15TQ
10Q	15F
10H	15RCS
10F	15LCS
12Q	15SST

            Shrub risers as required
      b. Bubbler Head, Stream and Flood:
         1. Rainbird 1400 series, pressure compensating flood bubbler
         2. Rainbird 5 Series MPR Stream Bubbler Nozzles
      c. Rotors, where specified:
         1. Bodies
            a. Hunter PGP: Adjustable, 4" pop–up, full, half and quarter radius spray pattern
         2. Nozzles
            a. Hunter 6.0 (Blue)
         3. Installation:
            a. See related details. All irrigation heads shall be installed at minimum 12" clear of edge of asphalt pavement where unprotected by curbs or wheelstops.
            b. All pop–ups to be set flush to final grade and firmly sanded in grassed areas following sodding and in other landscaped areas prior to mulching.
            c. All shrub risers shall be 18" high, black or painted black to be less visible in the landscape, with a 12" pop–up.

Pipe, fitting, nipples:

A. Pipe:
   1. Irrigation systems:
      a. All type 1 PVC (1120) unless otherwise noted.
      b. Schedules and classes:
         1. Service (suction) line, schedule 40.
         2. P.O.C. manifolds, schedule 40 minimum.
         3. Mains and section lines:
            a. 1–inch and larger, class 200.
            b. 3/4–inch, class 315.
   2. Sleeves shall be installed under pavement by the Contractor for mains and laterals crossing VUA and/or where noted on the plan, prior to compaction of pavement base material. Directional bore where existing.
   3. Sizes:
      a. As drawn.
      b. Unmarked lines, 3/4–inch.
   4. Depths of cover:
      a. Service and main lines, 30–inches to subgrade (minimum).
      b. Laterals and Zone lines, 18–inches to final grade (minimum).
   5. Where wiring is to be run through the same sleeve as irrigation main, all due care shall be taken to protect the wire.

B. Fittings:
   1. All type 1 PVC to meet or exceed ASTM D–2466–76a and D–1784–75.
   2. All fittings shall be sized to line as drawn.
   3. Bushings:
      a. Shall not be allowed except when an injection–molded fitting if the dimensions required should not be available from any area source; in which case, only a single bushing shall be allowed to achieve the total particular reduction required (nested bushings shall be rejected).
      b. Shall not be allowed to make reductions in runs of pipe; all reductions shall be made in fittings planned.

C. Nipples:
   1. All type 1 PVC, either:
      a. Schedule 80 pipe threaded on both ends (schedule 40 use–rated).
      b. Or, schedule 40 injection molded to meet or exceed ASTM D–2466–76a and D–1784–75.
   2. All to be sized to line and to be of the specific lengths required.
   3. All to be installed without resort to either bushings or solvent–weld joints.

General notes:

A. System design drawings:
   1. Have been prepared schematically with common trenches indicated wherever practical.
   2. Are based on head placement with that representation taking precedence over all other representations, dimensions, and locations.
   3. Display certain system components and piping in paved areas that are to be installed in unpaved areas immediately adjacent.
   4. All components of irrigation system (heads, fittings, piping, nozzles, etc.) shall be "Rain Bird" or approved equal.

B. Bidders are advised to review all contract documents, Landscape Plans and related Engineering Plans prior to submitting a proposal for this section of the work. Should the specified manufacturer have revised or re–issued model numbers for components, the Bidder is advised to submit spec sheets for comparable performing components by the specified manufacturer, or approved equal (O.A.E.) to the Landscape Architect for evaluation.

C. Contractor shall submit six (6) sets of equipment spec sheets for all components or material specified by brand name (proprietary) as indicated, providing spec sheets for comparable components by the manufacturers where model numbers have changed and obtain approval for submittals in writing from the Landscape Architect prior to permitting.

D. Contractor shall obtain all plumbing and applicable permits, as required, and submit to the permitting agency all required and related componant information Contractor shall provide an irrigation system which complies with all applicable land development and building codes.

E. Contractor shall obtain electrical service from connection specified by Electrical Engineering or provide service drop from nearby source and applicable permits.

F. Contractor shall provide rain sensor automatic shutoff/reset will be "MiniClik II" Model 502(O.A.E.) pump mounted and installed per manufactor's specifications.

G. Contractor will provide an in–line rust inhibitor filter. No overspray on paving.

H. Contractor shall provide Bubbler Heads equal to or exceeding the number of Trees, Royal Palms or large Date Palms; proposed or relocated. Bubblers can be zoned separately. Contractor shall field adjust the number of zones and/or zone size for the additional water consumption and to balance distribution on the system. Bubbler heads shall be abandoned and lateral connection capped upon expiration of the landscape warrantee.

I. Contractor shall provide "as–built" plans, in downloadable AutoCAD electronic form and hardcopies, with text and graphics complying with Florida Irrigation Society standards and material specifications clearly and completely called out.

J. Contractor shall maintain a complete record of: submittals, plans by release dates, correspondence, permits, addenda, change orders and requests for information (RFI) for review on request by the Owner, Landscape Architect &/or Inspector.

QUOTATIONS OR PROPOSAL/AGREEMENTS WILL PROVIDE UNIT COSTS AND SHALL INCLUDE: SUBMITTALS,IRRIGATION EQUIPMENT LISTED, PUMP STATION DELIVERY & PLACING, ELECTRICAL SERVICE, PIPING & JOINTS, TRENCHING, PRESSURE TESTING, INSPECTIONS, BACKFILLING, OPERATIONAL TESTING, TAXES, FEES, CLEAN–UP, WATER SCHEDULE PROGRAMMING, AND ALL FIELD ADJUSTMENTS NECESSARY TO DELIVER A FULLY FUNCTIONAL IRRIGATION SYSTEM.

THE CONTRACTOR/BIDDERS HAVE CAREFULLY READ AND FULLY UNDERSTAND ALL DRAWINGS (LANDSCAPE, IRRIGATION, RELATED ENGINEERING AND ARCHITECTURE), DETAILS, SPECIFICATIONS AND NOTES OF SUCH IRRIGATION SYSTEM PLANS FOR THE IDENTIFIED PROJECT AND LOCATION; AND CONTRACTOR/ BIDDERS ACKNOWLEDGES SAME BY SIGNATURE, DATE & COMPANY NAME BELOW THAT THE BID SUMITTED REFLECTS AN ACCURATE INSTALLATION OF THE IRRIGATION SYSTEM IN COMPLIANCE WITH ALL CONDITIONS SET FORTH, INCLUDING OFFICIAL ADDENDA. SO SWORN:

NOTE: ALL IRRIGATION MAINS AND LATERALS UNDER NEW OR EXISTING IMPERVIOUS AREAS, INCLUDING ASPHALT, PAVERS, PLANTERS, CONCRETE, ETC. SHALL BE SLEEVED; 2 NOMINAL SIZES LARGER THAT PIPING.

ARCADIS
7000 N Federal Highway
Boca Raton FL 33487 USA
tel 561 393 6555
www.arcadis.com

SEAL

NOT TO BE FILED FOR RECORD UNLESS SIGNED AND DATED WITH THE ORIGINAL SEAL OF DEBRA L. HERNANDEZ FLORIDA L.A. #6666975 FOR THE FIRM.

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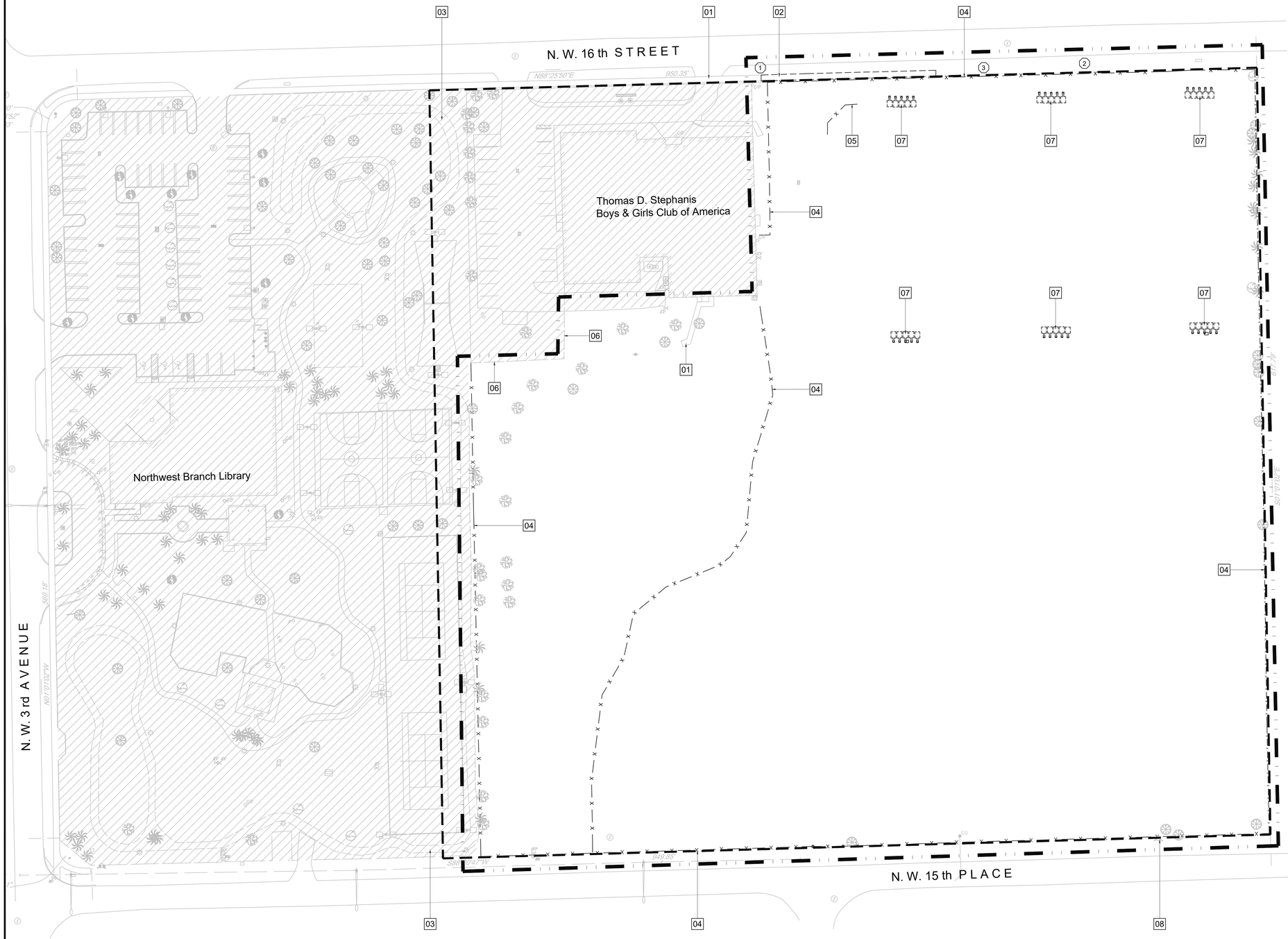
CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: DLH
CHECKED BY: PFR
DATE: 05/19/2025
REVISIONS:
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IRRIGATION DETAILS AND SPECIFICATIONS



0 10 20 50 100 200
GRAPHIC SCALE (IN FEET)

NORTH

SITE PLAN - DEMOLITION

SCALE: 1" = 40'-0"

SITE DEMOLITION KEYNOTES

01 EXISTING CONCRETE SIDEWALK TO REMAIN
02 EXISTING CONCRETE SIDEWALK TO BE REMOVED
03 EXISTING GRAVEL PATH AND BASE TO REMAIN
04 EXISTING CHAINLINK FENCE TO BE REMOVED
05 EXISTING BACKSTOP FENCE TO BE REMOVED
06 EXISTING CHAINLINK FENCE TO REMAIN
07 EXISTING LIGHT POLES AND FIXTURE HEADS TO BE REMOVED
08 EXISTING FIRE HYDRANT TO REMAIN

NOTE

PROTECT ALL EXISTING TREES NOT NOTED TO BE REMOVED.
SEE LANDSCAPE SHEETS FOR TREES TO BE REMOVED, RELOCATED OR TO REMAIN.

AREA OF EXISTING APOLLO PARK AND ADJOINING BOYS AND GIRLS CLUB ADJACENT TO THE PROJECT SITE TO REMAIN. NO WORK EXPECTED AT THESE AREAS.

PROPERTY BOUNDARY LINE

PROJECT BOUNDARY LINE

TEMPORARY SIGNAGE LOCATION

TEMPORARY SIGNAGE TEXT:

1. **"SIDEWALK CLOSED USE OPPOSITE SIDE OF STREET"** AT EAST END OF SIDEWALK IN FRONT OF THE BOYS AND GIRLS CLUB DIRECTING PEDESTRIANS TO THE NORTH SIDE OF NW 16th STREET
2. **"CONSTRUCTION ACCESS ONLY"** AT SITE ENTRANCE POINTS AND AREA WITH GATES FOR TEMPORARY ACCESS.
3. **"NO TRESPASSING CONSTRUCTION AREA VIOLATORS WILL BE PROSECUTED"** TO BE PROVIDED ALONG FENCE AT PERIMETER OF PROJECT AREA THAT IS ADJACENT TO A PUBLIC STREET, SIDEWALK OR PATH.

GENERAL DEMOLITION NOTES:

1. CONTRACTOR SHALL OBTAIN AND PAY ALL FEES FOR PERMITS AND INSPECTIONS AS REQUIRED BY CODE, APPLICABLE LAWS OR GOVERNING AGENCIES IN CONNECTION WITH DEMOLITION WORK, REMOVAL AND DISPOSAL OF DEBRIS, ETC.
2. DEMOLISH AND REMOVE ALL WALLS, SURFACES, ETC. DESIGNATED FOR REMOVAL ON DEMOLITION PLAN. ADJACENT SURFACES TO BE PROTECTED AND PATCHED AS REQUIRED AND MADE READY TO RECEIVE NEW FINISHES OR TO MATCH EXISTING FINISHES, INCLUDING BASES AND CEILINGS.
3. ALL DEMOLITION TO BE PERFORMED BY MECHANICS SKILLED AND/OR LICENSED, IF REQUIRED, IN TRADES INVOLVED.
4. ELECTRICAL LINES TO BE PROPERLY CAPPED AS REQUIRED BY DEMOLITION.
5. REMOVE ALL LIGHT FIXTURES AS DESCRIBED ON THE DEMOLITION DRAWINGS;.
6. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY ADDITIONAL DEMOLITION AND REMOVALS AS REQUIRED BY SCOPE OF WORK OF CONTRACT DOCUMENTS.
7. CONTRACTOR TO PROVIDE BRACING AND SHORING NECESSARY TO SUPPORT EXISTING STRUCTURE DURING REMOVAL OF MEMBERS AND INSTALLATION OF NEW FRAMING.
8. CONTRACTOR ASSUMES RISK(S) REGARDING DAMAGE OR LOSS, WHETHER BY FIRE, THEFT OR OTHER CASUALTY TO DEMISED PREMISES AFTER CONTRACT IS SIGNED. NO SUCH DAMAGE OR LOSS WILL RELIEVE CONTRACTOR OF OBLIGATION TO COMPLETE WORK.
9. CONTRACTOR IS REQUIRED TO PATCH AND REPAIR ALL ADJACENT WALLS AND SURFACES AT SITE DAMAGED DURING DEMOLITION OR WITHIN THE BUILDING AS A RESULT OF DEBRIS REMOVAL.
10. CONTRACTOR TO TAKE CARE DURING DEMOLITION TO MAINTAIN EXISTING SERVICES.
11. DISPOSE OF DEMOLITION MATERIAL IN MANNER APPROVED BY GOVERNMENT REGULATIONS IMMEDIATELY FOLLOWING DEMOLITION UNLESS OTHERWISE INSTRUCTED.
12. TO THE BEST OF OUR KNOWLEDGE THERE IS NO ASBESTOS ABATEMENT REQUIRED PER INFORMATION PROVIDED IN ASBESTOS REPORTS INCLUDED IN THE PROJECT MANUAL.
13. PROVIDE ENVIRONMENTAL CONTROL FOR ALL DEMOLITION WORK AS REQUIRED.
14. ANY ITEMS NOTED "SAVE" TO BE REMOVED, NUMBERED, CATALOGUED FOR STORAGE AND PROTECTED FOR FUTURE USE / RELOCATION.
15. PROVIDE TEMPORARY LIGHTING THROUGHOUT CONSTRUCTION AREA, AS REQUIRED.
16. CONTRACTOR TO PROVIDE TEMPORARY TOILET FACILITIES TO BE USED BY DEMOLITION WORKERS DURING THE DURATION OF DEMOLITION. CONTRACTOR SHALL SUPPLY ALL NECESSARY PRODUCTS AND IS RESPONSIBLE FOR MAINTAINING A SANITARY ENVIRONMENT.
17. REMOVE ALL WIRING AND CONDUITS INTERFERING WITH DEMOLITION WORK. TERMINATE A JUNCTION BOX AT NEAREST WALL OR CEILING TO REMAIN.
18. CONTRACTOR SHALL COORDINATE LOCATION FOR DUMPSTER WITH THE OWNER.
19. CONTRACTOR SHALL PROTECT THE PROJECT SITE FROM ACCESS BY THE PUBLIC DURING WORK OPERATIONS AND AT THE END OF EACH WORK DAY. PROVIDE TEMPORARY BARRIERS AS REQUIRED UNTIL COMPLETION OF ALL WORK.
20. SEE CIVIL AND MEP ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION.
21. EXISTING FENCE TO REMAIN AT PERIMETER OF SITE TO SECURE DURING CONSTRUCTION. CONTRACTOR TO PROVIDE GATES AS NECESSARY AND PROVIDE OPAQUE SCREENING TO COMPLY WITH THE REQUIREMENTS OF CITY ORDINANCE 152.06 (B) THROUGH 152.06 (G)
22. PEDESTRIANS SHALL BE PROTECTED DURING DEMOLITION AND CONSTRUCTION ACTIVITIES. SIGNS SHALL BE PROVIDED BY CONTRACTOR TO DIRECT TRAFFIC.

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CITY OF POMPANO BEACH
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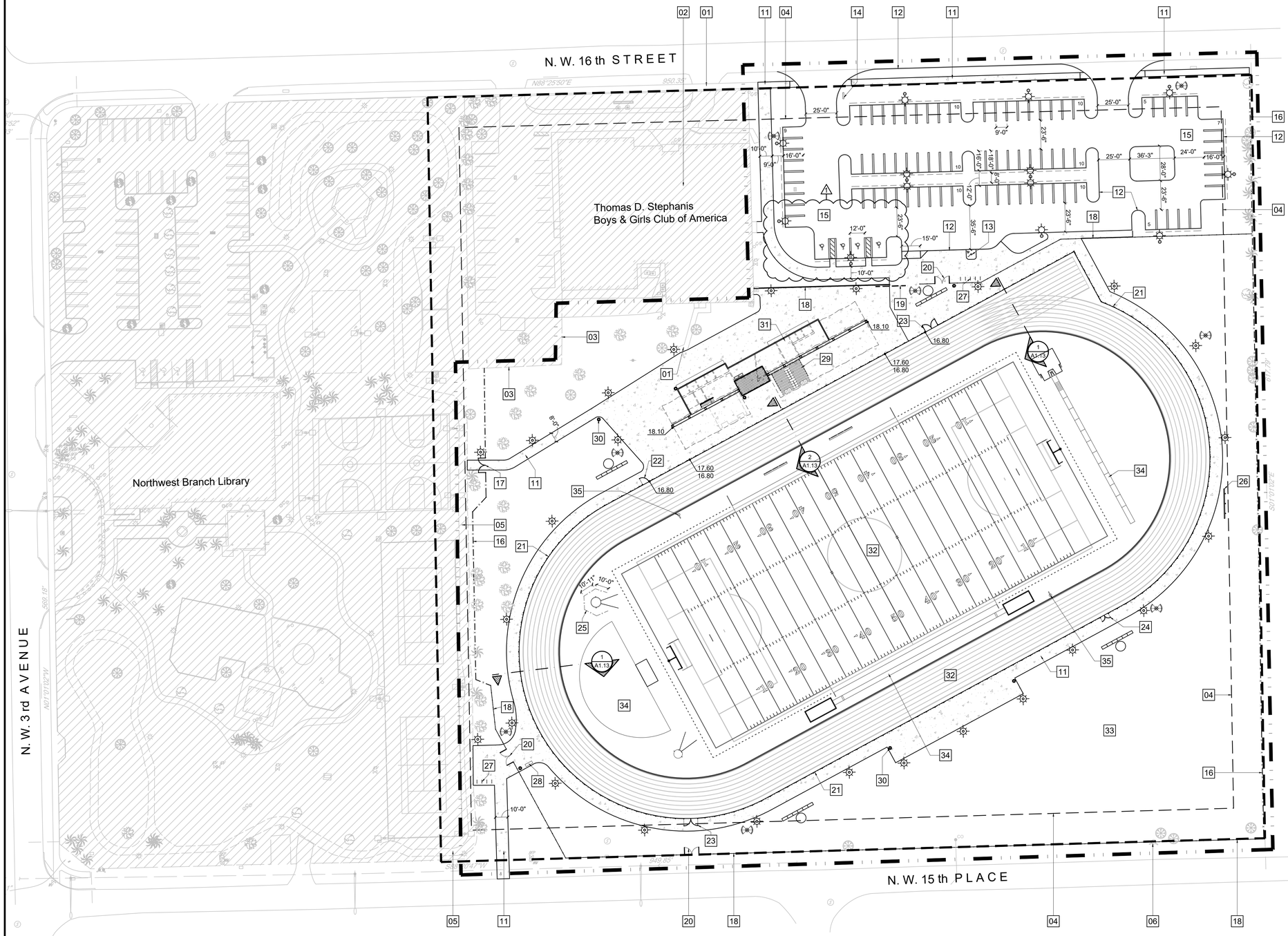
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CHECKED BY: AZ
DATE: 05/19/2025

REVISIONS:
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2406

SHEET
A1.09

SITE PLAN - DEMOLITION



NORTH

SITE PLAN - PROPOSED

SCALE: 1" = 40'-0"

KEYNOTES FOR EXISTING FEATURES

01	EXISTING CONCRETE SIDEWALK TO REMAIN
02	EXISTING BOYS AND GIRLS CLUB BUILDING TO REMAIN
03	EXISTING FENCE TO REMAIN
04	25' PERIMETER SETBACK LINE
05	EXISTING ASPHALT PATH TO REMAIN
06	EXISTING FIRE HYDRANT TO REMAIN

KEYNOTES FOR PROPOSED FEATURES

11	NEW CONCRETE SIDEWALK. SEE CIVIL DRAWING SHEETS & ARCH. CONCRETE PAVEMENT PLAN FOR MORE INFORMATION.
12	NEW CONTINUOUS CONCRETE 'D' CURB
13	NEW FLAG POLE WITH UPLIGHT FIXTURE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
14	LOCATION FOR NEW MONUMENT SIGN PROVIDED-INSTALLED BY CITY. CONTRACTOR TO PROVIDE POWER PER ELECTRICAL DRAWINGS.
15	NEW ASPHALT PARKING LOT WITH STALL MARKINGS. SEE CIVIL DRAWING SHEETS FOR MORE INFORMATION.
16	NEW PERIMETER 6' HIGH CHAINLINK FENCE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
17	NEW 12' WIDE, 6' HIGH CHAINLINK FENCE DOUBLE GATE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
18	NEW PERIMETER 6' HIGH ALUMINUM PICKET FENCE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
19	NEW 24' WIDE, 6' HIGH ALUMINUM PICKET SLIDING GATE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
20	NEW 12' WIDE, 6' HIGH ALUMINUM PICKET DOUBLE GATE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
21	NEW PERIMETER 4' HIGH CHAINLINK FENCE FOR RUNNING TRACK. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
22	NEW 4' WIDE, 4' HIGH CHAINLINK FENCE SINGLE GATE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
23	NEW 12' WIDE, 4' HIGH CHAINLINK FENCE DOUBLE GATE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
24	NEW 8' WIDE, 4' HIGH CHAINLINK FENCE DOUBLE GATE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
25	NEW SPORTSFIELD SPECIALTY NETTING AROUND DISCUS PAD.
26	NEW ELECTRONIC SCOREBOARD WITH FOUNDATION AND STRUCTURE. SEE SITE DETAILS SHEET FOR MORE INFORMATION.
27	NEW BIKE RACKS (TYP. OF 10) SEE SITE DETAILS SHEET FOR MORE INFORMATION.
28	NEW BENCH (TYP. OF 2) SEE SITE DETAILS SHEET FOR MORE INFORMATION.
29	NEW ALUMINUM BLEACHERS. SEE A1.15 FOR MORE INFORMATION.
30	NEW TRASH RECEPTACLE ON CONCRETE PAD (TYP. OF 7) SEE SITE DETAILS SHEET FOR MORE INFORMATION.
31	NEW 2-STORY BUILDING WITH RESTROOMS, CONCESSION ROOM, STORAGE AND PRESS BOX. SAIL SHADE STRUCTURE FASTENED TO BUILDING FOR SHADE ABOVE BLEACHERS. SEE BUILDING SHEETS FOR MORE INFORMATION.
32	NEW MULTIPURPOSE FIELD WITH ROLLED BERMUDA SOD, SURROUNDED BY TRACK FIELD WITH SYNTHETIC SURFACE. SEE A1.12, LANDSCAPE & CIVIL SHEETS FOR MORE INFORMATION.
33	NEW LANDSCAPE AREA. SEE LANDSCAPE & IRRIGATION SHEETS.
34	NEW SYNTHETIC SURFACE TRACK FOR FIELD EVENTS (POLE VAULT APPROACH TRACK, LONG JUMP RUNNING TRACK, HIGH JUMP APPROACH TRACK)
35	QUICK CONNECT VALVE FOR HOSE CONNECTION. SEE CIVIL & IRRIGATION SHEETS.

SITE PARKING INFORMATION

PER PARKING STANDARDS PROVIDED BY AMERICAN PLANNING ASSOCIATION, PARKS HAVING AN AREA OF 50 ACRES OR LESS TO HAVE 1 PARKING SPACE FOR EACH ONE-HALF ACRE OF DEVELOPED PARK AREA UP TO 15 ACRES, PLUS 1 PARKING SPACE FOR EACH 400 SQ. FEET OF FLOOR AREA IN THE REMAINING AREA OF EACH BUILDING IN THE PARK.

DEVELOPED AREA OF PARK = 8.05 ACRES = 17 PARKING SPACES REQD.
BUILDING = 2,533 SQ. FEET = 7 PARKING SPACES REQD.

PARKING PROVIDED: 86 STANDARD SPACES (9' X 18')
04 ADA SPACE (12' X 18')

90 TOTAL SPACES

PER 2023 FLORIDA ACCESSIBILITY CODE TABLE 208.2, A MINIMUM OF (4) OF THE PROVIDED (90) PARKING SPACES SHALL BE ACCESSIBLE SPACES.

SITE AREA BREAKDOWN:

TOTAL SITE AREA:	9.47 ACRES / 412,228 SQ. FT.	(100.0%)
BUILDING AREA:	0.49 ACRES / 21,228 SQ. FT.	(05.0%)
IMPERVIOUS AREA:	3.81 ACRES / 165,958 SQ. FT.	(40.2%)
PERVIOUS LANDSCAPE AREA:	2.88 ACRES / 125,617 SQ. FT.	(30.5%)
ATHLETIC FIELD (PERVIOUS):	2.30 ACRES / 100,159 SQ. FT.	(24.3%)
PROJECT AREA:	8.05 ACRE / 350,714 SQ. FT.	(85.0%)

THE PERVIOUS AREA REQUIREMENTS PER SECTION 155.3502 OF THE CITY OF POMPANO BEACH ZONING CODE, AS FOLLOWS:
PARKS AND RECREATION (PR) - 40% MINIMUM
PERVIOUS AREA FOR THIS PROJECT PER TABLE ABOVE - 54.8%

AREA OF EXISTING APOLLO PARK AND ADJOINING BOYS AND GIRLS CLUB ADJACENT TO THE PROJECT SITE TO REMAIN. NO WORK EXPECTED AT THESE AREAS.

AREA OF NEW CONCRETE WALKWAY / PAD

NEW LIGHT POLE MOUNTED CAMERA

NEW PARKING LOT LIGHT POLE

NEW PEDESTRIAN WALKWAY LIGHT POLE

NEW SPORTS LIGHTING POLE

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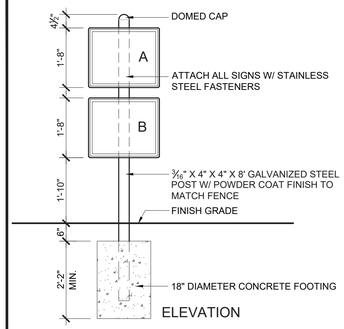
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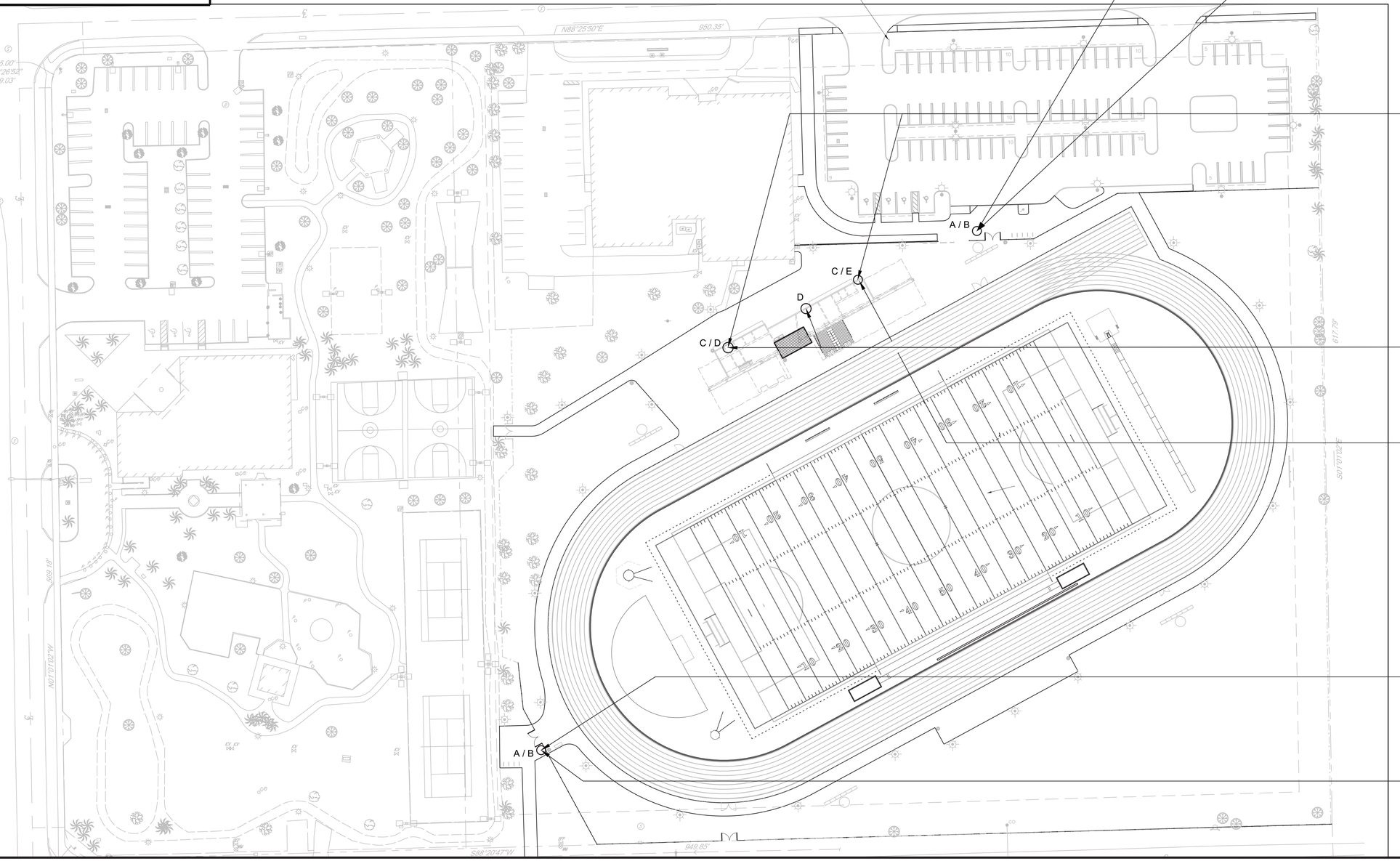
SITE PLAN - PROPOSED



1 TYPICAL SIGNAGE DETAIL

SCALE: 1/2" = 1' - 0"

LOCATION FOR NEW MONUMENT SIGN PROVIDED-INSTALLED BY CITY. CONTRACTOR TO PROVIDE POWER PER ELECTRICAL DRAWINGS.



NORTH SITE PLAN - SIGNAGE

SCALE: 1" = 40'-0"



A. POST MOUNTED



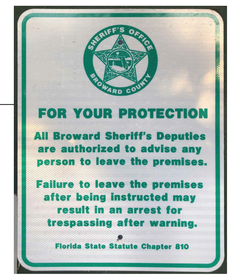
B. POST MOUNTED



C. WALL MOUNTED



D. WALL MOUNTED



E. WALL MOUNTED



A. POST MOUNTED



B. POST MOUNTED

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SITE PLAN - SIGNAGE

NOTE:

PROVIDE NEW ROLLED BERMUDA SOD AS PER LANDSCAPE DRAWINGS, LASER GRADED AS NOTED IN CIVIL DRAWINGS AT SOCCER FIELD.

CONTRACTOR TO PROVIDE PERMANENT GOALS / UPRIGHTS ENCASED IN CONCRETE FOUNDATIONS BELOW THE GRASS SURFACE.

CONTRACTOR TO PROVIDE TWO UNITS OF 15 FEET LONG, SINGLE TIER PORTABLE ALUMINUM PLANK BENCH WITH BACK REST, SIMILAR TO SPORTSFIELD SPECIALTIES INC. MODEL NO. ATBBRPT15.

THE COLORS FOR FIELD STRIPING SHALL BE AS FOLLOWS FOR EACH SPORT: USE PIONEER ATHLETIC - ULTRA FRIENDLY - STARLINE GPS - VOC FREE PAINT. APPLIED BY GPS LINE MARKING ROBOT. G.C. TO SUBMIT SHOP DRAWING FOR MARKING LAYOUT.

FOOTBALL: WHITE

SOCCER: YELLOW

THE WIDTH OF ALL LINES / FIELD MARKINGS SHALL BE 4" WIDE EXCEPT THE 5, 15, 25, 35 AND 45 YARD LINES ON THE FOOTBALL FIELD WHICH SHALL BE 3" WIDE.

CONTRACTOR TO PROVIDE THE FOLLOWING FIXED FOOTBALL AND PORTABLE SOCCER GOAL COMBINATION KIT W/ ACCESSORIES:

FOOTBALL GOALS: SPORTSFIELD SPECIALTIES #GP820HS - 8 FEET GOOSENECK OFFSET AND 20 FEET UPRIGHTS; W/ PLATE MOUNT HARDWARE KIT, FLAGS AND PROTECTIVE WRAP PADDING AT BASE.

SOCCER GOALS: SPORTS SPECIALTIES #SG824R - 8 FEET TALL X 24 FEET WIDE W/ WHITE NET AND ATTACHMENT HARDWARE. PROVIDE #SGMKR INTEGRATED WHEEL ASSEMBLY FOR BOTH GOALS.

GROUND ATTACHMENT: SPORTS SPECIALTIES #SG2S - INTERNAL, REAR GROUND BAR CLAMPING MECHANISM AND HARDWARE W/ LID-FILLER PLUGS FOR GRASS ASSEMBLY.

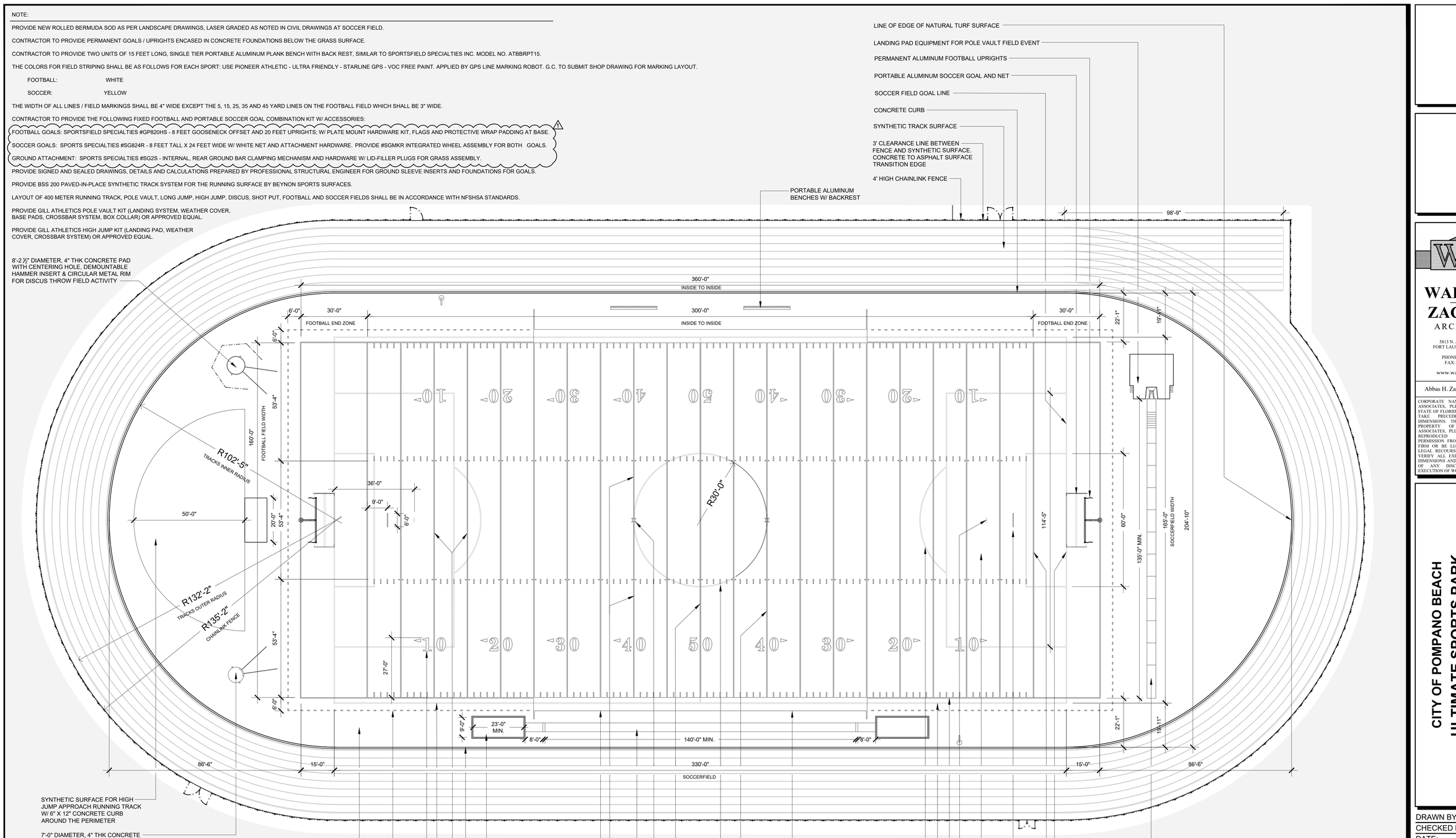
PROVIDE SIGNED AND SEALED DRAWINGS, DETAILS AND CALCULATIONS PREPARED BY PROFESSIONAL STRUCTURAL ENGINEER FOR GROUND SLEEVE INSERTS AND FOUNDATIONS FOR GOALS.

PROVIDE BSS 200 PAVED-IN-PLACE SYNTHETIC TRACK SYSTEM FOR THE RUNNING SURFACE BY BEYNON SPORTS SURFACES.

LAYOUT OF 400 METER RUNNING TRACK, POLE VAULT, LONG JUMP, HIGH JUMP, DISCUS, SHOT PUT, FOOTBALL AND SOCCER FIELDS SHALL BE IN ACCORDANCE WITH NFSHSA STANDARDS.

PROVIDE GILL ATHLETICS POLE VAULT KIT (LANDING SYSTEM, WEATHER COVER, BASE PADS, CROSSBAR SYSTEM, BOX COLLAR) OR APPROVED EQUAL.

PROVIDE GILL ATHLETICS HIGH JUMP KIT (LANDING PAD, WEATHER COVER, CROSSBAR SYSTEM) OR APPROVED EQUAL.



NOTE:
REFER TO SITE CONSTRUCTION GUIDELINES ON BEYNON SPORTS WEBSITE FOR APPROACH TRACK GRADING & INSTALLATION STANDARDS.

1 **FIELD LAYOUT PLAN**

SCALE: 1" = 20'-0"

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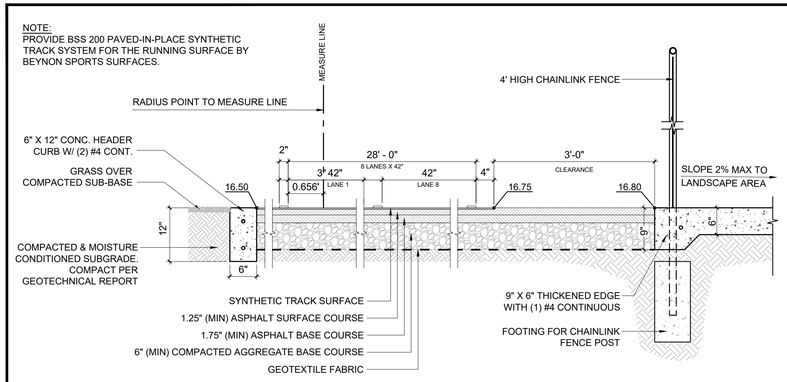
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FIELD LAYOUT PLAN

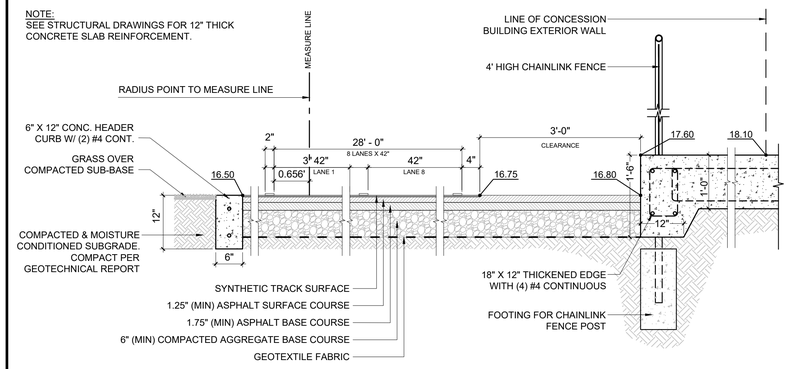
NOTE:
PROVIDE BSS 200 PAVED-IN-PLACE SYNTHETIC TRACK SYSTEM FOR THE RUNNING SURFACE BY BEYNON SPORTS SURFACES.



1 RUNNING TRACKS CROSS-SECTION DETAIL @ SIDEWALK

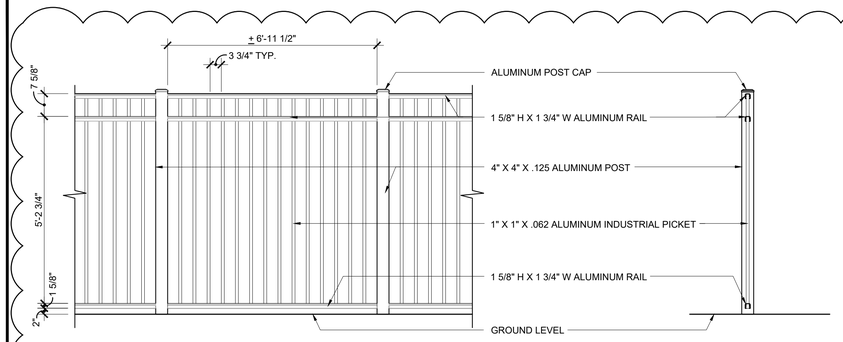
SCALE: 1/4" = 1'-0"

NOTE:
SEE STRUCTURAL DRAWINGS FOR 12" THICK CONCRETE SLAB REINFORCEMENT.



2 RUNNING TRACKS CROSS-SECTION DETAIL @ BUILDING

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



A. ELEVATION AT TYPICAL FENCE SECTION

SCALE: 1/2" = 1'-0"

B. SECTION AT TYPICAL FENCE SECTION

SCALE: 1/2" = 1'-0"

NOTE:

BASIS OF DESIGN FOR THE PICKET FENCE SHALL BE ULTRA ALUMINUM UAF-200 FLAT TOP (FLUSH BOTTOM) INDUSTRIAL SERIES. THIS IS THE SAME FENCE INSTALLED AT THE PERIMETER OF MC NAIR PARK.

OVERALL LENGTH OF 4 X 4 POSTS SHALL BE 96" AND SHALL BE ROUTERED TO RECEIVE RAILS, PROVIDE ENGINEERING FOR FOOTINGS AND COORDINATE LOCATION OF POSTS AND ALL FENCE COMPONENTS WITH TREES AND OTHER FEATURES IN THE PARK AND NOTIFY ARCHITECT OF ANY CONFLICTS.

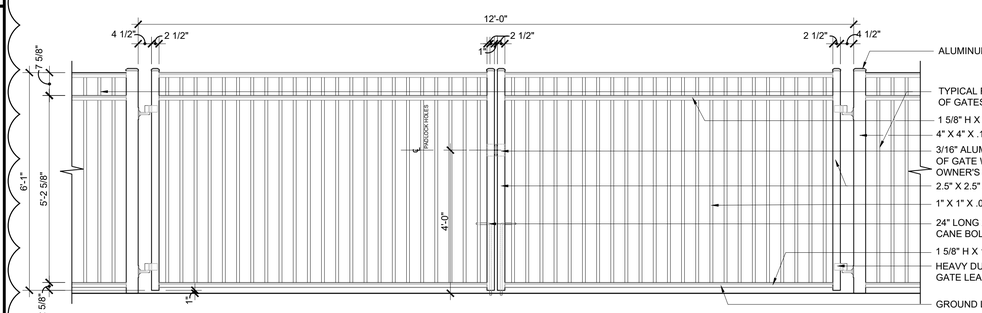
INSTALL CANE BOLTS AT THE INSIDE OF EACH GATE LEAF. PROVIDE 2 GUIDE BRACKETS AT EACH AND A RETAINER TO HOLD THE BOLT IN THE UP POSITION. PROVIDE 3/4" DIAMETER HOLES IN CONCRETE PAVEMENT TO RECEIVE CANE BOLTS IN THE OPEN AND CLOSED POSITIONS.

PROVIDE ALUMINUM ANGLES WELDED TO THE INSIDE AND JAMB OF GATE POSTS W/ HOLE TO ACCOMMODATE PADLOCK PROVIDED BY OWNER TO BE INSTALLED AT THE OUTSIDE OF EACH GATE.

ALL ALUMINUM FENCE COMPONENTS SHALL BE POWDER COATED BLACK PAINT.

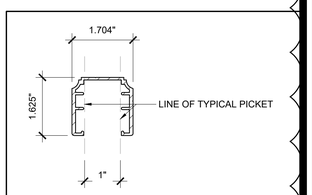
PROTECT SIDEWALK AND OTHER PAVEMENT DURING INSTALLATION OF POSTS AND FENCE.

CONTRACTOR SHALL SUBMIT ENGINEERED SIGNED AND SEALED SHOP DRAWINGS FOR NEW FENCE, GATES AND FOOTINGS COMPLYING W/ FBC 2023 FOR REVIEW AND PERMIT.



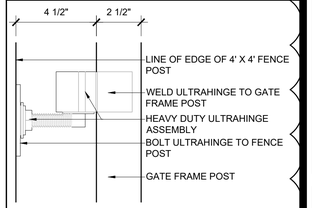
C. ELEVATION AT 12 FEET WIDE GATE

SCALE: 1/2" = 1'-0"



D. DETAIL AT TYPICAL RAIL EXTRUSION

HALF SCALE

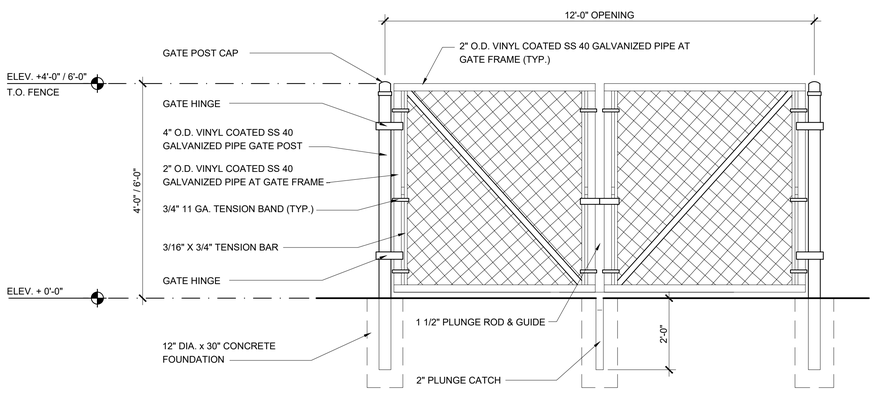


E. DETAIL AT TYPICAL HINGE

SCALE: 3" = 1'-0"

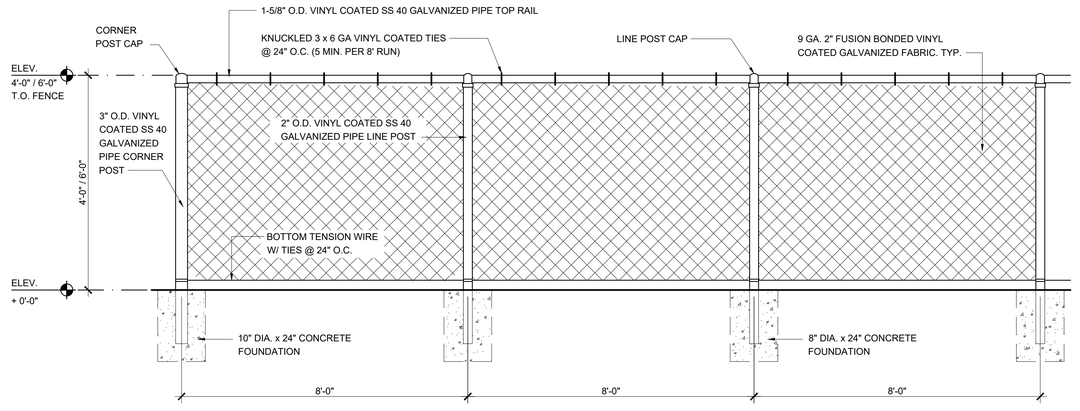
3 PERIMETER FENCE & GATE DETAIL

SCALE: 1/2" = 1'-0"



4 TYPICAL GATE DETAIL

SCALE: 1/2" = 1'-0"



CHAIN LINK FENCE NOTES

1. DETAIL APPLIES FOR 4' HIGH CHAIN LINK FENCE.
2. CONTRACTOR TO PROVIDE BLACK, FUSION BONDED, VINYL COATING ON ALL CHAIN LINK FENCE ELEMENTS, INCLUDING POSTS, RAILS, AND FABRIC
3. MAXIMUM POST SPACING SHALL BE 8'-0" O.C.
4. ALL DIMENSIONS TO CENTERLINE OF POSTS.
5. COMPLY WITH TABLE 2224 CHAIN LINK FENCE MINIMUM REQUIREMENTS OF THE FLORIDA BUILDING CODE EIGHTH EDITION (2023)

5 TYPICAL CHAIN LINK FENCE DETAIL

SCALE: 1/2" = 1'-0"

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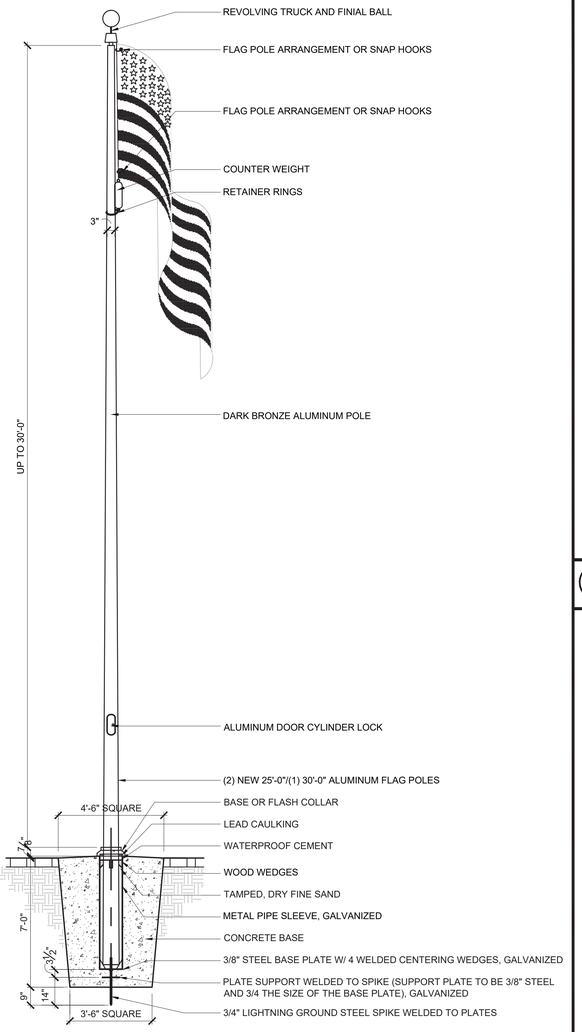
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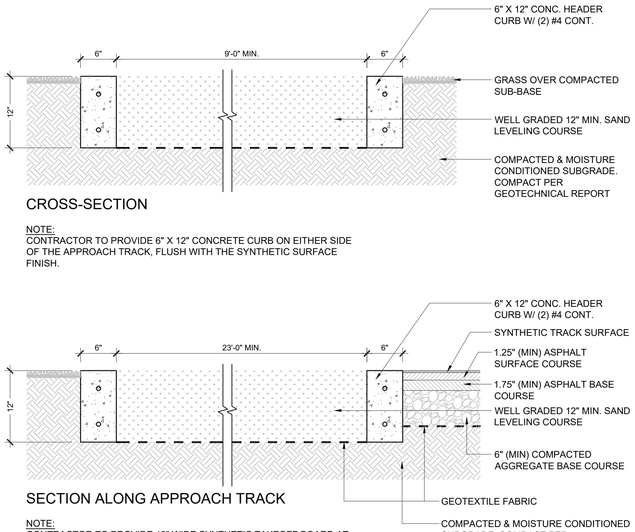
SITE DETAILS



FLAG POLE NOTES:
GROUNDSET INSTALLATION

1. DIG FOUNDATION AS DETAILED IN THE GROUND SLEEVE INSTALLATION INSTRUCTIONS LISTED ABOVE. SET SLEEVE INTO HOLE SO THAT TOP OF TUBE IS 2" ABOVE GRADE. PLUMB SLEEVE VERTICALLY AND BRACE SO THAT SLEEVE WILL NOT MOVE DURING POUR. POUR CONCRETE AND TROWEL TO DESIRED FINISH. KEEP INSIDE OF SLEEVE DRY AND FREE OF CONCRETE. COVER TOP OF SLEEVE IF SHAFT HAS NOT BEEN DELIVERED.
2. LAY SHAFT ON SAWHORSES, AND REMOVE WRAPPINGS FROM TOP AND BOTTOM OF SHAFT, AND FROM AROUND CLEAT AREA. LEAVE BALANCE OF WRAPPINGS ON SHAFT FOR PROTECTION DURING THE SET. IF POLE IS TWO OR THREE PIECE, ASSEMBLE SECTIONS PER INSTRUCTIONS ON REVERSE SIDE.
3. SCREW TRUCK INTO TOP OF POLE, USING PIPE WRENCH TO TIGHTEN. SCREW THREADED BALL-STEM INTO TOP OF TRUCK UNTIL BALL WILL NOT TURN FURTHER. USING WRENCH, TIGHTEN JAM-NUT AGAINST TOP OF TRUCK. THREAD ONE END OF ROPE HALYARD THROUGH THE TRUCK PULLEY AND TAPE OR TIE ENDS OF ROPE TOGETHER. FLAGSNAPS MAY BE ATTACHED AFTER POLE IS ERECTED. (IF POLE IS DOUBLE HALYARD SYSTEM, REPEAT OPERATION FOR SECOND HALYARD.)
4. USING SCREWS SUPPLIED, MOUNT CLEAT(S) TO SHAFT OVER DRILLED AND TAPPED HOLES APPROXIMATELY 5' ABOVE TAR-LINE. (IF CLEAT COVERS ARE USED, MOUNT THEM AT THE SAME TIME, USING THE SAME HOLES.) SLIP COLLAR ON BOTTOM OF SHAFT, AND TEMPORARILY TAPE IT TO WRAPPINGS ABOVE TAR-LINE.
5. PICK UP SHAFT WITH NYLON SLING, ROTATE POLE SO THAT CLEATS WILL FACE IN THE DESIRED DIRECTION, AND SET INTO CENTER OF FOUNDATION SLEEVE. IF POLE IS TWO OR THREE PIECE, A NYLON CHOKER MUST BE USED TO PREVENT THE BOTTOM SECTION FROM SLIPPING OFF WHEN LIFTED. PLUMB POLE VERTICALLY. PLACE WOOD WEDGES (NOT SUPPLIED) BETWEEN POLE AND SLEEVE TO PREVENT POLE FROM SHIFTING DURING FINAL SET.
6. TAMP DRY SAND BETWEEN POLE AND SLEEVE TO PERMANENTLY SET POLE. BE CERTAIN THAT SAND IS WELL COMPACTED, OTHERWISE POLE MAY SHIFT AT A LATER TIME. LEAVE A 1" TO 2" VOID AT TOP OF SLEEVE FOR SEALER. REMOVE WEDGES. FILL VOID WITH WATERPROOF CEMENT OR SEALANT, AND SLIP COLLAR DOWN POLE ONTO CONCRETE. CAULK INTO PLACE ON CONCRETE, AND AROUND POLE. REMOVE REMAINDER OF WRAPPINGS FROM POLE.
7. ATTACH FLAGSNAPS TO HALYARD BY FORMING A LOOP IN THE ROPE, RUNNING THE LOOP THROUGH THE SWIVEL-EYE AND OVER THE SNAP, THEN PULLING ROPE TAUT. ADJUST DISTANCE BETWEEN FLAGSNAPS TO ACCOMMODATE THE SIZE FLAG BEING FLOWN. ATTACH FLAG, RUN TO PEAK, AND TIE OFF HALYARDS ON CLEAT.

1 FLAG POLE DETAIL
SCALE: 3/8" = 1'-0"



CROSS-SECTION

NOTE:
CONTRACTOR TO PROVIDE 6" X 12" CONCRETE CURB ON EITHER SIDE OF THE APPROACH TRACK, FLUSH WITH THE SYNTHETIC SURFACE FINISH.

SECTION ALONG APPROACH TRACK

NOTE:
CONTRACTOR TO PROVIDE 12" WIDE SYNTHETIC TAKEOFF BOARD AT 8' MARK ON APPROACH TRACK AS SHOWN ON FIELD LAYOUT PLAN. IN ACCORDANCE WITH NFSHSA STANDARDS.

2 LONG JUMP SAND PIT SECTIONS
SCALE: 1" = 1'-0"





SKU: ALP479-38 Tags: 38 Gallon, Alpine, Back To School, Metal Slatted Trash, Outdoor Metal Trash Can, Outdoor Metal Trash Receptacle, Trash Can, Trash Receptacle

38 GALLON OUTDOOR METAL WASTE RECEPTACLE

FEATURES & BENEFITS

Design: Constructed with reinforced circular bands and rolled edges to ensure its longevity.

High-Capacity: The 38-gallon holding capability requires less emptying by maintenance workers.

Coating: A polyester powder that provides superior coverage, a polished finish, and detracts vandals.

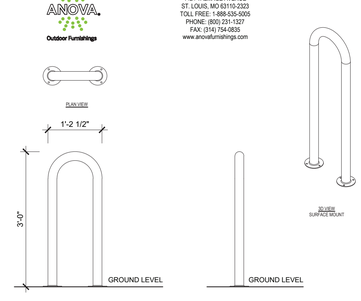
Optional: Partners well with our Rain Bonnet, which prevents rain and snow from flooding your receptacle.

Touch-Free: Without touching the receptacle physically, the risk of cross-contamination is eliminated.

NOTE:
- COLOR OPTION TO BE SELECTED BY OWNER.
- MANUFACTURERS:
  - ALPINE
  - TOPLINE RECREATION - CITY OF POMPANO BEACH STANDARD
  - APPROVED EQUAL

3 STEEL TRASH RECEPTACLE
NOT TO SCALE

ANOVA FURNISHINGS
1424 TALMAGE AVENUE
ST. LOUIS, MO 63110-2323
TOLL FREE: 1-888-635-5005
PHONE: (800) 231-1327
FAX: (314) 754-0835
www.anovafurnishings.com

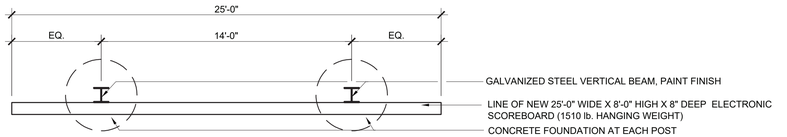


COLORS AND/OR OPTIONS: PLEASE SEE MANUFACTURER WEBSITE AT WWW.ANOVAFURNISHINGS.COM
FINISH: FADE-RESISTANT, POWDER COATED STEEL FINISH FEATURES A STATE-OF-THE-ART PRIMER PROVEN TO PREVENT RUSTING.
MATERIAL: 11-GAUGE WALL STEEL TUBING.
CAPACITY: 3 BIKES.
UNIT WEIGHT: 21 LBS.
STRUCTURAL WARRANTY: LIMITED 20-YEAR WARRANTY.
FINISH WARRANTY: 3-YEAR WARRANTY AGAINST RUSTING, PEELING, CHIPPING, CRACKING, MOLD, MILDEW, AND DEFECTS IN MATERIALS AND/OR WORKMANSHIP. 7-YEAR WARRANTY AGAINST FADING.

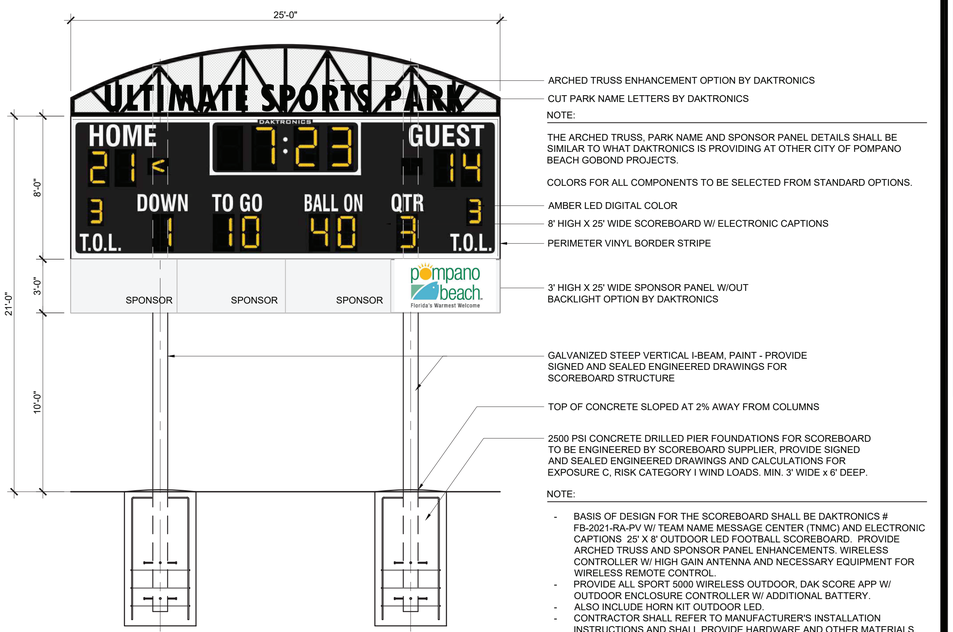
NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

STREETSIDE BIKE RACKS
LBIKRSURF - STREETSIDE 3-BIKE/1-LOOP BIKE RACK, POWDER-COATED, SURFACE MOUNT

4 1-LOOP BIKE RACK
NOT TO SCALE



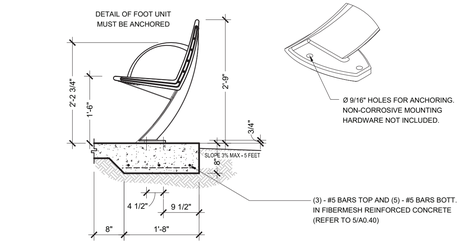
PLAN @ SCOREBOARD

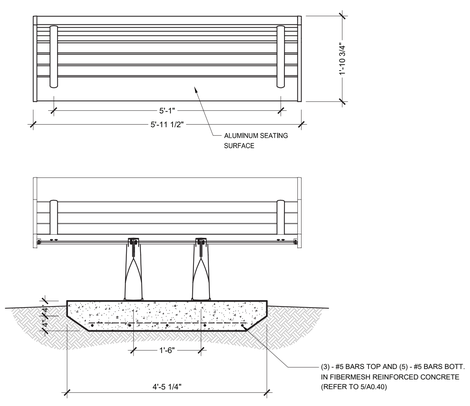


ELEVATION @ SCOREBOARD

NOTE:
- BASIS OF DESIGN FOR THE SCOREBOARD SHALL BE DAKTRONICS # FB-2021-RA-PV W/ TEAM NAME MESSAGE CENTER (TNMC) AND ELECTRONIC CAPTIONS 25' X 8' OUTDOOR LED FOOTBALL SCOREBOARD. PROVIDE ARCHED TRUSS AND SPONSOR PANEL ENHANCEMENTS. WIRELESS CONTROLLER W/ HIGH GAIN ANTENNA AND NECESSARY EQUIPMENT FOR WIRELESS REMOTE CONTROL.
- PROVIDE ALL SPORT 5000 WIRELESS OUTDOOR, DAK SCORE APP W/ OUTDOOR ENCLOSURE CONTROLLER W/ ADDITIONAL BATTERY.
- ALSO INCLUDE HORN KIT OUTDOOR LED.
- CONTRACTOR SHALL REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SHALL PROVIDE HARDWARE AND OTHER MATERIALS NECESSARY TO COMPLETE INSTALLATION.
- EXTEND CONTROLS FROM SCOREBOARD TO PRESSBOX.

6 SCOREBOARD DETAIL
SCALE: 1/4" = 1'-0"





NOTE:
CONTRACTOR TO PROVIDE AND INSTALL BENCHES AS INDICATED ON SITE PLAN AS MANUFACTURED BY LANDSCAPE FORMS, INC. MODEL "AUSTIN" BACKED BENCH, CANTILEVER, ALUMINUM, WITH END ARMS (CONFIRM QUANTITY WITH SITE PLAN)
SUBMIT COLOR AND FINISH SAMPLES TO OWNER AND ARCHITECT FOR REVIEW AND APPROVAL.

5 BENCH INSTALLATION DETAIL
NOT TO SCALE

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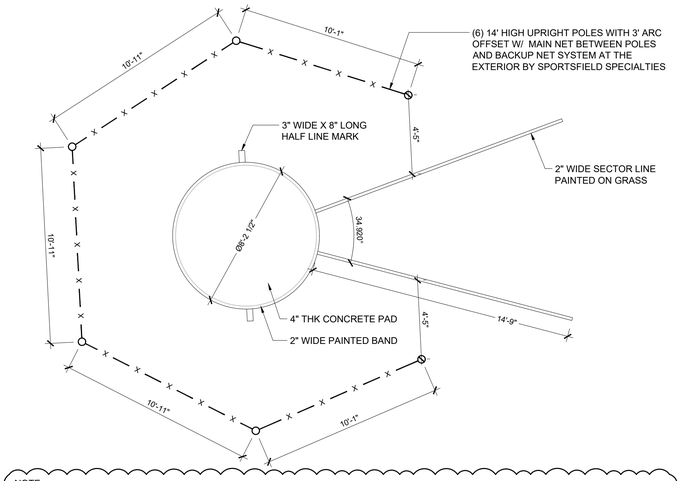
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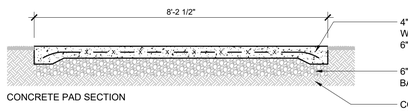
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SITE DETAILS



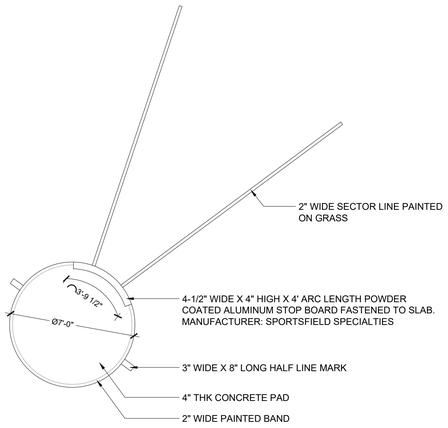
NOTE:
ALL DIMENSIONS & MARKINGS TO BE FOLLOWED IN ACCORDANCE WITH NFSHSA STANDARDS.
CONTRACTOR TO PROVIDE DEMOUNTABLE HAMMER INSERT PER STANDARDS. MANUFACTURER: SPORTSFIELD SPECIALTIES.
NET SYSTEM: SPORTSFIELD SPECIALTIES
MAIN NET - 13' H X 54' L, #36 BLACK NYLON, 1-3/4" SQUARE MESH NET WITH SEWN ROPE BINDING ON PERIMETER EDGES W/ (6) ANCHOR HARDWARE INSERTED IN CONCRETE PADS. CONCRETE PAD SIZING PER NET MANUFACTURER.
DCHSBNS BACKUP NET SYSTEM - 7'H X 63' L, #36 BLACK NYLON, 1-3/4" SQUARE MESH NET WITH SEWN ROPE BINDING ON PERIMETER EDGES.



CONCRETE PAD SECTION

1 DISCUS THROW PAD LAYOUT

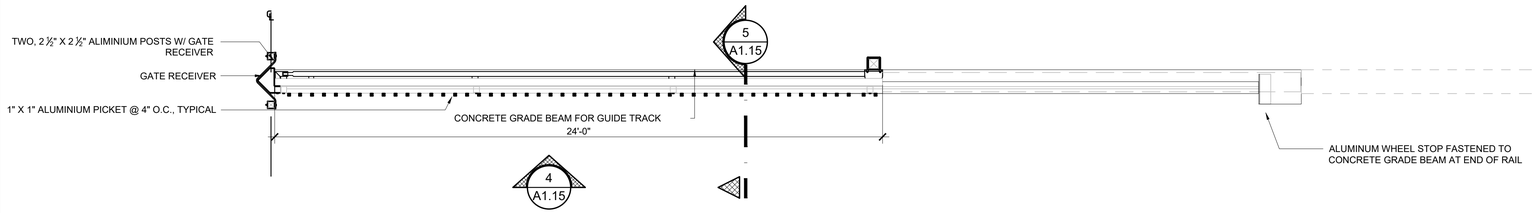
SCALE: 1/4" = 1'-0"



NOTE:
ALL DIMENSIONS & MARKINGS TO BE FOLLOWED IN ACCORDANCE WITH NFSHSA STANDARDS.
CONCRETE PAD TO FOLLOW THE SAME THICKNESS AS DISCUS THROW PAD.

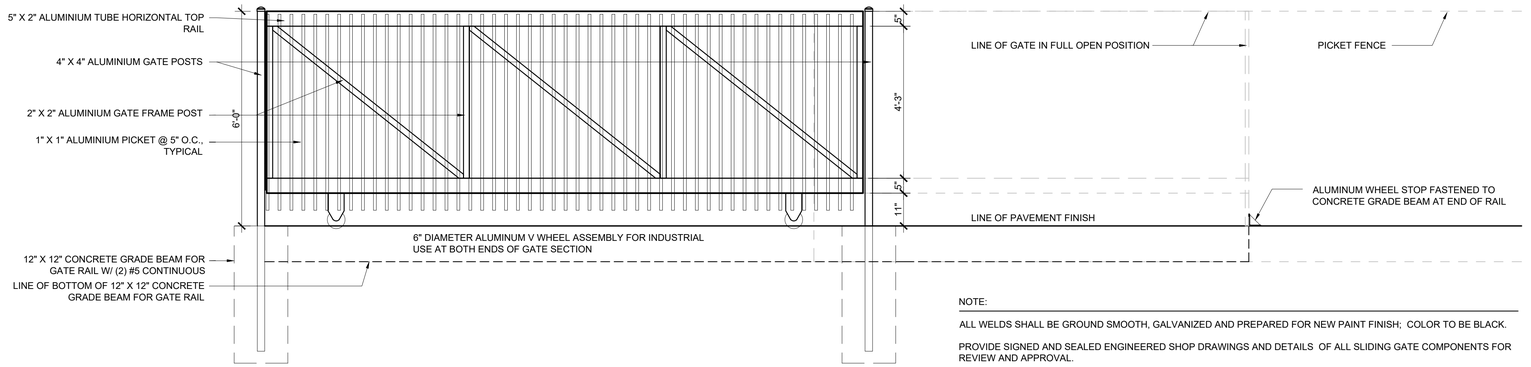
2 SHOT PUT PAD LAYOUT

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



3 SLIDING GATE PLAN

SCALE: 1/2" = 1'-0"



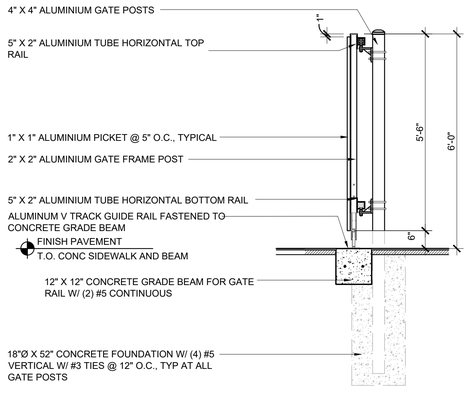
NOTE:

ALL WELDS SHALL BE GROUND SMOOTH, GALVANIZED AND PREPARED FOR NEW PAINT FINISH; COLOR TO BE BLACK.

PROVIDE SIGNED AND SEALED ENGINEERED SHOP DRAWINGS AND DETAILS OF ALL SLIDING GATE COMPONENTS FOR REVIEW AND APPROVAL.

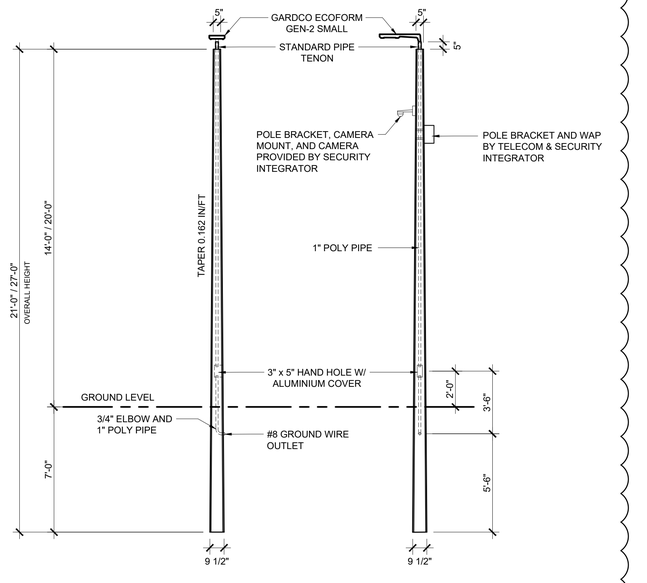
4 SLIDING GATE ELEVATION

SCALE: 1/2" = 1'-0"



5 SLIDING GATE SECTION

SCALE: 1/2" = 1'-0"



NOTE:

- GENERAL CONTRACTOR TO INSTALL CONDUITS/RACEWAYS WITH PULLSTRINGS FROM IT/ELEC ROOM TO CAMERA LOCATIONS. CITY VENDOR TO INSTALL SERVERS, RACKS, CONFIGURATIONS, WIRES FROM HEADEND TO CAMERA LOCATIONS, INCLUDING MOUNTING OF CAMERA EQUIPMENT.
- GENERAL CONTRACTOR TO PROVIDE ENGINEERED SIGN & SEALED SHOP DRAWINGS FOR POLE & FOUNDATIONS.

6 NEW PARKING LOT & PEDESTRIAN LIGHT POLE DETAIL

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

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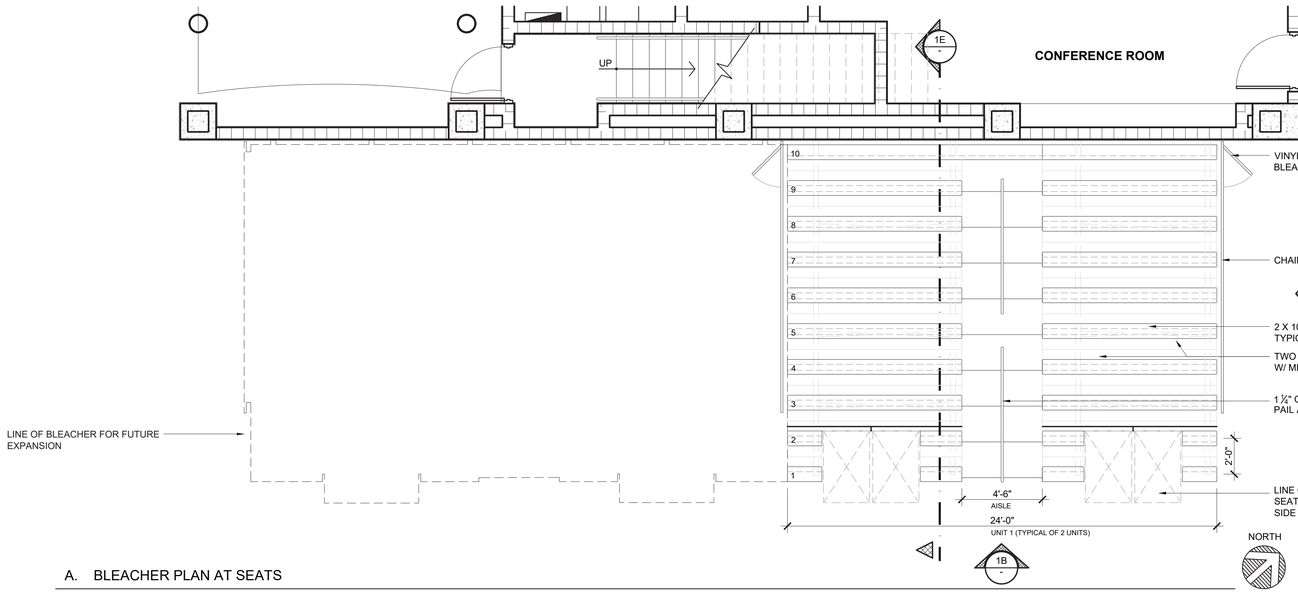
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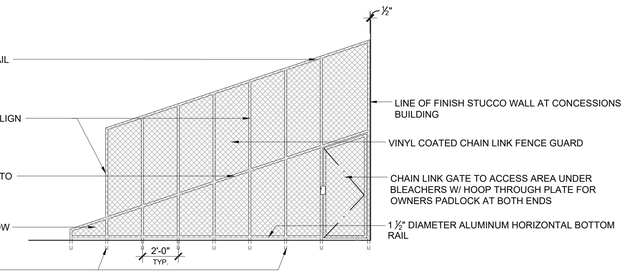
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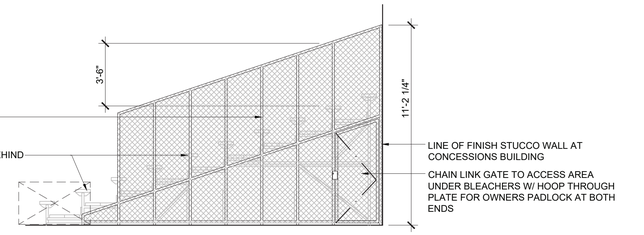
SITE DETAILS



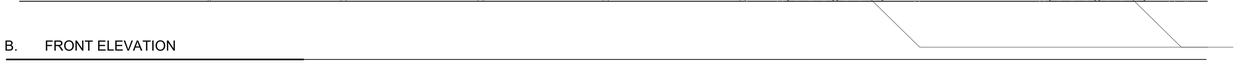
A. BLEACHER PLAN AT SEATS



C. GUARDRAIL ELEVATION W/OUT SEATING BEHIND



D. GUARDRAIL ELEVATION W/ BLEACHERS BEHIND



B. FRONT ELEVATION



E. SECTION THRU BLEACHER SEATING

1 HOME / WEST SIDE BLEACHER AND GUARDRAIL DESIGN

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

BLEACHER NOTES:

THE INTENT OF THIS CONCEPT IS TO PROVIDE STANDARD BLEACHER UNITS WITH A CUSTOM GUARDRAIL / ENCLOSURE THAT EXTENDS FROM THE GUARDRAIL HEIGHT TO THE FLOOR SURFACE.

THE SPACE UNDER THE BLEACHERS WILL BE ACCESS FROM CHAIN LINK GATES AT BOTH ENDS. THESE GATES SHALL HAVE A ½" STEEL PLATE WITH A SLOT FOR A STEEL LOOP WELDED TO THE LATCH SIDE OF THE GATE FRAME AND THE LOOP WELDED TO THE PIPE AT THE FRAME OF THE OPENING FOR A PADLOCK BY OWNER. BLEACHER MANUFACTURER MAY NEED TO ADJUST CROSS BRACING IN THE ANGLE FRAME TO MAINTAIN ACCESS TO SERVICE & CLEANING PERSONNEL.

PLEASE NOTE THE FOLLOWING CHARACTERISTICS FOR EACH GROUP OF BLEACHERS:

HOME / WEST SIDE

2 FREESTANDING UNITS 24' - 9 1/2" X 10 ROWS (TOTAL CAPACITY 270 PERSONS)
CHAIN LINK GUARDRAIL AT BOTH ENDS, NOT REQUIRED ON BACK

ANCHOR BLEACHER UNIT DIRECTLY TO CONCRETE SLAB W/ EXPANSION BOLTS.

KEEP SPLICES BETWEEN SECTIONS OF PLANS A MINIMUM OF 12" AWAY FROM THE EDGES OF AISLES.

PROVIDE ALUMINUM EXTRUSION W/ NON-SLIP BLACK ALUMINUM NOSING, W/ BLACK POP RIVETS CONTINUOUS ALONG THE LEADING EDGE OF EACH RISER AT AISLES

CONNECT / BRACE VERTICAL AND HORIZONTAL INTERMEDIATE RAIL BACK TO BLEACHER FRAMING BELOW SEATING PLANKS.

CONTRACTOR SHALL PROVIDE SIGNED AND SEALED ENGINEERED SHOP DRAWINGS AND CALCULATIONS FOR ATTACHMENT OF THE RAILING TO THE BLEACHER STRUCTURE.

GRIND ALL WELDS FOR SMOOTH TRANSITIONS BETWEEN GUARDRAIL COMPONENTS AND PAINT ALL RAILS, POSTS AND PICKETS.

BLEACHERS TO ACCOMMODATE FBC 2023 - ACCESSIBILITY.

PROVIDE SIGNED AND SEALED ENGINEERED DRAWING FOR BLEACHER AND ATTACHMENT TO SLAB TO COMPLY WITH THE FBC FOR WIND LOADING.

2 BLEACHER GENERAL NOTES

NO SCALE

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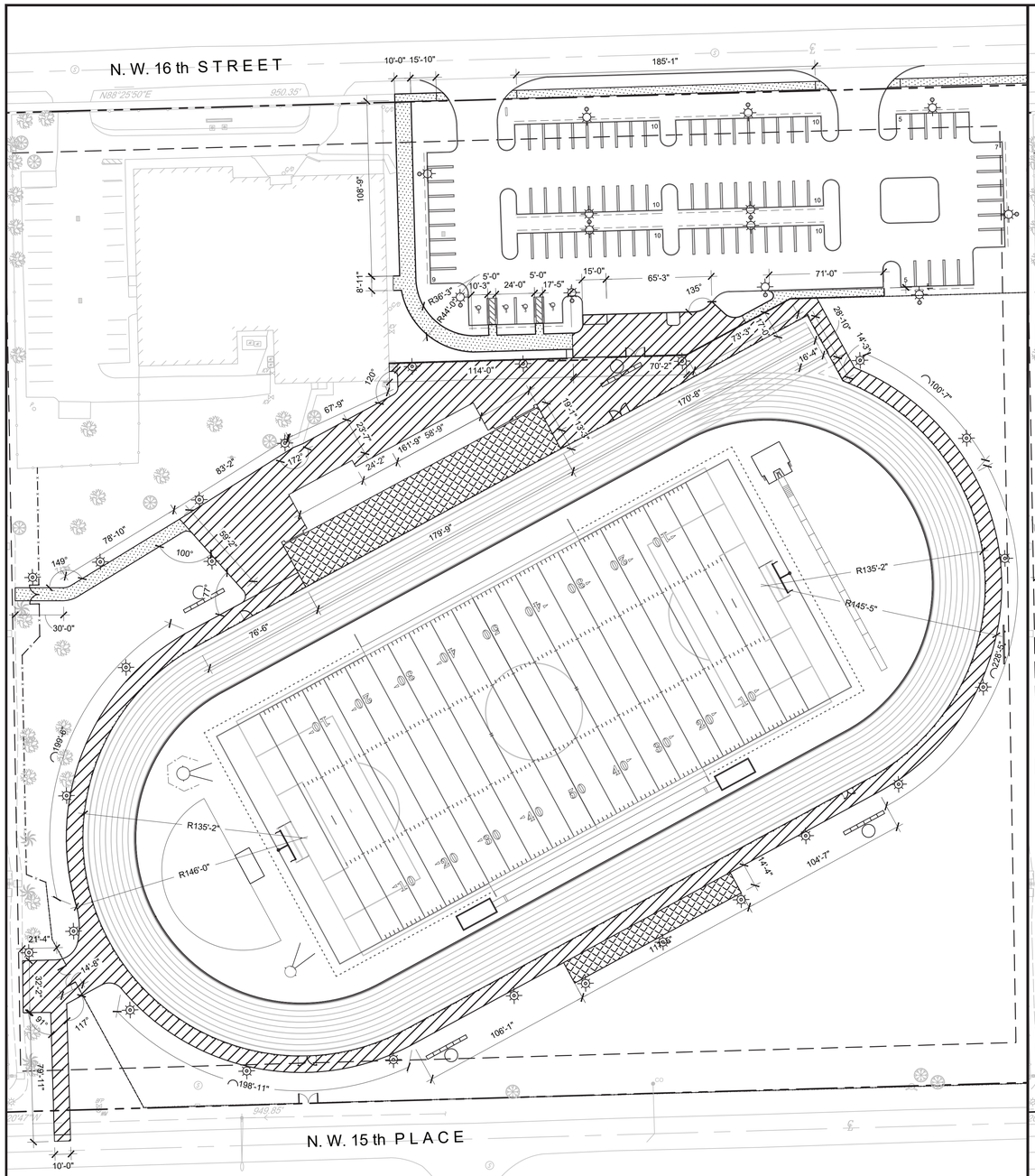
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BLEACHERS DETAILS



0 10 20 50 100 200
GRAPHIC SCALE (IN FEET)

NORTH

LEGEND

- 4" THICK CONCRETE PAVEMENT FOR PEDESTRIAN TRAFFIC W/ 6x6 W1.4 x W1.4 WWM
- 6" THICK CONCRETE PAVEMENT FOR VEHICULAR TRAFFIC W/ 6x6 W1.4 x W1.4 WWM
- 12" THICK CONCRETE PAVEMENT FOR BLEACHERS. SEE STRUCTURAL DRAWINGS FOR REINFORCEMENT DETAILS. CONTRACTOR TO COORDINATE BLEACHER SUPPORTS IN SLAB WITH BLEACHER SHOP DRAWINGS.

NOTE:

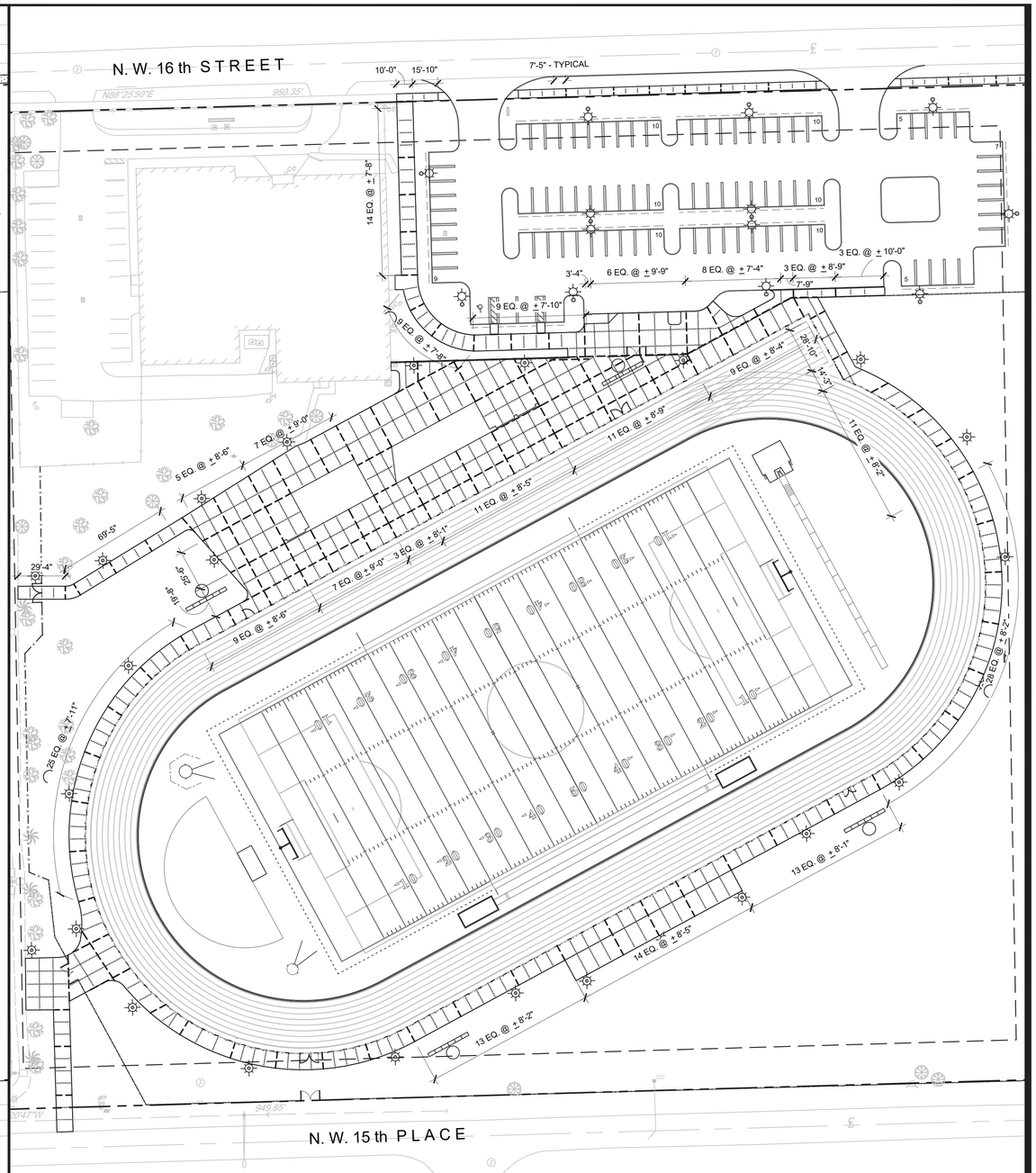
DIMENSIONS PROVIDED ARE FOR GENERAL LAYOUT PURPOSES. PRIOR TO POURING SLABS, FIELD VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES, AND/OR REQUEST ADDITIONAL CLARIFICATION FROM THE ARCHITECT.

THE SIDEWALK AT THE SOUTHWEST PLAZA, EXTEND SOUTHWARD TOWARDS NW 15TH PLACE AND WESTWARD TOWARDS THE GRAVEL PATH AT APOLLO PARK, WHICH IS NOT SHOWN IN THE LIMITS OF THIS DRAWING.

THE SIDEWALK ALONG NW 16 STREET EXTENDS TO THE EAST PROPERTY LINE OF THIS PROJECT. CONTINUATION OF THE SIDEWALK TO DIXIE HIGHWAY IS NOT IN THIS PROJECT SCOPE .

1 CONCRETE PAVEMENT PLAN

SCALE: 1" = 40'-0"



0 10 20 50 100 200
GRAPHIC SCALE (IN FEET)

NORTH

LEGEND

- CONTROL JOINT AT SLAB
- EXPANSION JOINT AT SLAB

NOTE:

PROVIDE EXPANSION JOINT AT PERIMETER OF CONCESSIONS BUILDING.

SPACING AT CONTROL / EXPANSION JOINTS AT CONCRETE HEADER CURB AND RETAINING WALL NOT TO EXCEED 30'-0" MAXIMUM.

2 CONCRETE PAVEMENT PLAN

SCALE: 1" = 40'-0"

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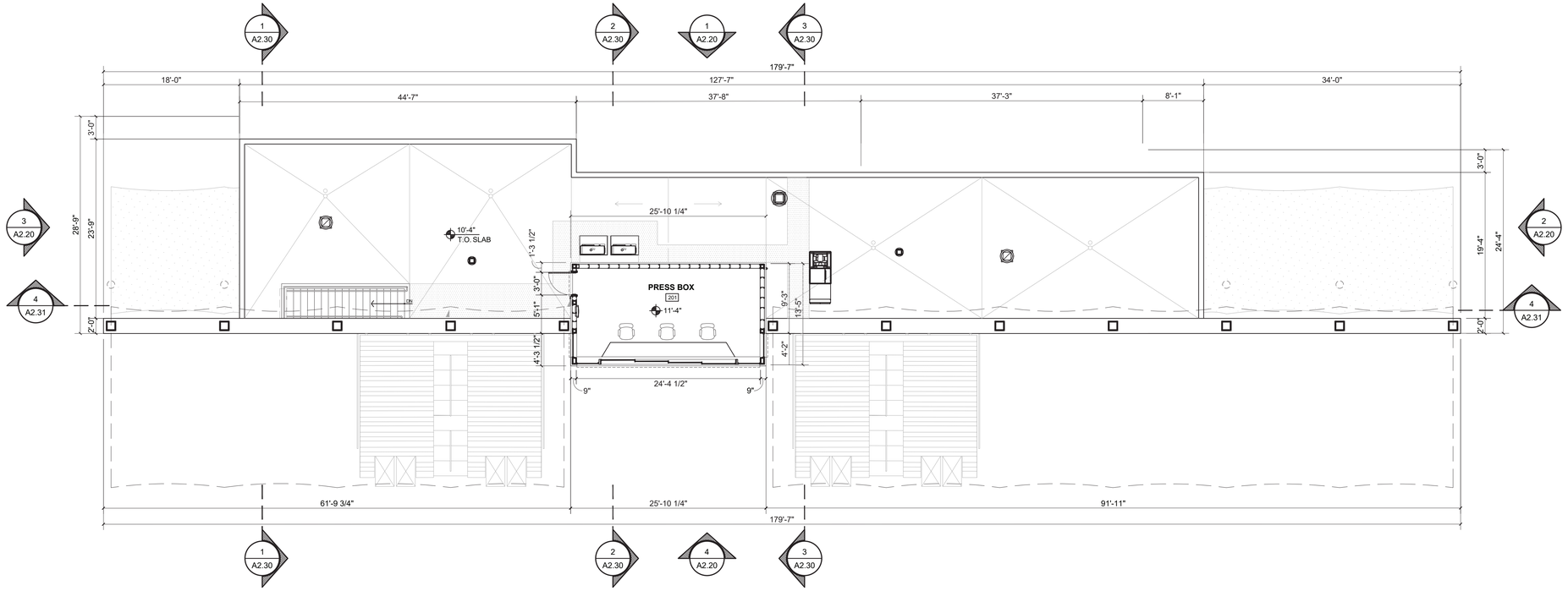
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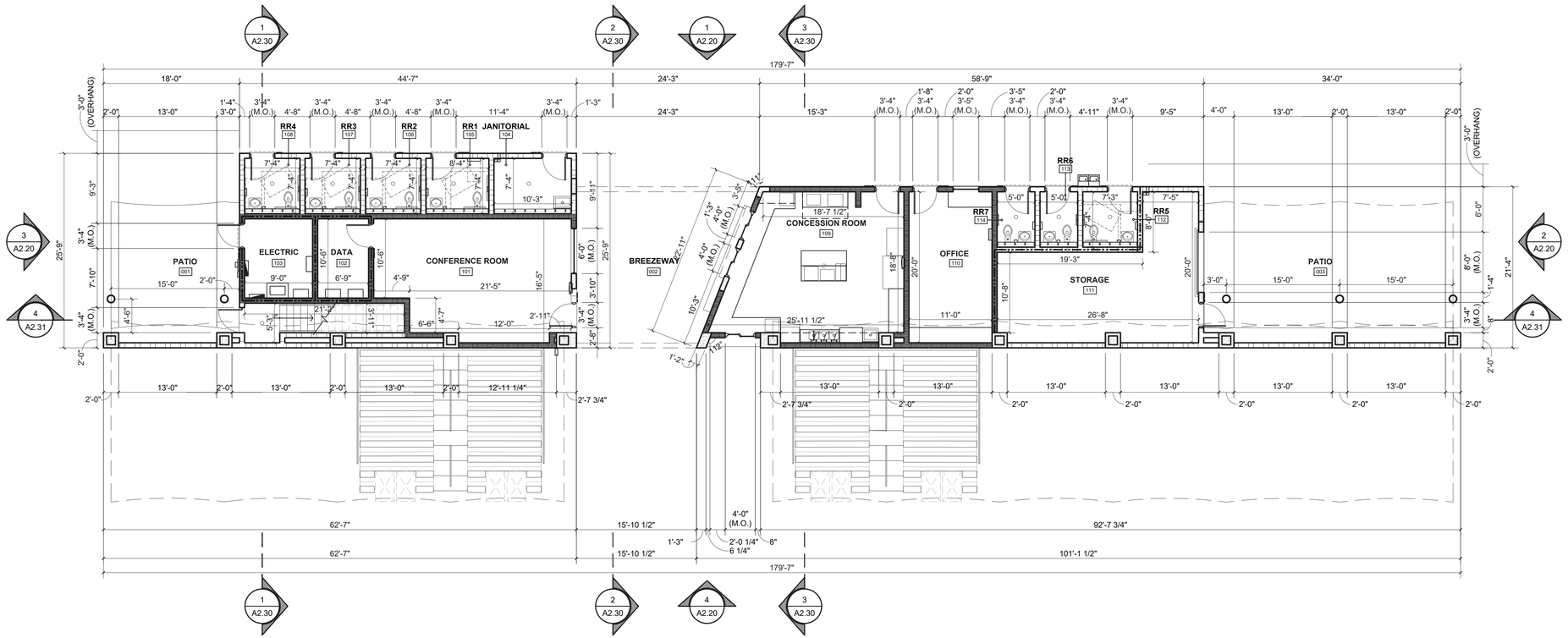
CONCRETE PAVEMENT PLAN



NORTH

2 SECOND FLOOR PLAN DIMENSIONS

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



NORTH

1 FIRST FLOOR PLAN DIMENSIONS

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

FLOOR PLAN LEGEND

- NEW 8" CONCRETE MASONRY UNIT WALL. SEE STRUCTURAL DWGS. AND ROOM FINISH SCHEDULE SHEET
- 2-HOUR FIRE RATED CMU WALL. SEE WALL TYPES
- CORE FILL INSULATION CMU WALL. SEE WALL TYPES SHEET A3.11
- NON-RATED METAL STUD WALL. SEE WALL TYPES
- CONCRETE COLUMN. SEE STRUCTURAL DWGS.
- IMPACT RATED DOOR. SEE DOOR SCHEDULE
- IMPACT RATED WINDOW. SEE DOOR SCHEDULE
- F.E. SEMI-RECESSED FIRE EXTINGUISHER
- A WINDOW TAG. SEE WINDOW SCHEDULE
- MOP SINK. SEE PLUMBING DWGS.
- W00 WALL TYPES TAG. SEE WALL TYPES
- 00 DOOR TAG. SEE DOOR SCHEDULE
- HI-LO DRINKING FOUNTAIN.
- AED AUTOMATED EMERGENCY DEFIBRILLATOR. BY OWNER.

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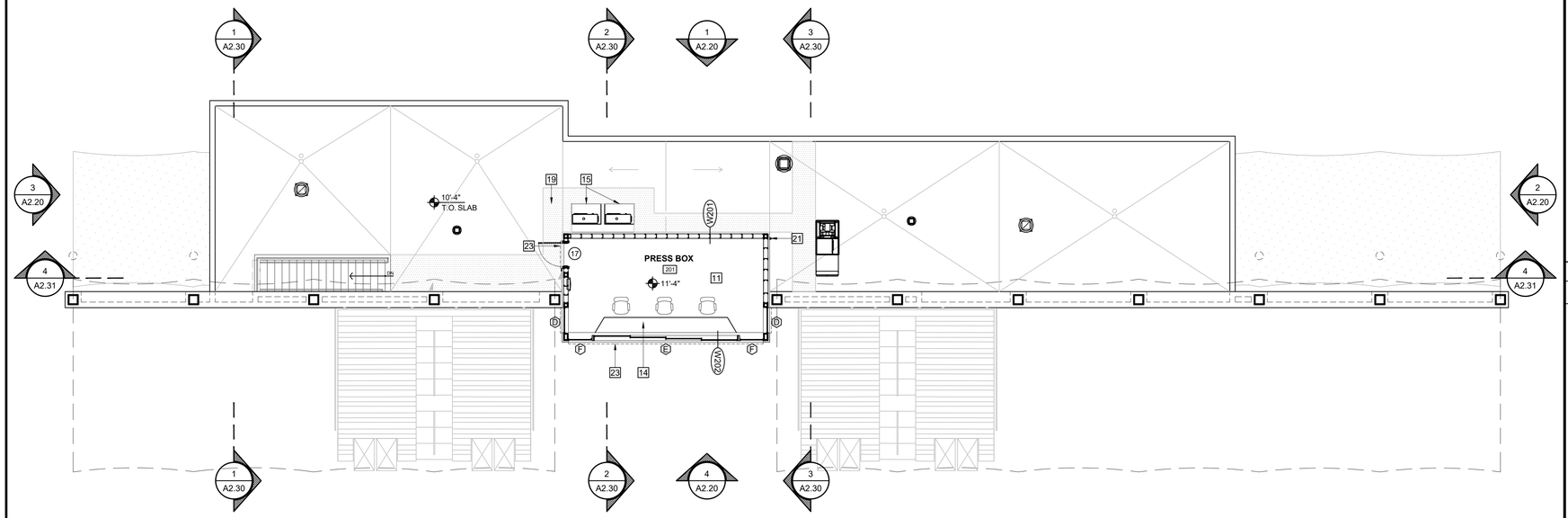
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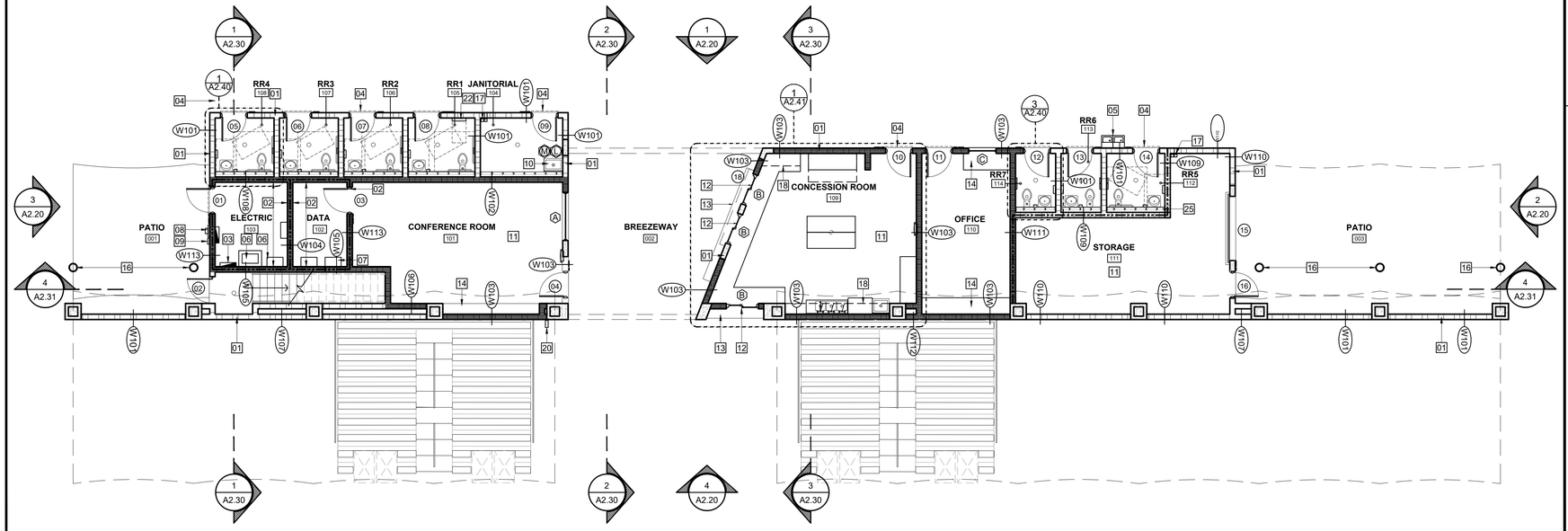
FLOOR PLAN DIMENSIONS



NORTH

2 SECOND FLOOR PLAN NOTES

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



NORTH

1 FIRST FLOOR PLAN NOTES

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

FLOOR PLAN LEGEND

- NEW 8" CONCRETE MASONRY UNIT WALL. SEE STRUCTURAL DWGS. AND ROOM FINISH SCHEDULE.
- 2-HOUR FIRE RATED CMU WALL. SEE WALL TYPES SHEET
- CORE FILL INSULATION CMU WALL. SEE WALL TYPES SHEET
- NON-RATED METAL STUD WALL. SEE WALL TYPES SHEET
- CONCRETE COLUMN. SEE STRUCTURAL DWGS.
- IMPACT RATED DOOR. SEE DOOR SCHEDULE A2.60
- IMPACT RATED WINDOW. SEE WINDOW SCHEDULE A2.70
- F.E. FIRE EXTINGUISHER
- A WINDOW TAG. SEE WINDOW SCHEDULE SHEET
- MOP SINK. SEE PLUMBING DWGS.
- W00 WALL TYPES TAG. SEE WALL TYPES SHEET A3.11
- 00 DOOR TAG. SEE DOOR SCHEDULE SHEET A2.60
- HI-LO DRINKING FOUNTAIN.
- AED AUTOMATED EMERGENCY DEFIBRILLATOR. BY OWNER.

SCOPE OF WORK / KEYNOTES

01 8" CONCRETE BLOCK WALL w/ STUCCO FINISH. SEE WALL TYPES. (TYP)

02 3/4" PLYWOOD ON 1/4" PRESSURE TREATED FURRING W/2 LAYERS OF FIRE RETARDANT PAINT ON ALL WALLS FROM 36" TO 84" A.F.F.

03 ELECTRICAL PANEL. STORAGE NOT ALLOWED AROUND THE PANEL.

04 ALUMINUM DOOR RAIN DRIP GUARD.

05 HI-LOW WATER FOUNTAIN WITH FILTERED BOTTLE FILLER. SEE PLUMBING DRAWINGS.

06 IT SWITCH CABINETS.

07 DATA RACK

08 ELECTRIC METER.

09 KNOX BOX.

10 MOP SINK.

11 FLOOR FINISH. SEE SHEET A2.80 FROM ROOM FINISH SCHEDULE.

12 IMPACT RATED SLIDING WINDOW W/ SHUTTER W/ SENSOR TIED TO SECURITY/ACCESS CONTROL SYSTEM ON THE EXTERIOR.

13 CONCRETE SERVING COUNTER W/ EPOXY PAINT. SEE SHEET A2.41 FOR DETAIL.

14 WORK SURFACE COUNTER. SEE SHEET A2.33 FOR DETAIL. (2)

15 AC CONDENSING UNIT ON STAND. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.

16 METAL COLUMN FOR SHADE SAIL. CONTRACTOR TO PROVIDE ENGINEERED SIGN & SEALED SHOP DRAWINGS FROM SHADE MANUFACTURER.

17 PRIMARY DOWNSPOUT THROUGH FLOOR SLAB. SEE PLUMBING DWG FOR CONTINUATION. FOR SECONDARY OVERFLOW DOWNSPOUT, OUTLET THROUGH WALL. SEE EXTERIOR ELEVATION FOR HEIGHT INFORMATION.

18 STORAGE CABINET ABOVE. SEE SHEET A2.41 FOR DETAIL. (2)

19 ROOF WALKWAY PROTECTION PAD.

20 GOOSENECK RELIEF VENT. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.

21 THOR GUARD POLE FOR LIGHTNING PREDICTION SYSTEM.

22 BABY DIAPER CHANGING STATION. REFER RESTROOM INTERIOR SHEET FOR MORE INFORMATION.

23 ALUMINUM DOOR RAIN DRIP GUARD. MATCH COLOR WITH INSULATED METAL PANELS.

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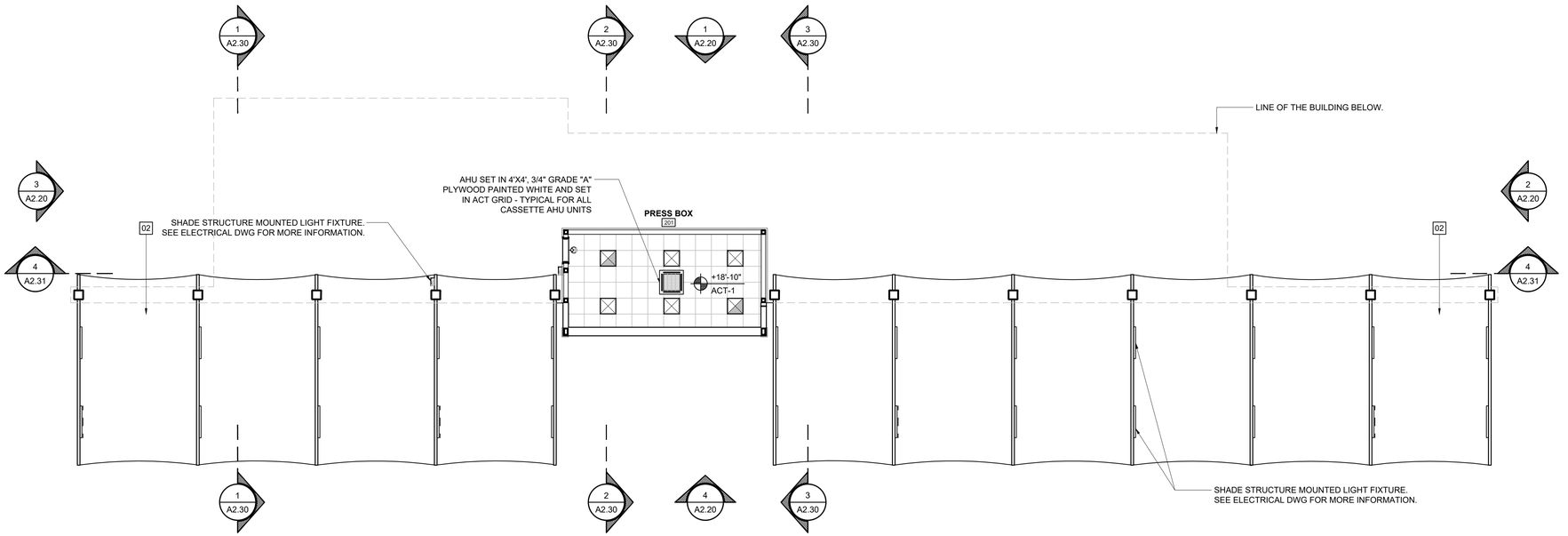
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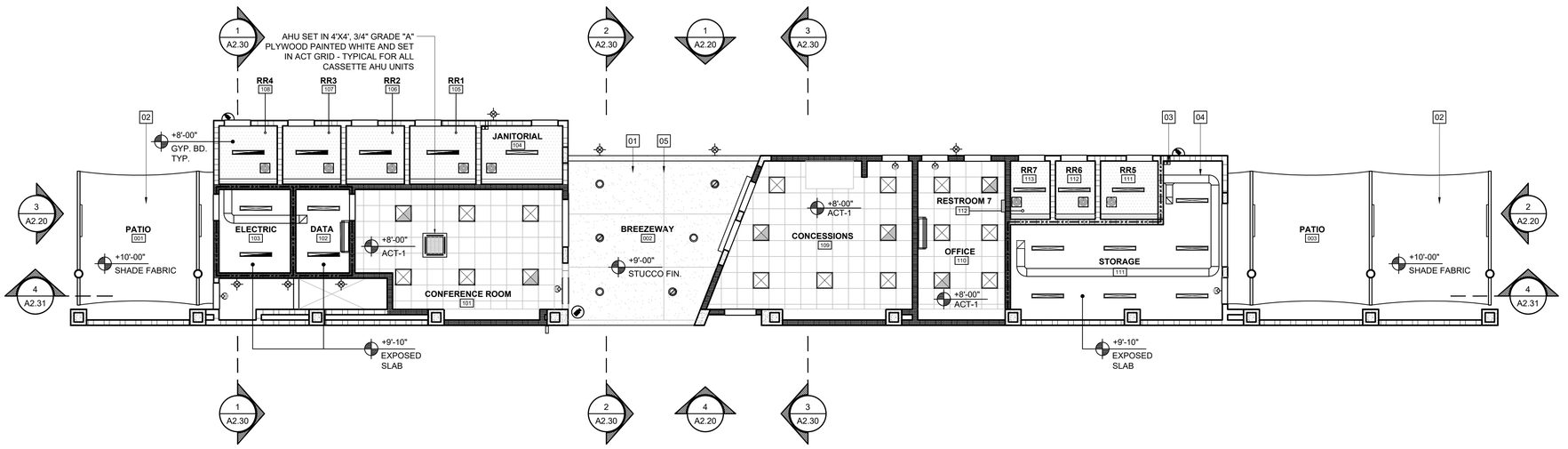
FLOOR PLAN NOTES



NORTH

1 SECOND FLOOR REFLECTED CEILING PLAN

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



NORTH

2 FIRST FLOOR REFLECTED CEILING PLAN

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

CEILING KEYNOTES

01	STUCCO SOFFIT CEILING
02	SHADE FABRIC CANOPY
03	4"X4" ALUMINUM DOWNSPOUT
04	EXHAUST DUCT SYSTEM ABOVE CEILING
05	CONNECTION JOINT

CEILING LEGEND

- EMERGENCY EXIT SIGN
- WALL MOUNTED MULTIPLE SENSOR CCTV CAMERA
- CEILING MOUNTED MULTIPLE SENSOR CCTV CAMERA
- CEILING FIRE SPRINKLER
- CEILING LIGHT FIXTURE
- CEILING EMERGENCY LIGHT FIXTURE
- WALL MOUNTED AIR CONDITIONING UNIT
- CEILING EXHAUST FAN
- CEILING EXHAUST GRILLE
- 24"x24" LAY-IN EMERGENCY LIGHT FIXTURE
- 24"x24" LAY-IN LIGHT FIXTURE
- 48"x6" LAY-IN LIGHT FIXTURES
- 48"x6" LAY-IN EMERGENCY LIGHT FIXTURE
- CEILING MOUNTED MECHANICAL SUPPLY AIR REGISTER
- +0'-0" CEILING ELEVATION IN RELATION TO FINISH FLOOR (0'-0")
- WALL MOUNTED LIGHT FIXTURE
- 24" x 24" ACOUSTICAL CEILING TILE
- AREA OF SUSPENDED SOFFIT W/ SMOOTH SAND STUCCO FINISH
- AREA OF SUSPENDED GYP. BD. CEILING
- 2-HOUR FIRE RATED CMU WALL. SEE WALL TYPES SHEET A3.11
- SHADE STRUCTURE LIGHT FIXTURES
- SHADE STRUCTURE EMERGENCY LIGHT FIXTURES
- SHADE STRUCTURE / EXTERIOR WALL MOUNTED LIGHT FIXTURE

NOTE :
- REFER TO ELECTRICAL & MECHANICAL SHEETS FOR MORE INFORMATION.
- GENERAL CONTRACTOR TO INSTALL CONDUITS/RACEWAYS FROM IT/ELEC ROOM TO CAMERA & CARD READER LOCATIONS. CITY VENDOR TO INSTALL SERVERS, RACKS, CONFIGURATIONS, WIRES FROM HEADEND TO CAMERA LOCATIONS, INCLUDING MOUNTING OF CAMERA & CARD READER EQUIPMENT.

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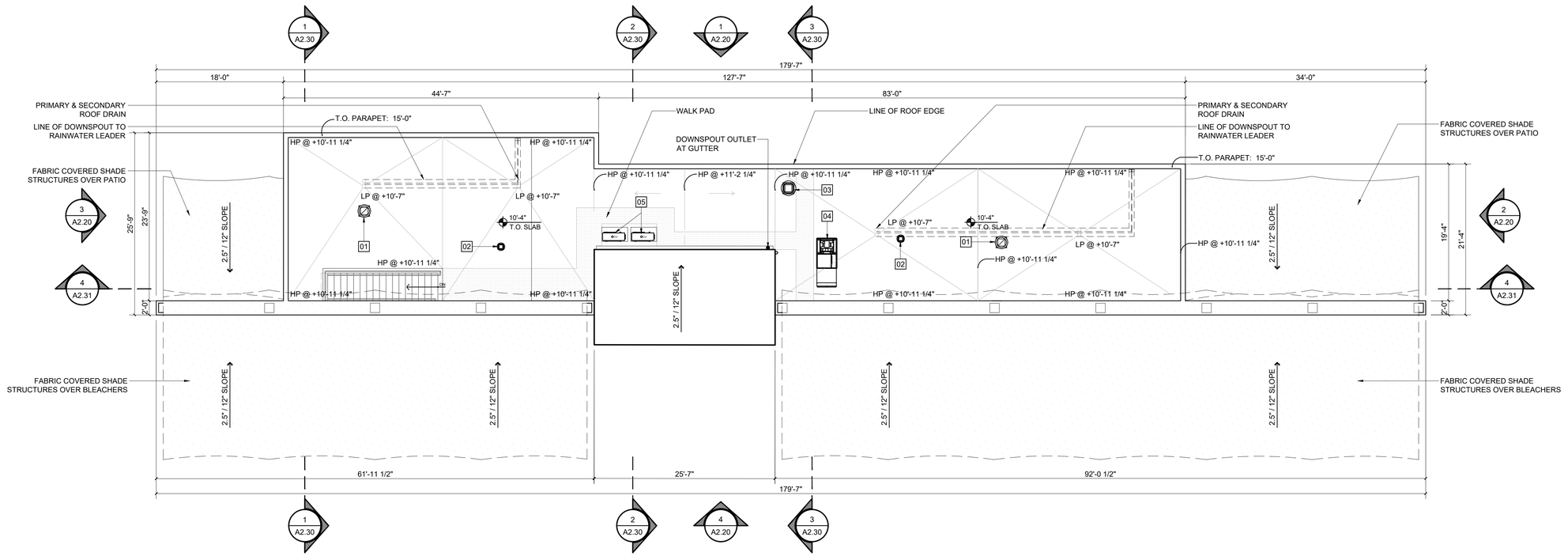
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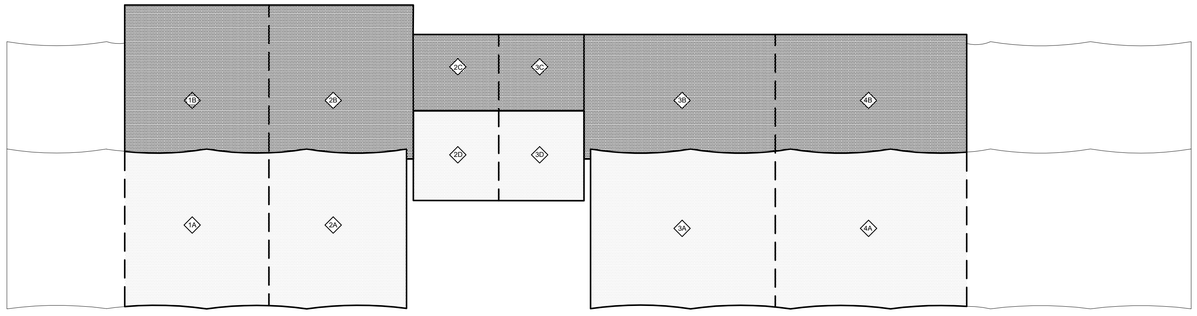
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CONCESSION BUILDING - RCP



ROOF ZONE DIAGRAM AND CALCULATIONS



NOTES

BASIS OF DESIGN FOR NEW ROOF SHALL BE 50 MIL XT SINGLE PLY FIBERTITE ROOFING MEMBRANE FULLY ADHERED TO 1/4" SECUROCK ROOF BOARD OVER 5/8" EXTERIOR GRADE PLYWOOD TO BE INSTALLED IN ACCORDANCE WITH MIAMI-DADE NOTICE OF ACCEPTANCE. SUBMIT SAMPLES OF COLORS TO BE SELECTED FOR REVIEW AND APPROVAL.

SLOPE ROOFING AS INDICATED ON THIS PLAN.

PROVIDE WEATHER-TIGHT CONDITIONS AT ALL TIMES DURING CONSTRUCTION, AND DO NOT APPLY ROOFING DURING INCLEMENT WEATHER.

CONTRACTOR TO SUBMIT MIAMI-DADE NOTICE OF ACCEPTANCE INFORMATION AND ENGINEERED SHOP DRAWINGS.

CONTRACTOR TO LAY ROOF EDGE (EAVE) ANGLES IN A MANNER THAT THEY MEET AT A MITRED CONDITION AT ALL CORNERS AND JUNCTIONS.

2 BASIS OF DESIGN FOR LIGHTNING DETECTION / ALERTING SYSTEM SHALL BE SFERIC SIREN (E-HORN) BY EARTH NETWORKS TOTAL LIGHTNING NETWORK.

ROOF PLAN LEGEND

- STANDING SEAM ALUMINUM ROOF
- 1 : 12 SLOPE — ROOF PITCH
- LINE OF EXTERIOR WALLS AND COLUMNS BELOW
- DOWNSPOUT OUTLET AT GUTTER
- 1 — ROOF ZONE

KEYNOTES

01	ROOF MOUNTED EXHAUST FAN.
02	ALUMINUM INTAKE HOOD.
03	KITCHEN HOOD EXHAUST FAN.
04	ROOF MOUNTED MAKEUP AIRFAN.
05	AC CONDENSING UNIT.

NOTE : REFER TO MECHANICAL DWG SET FOR MORE INFORMATION.

ROOF DRAINAGE CALCULATIONS

(FLORIDA BUILDING CODE 2023 w/LATEST REVISIONS- PLUMBING / TABLES 1106.3 & 1106.6)

	ROOF AREA	RAINFALL RATE	GUTTER SIZE	GUTTER CAPACITY	VERTICAL LEADER SIZE	VERTICAL LEADER CAPACITY
ZONE 1A	497 sq. ft.					
ZONE 1B	474 sq. ft.					
ZONE 1 TOTAL	971 sq. ft.	50.5 gpm	2 $\frac{3}{4}$" x 3"	55 gpm	2 $\frac{3}{4}$" X 2 $\frac{3}{4}$"	54 gpm
ZONE 2A	476 sq. ft.					
ZONE 2B	474 sq. ft.					
ZONE 2C	143 sq. ft.					
ZONE 2D	169 sq. ft.					
ZONE 2 TOTAL	1262 sq. ft.	65.6 gpm	2 $\frac{3}{4}$" x 3"	87 gpm	2" X 4"	92 gpm
ZONE 3A	638 sq. ft.					
ZONE 3B	503 sq. ft.					
ZONE 3C	143 sq. ft.					
ZONE 3D	169 sq. ft.					
ZONE 3 TOTAL	1453 sq. ft.	75.5 gpm	2 $\frac{3}{4}$" x 3"	87 gpm	2" X 4"	92 gpm
ZONE 4A	663 sq. ft.					
ZONE 4B	501 sq. ft.					
ZONE 4 TOTAL	1164 sq. ft.	60.5 gpm	2 $\frac{3}{4}$" x 3"	87 gpm	2" X 4"	92 gpm

GUTTER AND DOWNSPOUT CAPACITY CALCULATED AT 5" PER HOUR RAINFALL RATE. VERTICAL LEADER SIZES EXCEEDS CAPACITY LISTED IN TABLE 1106.3; AND THE ROOF SLOPE EXCEEDS VALUES IN THE TABLE 1106.6 AND SIZES EXCEEDS CAPACITY FOR GUTTERS PER FLORIDA BUILDING CODE - PLUMBING, 8th EDITION (2023)

TOTAL ROOF AREA: 6,906 SQ FT

RAINFALL RATE IS DETERMINED BY MULTIPLYING THE ROOF ZONE AREA X .0520

NORTH

1

CONCESSION BUILDING ROOF PLAN

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

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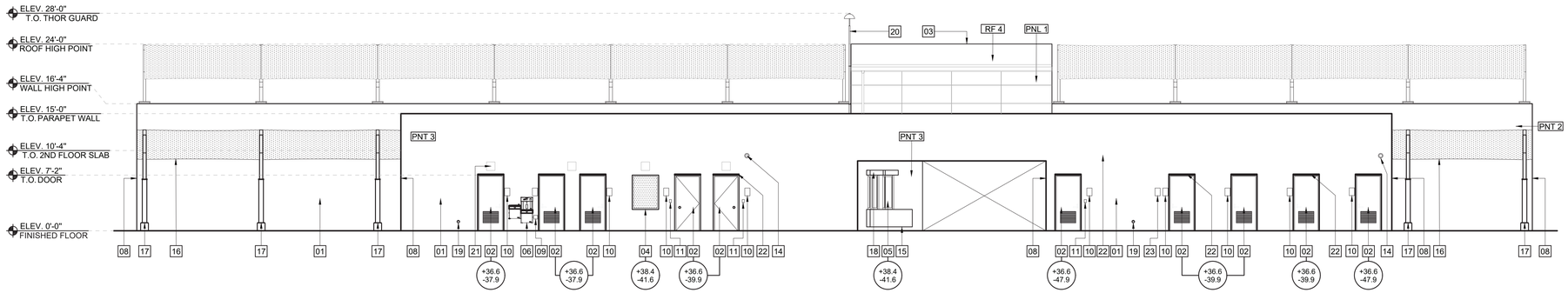
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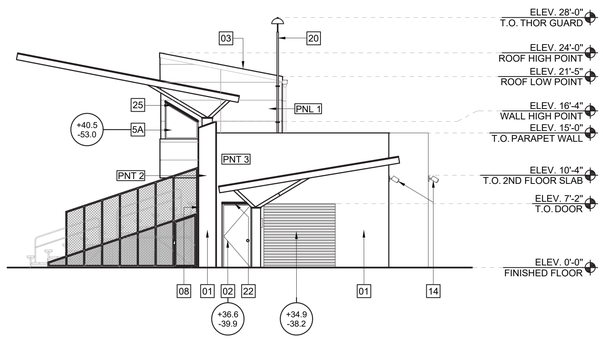
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CONCESSION BUILDING - ROOF PLAN



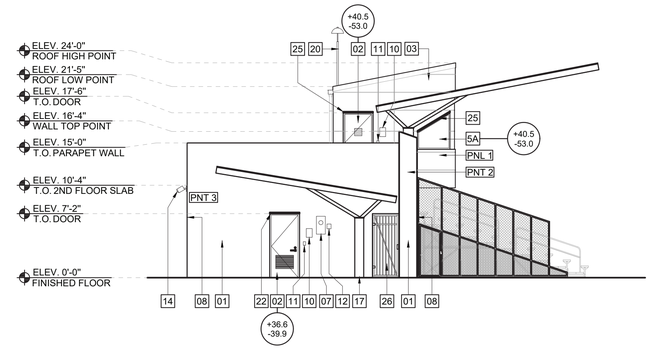
1 CONCESSION BUILDING NORTH ELEVATION

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



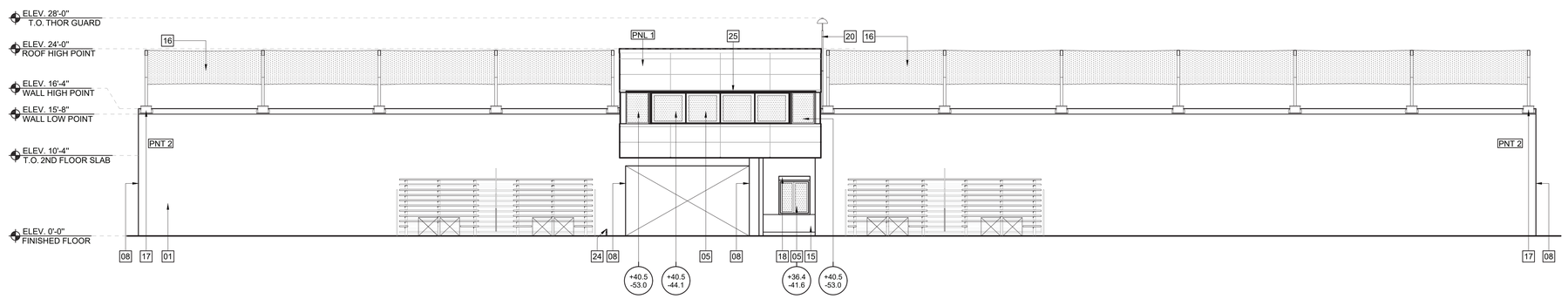
2 CONCESSION BUILDING EAST ELEVATION

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



3 CONCESSION BUILDING WEST ELEVATION

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



4 CONCESSION BUILDING SOUTH ELEVATION

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

EXTERIOR ELEVATIONS KEYNOTES

01 STUCCO ON EXTERIOR FACE OF CMU WALL. REFER WALL TYPE SHEET A3.11.
02 EXTERIOR IMPACT RATED HOLLOW METAL DOOR.
03 STANDING SEAM METAL ROOF WITH METAL FASCIA COVER.
04 IMPACT RATED OPAQUE GLASS WINDOW
05 IMPACT RATED SLIDING WINDOW
5A IMPACT RATED TRANSOM WINDOW
06 HI-LOW DRINKING FOUNTAIN WITH FILTERED BOTTLE FILLER.
07 ELECTRICAL METER & BUILDING MAIN DISCONNECT
08 NYLON STUCCO CORNER MOLDING (TYP. ALL CORNERS)
09 WALL HYDRANT
10 ROOM SIGNAGE
11 CARD READER
12 KNOX BOX
13 LOCATION OF METAL CANOPY
14 WALL MOUNTED MULTI SENSOR SECURITY CAMERAS. CONFIRM MOUNTING HEIGHT WITH OWNER.
15 CONCESSION SERVICE COUNTER
16 SHADE SAIL CANOPY FOR PATIO
17 METAL COLUMN FOR SHADE SAIL EQUIPMENT
18 HEADBOX FOR ROLL-UP SHUTTER SYSTEM
19 SECONDARY DOWNSPOUT. 12" ABOVE GRADE
20 THOR GUARD FOR LIGHTNING PREDICTION
21 EXTERIOR LIGHT FIXTURE. REFER ELECTRICAL DWG SET FOR MORE INFORMATION.
22 ALUMINUM DOOR RAIN DRIP GUARD.
23 SIGNAGE FOR DIAPER CHANGING STATION.
24 GOOSENECK RELIEF VENT. REFER MECHANICAL DWG FOR MORE INFORMATION.
25 ALUMINUM DOOR RAIN DRIP GUARD. MATCH COLOR WITH INSULATED METAL PANELS.
26 ALUMINUM PICKET GATE.

FINISH COLORS

PNL 1 - PRESS BOX EXTERIOR WALL - METAL INSULATED PANEL - CENTRIA PRISMATIC - 9930 NIGHT HORIZON

PNT 2 - BUILDING EXTERIOR WALL COLOR - SW 6233 - SAMOVAR SILVER

PNT 3 - BUILDING EXTERIOR WALL COLOR - SW 6451 - NURTURE GREEN

RF 4 - STANDING SEAM METAL ROOF - COLOR TO MATCH WITH METAL INSULATED PANEL

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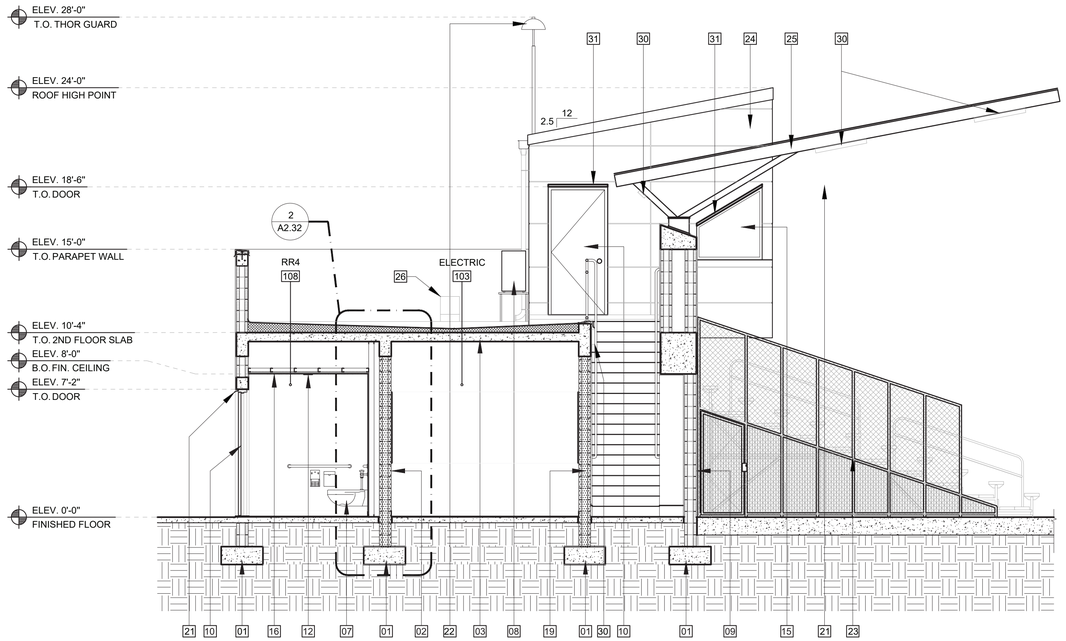
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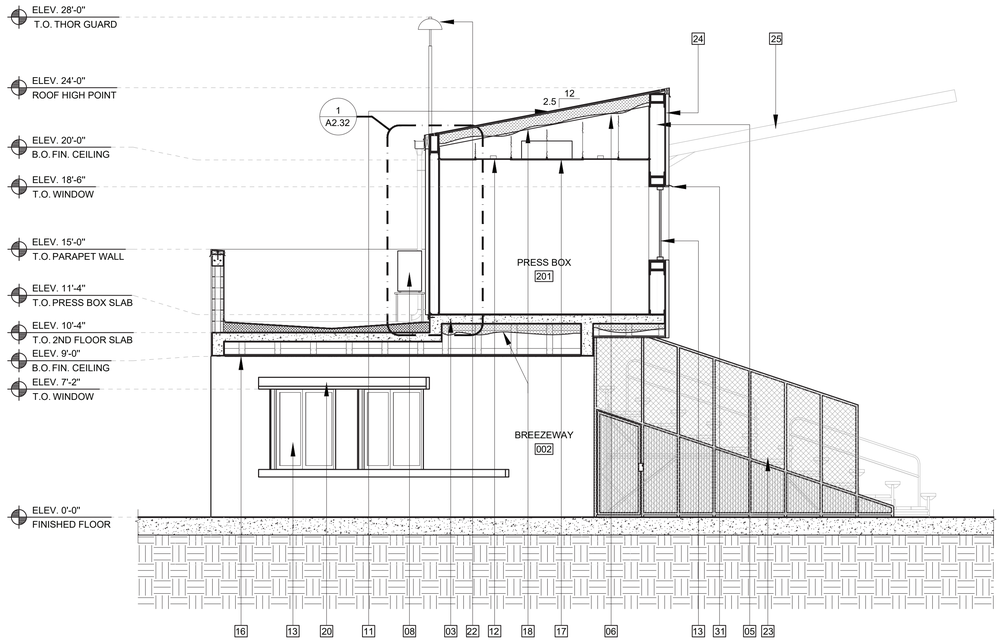
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CONCESSION BUILDING ELEVATIONS



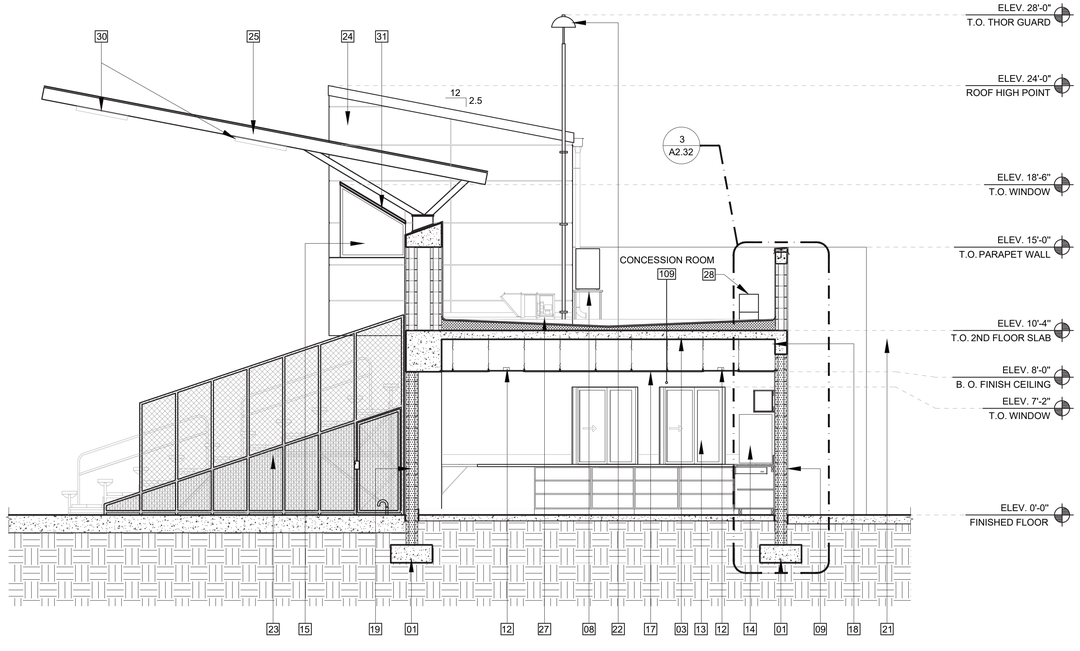
1 TRANSVERSE BUILDING SECTION 1

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



2 TRANSVERSE BUILDING SECTION 2

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



3 TRANSVERSE BUILDING SECTION 3

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

BUILDING SECTION KEYNOTES

01 CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS
02 CONCRETE MASONRY WITH STUCCO AND EPOXY PAINT FINISH
03 CONCRETE SLAB. SEE STRUCTURAL DRAWINGS
04 LAVATORY. SEE PLUMBING DRAWINGS
05 VERTICAL STUD SUPPORTING ROOF. SEE STRUCTURAL DRAWINGS
06 METAL STUD SUPPORTING ROOF. SEE STRUCTURAL DRAWINGS
07 WATER CLOSET. SEE PLUMBING DRAWINGS
08 AC CONDENSING UNIT
09 STUCCO ON EXTERIOR FACE OF CMU WALL. SEE WALL SECTIONS & EXTERIOR ELEVATIONS FOR MORE INFORMATION.
10 EXTERIOR IMPACT RATED HOLLOW METAL DOOR
11 SINGLE PLY MEMBRANE ROOF. SEE ROOF PLAN FOR MORE DETAILS.
12 LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS
13 EXTERIOR IMPACT RATED SLIDING WINDOW
14 CONCESSION ROOM EQUIPMENT. SEE FLOOR PLAN FOR EQUIPMENT DETAILS
15 FIXED GLASS TRANSOM WINDOW
16 STUCCO CEILING. SEE ROOM FINISH SCHEDULE A2.80.
17 24" x 24" ACOUSTICAL CEILING TILE
18 SPRAY FOAM INSULATION
19 WALL WITH CORE FILL INSULATION. SEE FLOOR PLAN FOR MORE INFORMATION.
20 OVERHEAD ROLL-UP SHUTTER AT CONCESSION SERVING WINDOW
21 ALUMINUM DOOR RAIN DRIP GUARD.
22 THOR GUARD FOR LIGHTNING PREDICTION SYSTEM.
23 ALUMINUM BLEACHER SYSTEM. SEE BLEACHER DETAILS SHEET FOR MORE INFORMATION.
24 EXTERIOR METAL INSULATED PANELS AT PRESS BOX. SEE EXTERIOR ELEVATIONS FOR MORE INFORMATION.
25 STRUCTURE FOR SHADE SAIL CANOPY. CONTRACTOR TO PROVIDE ENGINEERED SIGN & SEALED SHOP DRAWINGS FROM SHADE MANUFACTURER.
26 ALUMINUM INTAKE HOOD. REFER MECHANICAL DWG SET FOR MORE INFORMATION.
27 KITCHEN HOOD EXHAUST FAN. REFER MECHANICAL DWG SET FOR MORE INFORMATION.
28 ROOF MOUNTED MAKEUP AIRFAN. REFER MECHANICAL DWG SET FOR MORE INFORMATION.
29 ROOF MOUNTED EXHAUST FAN. REFER MECHANICAL DWG SET FOR MORE INFORMATION.
30 EXTERIOR BUILDING LIGHTING. REFER LIGHTING DWG SET FRO MORE INFORMATION.
31 ALUMINUM DOOR RAIN DRIP GUARD. COLOR TO MATCH METAL INSULATED PANEL
32 ALUMINUM PICKET GATE
33 WALL MOUNTED EMERGENCY LIGHT

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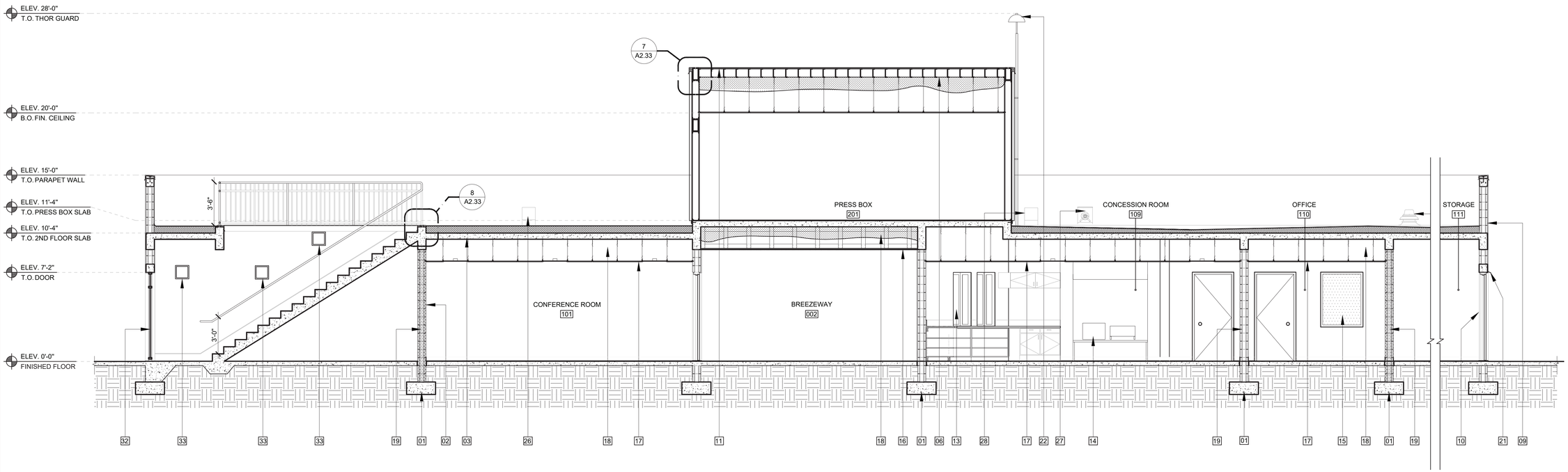
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CONCESSION BUILDING - SECTIONS



4 LONGITUDINAL BUILDING SECTION 4

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

BUILDING SECTION KEYNOTES

01 CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS
02 CONCRETE MASONRY WITH STUCCO AND EPOXY PAINT FINISH
03 CONCRETE SLAB. SEE STRUCTURAL DRAWINGS
04 LAVATORY. SEE PLUMBING DRAWINGS
05 VERTICAL STUD SUPPORTING ROOF. SEE STRUCTURAL DRAWINGS
06 METAL STUD SUPPORTING ROOF. SEE STRUCTURAL DRAWINGS
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13 EXTERIOR IMPACT RATED SLIDING WINDOW
14 CONCESSION ROOM EQUIPMENT. SEE FLOOR PLAN FOR EQUIPMENT DETAILS
15 FIXED GLASS TRANSOM WINDOW
16 STUCCO CEILING. SEE ROOM FINISH SCHEDULE A2.80.
17 24" x 24" ACOUSTICAL CEILING TILE
18 SPRAY FOAM INSULATION
19 WALL WITH CORE FILL INSULATION. SEE FLOOR PLAN FOR MORE INFORMATION.
20 OVERHEAD ROLL-UP SHUTTER AT CONCESSION SERVING WINDOW
21 ALUMINUM DOOR RAIN DRIP GUARD.
22 THOR GUARD FOR LIGHTNING PREDICTION SYSTEM.
23 ALUMINUM BLEACHER SYSTEM. SEE BLEACHER DETAILS SHEET FOR MORE INFORMATION.
24 EXTERIOR METAL INSULATED PANELS AT PRESS BOX. SEE EXTERIOR ELEVATIONS FOR MORE INFORMATION.
25 STRUCTURE FOR SHADE SAIL CANOPY. CONTRACTOR TO PROVIDE ENGINEERED SIGN & SEALED SHOP DRAWINGS FROM SHADE MANUFACTURER.
26 ALUMINUM INTAKE HOOD. REFER MECHANICAL DWG SET FOR MORE INFORMATION.
27 KITCHEN HOOD EXHAUST FAN. REFER MECHANICAL DWG SET FOR MORE INFORMATION.
28 ROOF MOUNTED MAKEUP AIRFAN. REFER MECHANICAL DWG SET FOR MORE INFORMATION.
29 ROOF MOUNTED EXHAUST FAN. REFER MECHANICAL DWG SET FOR MORE INFORMATION.
30 EXTERIOR BUILDING LIGHTING. REFER LIGHTING DWG SET FRO MORE INFORMATION.
31 ALUMINUM DOOR RAIN DRIP GUARD. COLOR TO MATCH METAL INSULATED PANEL
32 ALUMINUM PICKET GATE
33 WALL MOUNTED EMERGENCY LIGHT

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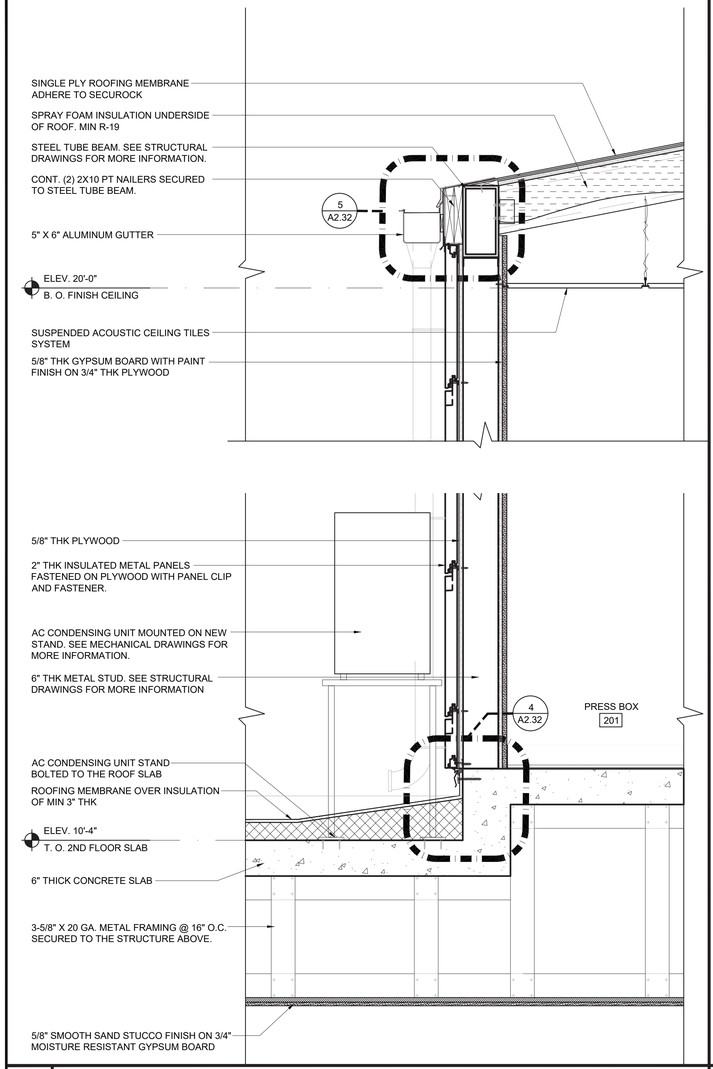
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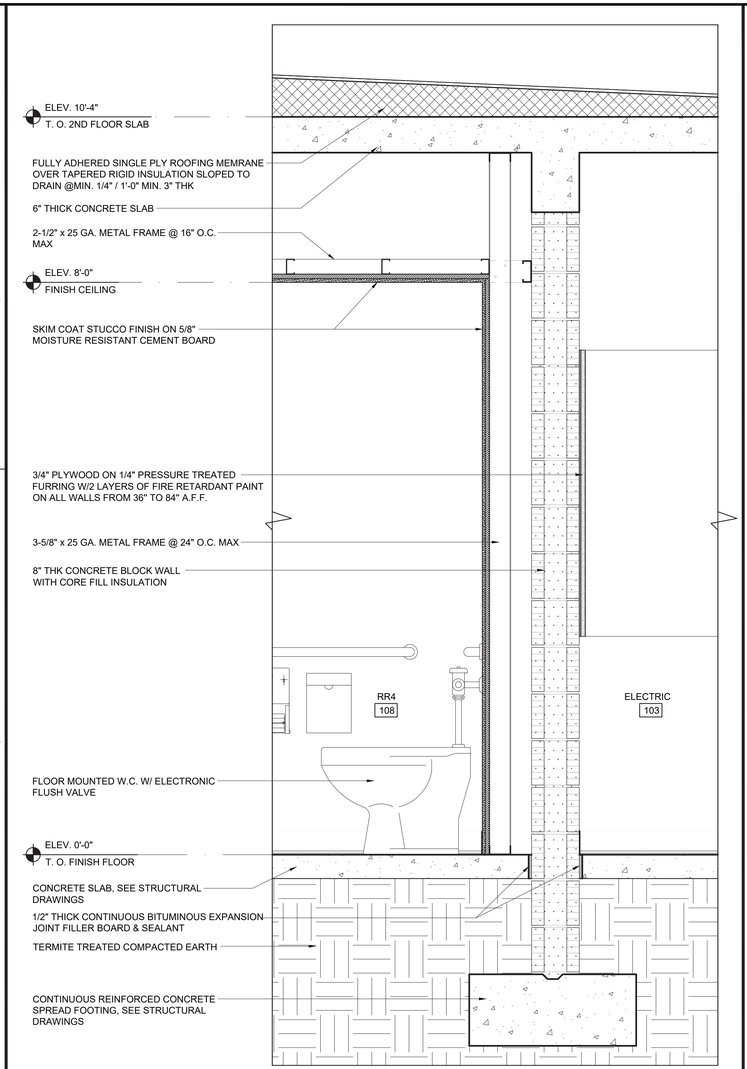
SHEET
A2.31

CONCESSION BUILDING - SECTIONS



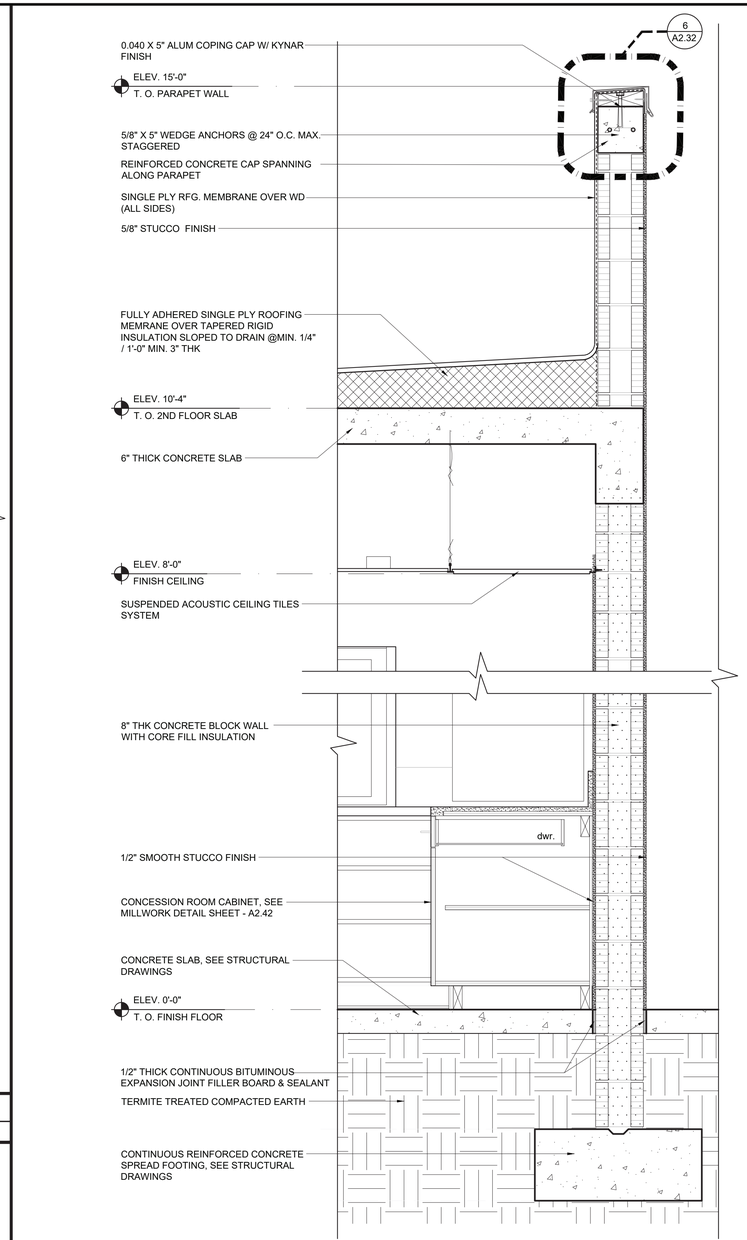
1 WALL SECTION AT PRESS BOX EXTERIOR WALL

SCALE: 1" = 1'-0"



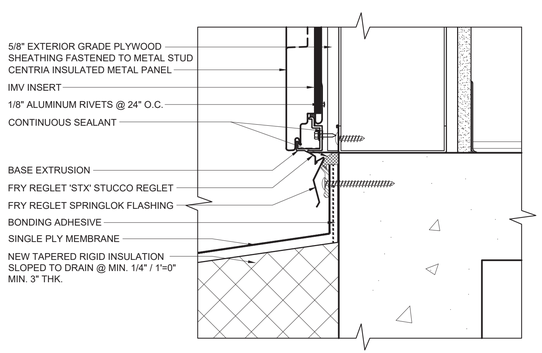
2 SECTION AT TYPICAL RESTROOM

SCALE: 1" = 1'-0"



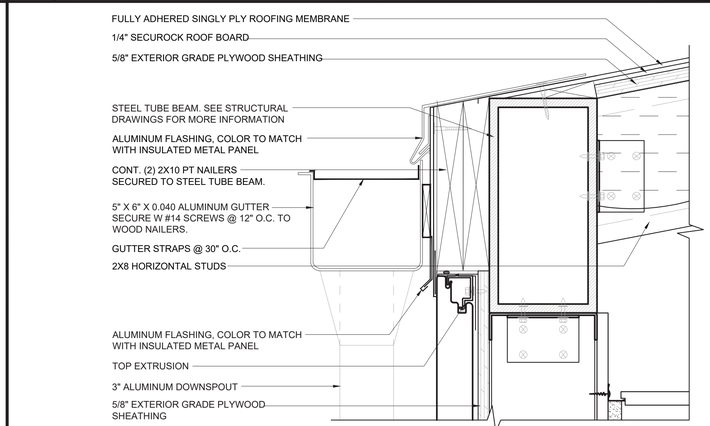
3 SECTION AT CONCESSION ROOM EXTERIOR WALL

SCALE: 1" = 1'-0"



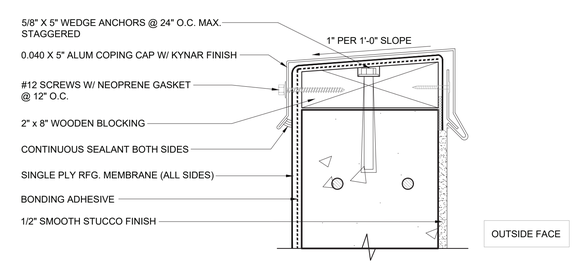
4 DETAIL AT PRESS BOX WALL & ROOF SLAB INTERSECTION

SCALE: 3" = 1'-0"



5 DETAIL AT PRESS BOX ROOF GUTTER

SCALE: 3" = 1'-0"



6 DETAIL AT PARAPET W/ ALUMINUM COPING

SCALE: 3" = 1'-0"

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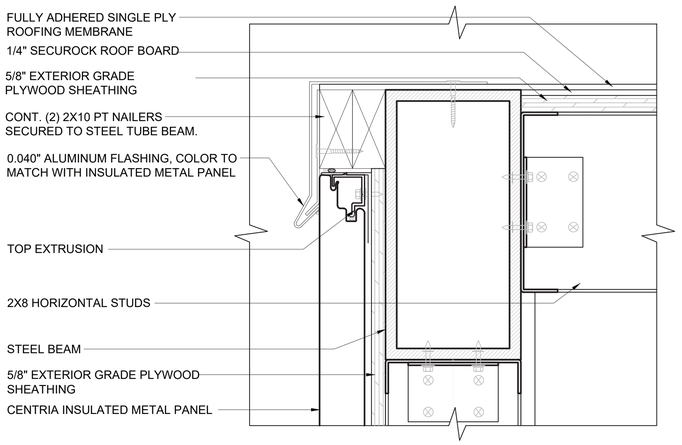
CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: TN
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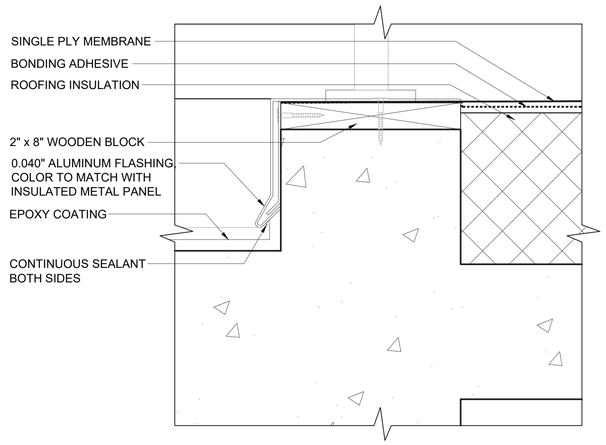
SHEET
A2.32

CONCESSIONS BUILDING
WALL SECTION DETAILS



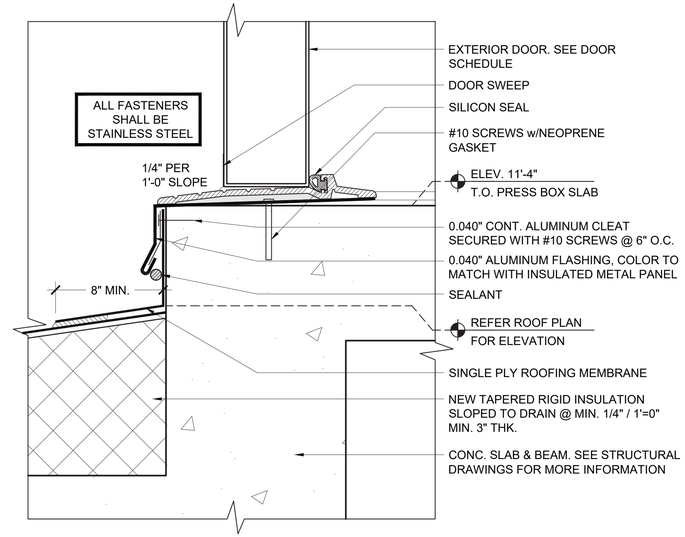
7 DETAIL AT ROOF EDGE

SCALE: 3" = 1'-0"



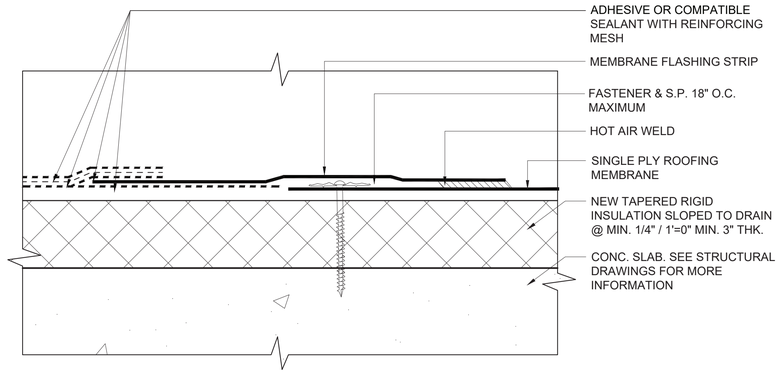
8 DETAIL AT STAIRCASE RISER / TREAD

SCALE: 3" = 1'-0"



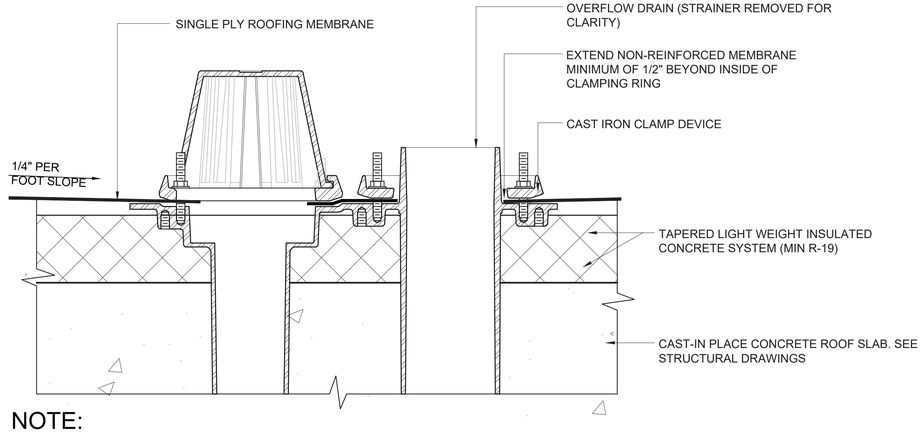
9 THRESHOLD DETAIL AT PRESS BOX DOOR

SCALE: 3" = 1'-0"



10 OVERNIGHT PROTECTION DETAIL

SCALE: 3" = 1'-0"

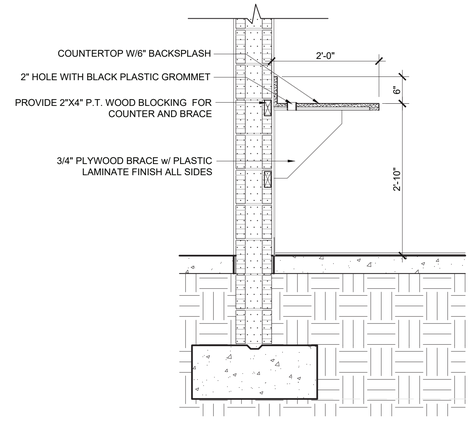


NOTE:

- PRIMARY AND OVERFLOW ROOF DRAIN: ZURN MODEL OR APPROVED EQUAL; SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION. PER FBC - PLUMBING
- ROOF INSULATION TO BE A MINIMUM OF 3" THICK

11 ROOF DRAIN AND OVERFLOW DETAIL

SCALE: 3" = 1'-0"



12 WORK SURFACE COUNTER DETAIL

SCALE: 3/4" = 1'-0"

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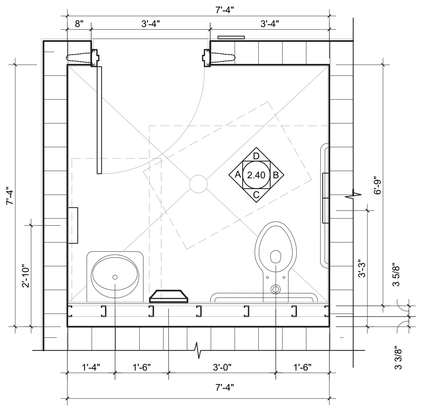
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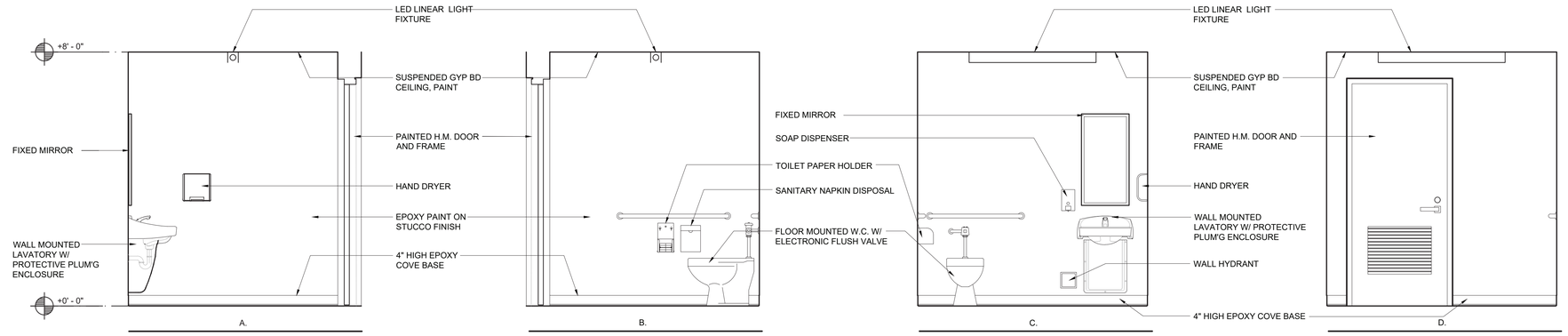
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CONCESSIONS BUILDING
WALL SECTION DETAILS



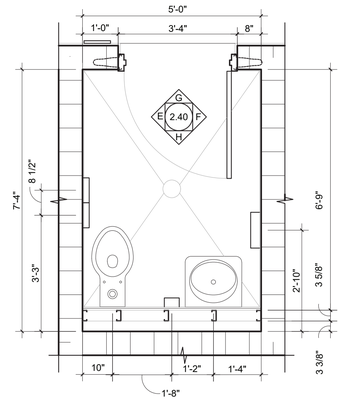
1 ADA RESTROOM PLAN

SCALE : 1/2" = 1' - 0"



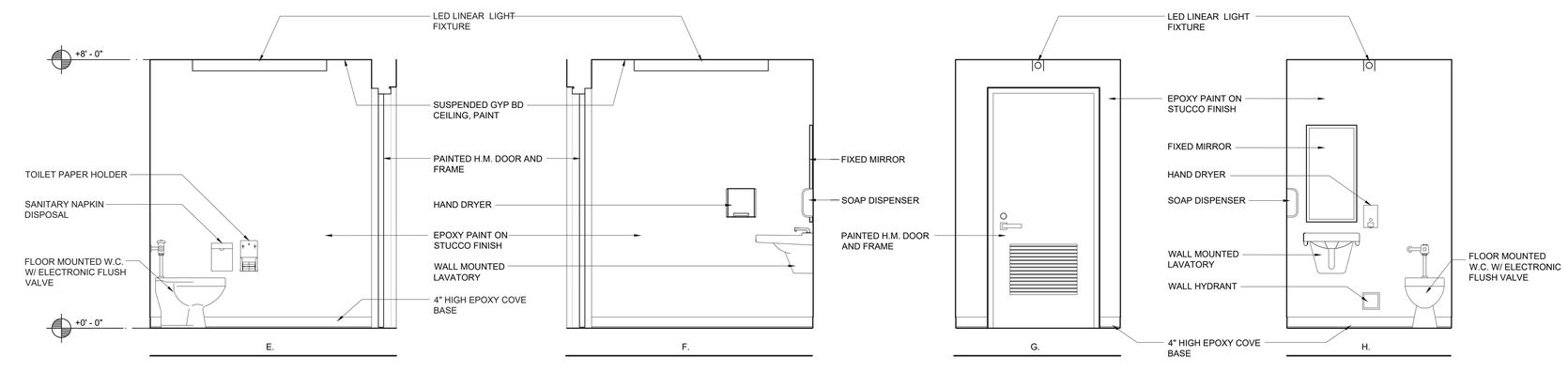
2 ADA RESTROOM INTERIOR ELEVATIONS

SCALE : 1/2" = 1' - 0"



1 TYPICAL RESTROOM PLAN

SCALE : 1/2" = 1' - 0"



2 TYPICAL RESTROOM INTERIOR ELEVATIONS

SCALE : 1/2" = 1' - 0"

NOTE:

- ALL FIXTURES AND ACCESSORIES SHALL BE INSTALLED TO COMPLY W/ FLORIDA BUILDING CODE - ACCESSIBILITY REQUIREMENTS, INCLUDING MOUNTING HEIGHTS.
- CONTRACTOR TO DETERMINE WHETHER STANDARD OR PRECUT LAVATORY PLUMBING PROTECTOR IS AVAILABLE AND MAY BE USED FOR EACH INSTALLATION. THE PROTECTIVE GUARD TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND SHALL BE INSTALLED TO COMPLY WITH ADA GUIDELINES.
- PROVIDE BLOCKING AS REQUIRED TO INSTALL ALL ACCESSORIES AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

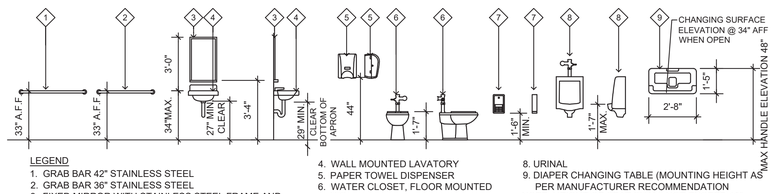
PLUMBING FIXTURES

THE FOLLOWING IS A LIST OF PLUMBING FIXTURES FOR REFERENCE ONLY. REFER TO PLUMBING DRAWINGS FOR PLUMBING FIXTURE SCHEDULE FOR FINAL SELECTION OF ALL FIXTURES, FITTINGS AND ACCESSORIES.

COUNTER TOP SINK LAVATORY:	AMERICAN STANDARD #0490.156 "RONDALYN" (CENTER HOLE) (WHITE)
WALL MOUNTED ADA LAVATORY:	AMERICAN STANDARD #0356.421 "LUCENRE" (SINGLE CENTER FAUCET HOLE) (WHITE)
FLOOR MOUNTED WATER CLOSET:	AMERICAN STANDARD #3461.001 "MADERA" (WHITE COLOR)
LAVATORY FAUCET:	AMERICAN STANDARD #6053.205 INNSBROOK SELECTRONIC BATTERY POWERED FAUCET (0.5 GPM)
WATER CLOSET FLUSH VALVE:	SLOAN SOLIS SENSOR FLUSH VALVE MODEL #8111-1.28-OR SOLAR POWERED W/ BATTERY BACK UP
TOILET SEAT:	PROFLO # PFTSCOF2000WH (WHITE)
WATER COOLER:	ELKAY #VRCTL8WSK - VANDAL RESISTANT BI-LEVEL WITH BOTTLE FILLER
ELECTRIC HAND DRYER:	XLERATOR #XL-GR BY EXCEL DRYER INC.

RESTROOM ACCESSORIES

FIXED MIRROR:	BRADLEY # 7481 STAINLESS STEEL (24"W X 36"H)
SOAP DISPENSER:	CITY OF POMPANO BEACH SHALL SUPPLY AND INSTALL ALL SOAP DISPENSERS
SURFACE MOUNTED TOILET PAPER HOLDER:	CITY OF POMPANO BEACH SHALL SUPPLY AND INSTALL ALL SURFACE MOUNTED TOILET PAPER HOLDER
SURFACE MOUNTED SANITARY NAPKIN DISPOSAL:	BRADLEY #4781-11 SURFACE MOUNTED NAPKIN DISPOSAL IN SATIN STAINLESS FINISH
42" GRAB BAR:	BRADLEY #812 SEAMLESS STAINLESS STEEL W/ ESCUTCHEON (VANDAL RESISTANT SCREWS, SAFETY GRIP FINISH)
36" GRAB BAR:	BRADLEY #812 SEAMLESS STAINLESS STEEL W/ ESCUTCHEON (VANDAL RESISTANT SCREWS, SAFETY GRIP FINISH)
PROTECTIVE LAVATORY ENCLOSURE FOR VANITY:	TRUEBRO / IPS CORPORATION STANDARD OR PRECUT LAV SHIELD



LEGEND

1. GRAB BAR 42" STAINLESS STEEL
2. GRAB BAR 36" STAINLESS STEEL
3. FIXED MIRROR WITH STAINLESS STEEL FRAME AND SHELF
4. WALL MOUNTED LAVATORY
5. PAPER TOWEL DISPENSER
6. WATER CLOSET, FLOOR MOUNTED H/C
7. TOILET PAPER DISPENSER
8. URINAL
9. DIAPER CHANGING TABLE (MOUNTING HEIGHT AS PER MANUFACTURER RECOMMENDATION

NOTE: HEIGHT OF SEAT SHALL NOT EXCEED 19" A.F.F.

5 ACCESSIBLE ACCESSORIES MOUNTING DETAIL

SCALE : NOT TO SCALE



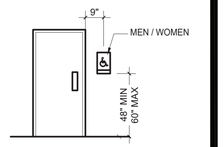
INTERIOR ACCESSIBILITY SIGN

INSTALL AT EACH ACCESSIBLE STALL

COMPLY WITH CHAPTER 7, SECTION 703.7.2.2. OF THE FBC EIGTH EDITION (2023) ACCESSIBILITY.

INTERIOR AND EXTERIOR - BLUE PLASTIC ALL SIGNAGE TO BE INSTALLED WITH TAMPER RESISTANT FASTENERS AND TO MEET ADA REQUIREMENT FOR SIZE OF CHARACTERS, CONTRAST, GRADE 2 BRAILLE, AND MOUNTING LOCATION

SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO A CLEAR FLOOR SPACE OF 18" MIN. x 18" MIN. CENTERED ON TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45° OPEN POSITION.

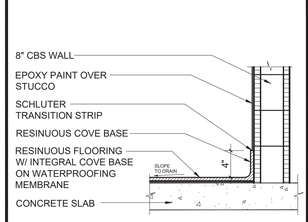


EXTERIOR SIGN LOCATION DETAIL

PERMANENT IDENTIFICATION REQUIRED AT ALL ACCESSIBLE ROOMS AND SPACES (STALLS, SHOWERS, ETC.). SIGNAGE TO BE LOCATED ON THE WALL ADJACENT TO THE LATCH SIDE OFF THE DOORWAY - OR NEAREST ADJACENT WALL. SIGNS SHALL BE LOCATED 48"MIN. AFF MEASURED FROM THE BASELINE OF THE LOWEST TACTILE CHARACTER AND 60" MAX. AFF MEASURED FROM BASELINE TO HIGHEST TACTILE CHARACTER.

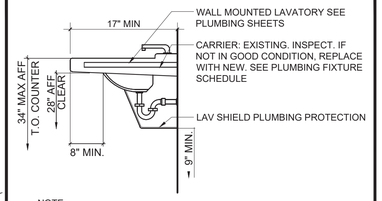
6 HC BATHROOM SIGNAGE DETAIL

SCALE : NOT TO SCALE



7 EPOXY FLOORING

SCALE : NOT TO SCALE

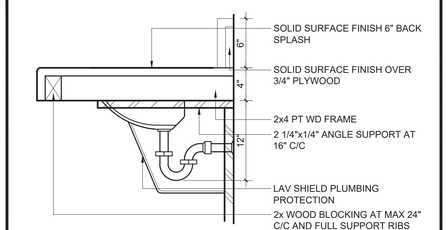


NOTE:

1. INSTALLATION TO BE IN FULL COMPLIANCE WITH ADA & FLORIDA ACCESSIBILITY CODES
2. PROVIDE 'LAV SHIELD' BY TRUEBRO. INSTALL PER MANUFACTURER'S INSTRUCTIONS TRUEBRO, INC.: 1-800-340-5969 OR APPROVED EQUAL.

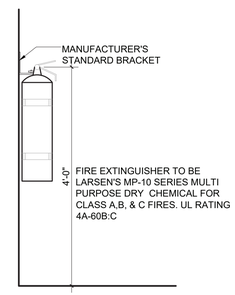
8 WALL HUNG LAVATORY

SCALE : NOT TO SCALE



9 COUNTER MOUNTED LAVATORY

SCALE : NOT TO SCALE



10 FIRE EXTINGUISHER

SCALE : NOT TO SCALE

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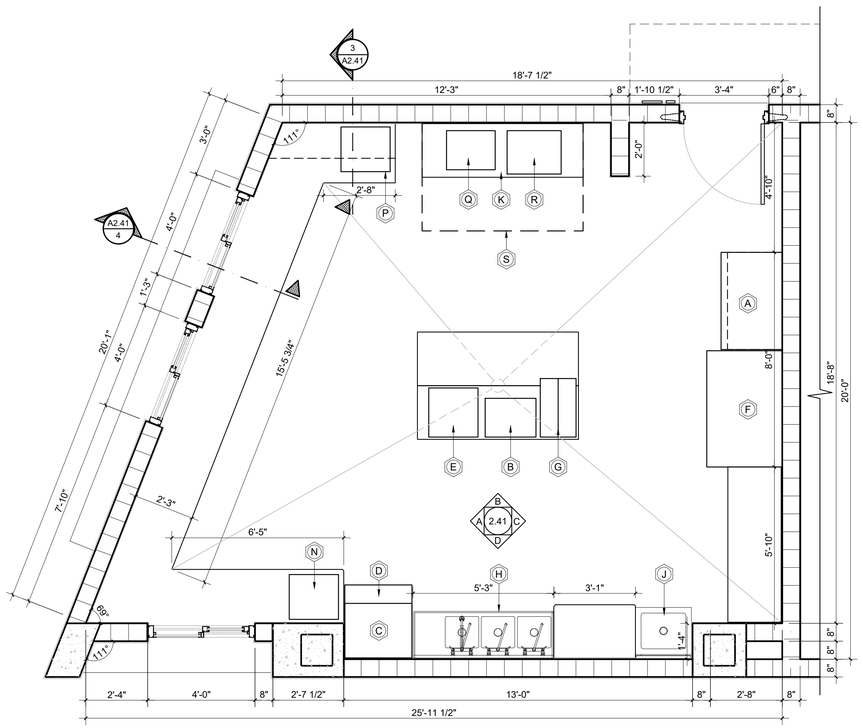
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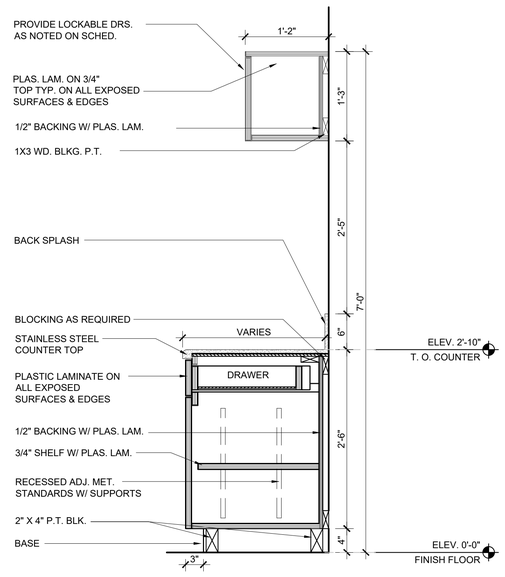
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RESTROOM PLAN, INTERIOR ELEVATIONS AND DETAILS



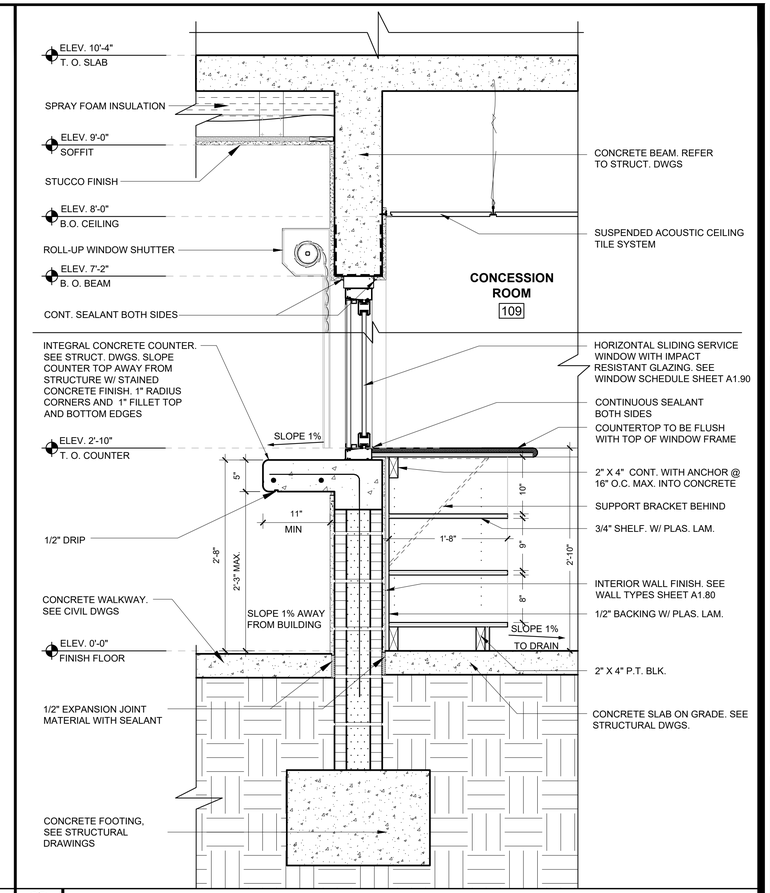
1 CONCESSION ROOM FLOOR PLAN

SCALE : 3/8" = 1'-0"



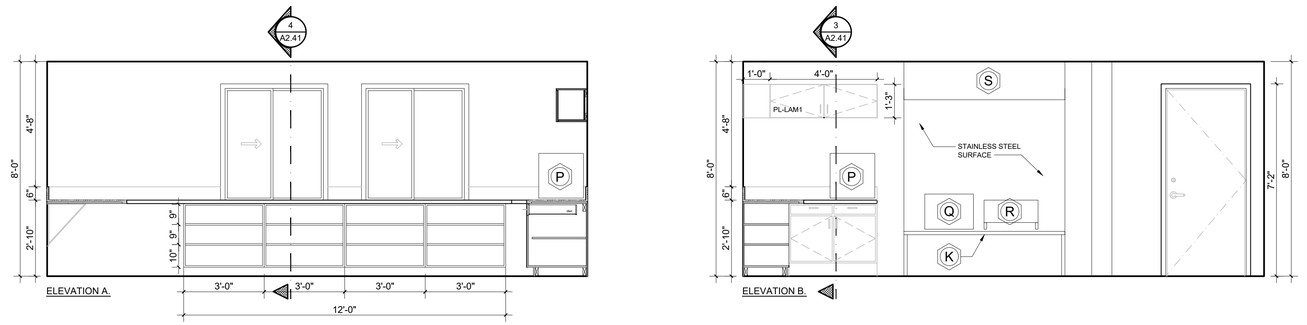
3 CASEWORK DETAIL WITH UPPER CABINETS

SCALE : 1" = 1'-0"



4 WALL SECTION AT CONCESSION ROOM WINDOW COUNTER

SCALE : 1" = 1'-0"



2 CONCESSION ROOM INTERIOR ELEVATIONS

SCALE : 3/8" = 1'-0"

EQUIPMENT SCHEDULE

ITEM	QTY.	DESCRIPTION	SIZE	BRAND	MODEL	PROVIDED	WASTE	COLD WATER	HOT WATER	ELECTRIC
A	1	LOW TEMP DISPLAY FREEZER & ICE CREAM FREEZER	43 1/2" x 27 5/8" x32 5/8"	EXCELLENCE INDUSTRIES	HL-11HC	OWNER	-	-	-	120/60/1
B	1	HOT DOG ROLLER KIT	22 3/4" W x 17 3/4"D x 11"H	AVANTCO	177RG30KIT10	OWNER	-	-	-	120/60/1
C	1	ICE MACHINE	30"W x 24.4"D x 22.4"H	AVANTCO	194MC50030HA	OWNER	2"	1/2"	-	120/60/1
D	1	ICE STORAGE BIN	30"W x 32.7"D x 41.6"H	AVANTCO	194BIN27530	OWNER	-	-	-	-
E	1	PRETZEL MERCHANDISER	22" x 22" x 32 5/8"	NEMCO	6423	OWNER	-	-	-	-
F	1	DUAL TEMPERATURE REFRIGERATOR FREEZER	52"W x 33 3/4"D x 84"H	BEVERAGE AIR	HBRF49HC-1-A	OWNER	-	-	-	-
G	1	ULTRA-2 SLUSHY MACHINE	16"W x 26.2"D x 31.9"H	BUNN	3400.0081	OWNER	-	-	-	120/60/1
H	1	3 - COMPARTMENT SINK	62 1/2"W x 20 1/2"D x 43 3/4"H	JOHN BOOS	E3S8-15-14R15	BY CONTRACTOR	3-1/2"	-	-	-
J	1	ADA HAND SINK	(SEE PLUMBING DWGS)	-	BY CONTRACTOR	BY CONTRACTOR	1-1/2"	1/2"	1/2"	-
K	1	STAINLESS STEEL TABLE	24"W x 24"D x 72"H	G.C.		BY CONTRACTOR				
L	1	MOP SINK	28"W x 20"D x 12"H	REGENCY	600SM202812	BY CONTRACTOR	3-1/2"	-	-	-
M	1	MOP SINK SPLASH GUARD	28"W x 20"D x 15"H	REGENCY	600SPL2028R	BY CONTRACTOR	-	-	-	-
N	1	COFFEE MACHINE	-	-	-	OWNER	-	-	-	
P	1	MICROWAVE				OWNER	-	-	-	
Q	1	COUNTERTOP FRYER	21 3/4"W x 17 1/2"D x 15 3/4"H	CECILWARE	EL2X15#	OWNER	-	-	-	120/60/1
R	1	COUNTERTOP GRILLE	24 1/8"W x 19 7/16"D x 12"H	AVANTCO	#177EG24N	OWNER	-	-	-	208/240
S	1	EXHAUST HOOD	72"W x 42"D x 24"H	GREENHECK	GHFW TYPE 1	BY CONTRACTOR	-	-	-	120/60/1

NOTE:
- CONTRACTOR TO PROVIDE ENGINEERED SIGN & SEALED DRAWINGS FOR EXHAUST HOOD. (2)
- STAINLESS STEEL PANEL BEHIND FRYER & GRILLE TO BE 16 GA - 316, FULLY ADHERED TO WALL.

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CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

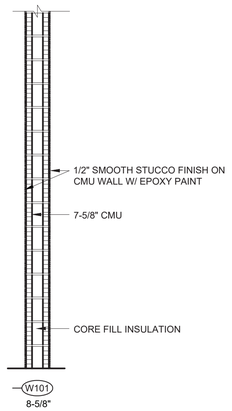
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CHECKED BY: AZ
DATE: 05/19/2025

REVISIONS:
1. 10-06-25 ADDENDUM 3 CO-ORD
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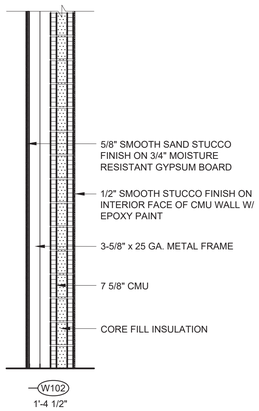
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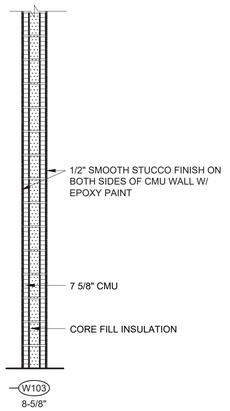
CONCESSION ROOM PLANS, INTERIOR ELEVATIONS AND DETAILS



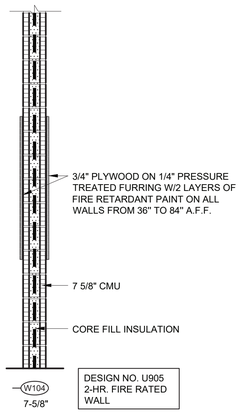
W101
8-5/8"



W102
1'-4 1/2"

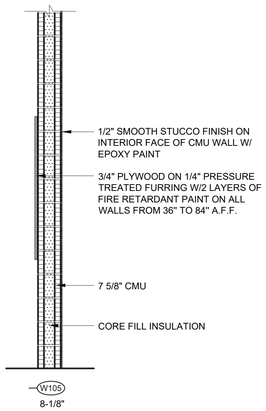


W103
8-5/8"

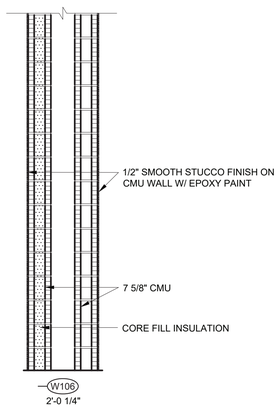


W104
7-5/8"

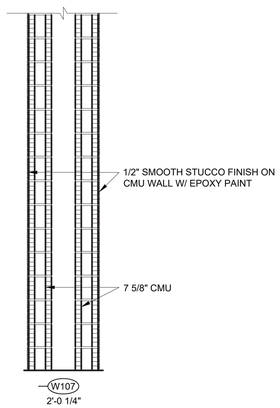
DESIGN NO. U905
2-HR. FIRE RATED WALL



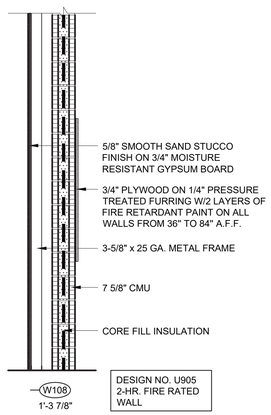
W105
8-1/8"



W106
2'-0 1/4"

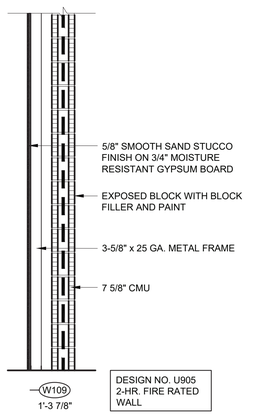


W107
2'-0 1/4"



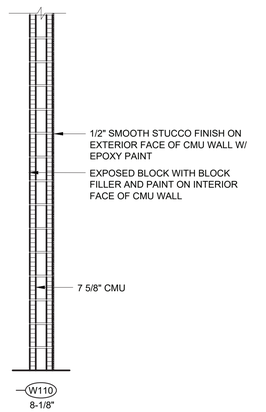
W108
1'-3 7/8"

DESIGN NO. U905
2-HR. FIRE RATED WALL

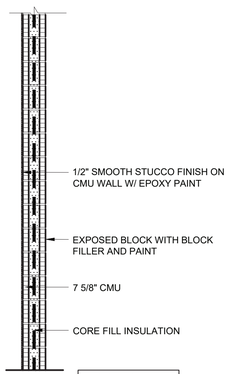


W109
1'-3 7/8"

DESIGN NO. U905
2-HR. FIRE RATED WALL

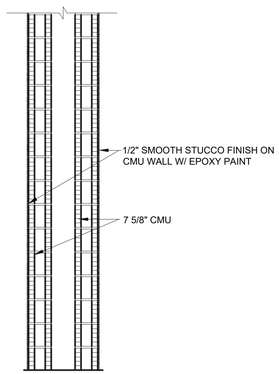


W110
8-1/8"

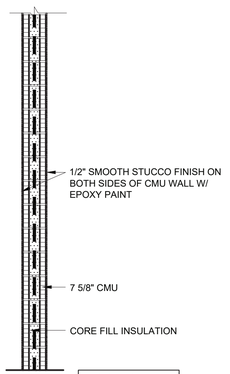


W111
8-1/8"

DESIGN NO. U905
2-HR. FIRE RATED WALL

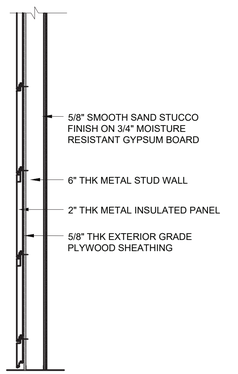


W112
2'-0 1/4"

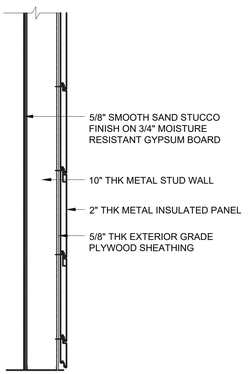


W113
8-5/8"

DESIGN NO. U905
2-HR. FIRE RATED WALL



W201
9-1/2"



W202
1' 1-1/2"

1 WALL TYPES

SCALE: 1/2"=1'-0"

GENERAL WALL NOTES

- SEE LIFE SAFETY PLAN SHEET A0.02 AND FLOOR PLAN SHEET A1.10/N FOR LOCATION OF FIRE RATED WALLS
- CORE FILL INSULATION AVERAGE R-4.5

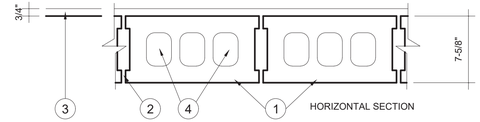
FIRE RATED CEILING NOTES

SEE LIFE SAFETY PLAN SHEET A0.02 FOR LOCATION OF FIRE RATED CEILINGS

2 HOUR RATED CEILING OVER STORAGE ROOM.
USE UL DESIGN NO. P522 PLUS (2) ADDITIONAL LAYERS OF 5/8" TYPE 'X' GYP. BD. 7/8" x 2-3/8", 25 GA FURRING CHANNELS AT 12" O.C. SECURED TO TRUSSES WITH NO. 8 X 2 1/2" COARSE DRYWALL SCREWS. MIN. R-30 INSULATION. ONE LAYER OF 5/8" TYPE 'X' GYPSUM WALLBOARD INSTALLED WITH THE LONG DIMENSION PARALLEL TO TRUSSES. ATTACHED USING 1" LONG TYPE S BUGLE-HEAD SCREWS SPACED AT 8" O.C. MAX. ALONG BUTTED END-JOINTS AND IN THE FIELD. VINYL, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS. PAPER TAPE, 2" WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS. INSTALL THE TWO ADDITIONAL LAYERS WITH THE SAME PROCESS. STAGGER THE JOINTS ON THE ADDITIONAL LAYERS.

U.L. DESIGN No. P522

DESIGN NO. U905
BEARING WALL RATING - 2 HR.
NONBEARING WALL RATING - 2 HR



1. CONCRETE BLOCKS* - VARIOUS DESIGNS. CLASSIFICATION D-2 (2 HR). SEE CONCRETE BLOCKS CATEGORY FOR LIST OF ELIGIBLE MANUFACTURERS.

2. MORTAR - BLOCKS LAID IN FULL BED OF MORTAR, NOM. 3/8 IN. THICK, OF NOT LESS THAN 2-1/4 AND NOT MORE THAN 3-1/2 PARTS OF CLEAN SHARP SAND TO 1 PART PORTLAND CEMENT (PROPORTIONED BY VOLUME) AND NOT MORE THAN 50 PERCENT HYDRATED LIME (BY CEMENT VOLUME). VERTICAL JOINTS STAGGERED.

3. PORTLAND CEMENT STUCCO OR GYPSUM PLASTER - ADD 1/2 HR TO CLASSIFICATION IF USED. WHERE COMBUSTIBLE MEMBERS ARE FRAMED IN WALL, PLASTER OR STUCCO MUST BE APPLIED ON THE FACE OPPOSITE FRAMING TO ACHIEVE A MAX. CLASSIFICATION OF 1-1/2 HR. ATTACHED TO CONCRETE BLOCKS (ITEM 1).

4. LOOSE MASONRY FILL - IF ALL CORE SPACES ARE FILLED WITH LOOSE DRY EXPANDED SLAG, EXPANDED CLAY OR SHALE (ROTARY KILN PROCESS), WATER REPELLANT VERMICULITE MASONRY FILL INSULATION, OR SILICONE TREATED PERLITE LOOSE FILL INSULATION ADD 2 HR TO CLASSIFICATION.

5. FOAMED PLASTIC* - (OPTIONAL-NOT SHOWN) - 1-1/2 IN. THICK MAX, 4 FT WIDE SHEATHING ATTACHED TO CONCRETE BLOCKS (ITEM 1).

THE DOW CHEMICAL CO - TYPE THERMAX

*BEARING THE UL CLASSIFICATION MARK

U.L. DESIGN No. U905

2 U.L DETAILS

SCALE: 1/2"=1'-0"

WALTERS ZACKRIA ARCHITECTS
5813 N. ANDREWS WAY
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Abbas H. Zackria, FL. AR 91520

CORPORATE NAME: WALTERS ZACKRIA ASSOCIATES, PLLC REGISTERED IN THE STATE OF FLORIDA. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. THESE DRAWINGS ARE THE PROPERTY OF WALTERS ZACKRIA ASSOCIATES, PLLC, AND SHALL NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION FROM A PRINCIPAL OF THE FIRM OR BE LIABLE FOR THE FULLEST LEGAL RECOURSE. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO EXECUTION OF WORK.

CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: TN
CHECKED BY: AZ
DATE: 05/19/2025
REVISIONS:
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2
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6

2406

SHEET
A2.70

WALL TYPES

ROOM FINISH SCHEDULE

NO.	ROOM NAME	FLOORS		WALLS				CEILING			CASEWORK	REMARKS	DESIGNED TO ACCEPT WATER INFILTRATION WITH THE FOLLOWING:
				NORTH	SOUTH	EAST	WEST						
		FLOOR	BASE	FINISH	FINISH	FINISH	FINISH	SIZE	FINISH	HEIGHT			
001	BREEZEWAY		-	EXT. PNT.	EXT. PNT.	EXT. PNT.	EXT. PNT.	-	STUCCO	9'-0"	-		N/A
002	OPEN PATIO		-					-	-	-	-		N/A
												2	
101	CONCESSION ROOM	EF-1	EF-1	PNT-1	PNT-1	PNT-1	PNT-1	2X2	ACT-1	8'-0"	PL-LAM-1	GROUT, STAINLESS STEEL COUNTER	TILE FLOOR AND WALL BASE, FLOOR DRAIN
102	CONFERENCE ROOM	EF-1	EF-1	PNT-1	PNT-1	PNT-1	PNT-1	2X2	ACT-1	8'-0"	PL-LAM-1	GROUT, SS-1 COUNTER	N/A
103	OFFICE	EF-1	EF-1	PNT-1	PNT-1	PNT-1	PNT-1	2X2	ACT-1	8'-0"	PL-LAM-1	GROUT, SS-1 COUNTER	N/A
104	STORAGE	SC	CB-1	EP-1	EP-1	EP-1	EP-1	-	GB/EP-1	9'-10"	-	-	CONCRETE FLOOR, EPOXY PNT
105	ELECTRIC	SC	CB-1	PNT-2	PNT-2	PNT-2	PNT-2	-	GB/PNT-2	9'-10"	PL-LAM-1	-	DUROCK, TILE FLOOR, EPOXY PAINT, FLOOR DRAIN
106	DATA	SC	CB-1	PNT-2	PNT-2	PNT-2	PNT-2	-	GB/PNT-2	9'-10"	PL-LAM-1	-	-
107	RESTROOMS	EF-1	EF-1	PNT-3	PNT-3	PNT-3	PNT-3	-	GB/PNT-3	8'-0"	-	-	-
108	JANITORIAL	EF-1	EF-1	PNT-3	PNT-3	PNT-3	PNT-3	-	GB/PNT-3	9'-10"	-	-	DUROCK, TILE FLOOR, EPOXY PAINT, FLOOR DRAIN
201	PRESS BOX	QT-1	QT-1	PNT-1	PNT-1	PNT-1	PNT-1	2X2	ACT-1	8'-8"	PL-LAM-1	GT-1, SS-1 COUNTER	N/A

ROOM FINISH LEGEND

SYMBOL	MATERIAL	SOURCE (NAMED PRODUCT)	COLOR	REMARKS	SPEC #
ACT-1	ACOUSTICAL CEILING TILE	ROCKFON ALASKA	WHITE	2' X 2', BEVELED TEGULAR, HOT DIPPED GALV., 9/16" GRID (WHITE FINISH). SEE REFLECTED CEILING PLANS FOR MORE INFORMATION.	09510
CB-1	WALL BASE	VPI CORPORATION, VINYL WALL BASE	BURNT UMBER (54)	4" STANDARD, COVE BASE	09650
CT-2	CERAMIC TILE	DALTILE, LINERS, SEMI GLOSS	MATTE ARTISAN BROWN (0144)	1" X 6" FLAT WALL TILE. SEE INTERIOR ELEVATION AND DETAIL 8/A1.72	09300
CT-3	CERAMIC TILE	DALTILE, NATURAL STONE, STONE RADIANCE	MORNING SUN / TORTOISE / MUSHROOM RANDOM (SA52)	5/8" RANDOM ACCENT TILE. SEE INTERIOR ELEVATION AND DETAIL 8/A1.72	09300
EP-1	EPOXY PAINT	SHERWIN WILLIAMS	DOVER WHITE (SW6385)	RESTROOM WALL AND CEILING	09900
EF-1	EPOXY FLOOR	DEX-O-TEX		SEAMLESS FLOOR W/ 6" INTEGRAL COVE BASE	
GT-1	EPOXY GROUT	MAPEI	FRENCH VANILLA (13)	EPOXY WALL TILE GROUT. APPLY AS PER MANUFACTURER'S RECOMMENDATIONS	-
GT-2	EPOXY GROUT	MAPEI	STRAW (94)	EPOXY FLOOR TILE GROUT. APPLY AS PER MANUFACTURER'S RECOMMENDATIONS	-
PL-LAM-1	PLASTIC LAMINATE	FORMICA	SCULPTED FINISH, DARK CHOCOLATE	CONCESSION ROOM CABINETS	06400
PNT-1	INTERIOR PAINT	SHERWIN WILLIAMS	COLONY BUFF (SW 7723)	LOWER PORTION OF INTERIOR WALLS	09900
PNT-2	INTERIOR PAINT	SHERWIN WILLIAMS	DOVER WHITE (SW 6385)	UPPER PORTION OF INTERIOR WALLS & GYP. BD. CEILINGS	09900
PRT-1	PORCELAIN TILE	-	-	-	-
PRT-2	CERAMIC TILE	-	-	-	-
PRT-3	CERAMIC TILE	-	-	-	-
QT-1	QUARRY TILE	DALTILE, QUARRY TEXTURES	ASHEN GRAY (OTO3) ABRASIVE FINISH	8" X 8" FIELD TILE, 8" X 5" COVE BASE (Q-3585)	09300
SS-1	SOLID SURFACE	FORMICA	CREMA TERRAZO (744)	KITCHEN COUNTERTOP WITH 6" BACKSPLASH	06400
SC	SEALED CONCRETE				
TP-1	TOILET PARTITION	SCANTRON PRODUCTS	MAHOGANY (ORANGE PEEL)	INSTALL AS PER MANUFACTURER'S RECOMMENDATION	10160
VCT-1	VINYL COMPOSITE TILE	ARMSTRONG	SANDRIFT WHITE (51858)	STANDARD EXCELON IMPERIAL TEXTURE	09650
WP-1	WATERPROOF DECK COATING	TREMCO	VULCUM 350 / 351	LIGHT GREY W/SKID-RESISTANT AGGREGATE	

- CONTRACTOR SHALL SUBMIT SAMPLES TO ARCHITECT FOR OWNER'S APPROVAL. OWNER MAY CHANGE COLORS OR PATTERNS FOR ITEMS OF COMPARABLE COST
- CONTRACTOR SHALL SUBMIT GROUT COLOR SAMPLES TO ARCHITECT FOR OWNER'S REVIEW. OWNER SHALL CHOOSE FROM STANDARD COLOR LIST

FINISH NOTES

- NAMED PRODUCTS: ARE INDICATED ON PLANS BY USE OF THE MANUFACTURER'S NAME FOR A PRODUCT, INCLUDING SUCH ITEMS AS MAKE, MODEL AND/OR COLOR ETC. THESE ITEMS APPEAR ON THE FINISH SCHEDULE LEGEND, MATERIAL DETAILS, ETC. ON THESE PLANS. THESE ITEMS TAKE PRECEDENCE OVER GENERIC MATERIAL IN THE SPECIFICATION MANUAL. THESE ITEMS ARE NOT TO BE SUBSTITUTED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT.
- IN THE EVENT THERE IS AMBIGUITY, CONFLICT OR DISAGREEMENT RELATING TO ITEMS OR ARRANGEMENTS TO BE FURNISHED UNDER THE CONTRACT DOCUMENTS, THE ARCHITECT WILL DETERMINE WHICH TAKES PRECEDENCE. IT IS UNDERSTOOD THAT THE CONTRACTOR SHALL FURNISH THE ITEMS OR ARRANGEMENTS OF GREATER QUANTITY, BETTER QUALITY OR HIGHER COST AS CONCLUSIVELY DETERMINED BY THE ARCHITECT.
- ALL FINISHES SHALL BE CLASS 'A' RATED UNLESS OTHERWISE NOTED.
- INTERIOR FLOOR FINISHES SHALL BE NO LESS THAN CLASS II.
- CLASSIFICATION OF HAZARD OF CONTENTS FOR THIS BUILDING IS "LOW HAZARD CONTENTS" AS PER NFPA 101-6.2.2.2 IN THE FLORIDA FIRE PREVENTION CODE 2014EDITION.
- ALL STUCCO AREAS TO RECEIVE SEALER PRIOR TO PAINT APPLICATION.
- CONTRACTOR SHALL SUBMIT COLOR SAMPLES OF ALL PRODUCTS. OWNER MAY CHOOSE DIFFERENT COLORS IF THE COST IS THE SAME AS THAT OF THE BID ITEM.

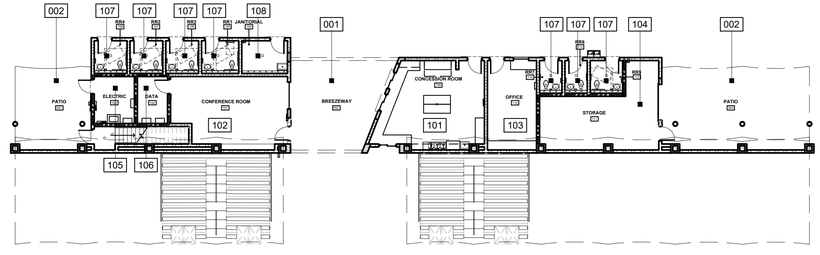
EPOXY PAINT NOTE

PROVIDE EPOXY PAINT IN JANITOR'S CLOSET, ALL STORAGE ROOMS, CONCESSION ROOM, AND RESTROOM CEILINGS AND WALLS.

MATERIALS LEGEND

ACT - ACOUSTICAL CEILING TILE
AT - ACCENT TILE
AP - ACOUSTICAL PANEL
AWF - ACOUSTICAL WALL FABRIC
CB - COVE BASE
CC - COLORED CONCRETE
CPT - CARPET
CR - CRASH RAIL
CT - CERAMIC/ PORCELAIN TILE
EP - EPOXY PAINT
EF - EPOXY FLOOR
E-GT - EPOXY GROUT
G - GRANITE
GB - GYPSUM BOARD
GT - GROUT
LFC - LINOLEUM FLOOR COVERING
MTL - METAL
OFP - OPERABLE PARTITIONS
PAV - PAVERS
PC - POLISHED CONCRETE
PL LAM - PLASTIC LAMINATE
PNT - PAINT
PRT - PORCELAIN TILE
PT - PAVER TILE
QT - QUARRY TILE
RB - RUBBER TILE
RST - RUBBER SPORTS TILE
RPL - RECYCLED PLASTIC LUMBER
SC - SEALED CONCRETE
SF - SYNTHETIC FLOORING
SP - SOUND PANELS
SS - SOLID SURFACE
STL - STAINLESS STEEL
TP - TOILET PARTITION
TZ - TERRRAZO
VCT - VINYL COMPOSITE TILE
VWC - VINYL WALL COVERING
WD - WOOD
WB - WOOD BASE

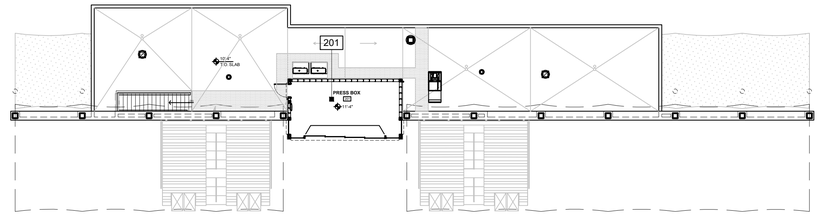
SEE ROOM FINISH LEGEND FOR MATERIAL DESCRIPTION



1 NORTH

FIRST LEVEL PLAN

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



2 NORTH

SECOND LEVEL PLAN

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

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Abbas H. Zackria, FL AR 91520

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DRAWN BY: TN
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DATE: 05/19/2025

REVISIONS:
1
2 10-06-25 ADDENDUM 3 CO-ORD
3
4
5
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2406

SHEET
A2.80

ROOM FINISH SCHEDULE

DOOR SCHEDULE

DOOR No	DOORS SIZE W	H	TH	MATL	TYPE SEE ELEV	FINISH	FRAME MATL	FINISH	FIRE LABEL	THRESHOLD (SEE DETAIL)	REMARKS	DESIGN WIND PRESSURES	HARDWARE LOCK SET TYPE	REMARKS
01	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -39.9	1	
02	3'-0"	7'-00"	1 3/4"	HM	FF	PNT	MTL	PNT		3/A2.90		+36.6 / -39.9	1	
03	3'-0"	7'-00"	1 3/4"	HM	AA	PNT	MTL	PNT		-		-	1	
04	3'-0"	7'-00"	1 3/4"	HM	AA	PNT	MTL	PNT		3/A2.90		+38.4 / -41.6	1	
05	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -47.9	9	
06	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -39.9	9	
07	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -39.9	9	
08	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -39.9	9	
09	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -47.9	1	
10	3'-0"	7'-00"	1 3/4"	HM	AA	PNT	MTL	PNT		3/A2.90		+36.6 / -39.9	1	
11	3'-0"	7'-00"	1 3/4"	HM	AA	PNT	MTL	PNT		3/A2.90		+36.6 / -39.9	1	
12	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -37.9	9	
13	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -37.9	9	
14	3'-0"	7'-00"	1 3/4"	HM	EE	PNT	MTL	PNT		3/A2.90		+36.6 / -37.9	9	
15	8'-0"	8'-00"		MTL	BB	PNT	MTL	PNT		4/A2.90		+34.9 / -38.2	3	
16	3'-0"	7'-00"	1 3/4"	HM	AA	PNT	MTL	PNT		3/A2.90		+36.6 / -39.9	1	
17	3'-0"	7'-00"	1 3/4"	HM	CC	PNT	MTL	PNT		-		+40.5 / -53.0	1	
18	10'-0"	7'-00"	1 3/4"	HM	DD	PNT	MTL	PNT		-		+38.4 / -41.6	1	

* **OVERHEAD DOOR** BY CORNELL IRON WORKS INC. OR APPROVED EQUAL.
MANUAL OPERATED AND FULLY WEATHER STRIPPED W/ PERIMETER WEATHER SEAL PACKAGE.
FINISH: FACTORY PRIMED, FIELD PAINTED.
MATERIAL: GALVANIZED METAL DOORS WITH TRACK AND FRAME

EXTERIOR DOORS ALL EXTERIOR DOORS SHALL HAVE MIAMI-DADE PRODUCT APPROVAL FOR WIND-BORNE DEBRIS PER 1626.1 AND 1626.2 LARGE MISSILE IMPACT TESTS, FBC EIGTH EDITION (2023).

LOCKSET TYPE

1. CLASSROOM LOCKSET F05, WEATHER STRIP, THRESHOLD, HINGES, CLOSER, DOOR STOP.
2. CLASSROOM DEAD BOLT, WEATHER STRIP, THRESHOLD, HINGES, CLOSER, DOOR STOP, KICK PLATE, PUSH/PULL PLATE
3. INTERIOR SLIDE BOLTS WITH KEYED PADLOCKS
4. CLASSROOM LOCKSET F05 INTERLOCK WITH ADA LIFT, HINGES, THRESHOLD, CLOSER, DOOR STOP, DOOR BOTTOM, FIRE SEAL
5. STORE ROOM LOCKSET, HINGES, DOOR STOP.
6. STORE ROOM LOCKSET, WEATHER STRIP, THRESHOLD, DOOR STEP, FLUSH BOLT, CLOSER.
7. HINGES, YOKE, VINYL-COATED CHAIN, KNOX LOCK, PADLOCK.
8. HINGES, YOKE, VINYL-COATED CHAIN, KNOX LOCK, PADLOCK, PLUNGE ROD.
9. RESTROOM LOCKSET w/ OCCUPANCY INDICATOR, WEATHER STRIP, THRESHOLD, HINGES, DOOR STOP, KICK PLATE, PUSH PULL PLATE

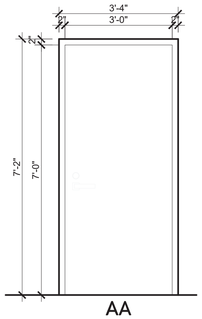
HARDWARE

LOCK SPECIFICATION - "SCHLAGE"
LOCKS - HEAVY DUTY MORTISE LOCK 'L' SERIES
w/ VANDLGUARD
LEVER - 15. M ESCUTCHEON
FINISH - 630 SATIN STAINLESS STEEL

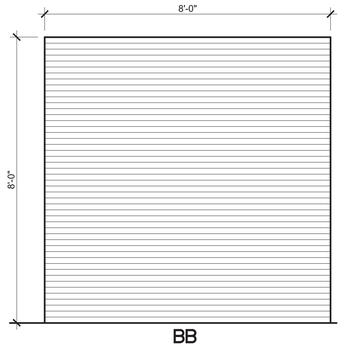
CLOSER SPECIFICATION - LCN 4040XP SERIES
w/ HOLD OPEN OPTION

ALL HARDWARE TO MEET ADA ACCESSIBILITY REQUIREMENTS.
DOOR CLOSER SHALL ALLOW A CLEAR HEIGHT OF AT LEAST 80" AFF. WHEN DOOR OPEN.
COORDINATE CORES AND COMMON KEYING WITH OWNER.
ALL EXTERIOR DOORS TO RECEIVE WEATHER STRIPPING.

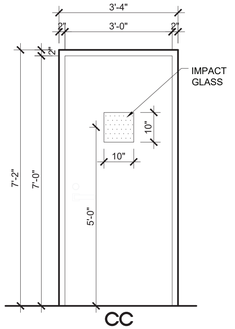
NOTE:
PROVIDE LIQUID APPLIED WATERPROOFING TO MASONRY / CONCRETE SURFACES AT PERIMETER OF WINDOWS AND DOOR OPENINGS; EXTEND TO A MINIMUM OF12" BEYOND EDGE OF OPENING AT INTERIOR AND EXTERIOR SIDE. BASIS OF DESIGN SHALL BE DOWSIL 778 SILICON LIQUID FLASHING BY DOW CHEMICALS.



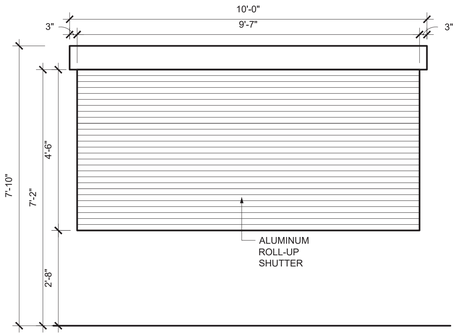
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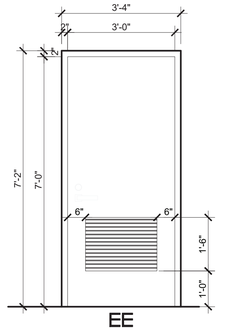
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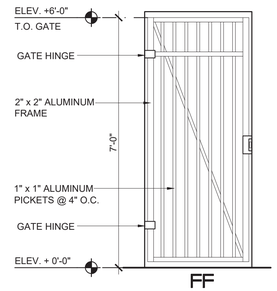
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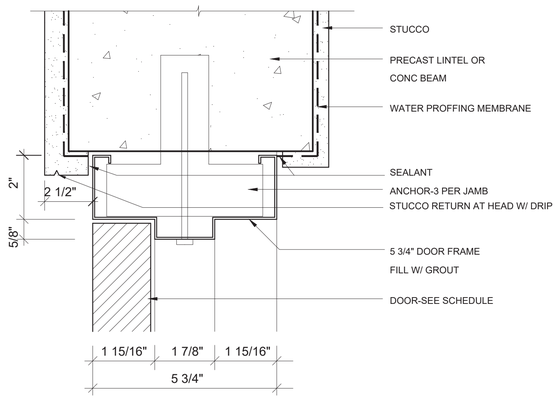
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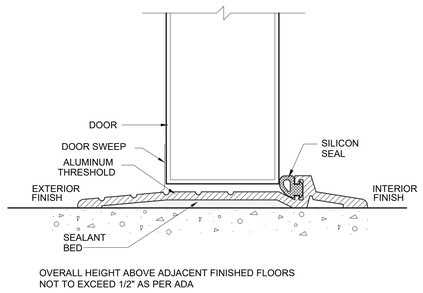
1 DOOR SCHEDULE

SCALE: 1/2" = 1'-0"



2 DOOR HEAD / JAMB DETAIL

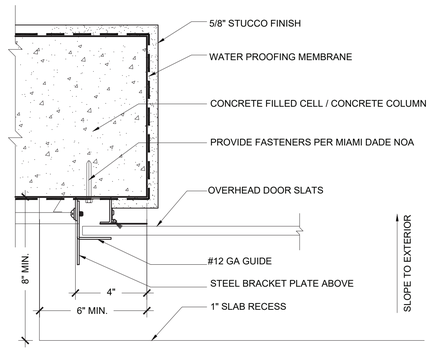
SCALE: N.T.S.



OVERALL HEIGHT ABOVE ADJACENT FINISHED FLOORS
NOT TO EXCEED 1/2" AS PER ADA

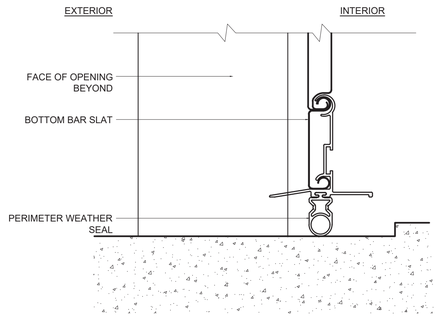
3 EXTERIOR THRESHOLD DETAIL

SCALE: NTS



4 OVERHEAD DOOR JAMB DETAIL

SCALE: NTS



4 OVERHEAD DOOR THRESHOLD DETAIL

SCALE: NTS

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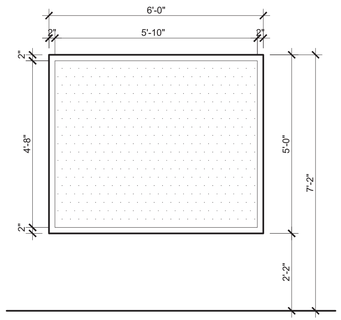
CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

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REVISIONS:
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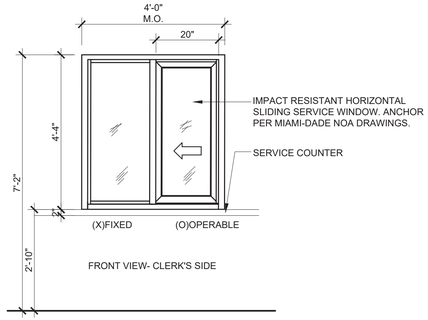
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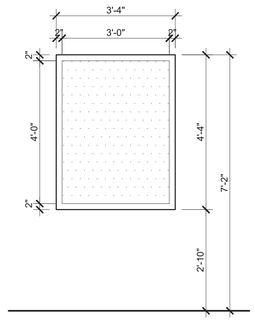
CONCESSIONS BUILDING
DOOR SCHEDULE



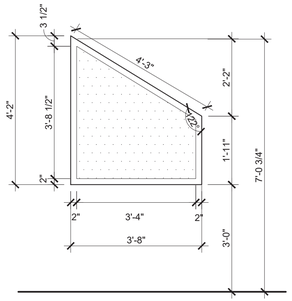
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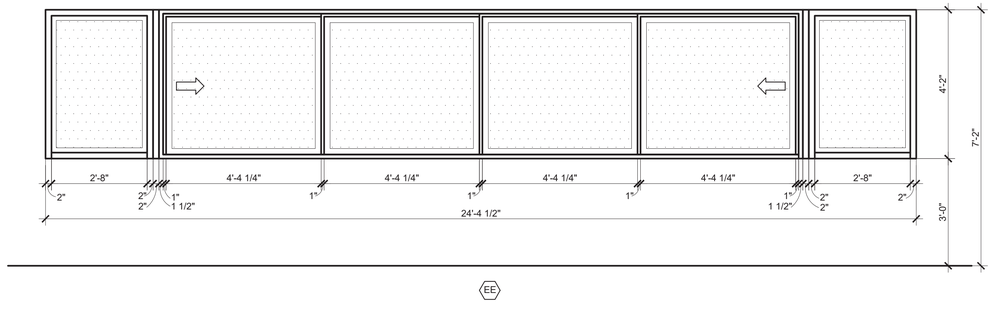
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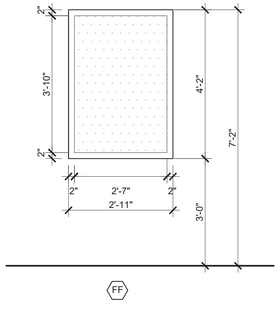
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WINDOW/LOUVER SCHEDULE

WINDOW	WINDOW SIZE W	WINDOW SIZE H	MAT'L	TYPE SEE ELEV	FINISH	WIND PR.	FRAME MAT'L	FRAME FINISH	FIRE LABEL	REMARKS
Ⓐ	6'-0"	5'-0"	IMPACT RESISTANT GLASS	AA	TINT	+38.4/-41.6	ALUM	ANOD	-	
Ⓑ	4'-0"	4'-4"	IMPACT RESISTANT GLASS	BB	TINT	+38.4/-41.6	ALUM	ANOD	-	
Ⓒ	3'-4"	4'-4"	IMPACT RESISTANT GLASS	CC	TINT	+38.4/-41.6	ALUM	ANOD	-	
Ⓓ	3'-8"	4'-2"	IMPACT RESISTANT GLASS	DD	TINT	+40.5/-53.0	ALUM	ANOD	-	
Ⓔ	24'- 4 1/2"	4'-2"	IMPACT RESISTANT GLASS	EE	TINT	+40.5/-44.1	ALUM	ANOD	-	
Ⓕ	2'- 11"	4'-2"	IMPACT RESISTANT GLASS	FF	TINT	+40.5/-53.0	ALUM	ANOD	-	

NOTE:
1) IMPACT RESISTANT EXTERIOR ALUMINUM LOUVERS. FIELD VERIFY SIZE OF EXISTING LOUVER OPENING PRIOR TO ORDERING NEW PRODUCT. SEE SPECIFICATIONS SECTION 10210
2) PROVIDE VERTICAL LOUVER BLINDS AT ALL WINDOWS, TYP. SEE SPECIFICATION SECTION 12492
3) CONTRACTOR TO PROVIDE MARBLE SILLS AT ALL WINDOWS. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
4) SUBMIT MIAMI-DADE PRODUCT APPROVAL AND ENGINEERED SHOP DRAWINGS FOR ALL WINDOWS. COMPLY w/ FBC 2023 AND ASCE 7-10. ALL ATTACHMENTS AS PER MIAMI DADE NOA

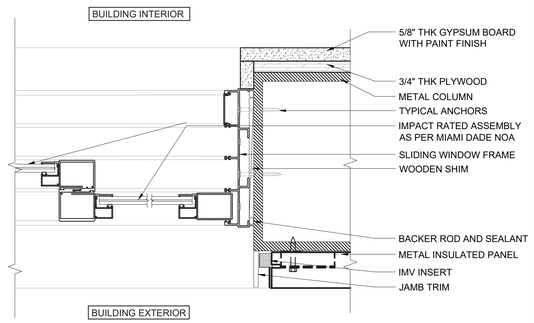
5) GLASS CRITERIA FOR EXTERIOR DOORS AND WINDOWS:
- A) LIGHT TO SOLAR GAIN RATIO (LSG) : 1.53
- B) SHADING COEFFICIENT (SC) : 0.43
- C) U-FACTOR : 0.95 WINTER, 0.87 SUMMER
- D) SOLAR HEAT GAIN COEFFICIENT (SHGC) : 0.38
- E) VISIBLE LIGHT TRANSMITTANCE : 57%

EXTERIOR GLAZING INFORMATION

ALL EXTERIOR GLAZING IN WINDOWS SHALL BE TEMPERED AND HAVE MIAMI-DADE PRODUCT APPROVAL FOR WIND-BORNE DEBRIS PER 1626.1 AND 1626.2 LARGE MISSILE IMPACT TESTS, FBC 2023 EDITION.
EXTERIOR GLAZING SHALL COMPLY WITH 2411.3.2.1, 1715.5.2.1 AND 1715.5.4.2.

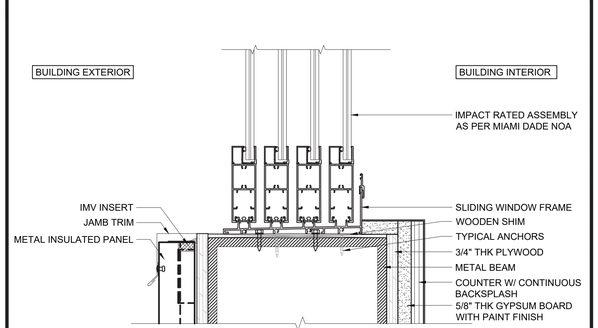
1 DOOR WINDOW SCHEDULE

SCALE: NTS



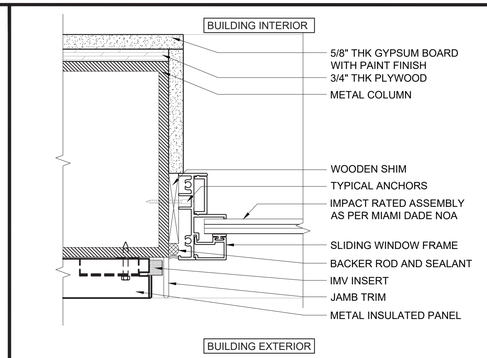
2 PRESS BOX SLIDING WINDOW JAMB DETAIL

SCALE: NTS



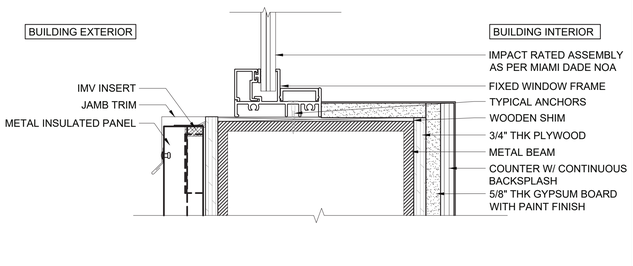
3 PRESS BOX SLIDING WINDOW SILL DETAIL

SCALE: NTS



4 PRESS BOX FIXED WINDOW JAMB DETAIL

SCALE: NTS



5 PRESS BOX FIXED WINDOW SILL DETAIL

SCALE: NTS

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CITY OF POMPANO BEACH
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CHECKED BY: AZ
DATE: 05/19/2025
REVISIONS:
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CONCESSION BUILDING WINDOW SCHEDULE

METAL STUD:

EXTERIOR VERTICAL METAL STUD FRAMING SHALL BE 6"–16G.A. AT 16"O.C. MIN. SPECIFIED BY A.I.S.I. WITH RESPECT TO A.S.T.M. STANDARDS. METAL STUDS SHALL BE C–SHAPED AND HAVE A MINIMUM YIELD STRENGTH OF 50 KSI. INSTALLATION OF METAL STUD FRAMING SYSTEMS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED OR WRITTEN INSTRUCTIONS AND RECOMMENDATIONS, AND PER THE STRUCTURAL DRAWINGS. STUD SHALL BE DALE/INCOR CEE OR APPROVED EQUAL.

METAL STUDS CONNECTIONS: (MINIMUM) , FOR ADDITIONAL FASTENERS (SEE PLAN)

A) HORIZONTAL TO VERTICAL STUD: PROVIDE (5) #12 TEK SCREWS
B) VERTICAL TO TRACK : PROVIDE (2) #12 TEK SCREWS, (1) EACH SIDE
C) TRACK TO STEEL : USE (2) 1/8" POWER ACTUATED FASTENERS EVERY 8" O.C.
D) TRACK TO MASONRY : USE 1/4" TAPCON X 1 1/4" EMBEDMENT EVERY 8" O.C.
E) DIAGONAL TO WALL (WHERE APPLICABLE): USE 4" X 4" X 4" X 14GA CLIP ANGLE, WITH (5) #12 TEK SCREWS INTO DIAGONAL, (4) 1/4" TAPCON INTO WALL.
F) HORIZONTAL STUD TO STEEL : (2) 1/8" POWER ACTUATED FASTENERS

FORM WORK:

SHORING AND BRACING PROCEDURES SHALL FOLLOW THE "RECOMMENDED PRACTICE FOR CONCRETE FORM WORK" BASED UPON AMERICAN CONCRETE INSTITUTE STANDARD, ACI 347, ARTICLES 2.4 THROUGH 2.7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BRACING OF VERTICAL MEMBERS (WALL BEAMS AND COLUMNS) DURING CONSTRUCTION PHASE UNTIL FLOOR AND ROOF SYSTEM ARE IN PLACE AND PROPERLY ATTACHED TO SUCH MEMBERS.

DOWEL INSTALLATION:

1. PRE–DRILLING DEPTH AS PER PLAN
2. EPOXY : HILITI HIT RE 500 SD 2 PARTS EPOXY OR APPROVED EQUAL.
3. EPOXY INSTALLATION SHALL BE IN STRICT CONFORMANCE WITH MFR. RECOMMENDATIONS.

EPOXY :

1. EPOXY : HILITI HIT RE 500 SD 2 PARTS EPOXY OR APPROVED EQUAL.
2. EPOXY INSTALLATION SHALL BE IN STRICT CONFORMANCE WITH MFR. RECOMMENDATIONS.

REINFORCED MASONRY:

1. HOLLOW MASONRY UNITS SHALL CONFORM TO ASTM C–90, TYPE, II, GRADE N, SQUARE END, WITH A MINIMUM AVERAGE CONCRETE STRENGTH OF f'm = 2000 PSI AND NET AREA COMPRESSIVE STRENGTH= 2,800 PSI ,SEE PLAN
2. A. MORTAR SHALL CONFORM TO ASTM C–270, TYPE "M" WITH A 28–DAY STRENGTH OF 2,500 p.s.i.
   B. FILL CELLS GROUT SHALL HAVE A MINIMUM STRENGTH OF 4000 psi. WITH HIGH WATER TO CEMENT RATIO AND A MINIMUM OF 10" SLUMP.GROUT SHALL CONFORM TO ASTM C–476.AND CONFORM TO FBC 2122.8
C. GROUT CONFINEMENT TO CONFORM TO FBC 2122.8.5
   CONFINE GROUT TO THE AREAS INDICATED ON THE PROJECT DRAWINGS.
   USE MATERIAL TO CONFINE GROUT THAT PERMITS BOND BETWEEN MASONRY UNITS AND MORTAR.
D. GROUT CONSOLIDATION TO CONFORM TO FBC 2122.8.9.
   GROUTING SHALL BE CONSOLIDATED BETWEEN LIFTS BY PUDDLING, RODDING OR MECHANICAL VIBRATION.
E. GROUT KEYS TO CONFORM TO FBC 2122.8.10
   GROUT KEYS SHALL BE FORMED BETWEEN GROUTS POURS.
   GROUT KEYS SHALL BE FORMED BETWEEN GROUT LIFTS WHEN THE FIRST LIFT IS PERMITTED TO SET PRIOR TO PLACEMENT OF THE SUBSEQUENT LIFT.
   1. FORM A GROUT KEY BY TERMINATING THE GROUT A MINIMUM OF 1 1/2"IN. BELOW A MORTAR JOINT.
   2. DO NOT FORM GROUT KEYS WITHIN BEAMS.
   3. AT BEAMS OR LINTELS LAID WITH CLOSED BOTTOM UNITS, TERMINATE THE GROUT POUR AT THE BOTTOM OF THE BEAM OR LINTEL WITHOUT FORMING A GROUT KEY
3. REINFORCED MASONRY WALLS ARE DESIGNED PER ACI 530–05/ASCE 7–22.
4. SPECIAL INSPECTION IS REQUIRED FOR THE REINFORCED MASONRY WALL, BY A SPECIALTY ENGINEER. SPECIALTY ENGINEER SHALL DISTRIBUTE COPIES OF FORMAL INSPECTION REPORTS TO OWNER AND AUTHORITY HAVING JURISDICTION.
5. LAY ALL MASONRY WITH FULL FACE HEAD JOINTS AND WITH FACE SHELL MORTAR BEDDING.
6. MASONRY ANCHORAGE TO SUPERSTRUCTURE SHALL BE PROVIDED IN ACCORDANCE WITH STRUCTURAL DRAWINGS AND DETAILS.
7. THE USE OF ADMIXTURES SHALL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF ENGINEER.
8. VERTICAL REINFORCING:
A. ASTM A 615–60 PER REINFORCING SECTION.
B. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL CORE IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL IN SIX VERTICAL FOR ALIGNMENT, EVEN THOUGH IT IS IN AN ADJACENT CELL TO THE VERTICAL WALL REINFORCING. AND CONFORM TO FBC 2122.8.2
   VERTICAL CELLS TO BE GROUTED SHALL PROVIDE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN CLEAR, UNOBSTRUCTED, CONTINUOUS, VERTICAL CORES MEASURING NOT LESS THAN 2 INCHES BY 3 INCHES FOR FINE AGGREGATE GROUT AND 3 INCHES BY 3 INCHES FOR COARSE AGGREGATE GROUT AS DEFINED BY ASTM C 476.
C. VERTICAL REINFORCING STEEL SHALL HAVE A MINIMUM CLEARANCE OF ONE–QUARTER INCH FROM THE MASONRY.
D. VERTICAL REINFORCEMENT SHALL BE PROVIDED AT EACH SIDE OF OPENINGS IN WALL, AT WALL INTERSECTIONS, CORNERS AND ENDS.
   THIS REINFORCING SHALL BE THE SAME SIZE AS THE SCHEDULED WALL REINFORCING FOR THE PARTICULAR WALL BUT NEVER LESS THAN 1 #5 UNLESS NOTED OTHERWISE. SPECIAL CARE SHALL BE TAKEN TO INSURE THAT CELLS TO BE GROUTED LINE UP PROPERLY.
9. HORIZONTAL REINFORCING: NO. 9 LADDER TYPE AT 16" O.C. VERTICALLY. MIN LAP OF 6".
10. PROVIDE "DOVE TAIL" ANCHORS AT 16" O.C. VERTICAL FOR ALL MASONRY PLACED ADJACENT TO COLUMNS OR EXTEND HORIZONTAL REINFORCING 4" INTO COLUMN.
11. HOOK ALL VERTICAL REINFORCING INTO BEAM ABOVE WHERE REBAR TERMINATES WITH 90° HOOK.
12. PROVIDE CORNER BARS AT ALL CONCRETE / BOND BEAM INTERSECTIONS. BARS SHALL BE SAME SIZE AND QUANTITY AS BEAM REINFORCING, EXTENDING 48 db IN BOTH DIRECTIONS.
13. IF ONE END OF A WALL IS HIGHER THAN THE INTERSECTED WALL, THE CORNER BARS SHALL BE TURNED DOWN INTO THE VERTICAL FILLED CELL.
14. REFER TO FLOOR PLANS FOR VERTICAL STEEL SIZE AND SPACING IN THE REINFORCED MASONRY WALLS.
15. SPLICE SHALL BE A MINIMUM OF 48 BAR DIAMETER.
16. ALL MASONRY WALLS SHALL BE CONSTRUCTED IN FOUR (8'–0") LIFTS.
17. ALL CORNERS WITH A 45 DEGREE ANGLE CAN BE ERECTED WITH THE T–990 CMU BY RINKER.
18. ALL KNEE WALLS SHALL HAVE 1 #6 VERTICAL AT 24" O.C. BELOW OPENINGS AND 8" X 8" "H" BOND BEAM OR CAST IN PLACE SILL WITH 2 #5 CONTINUOUS. EXTEND STEEL INTO EACH SIDE OF WALLS 4" MINIMUM.
19. ALL FILLED CELLS VERTICAL SHALL EXTEND TO TOP OF ROOF BEAM WITH A 90° HOOK.
20. HEADER: MINIMUM OF 8"X12" WITH 2 #5 TOP AND 2 #5 BOTTOM WITH #3 CLOSED TIES AT 4"O.C. TYPICAL EXTEND HORIZONTAL REBARS MINIMUM OF 4" INTO CONCRETE COLUMN AT EACH END UNLESS NOTED OTHERWISE ON STRUCTURAL PLAN

STRUCTURAL STEEL:

1. STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM WITH THE REQUIREMENTS OF THE "AISC'S SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL OR BUILDINGS", LATEST EDITION.
2. STRUCTURAL STEEL PLACEMENT DRAWINGS AND MATERIAL LISTS SHALL CONFORM TO AISC'S STRUCTURAL STEEL DETAILING", LATEST EDITION. SHOP DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A FLORIDA LICENSED PROFESSIONAL ENGINEER AND SUBMITTED FOR REVIEW PRIOR TO FABRICATION. (SIX (6) PRINTS OF EACH DRAWING.)
3. ALL STRUCTURAL MEMBERS AND MISC. METALS SHALL CONFORM WITH ASTM A–36 UNLESS NOTED OTHERWISE.
4. SHOP CONNECTIONS SHALL BE WELDED IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE". USE E70XX ELECTRODE.
5. ALL FIELD BOLTS SHALL BE ASTM A–325N 3/4"ø BOLTS.
6. STEEL TUBING TO BE ASTM – A500 GRADE B(46).
6A. WIDE FLANGE BEAMS SHALL BE ASTM A992 GRADE 50 TYPICAL.
7. ALL STEEL TO HAVE A SHOP COAT OF RUST INHIBITIVE PAINT.
8. DELETE PAINT ON ALL STEEL TO RECEIVE SPRAYED ON FIREPROOFING OR CONCRETE ENCASEMENT.
9. FULL DEPTH CONNECTIONS ARE TO BE USED ON ALL GIRDER AND BEAM CONNECTIONS TO COLUMNS. BOLTS TO BE AT 3" o.c. VERT. (U.N.O.)
10. MINIMUM BEARING OF STEEL BEAMS AND LINTELS, ON MASONRY SHALL BE 4".
11. ALL WEDGE ANCHORS SHALL BE EMBEDDED IN CONCRETE, OR FILLED CELLS OR GROUTED CELLS, (TYP) FOR EMBEDMENT LENGTH, REFER TO SECTIONS.
12. ALL EXPOSED STEEL MEMBERS TO WEATHER SHALL BE HOT DIPPED GALVANIZED (TYP)

FIELD WELDING:

1. WELDING SHALL BE DONE BY A CERTIFIED ARC WELDER USING THE LATEST APPROVED A.W.S. TECHNIQUES.
2. ALL WELDS SHALL CONFORM TO THE LATEST AWS SPECIFICATION USING E–70XX ELECTRODE.
3. ALL FIELD WELDS SHALL BE WIRE–BRUSHED CLEAN AND COATED WITH ANTI RUST PAINT.

GROUT:

ALL LEVELING GROUT SHALL BE HIGH STRENGTH NON–SHRINKING AND NON–METALLIC – "SIKA" OR "MASTER BUILDERS". MIXING AND PLACING SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

GENERAL BEAM SCHEDULE NOTES:

1. SCHEDULED HOOPS OR STIRRUPS SHALL BE PLACED AT EACH END OF BEAM UNLESS NOTED OTHERWISE.
2. BUNDLE ALL STRUCTURAL BEAM TOP BARS IN PAIRS OVER SUPPORT WITH TOP BARS FROM ADJACENT BEAMS.
3. ALL CONCRETE BEAMS OTHER THAN THOSE WITH THE PREFIX TB SHALL BE POURED PRIOR TO PLACING BLOCK BELOW.
4. ALL TIE BEAM REINFORCING SHALL EXTEND INTO SPAN OF ANY ADJACENT STRUCTURAL BEAM AS PER BENDING DIAGRAM.
5. DROP BOTTOM OF TIE BEAM AS REQUIRED AT WINDOW AND DOOR HEADS (28" MAXIMUM) AND ADD 2 #5 BOTTOM IF DROP EXCEEDS 8".
6. TIE BEAM SCHEDULED DEPTHS ARE MINIMUM AND MAY BE INCREASED (8" MAXIMUM) TO FIT BLOCK WORK.
7. ALL ADDED LONGITUDINAL BEAM REINFORCING SHALL EXTEND 6" MINIMUM INTO SUPPORT UNLESS NOTED OTHERWISE.
8. PROVIDE CORNER BARS AT ALL CONCRETE TIE BEAM INTERSECTIONS. BARS SHALL BE SAME SIZE AND QUANTITY AS BEAM REINFORCING, EXTENDING 48 BAR DIAMETER.

NOTES:

1. NO CHANGES SHALL BE MADE WITHOUT THE PRIOR PERMISSION OF THE ARCHITECT.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND CONDITIONS OF THE JOB SITE PRIOR TO INITIATING CONSTRUCTION AND REPORT ANY DISCREPANCIES OR CONDITIONS THAT ARE UNSATISFACTORY.
3. THE CONTRACTOR SHALL PERFORM ALL WORK IN STRICT COMPLIANCE WITH THE PLANS, FLORIDA BUILDING CODE 2020, 7th EDITION AND BROWARD COUNTY AMENDMENTS AND OTHER APPLICABLE CODES.
4. CONTRACTOR SHALL NOT SCALE DRAWINGS. INFORMATION SHALL BE OBTAINED FROM ARCHITECT.
5. SHOP DRAWINGS BEARING THE SEAL OF A FLORIDA LICENSED REGISTERED ENGINEER SHALL BE SUBMITTED FOR APPROVAL OF ALL PREFABRICATED STRUCTURAL SYSTEMS.
6. ALL WOOD IN DIRECT CONTACT WITH CONCRETE SHALL BE PROPERLY PRESSURE TREATED WITH A WOOD PRESERVATIVE.
7. AIR CONDITIONING (A/C) CONTRACTOR TO PROVIDE COMPLETE SHOP DRAWINGS OF DESIGN AND LAY–OUT FOR REVIEW.

CODES AND STANDARDS:

1. WIND LOADS WERE CALCULATED IN ACCORDANCE WITH ASCE 7–22. THE PROJECT WAS DESIGNED IN ACCORDANCE WITH THE, FLORIDA BUILDING CODE 2023, BROWARD COUNTY AMENDMENTS.
2. BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE, ACI 318/LATEST EDITION. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES ACI 315/LATEST EDITION.
3. SPECIFICATION FOR THE DESIGN, FABRICATION AT ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, AISC ASD LATEST EDITION.
4. BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES, ACI 530 / LATEST EDITION.

CONTRACTOR BID:

1. GENERAL CONTRACTOR IS RESPONSIBLE TO WORK WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS SIMULTANEOUSLY. GENERAL CONTRACTOR SHALL VERIFY DIMENSIONS OF OPENINGS AND ELEVATIONS PRIOR TO STARTING THE WORK. ANY DISCREPANCY, NOTIFY THE ARCHITECT PRIOR TO PROCEEDING. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO BID THE ONES WHICH CAN CAUSE THE MOST COST IMPACT.
2. GENERAL CONTRACTOR SHALL VERIFY UNIT ANCHORAGE BETWEEN STRUCTURAL AND MECHANICAL DRAWINGS. ANY DISCREPANCIES NOTIFY THE ENGINEER PRIOR TO CONTINUING.
3. GENERAL CONTRACTOR AND HIS SUB–CONTRACTORS SHALL REVIEW ALL SHOP DRAWINGS AND COMMENTS ON DRAWINGS, STAMP DRAWINGS, THEN SUBMIT DRAWINGS TO ARCHITECT AND ENGINEER. OTHERWISE SHOP DRAWINGS WILL BE REJECTED.

DIMENSIONS:

CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD WITH SHOP DRAWINGS, ARCHITECTURAL DRAWINGS, AND WITH MECHANICAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

SHOP DRAWINGS:

1. SUBMIT (6) COPIES OF EACH REQUIRED SUBMITTAL, (1) COPY OF WHICH WILL BE KEPT IN THIS OFFICE.
2. ALLOW 5 WORKING DAYS FOR REVIEW TIME.
3. STRUCTURAL SHEET CANT BE USED AS SHOP DRAWINGS.
4. SHOP DRAWINGS SHALL BE FULLY GENERATED WITH FULL COORDINATION OF STRUCTURAL, ARCHITECTURAL AND MECHANICAL DRAWINGS.

MECHANICAL EQUIPMENT:

LOCATION FOR ALL OPENINGS, MECHANICAL TRENCHES, ENCASED CONDUIT OR PIPING AND ANCHOR BOLTS SHALL BE VERIFIED WITH MANUFACTURER'S SHOP DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

SLAB ON FILL:

INTERIOR CONCRETE SLABS POURED ON FILL TO BE POURED OVER A 15 MILL WATERPROOF MEMBRANE OVER TERMITE TREATED CLEAN NON ORGANIC FILL. ALL SLABS TO BE REINFORCED WITH 6X6, W2.9XW2.9 WELDED WIRE FABRIC PLACED AT MID DEPTH OF SLAB, UNLESS NOTED OTHERWISE. MINIMUM SLAB THICKNESS EQUALS 4" UNLESS NOTED OTHERWISE.

WALL OPENINGS:

ANY WALL OPENINGS OR LOUVER SHALL HAVE A MINIMUM 8" X 8" BEAM ABOVE AND BELOW WITH 2 #5 CONTINUOUS AND 1 #5 VERTICAL CELL EACH SIDE (TYP.) UNLESS A BEAM OR COLUMN ARE ALREADY NOTED ON THE DRAWING.

SIDEWALK:

CONCRETE SIDEWALKS SHALL BE MINIMUM 4" THICK AND HAVE ONE LAYER OF 6 X 6, W1.4 X W.14 WELDED WIRE FABRIC PLACED AT MID DEPTH OF SLAB. UNLESS OTHERWISE NOTED. CONTROL JOINT SPACING SHALL NOT EXCEED 1.5 TIMES THE WIDTH OF THE WALK. SEE SHEET A1.17 FOR CONCRETE THICKNESS AND JOINT PATTERN.

SITE PREPARATION NOTES:

1. EXISTING SOIL TO BE EXCAVATED TO A DEPTH AS REQUIRED IN SOIL REPORT . FILL MATERIAL SHALL BE CLEAN SAND, FREE OF ORGANIC OR DELETERIOUS MATERIAL.
2. THIS EXCAVATION SHALL EXTEND 5'–0" OUTSIDE OF EXTERIOR WALLS, BACKFILLING SHALL BE PLACED IN LAYERS OF 9" – 12" (MAXIMUM). AT A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM, AND COMPACTED TO 98% MINIMUM OF THE DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR TESTING–ASTMD–1557
3. UPON SUCCESSFUL COMPLETION OF ABOVE PROCEDURES AS VERIFIED BY GEOTECHNICAL ENGINEER, GENERAL CONTRACTOR SHALL EXCAVATE, AND CAST FOOTING ON COMPACTED BASE.
3A. COPY FROM SOIL REPORT
4. CONTRACTOR SHALL PROPERLY DISPOSE OF UNSUITABLE EXCAVATED MATERIAL AND SHALL NOT BE PERMITTED TO USE IT AT REFILL.
5. MINIMUM SOIL BEARING CAPACITY SHALL BE 2500 PSF.

REINFORCING:

REINFORCING STEEL SHALL BE DEFORMED, NEW BILLET STEEL ASTM A–615 GRADE 60. SPLICES TO BE IN ACCORDANCE WITH ACI 318–LATEST EDITION FOR "STRENGTH DESIGN". FABRICATION AND PLACING OF STEEL SHALL BE IN ACCORDANCE WITH LATEST SEDITION ACI CODE STANDARDS AND PRACTICE PROCEDURES.

HEADER:

MINIMUM OF 12"X12" FOR 12" WALL AND 8"X12" FOR FOR 8"WALL WITH 2 #5 TOP AND 2 #5 BOTTOM WITH #3 CLOSED TIES AT 4"O.C. TYPICAL EXTEND HORIZONTAL REBARS MINIMUM OF 4" INTO CONCRETE COLUMN AT EACH END UNLESS NOTED OTHERWISE ON STRUCTURAL PLAN

CONTROL JOINTS:

CONTRACTOR SHALL SAW CUT CONTROL JOINTS IN CONCRETE SLAB WITHIN 8 HOURS OF PLACING CONCRETE. CONTROL JOINTS SHALL BE LAID OUT AT CENTER LINES OF COLUMNS WHERE POSSIBLE, AND SHALL NOT EXCEED 12'–0" X 12'–0" SQUARE PANELS. LONGER DIMENSION OF PANEL SHALL NOT EXCEED 1.5 TIMES THE SHORTER ONE. SAWCUT SHALL BE 1/4 OF THE SLAB DEPTH AND 1/8" WIDE.

CONCRETE:

CONCRETE TO REACH DESIRED STRENGTH, AS NOTED ON PLANS AND SCHEDULES IN 28 DAYS (MINIMUM CONCRETE STRENGTH SHALL BE f'c = 4000 psi IN 28 DAYS. UNLESS NOTED OTHERWISE.) AND HAVE A MINIMUM OF 517 LBS. OF CEMENT PER CUBIC YARD. ALL CONCRETE SHALL BE "READY MIXED" AND IN ACCORDANCE WITH ASTM SPECIFICATIONS C94 CERTIFICATE OF MANUFACTURERS MIX AND STRENGTH IS TO BE PROVIDED. NO WATER TO BE ADDED AFTER TRUCK LEAVES PLANT WITHOUT APPROVAL OF ENGINEER OR PLANT ENGINEER. PLANT CONTROL IS REQUIRED. MAXIMUM MIX TIME AT POINT OF DEPOSIT IS 90 MINUTES. W/C=0.40

FOOTING DESIGN:

1. AN ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 2,500 PSF WAS USED FOR DESIGN OF FOOTINGS. VERIFICATION SHALL BE PROVIDED BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
2. SET TOP OF ALL FOOTINGS AT –1'–4" (U.N.O.)
3. FOOTING SHALL BE EXCAVATED TO CLEAN SOIL, FREE OF VEGETATION AND DELETERIOUS MATTER, AND CONCRETE SHALL BE PLACED ON AN UNDISTURBED BASE. (SEE SITE PREPARATION NOTE)
4. FOR CONTINUOUS WALL FOOTINGS, SPLICES IN REINFORCING BARS SHALL NOT BE LESS THAN (36) BAR DIAMETERS AND REINFORCEMENT SHALL BE CONTINUOUS AROUND ALL CORNERS AND CHANGES IN DIRECTION. CONTINUITY SHALL BE PROVIDED AT CORNERS OR CHANGES IN DIRECTION BY BENDING THE LONGITUDINAL STEEL AROUND THE CORNER (48) BAR DIAMETERS OR BY ADDING MATCHING REINFORCING STEEL, WHICH SHALL EXTEND (48) BAR DIAMETERS FROM EACH CORNER OR CHANGE IN DIRECTION. WHEN THREE OR MORE BARS ARE REQUIRED, THE BARS SHALL BE HELD IN PLACE AND ALIGNMENT BY TRANSVERSE BARS SPACED NOT MORE THAN (4) FEET APART.

FILL COMPACTION:

SOIL SHALL BE COMPACTED TO 98% OF THE DRY DENSITY (ASTM D1557) WITHIN A DISTANCE OF FIVE FEET BEYOND ALL BUILDING EDGES. AT LEAST ONE FIELD DENSITY TEST SHALL BE PERFORMED FOR EACH 1600 SQUARE FEET OF AREA. DENSITY TESTS ARE TO BE MADE 12" BELOW THE BOTTOM OF FOOTING DEPTH.
•MINIMUM (3 TESTS) PER LIFT OF FILL MATERIAL
•(1) TEST FOR EVERY COLUMN PAD
•(1) FIELD TEST FOR EVERY FIFTY (50) LF AT THE WALL FOOTINGS.
RESULTS OF PROCTOR TEST(S) AND FIELD DENSITY TEST(S) SHALL BE FURNISHED TO THE ENGINEER. GENERAL CONTRACTOR SHALL FOLLOW RECOMMENDATIONS IN SOIL REPORT, PRIOR TO CONSTRUCTION.

VIBRATION CONCERN:

BASED ON THE SOIL REPORT THE USE OF VIBRATION EQUIPMENT WILL HAVE A POTENTIAL VIBRATION EFFECT ON NEARBY EXISTING STRUCTURE.
ARCHITECT, OWNER AND GEOTECHNICAL ENGINEER TO DISCUSS ANY CONCERN

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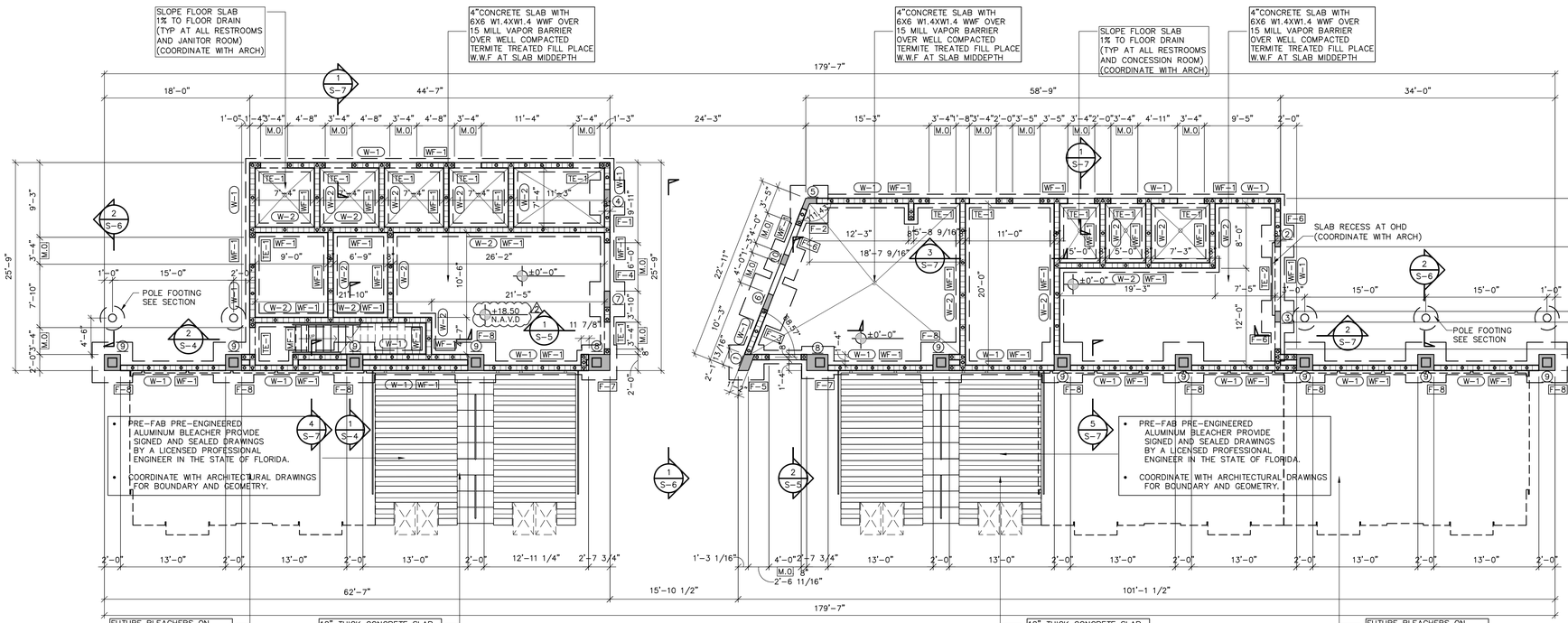
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CONCESSION NOTES



FOUNDATION PLAN

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

1. ELEVATION TOP OF FOOTINGS TO BE -1'-4" BELOW GRADE U.N.O.
2. ASSUMED DATUM ±0'-0" IS EQUAL TO FINISHED FLOOR SLAB. (+18.59 N.A.V.D.) (2)
3. TE-1 SEE FOOTING SCHEDULE.
4. C.J. INDICATES SAW CUT CONTROL JOINTS. CUT TO | DEPTH OF SLAB. SEE GENERAL NOTES ON SHEET S/1A
5. (W-1) ⊙: PROVIDE #6 VERTICAL IN FILLED CELL AS SHOWN ON PLAN AND NOT TO EXCEED 24"O.C.
   (W-2) ⊙: PROVIDE #5 VERTICAL IN FILLED CELL AS SHOWN ON PLAN AND NOT TO EXCEED 48"O.C.
   ADDITIONAL REINFORCING NEXT TO WINDOW AND DOOR OPENINGS WHERE NO COLUMN IS INDICATED. REINFORCEMENT TO EXTEND FROM FOUNDATION TO 2ND FLOOR CONCRETE DECK ABOVE, AND TERMINATE WITH 90° HOOK.
6. ALL MASONRY WALLS TO HAVE #9 LADDER TYPE DURO WALL HORIZONTAL JOINT REINFORCING EVERY 2ND BLOCK COURSE. EXTEND REINFORCING MINIMUM 4" INTO CONC COLUMNS.
7. MASONRY BLOCK SHALL BE f'm = 2000 psi MIN.
8. WHERE TWO PAD FOOTINGS INTERSECT OR OVERLAP; ADD #7 TOP AT 8"O.C. X4'-0"LONG CENTER TO FOOTERS X JOINTS.
9. ALL SLOPES, DRAINS AND RECESSES IN FLOOR SLAB, COORDINATE W/ ARCH. AND MECHANICAL DRAWINGS PRIOR OF POURING FLOOR SLAB

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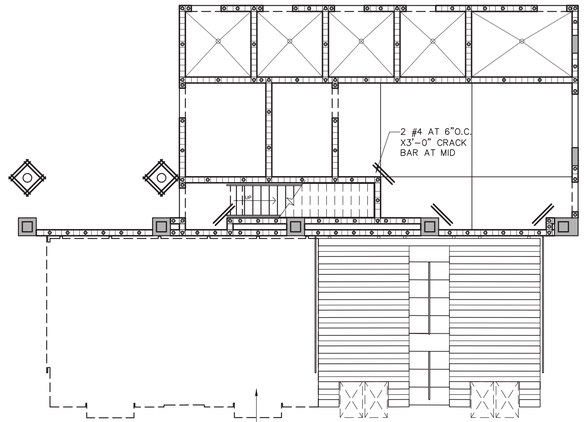
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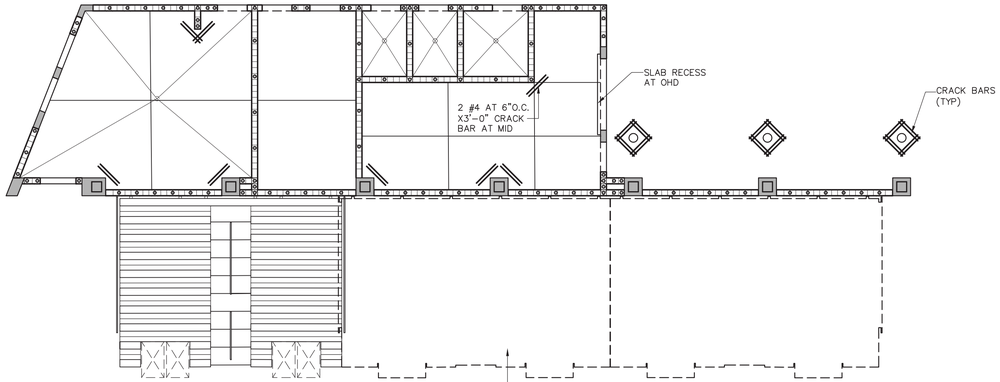
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CONCESSION FOUNDATION FLOOR PLAN



SEE SHEET A1.17 FOR CONTROL JOINT PATTERN
AT ALL EXTERIOR SLAB AREAS (TYP)



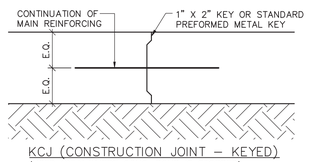
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CONTROL JOINT

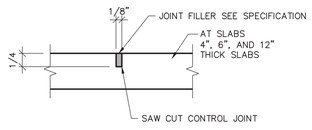
SCALE: 1/8" = 1'-0"

CONTROL JOINTS:

CONTRACTOR SHALL SAW CUT CONTROL JOINTS IN CONCRETE SLAB WITHIN 8 HOURS OF PLACING CONCRETE. CONTROL JOINTS SHALL BE LAID OUT AT CENTER LINES OF COLUMNS WHERE POSSIBLE, AND SHALL NOT EXCEED 12'-0" X 12'-0" SQUARE. LONGER DIMENSION OF PANEL SHALL NOT EXCEED 1.5 TIMES THE SHORTER ONE. SAWCUT SHALL BE 1/4" DEPTH AND 1/8" WIDE.



KCJ (CONSTRUCTION JOINT – KEYED)
(USED ONLY WHERE CONC. POUR IS STOPPED)



CONTROL JOINT DETAIL

SCALE: 1-1/2" = 1'-0"

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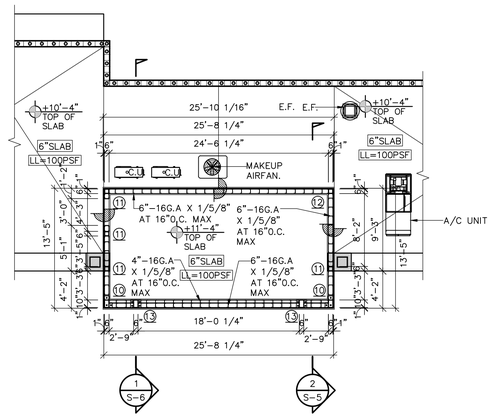
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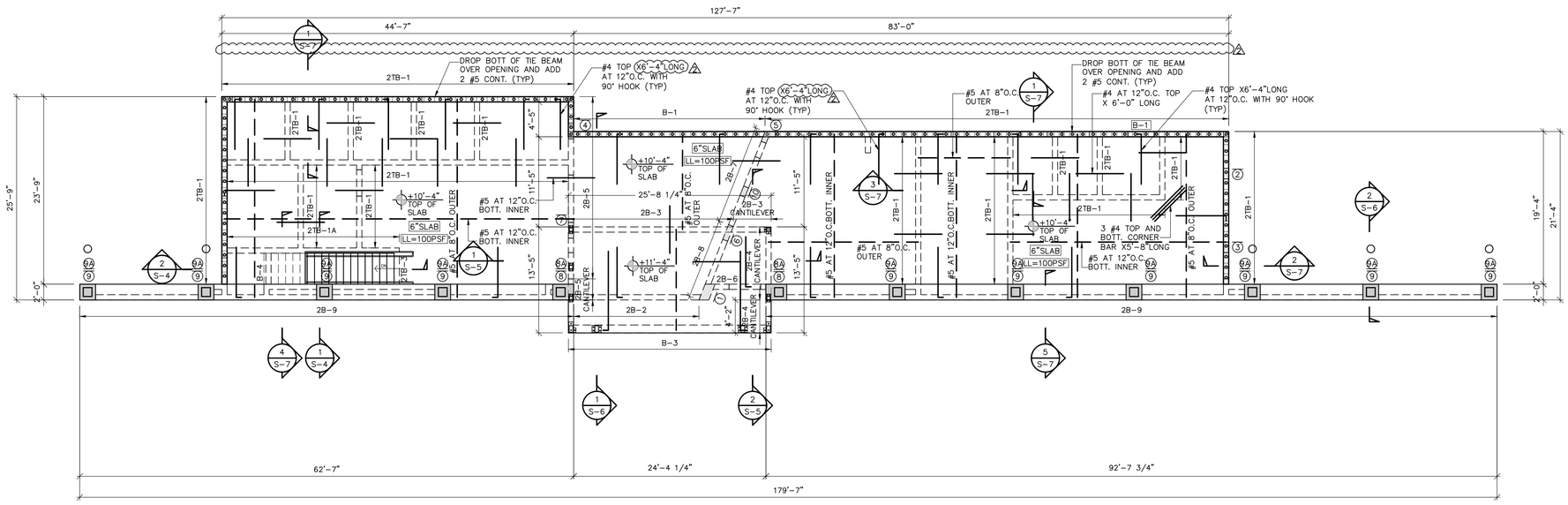
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CONCESSION
CONTROL JOINT
PLAN



SECOND FLOOR STUD FRAMING PLAN

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



SECOND FLOOR FRAMING PLAN

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

——— INDICATES TOP REINFORCING (3/4" COVER FROM TOP OF SLAB)

— — — — INDICATES BOTTOM REINFORCING (3/4" COVER FROM BOTTOM OF SLAB)

DESIGN LOADS: 6" SLAB

-DEAD LOAD	(DL_1):	6"SLAB
-	(DL_2):	10 PSF (ROOFING)
-	(DL_3):	5 PSF (CEILING)
-LIVE LOAD	(LL):	100 PSF

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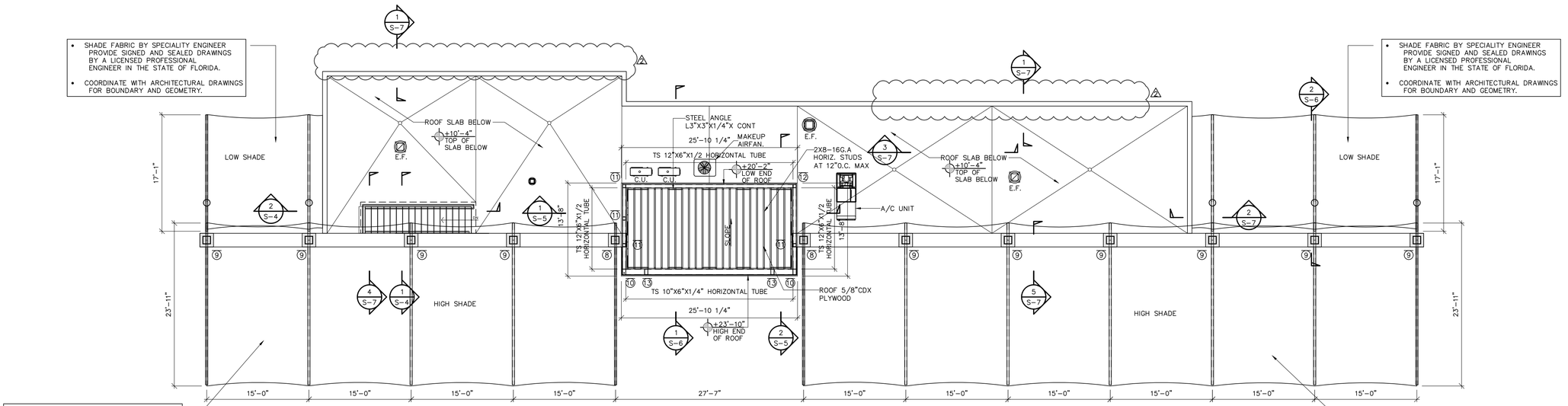
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2 10-06-2025 ADDENDUM 3 COORDINATION
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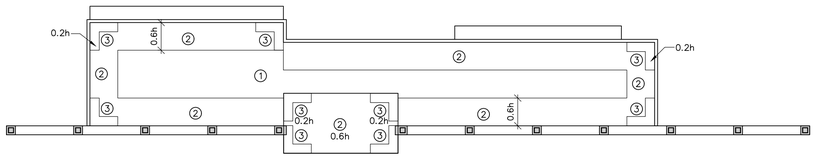
SHEET
S-2

CONCESSION
SECOND FLOOR
FRAMING PLAN



ROOF FRAMING PLAN

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



ROOF UPLIFT PRESSURE

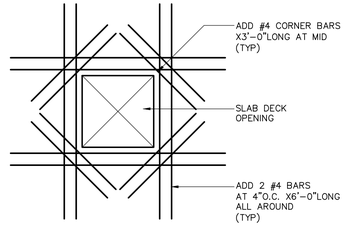
F.B.C. 2023, ASCE 7-22
V=170 MPH (ULTIMATE)
V NOMINAL DESIGN=132.6 MPH
BASIC WND PRESSURE=32.4 PSF
EXPOSURE =C
RISK CATEGORY =II
ENCLOSED BUILDING

HIGH ROOF +23'-10"NOMINAL PRESSURE IS USED;
WIND UPLIFT PRESSURE (GROSS) "ASD"
(ASD) ROOFING UPLIFT BASED ON 10 SQ.FT. ROOFING

BASIC WIND PRESSURE =35.96 PSF
ZONE (1) PUP=-67.6 PSF (BODY OF ROOF)
ZONE (2) PUP=-89.2 PSF (PERIMETER)
ZONE (3) PUP=-121.6 PSF (CORNER)

LOW ROOF DECK +10'-4"NOMINAL PRESSURE IS USED;
(A) ROOFING UPLIFT BASED ON 10 SQ.FT. ROOFING

BASIC WIND PRESSURE =35.96 PSF
ZONE (1) PUP=-66.1 PSF (BODY OF ROOF)
ZONE (2) PUP=-80.65 PSF (PERIMETER)
ZONE (3) PUP=-109.92 PSF (CORNER)
(NOTE: IF PARAPET IS 3'-0" OR HIGHER USE PRESSURE OF ZONE 2)



SLAB DECK OPENING

DETAIL A S-3
SCALE:1/2"=1'-0"

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Abbas H. Zackria, FL AR 91520

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ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

SAAD EL-HAGE P.E. #42550
SAAD ELIA EL-HAGE LICENSE No. PE42550 STATE OF FLORIDA PROFESSIONAL ENGINEER
CERTIFICATE OF AUTHORIZATION #00008801

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JOB# S24-067

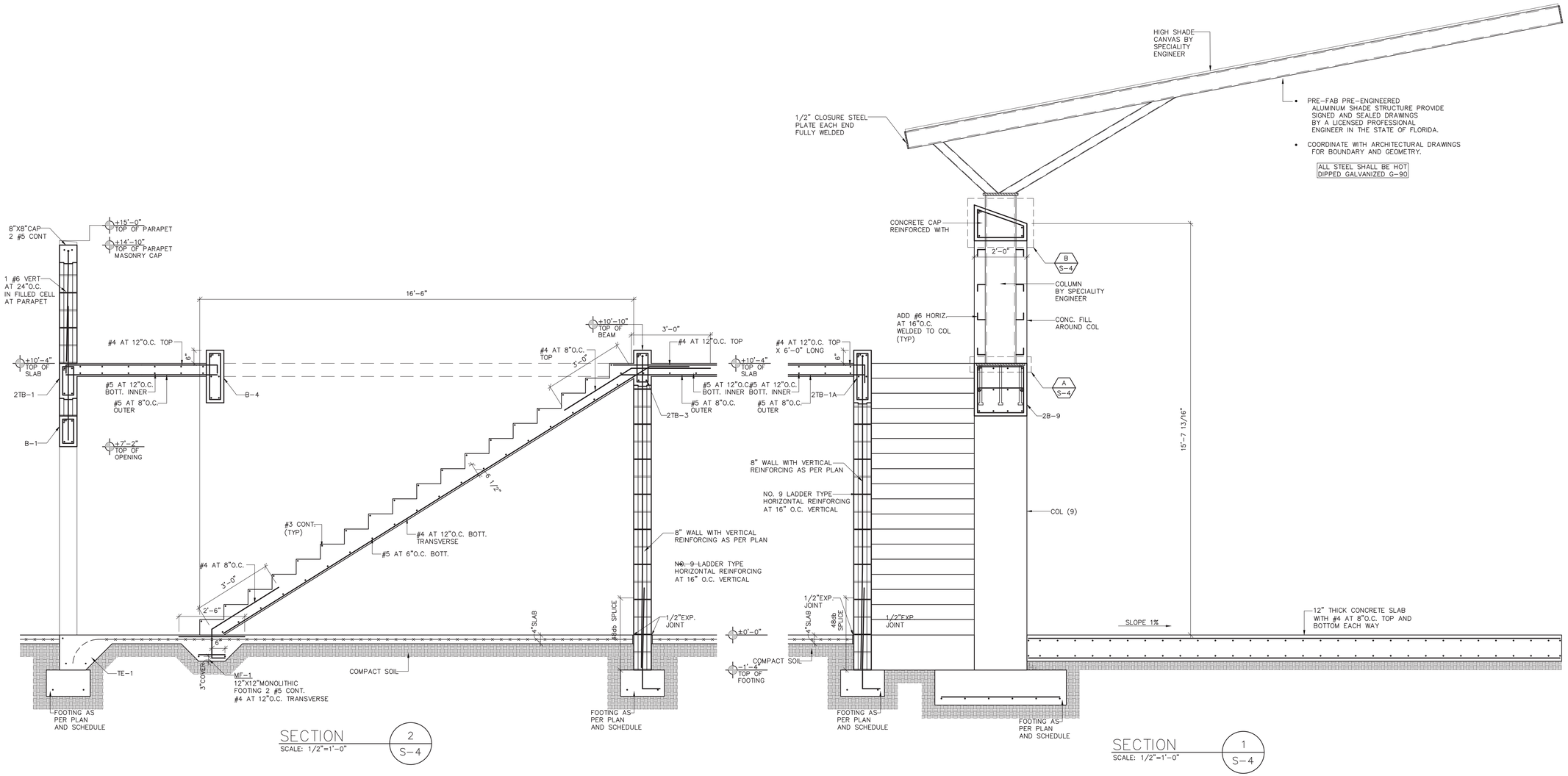
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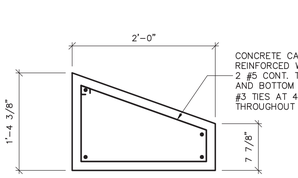
SHEET
S-3

CONCESSION ROOF FRAMING PLAN

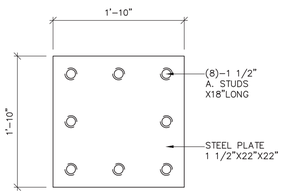


SECTION 2 / S-4
SCALE: 1/2"=1'-0"

SECTION 1 / S-4
SCALE: 1/2"=1'-0"



REINFORCED CONCRETE CAP DETAIL B / S-4
SCALE: 1"=1'-0"



STEEL PLATE DETAIL A / S-4
SCALE: 1"=1'-0"

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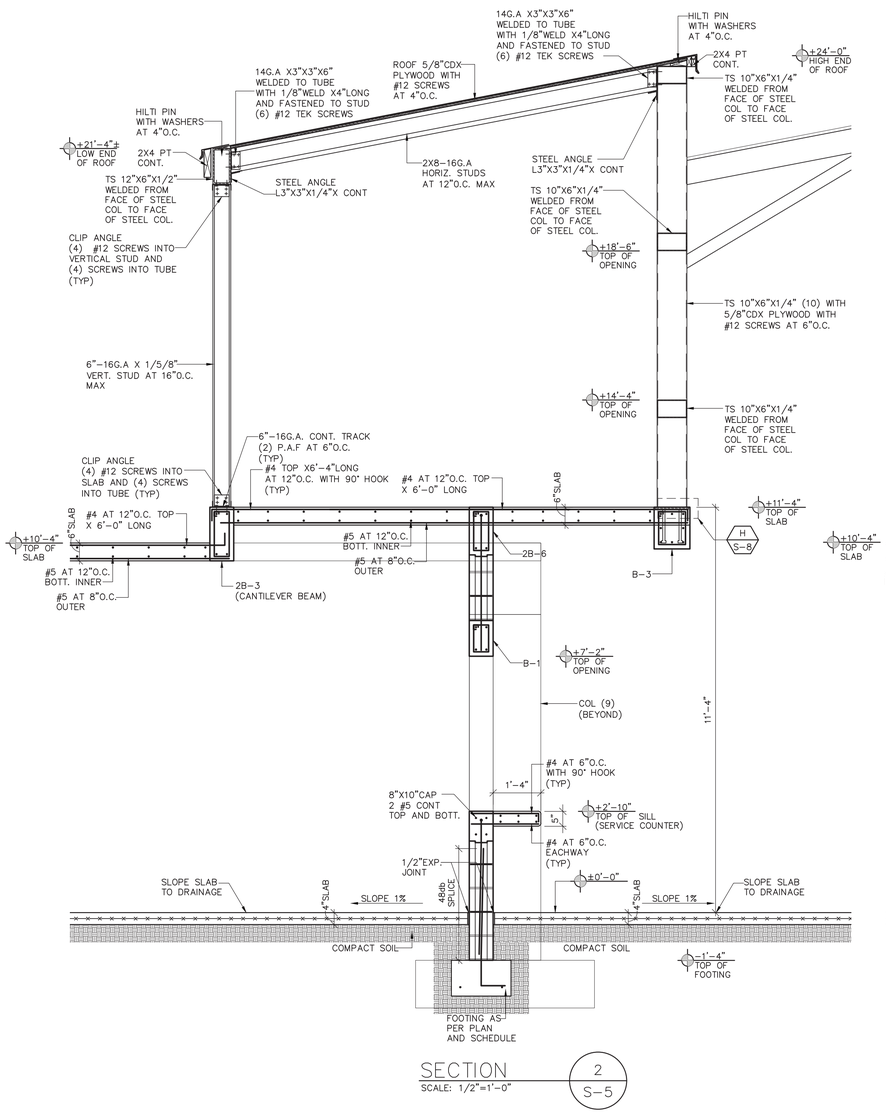
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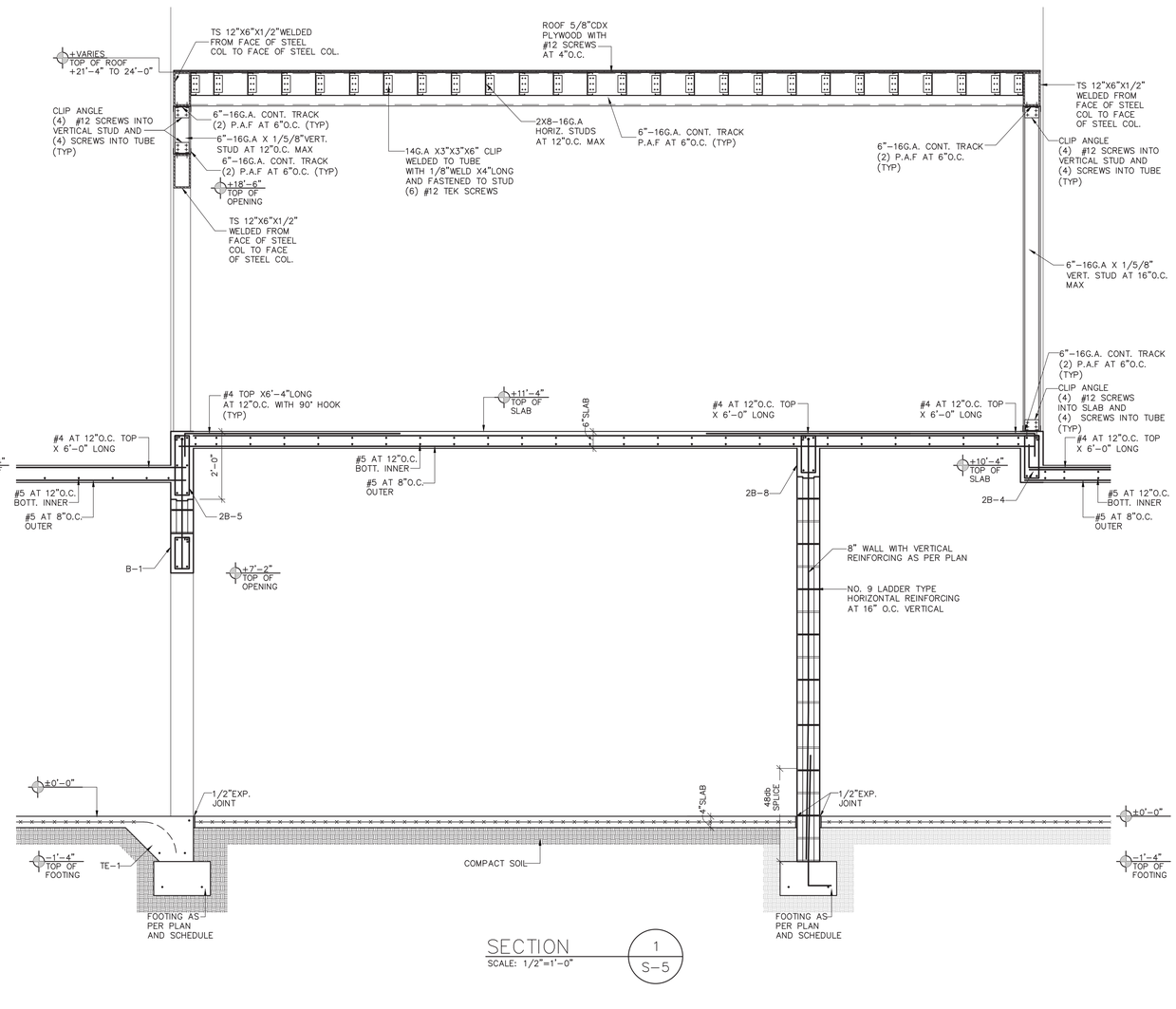
2406

SHEET
S-4

CONCESSION SECTIONS



SECTION 2
SCALE: 1/2"=1'-0"
S-5



SECTION 1
SCALE: 1/2"=1'-0"
S-5

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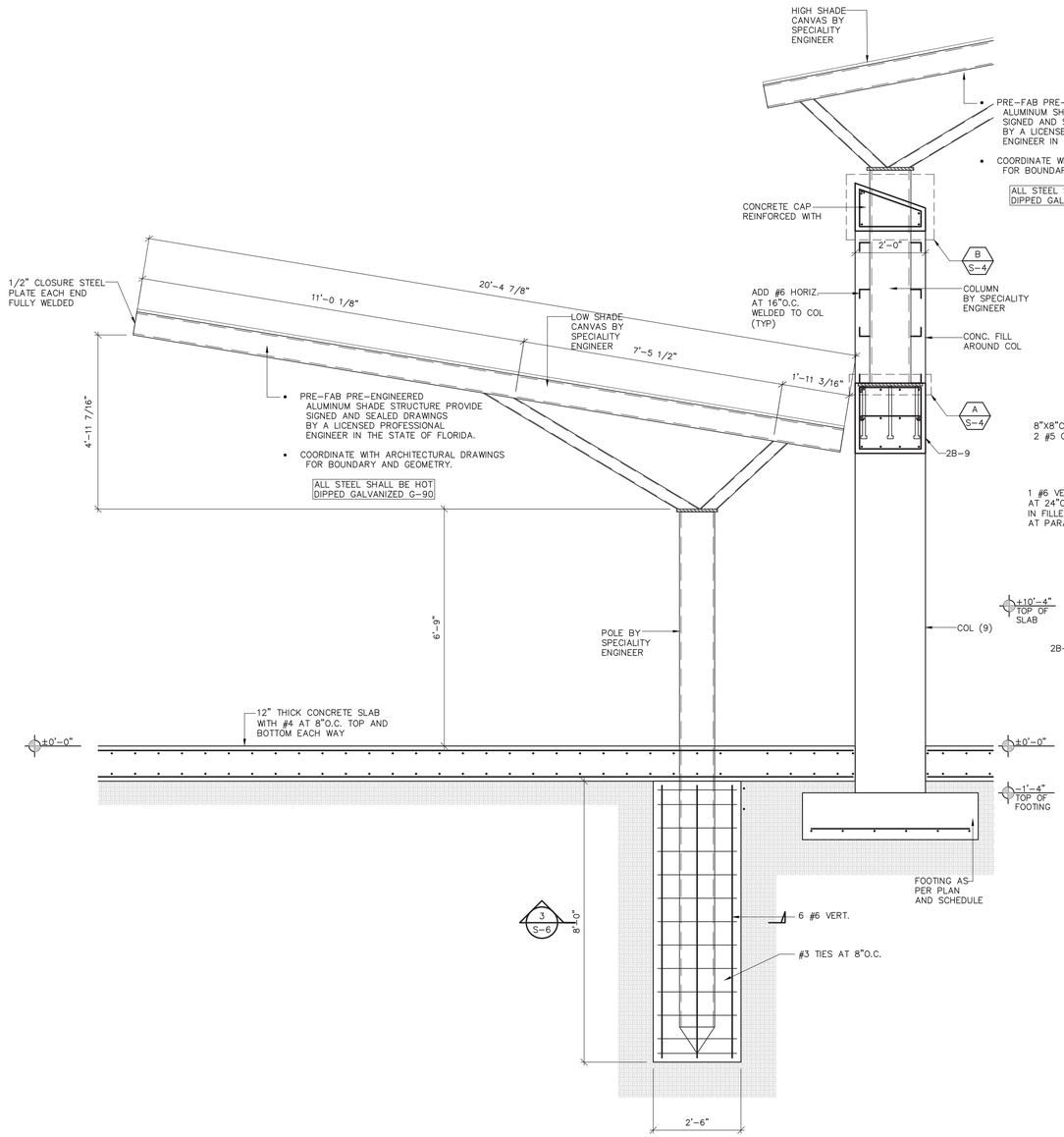
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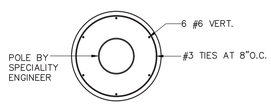
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SHEET
S-5

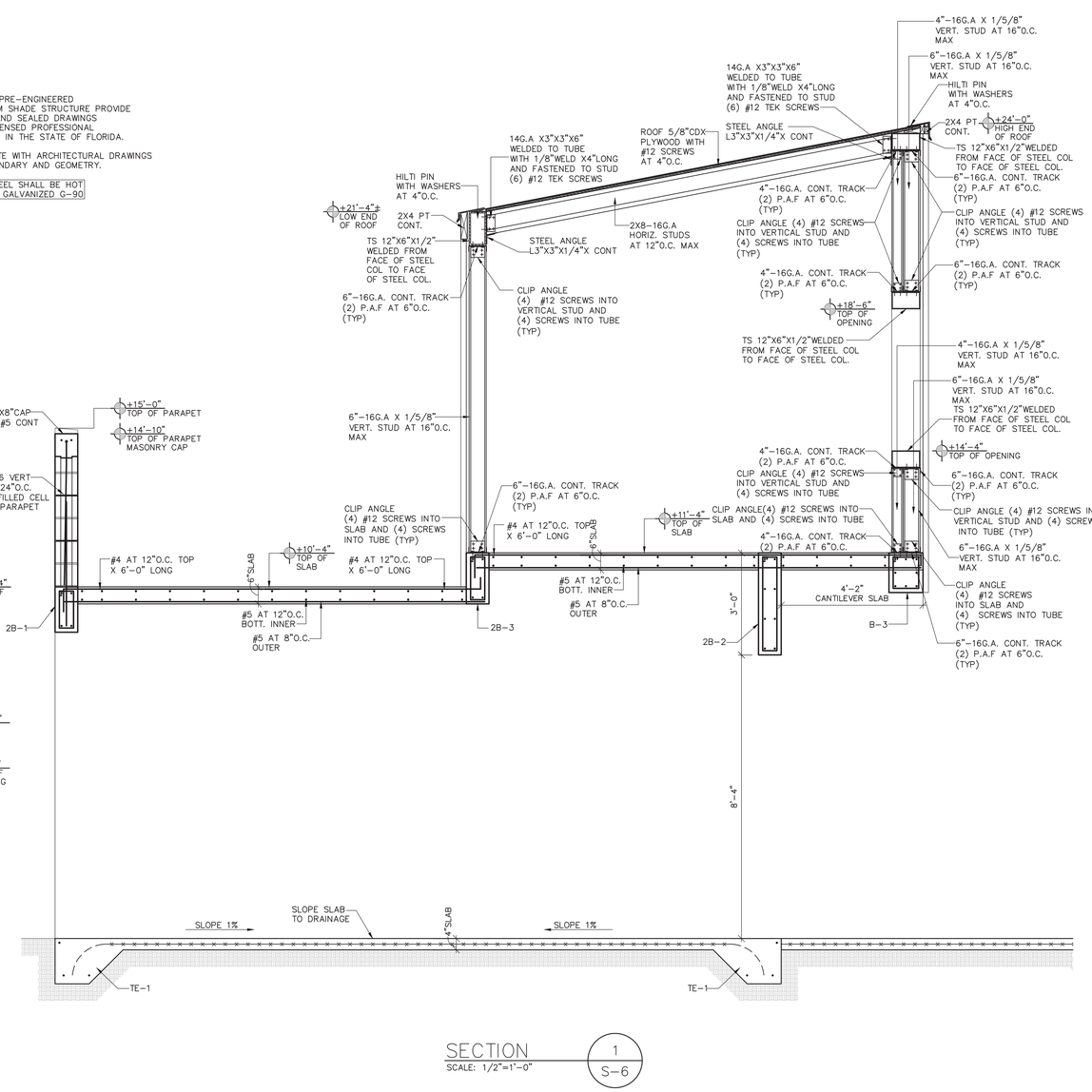
CONCESSION SECTIONS



SECTION 2 / S-6
SCALE: 1/2"=1'-0"



SECTION 3 / S-6
SCALE: 1/2"=1'-0"



SECTION 1 / S-6
SCALE: 1/2"=1'-0"

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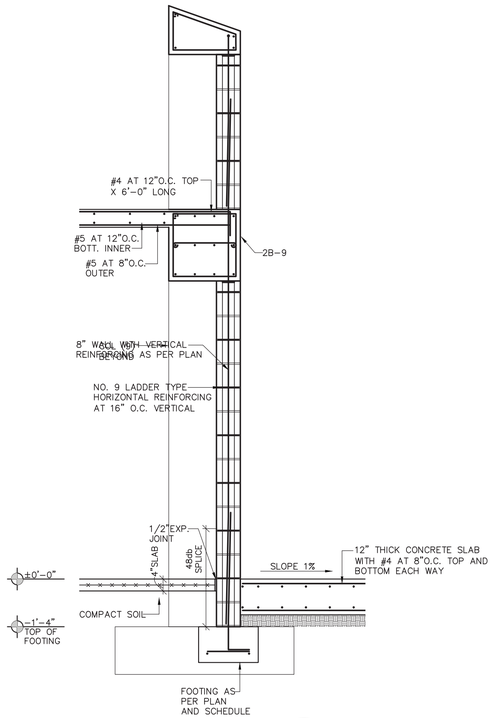
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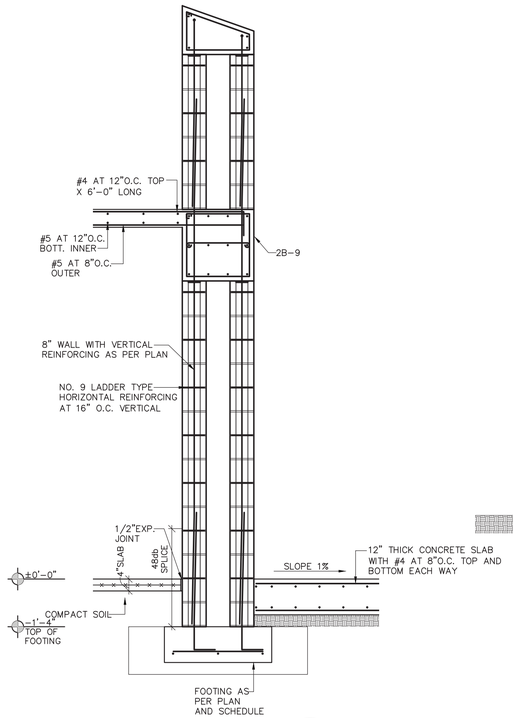
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SHEET
S-6

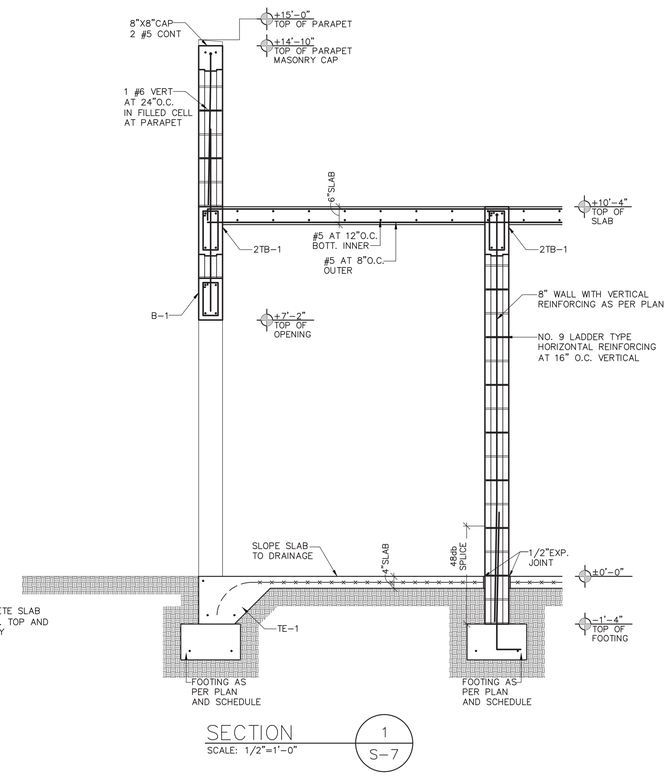
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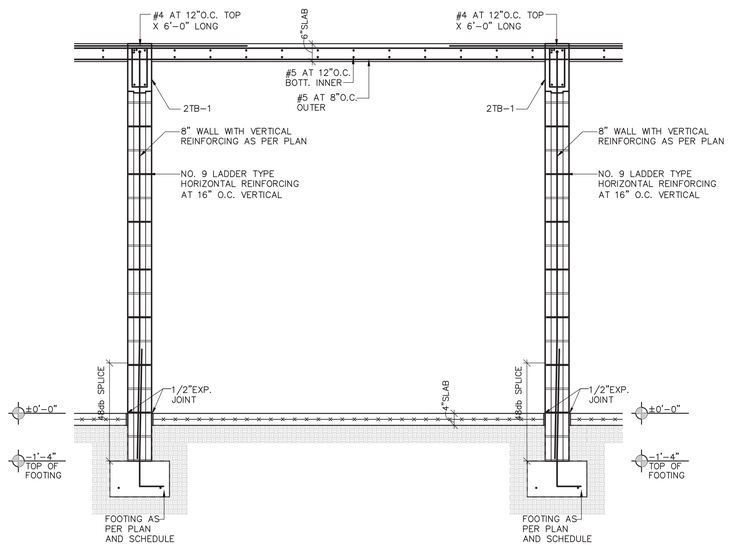
SECTION 5
SCALE: 1/2"=1'-0" S-7



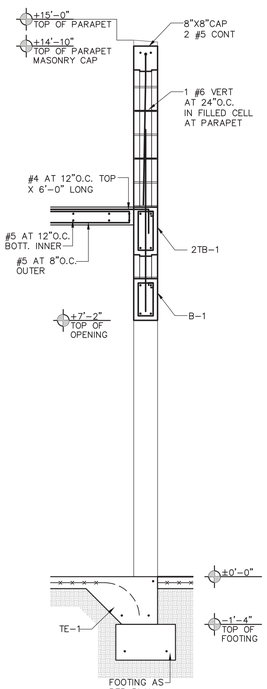
SECTION 4
SCALE: 1/2"=1'-0" S-7



SECTION 1
SCALE: 1/2"=1'-0" S-7



SECTION 3
SCALE: 1/2"=1'-0" S-7



SECTION 2
SCALE: 1/2"=1'-0" S-7

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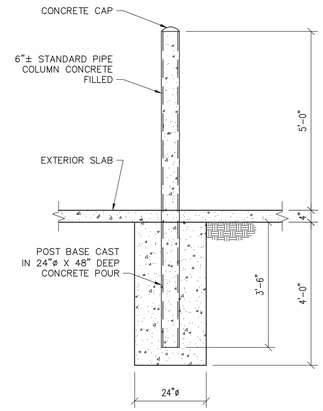
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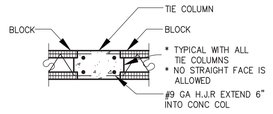
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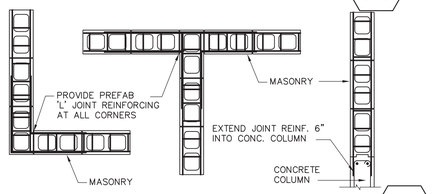
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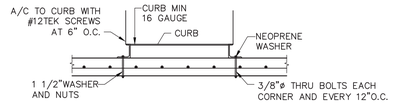
TYPICAL BOLLARD DETAIL — H / S-8



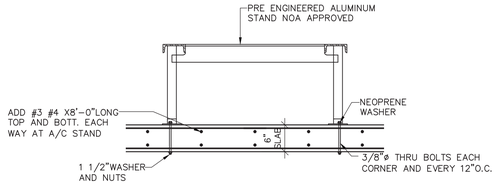
TIE COLUMN DETAIL (TYPICAL) — E / S-9
N.T.S.



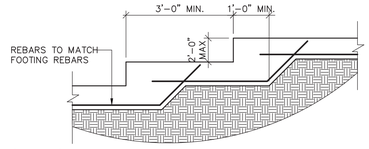
TYPICAL MASONRY HORIZONTAL JOINT REINFORCEMENT DETAIL — E-E / S-8



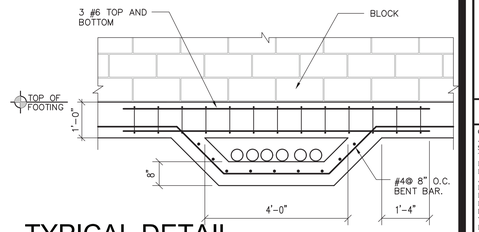
CONCRETE SLAB E/F DETAIL — A / S-8
SCALE: 1/2" = 1'-0"



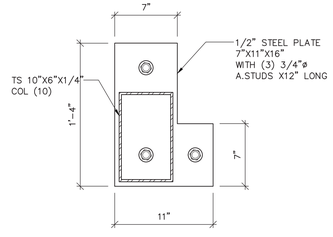
CONCRETE SLAB A/C DETAIL TYP OF 3 — D / S-8
SCALE: 1/2" = 1'-0"



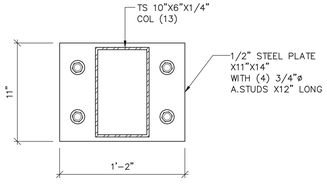
(TYP) STEPPED FOOTING DETAIL — F / S-8
SCALE: 1/2" = 1'-0"



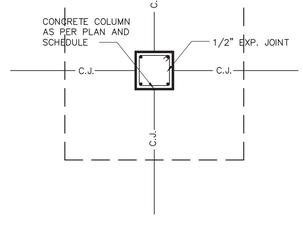
TYPICAL DETAIL PIPES UNDER FOOTING — B / S-8
SCALE: 1/2" = 1'-0"



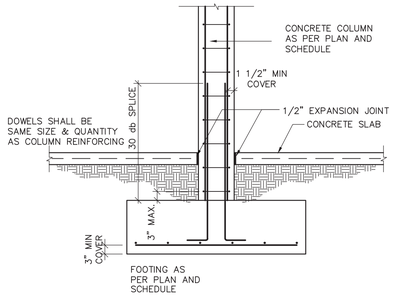
STEEL PLATE AT STEEL COL 10 — H / S-8
SCALE: 1 1/2" = 1'-0"



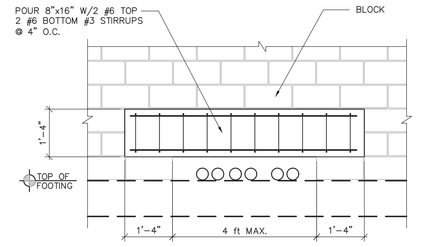
STEEL PLATE AT STEEL COL 13 — J / S-8
SCALE: 1 1/2" = 1'-0"



DETAIL — G-G / S-8
SCALE:



DETAIL — G / S-8
SCALE:



TYPICAL DETAIL PIPES ABOVE FOOTING — C / S-8
SCALE: 1/2" = 1'-0"

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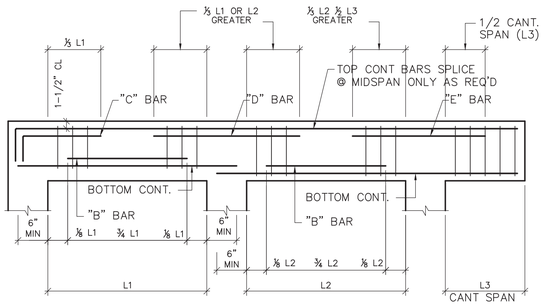
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S-8

CONCESSION DETAILS

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JOB# S24-067



STIRRUP LEGEND
3/C = #3 CLOSED
3/O = #3 OPEN
2/H = #2 HOOPS

NOTE:
"D" BARS ARE TO BE USED AT BOTH ENDS OF A SPAN UNLESS "D" BARS FROM ADJACENT SPAN ARE GREATER OR "C" BARS OR "E" BARS ARE REQUIRED.

REINFORCED CONCRETE BEAMS

MARK	SIZE WxD	TOP ELEV.	REINFORCING STEEL						STIRRUPS FROM EA. COL FACE			MOMENT	SHEAR	REMARKS
			BOT CONT.	B	TOP CONT.	C	D	E	SIZE TYPE	NO & SPACING	BAL	(K-FT)	(KIPS)	
B-1	8"X16"	OVER OPENING	2 #5		2 #5				#3/C	1 AT 3"	6"			
B-2	8"X28"	+11'-4"	2 #7		2 #7				#3/C	1 AT 4"	8"			ADD 4 #5 CONT. EQUALLY SPACED
B-3	12"X14"	+11'-4"	3 #7		3 #7				#3/C	1 AT 3"	6"			
B-4	8"X24"	+10'-10"	2 #6		2 #6				#3/C	1 AT 2"	4"			2 #6 MID CONT.
2B-1	8"X24"		2 #8	2 #7	2 #8		2 #7	2 #7	#3/C	1 AT 4"	8"			2 #6 MID CONT.
2B-2	8"X36"	+11'-4"	2 #6		2 #6				#3/C	1 AT 4"	8"			2 #6 MID CONT.
2B-3	8"X18"	+11'-4"	2 #8	2 #7	2 #8		2 #7	2 #7	#3/C	1 AT 3"	6"			
2B-4	8"X18"	+11'-4"	2 #8		2 #8				#3/C	1 AT 2"	4"			
2B-5	8"X24"	+11'-4"	4 #8		4 #8				#4/C	1 AT 4"	8"			4 #8 MID CONT. ADDITIONAL HAIRPIN MID AT 8"O.C. (B/S-9)
2B-6	8"X16"	+11'-4"	2 #5		2 #5				#3/C	1 AT 3"	6"			
2B-7	8"X28"	+10'-4"	2 #7		2 #7				#3/C	1 AT 3"	6"			ADD 2 #5 MID. CONT.
2B-8	8"X26"	+11'-4"	2 #5		2 #5				#3/C	1 AT 4"	8"			2 #5 MID CONT.
2B-9	24"X24"	+10'-4"	4 #7		4 #7				#3/C	1 AT 4"	8"			ADD 4 #6 MID. CONT., #3 HAIRPIN AT 8"O.C.
2TB-1	8"X16"	+10'-4"	2 #5		2 #5				#3/C	1 AT 6"	12"			
2TB-1A	8"X24"	+10'-10"	2 #5		2 #5				#3/C	1 AT 6"	12"			2 #5 MID CONT.
2TB-2	VOID													
2TB-3	8"X20"	+10'-10"	2 #5		2 #5				#3/C	1 AT 6"	12"			AT STAIR

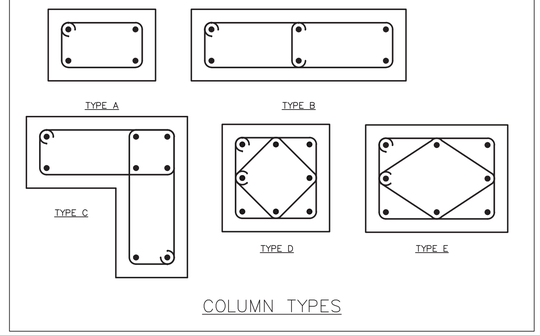
GENERAL BEAM SCHEDULE NOTES:

1. SCHEDULED HOOPS OR STIRRUPS SHALL BE PLACED AT EACH END OF BEAM UNLESS OTHERWISE NOTED.
2. BUNDLE ALL STRUCTURAL BEAM TOP BARS IN PAIRS OVER SUPPORT WITH TOP BARS FROM ADJACENT BEAMS.
3. ALL CONCRETE BEAMS OTHER THAN THOSE WITH THE PREFIX TB SHALL BE POURED PRIOR TO PLACING BLOCK BELOW.
4. ALL TIE BEAM REINFORCING SHALL EXTEND INTO SPAN OF ANY ADJACENT STRUCTURAL BEAM AS PER BENDING DIAGRAM.
5. DROP BOTTOM OF TIE BEAM AS REQUIRED AT WINDOW AND DOOR HEADS (28" MAXIMUM) AND ADD 2 #5 BOTTOM IF DROP EXCEEDS 8".
6. TIE BEAM SCHEDULED DEPTHS ARE MINIMUM AND MAY BE INCREASED (8" MAXIMUM) TO FIT BLOCK WORK.
7. ALL ADDED LONGITUDINAL BEAM REINFORCING SHALL EXTEND 6" MINIMUM INTO SUPPORT UNLESS NOTED OTHERWISE.
8. PROVIDE CORNER BARS AT ALL CONCRETE TIE BEAM INTERSECTIONS. BARS SHALL BE SAME SIZE AND QUANTITY AS BEAM REINFORCING, EXTENDING 48 BAR DIAMETER.

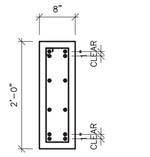
COLUMNS

WHERE VERTICAL STEEL IS SPACED 6"O.C. OR MORE HAIR PINS SHALL BE REQUIRED

MARK	SIZE	VERT / CAP PLATE	TIES / BOTT. PLATE	REMARKS
1	15" X 24"	6 #7	#3 AT 8"O.C.	
2	8" X 16"	4 #6	#3 AT 8"O.C.	
3	8" X 16"	4 #6	#3 AT 8"O.C.	
4	8" X 24"	6 #6	#3 AT 8"O.C.	
5	8" X 16" X 16"	8 #6	#3 AT 8"O.C.	
6	8" X 24"	6 #6	#3 AT 8"O.C.	
7	8" X 24"	6 #6	#3 AT 8"O.C.	
8	31 3/4" X 24"	8 #7	#3 AT 8"O.C.	TYPE-E
8A	31 3/4" X 24"	8 #7	#3 AT 8"O.C.	TYPE-E
9	24" X 24"	8 #6	#3 AT 8"O.C.	TYPE-D
9A	24" X 24"	8 #6	#3 AT 8"O.C.	TYPE-D
10	TS 6"X10"X1/4"	1/2" X6"X10" ECLOSURE STL PLT. FULLY WELD 1/4"	7"X16"X11"X1" STL. PLT. (3) 3/4"ø A.S. X 12"LG	STEEL COL STARTS AT SECOND FLOOR
11	TS 6"X6"X1/2"	1/2" X6"X6" ECLOSURE STL PLT. FULLY WELD 1/4"	7"X12"X1" STL. PLT. (4) 1"ø A.S. X 18"LG	STEEL COL STARTS AT SECOND FLOOR
12	TS 6"X6"X1/2"	1/2" X6"X6" ECLOSURE STL PLT. FULLY WELD 1/4"	7"X10"X10"X1" STL. PLT. (3) 1"ø A.S. X 18"LG	STEEL COL STARTS AT SECOND FLOOR
13	TS 6"X10"X1/4"	1/2" X6"X10" ECLOSURE STL PLT. FULLY WELD 1/4"	14"X11"X1" STL. PLT. (4) 3/4"ø A.S. X 12"LG	STEEL COL STARTS AT SECOND FLOOR
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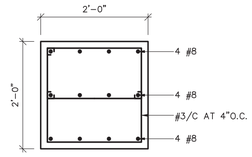


COLUMN TYPES



2B-5

DETAIL B S-9
SCALE: 3/4"=1'-0"



CAP OVER 24"X24"COLUMN

DETAIL A S-9
SCALE: 3/4"=1'-0"

REINFORCED CONCRETE FOOTINGS

CORNER BARS SHALL BE REQUIRED AT ALL FOOTING INTERSECTIONS AT 30 EACH DIRECTION

MARK	SIZE	CONT	SW	LW	REMARKS
F-1	4'-4"X4'-4"X12"		6 #5	6 #5	
F-2	4'-8"X4'-8"X12"		6 #5	6 #5	
F-3	5'-6"X5'-6"X14"		7 #5	7 #5	
F-4	4'-4"X4'-4"X12"		6 #5	6 #5	
F-5	4'-4"X4'-4"X12"		6 #5	6 #5	
F-6	4'-0"X4'-0"X12"		5 #5	5 #5	
F-7	4'-4"X4'-4"X12"		6 #5	6 #5	
F-8	5'-0"X5'-0"X16"		6 #6	6 #6	
WF-1	20" X 12"	2 #5	#4 AT 14"O.C.		
TE-1	8"X16"	2 #5			1 #5 TOP CONT.
TE-2	12"X16"	2 #5			1 #5 TOP CONT.

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SAAD EL-HAGE P.E. #42550
SAAD ELIA EL-HAGE LICENSE No. PE42550 STATE OF FLORIDA PROFESSIONAL ENGINEER
CERTIFICATE OF AUTHORIZATION #00008801

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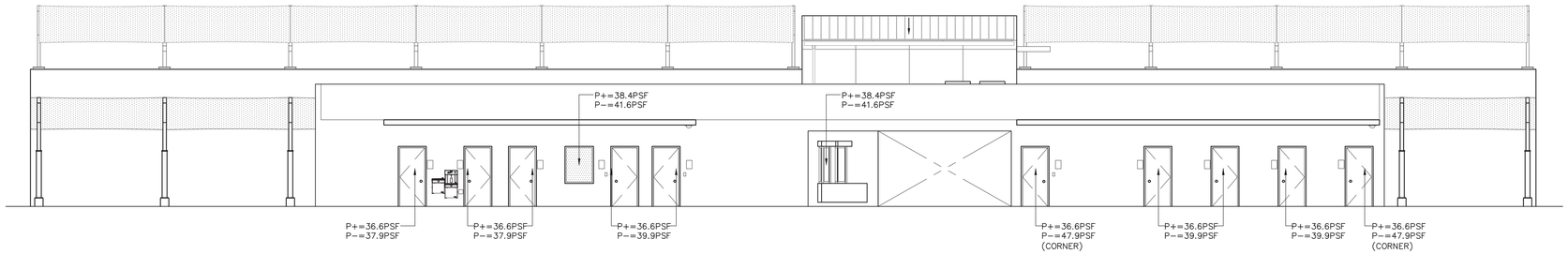
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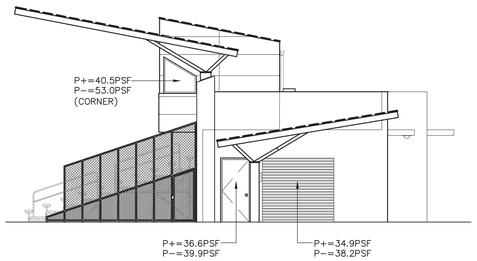
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CONCESSION SCHEDULES



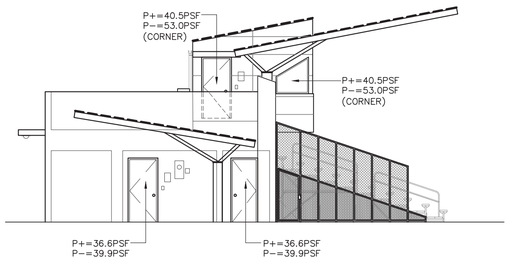
ELEVATION NORTH

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



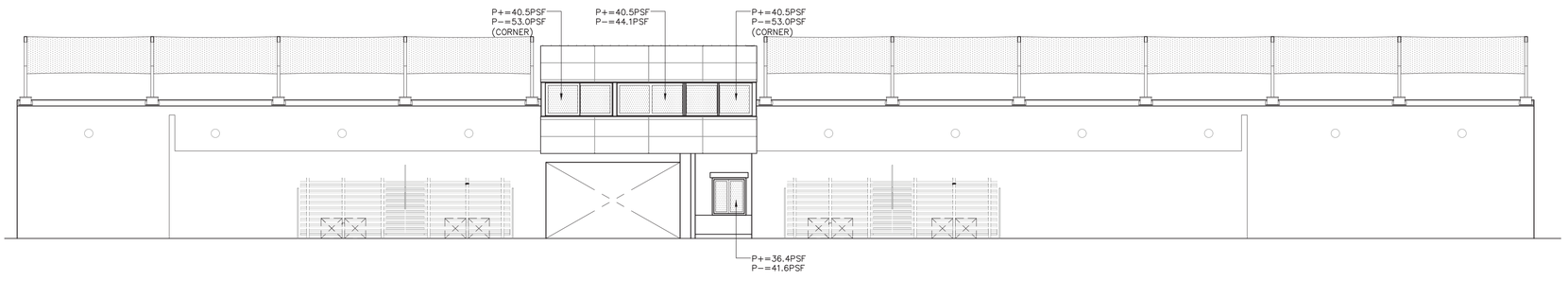
ELEVATION EAST

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



ELEVATION WEST

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



ELEVATION SOUTH

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

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S-10

CONCESSION
WIND PRESSURES

MECHANICAL NOTES

1. DO NOT SCALE THE DRAWINGS. REFER TO ARCHITECTURAL PLANS FOR ALL DIMENSIONS.
2. COORDINATE EXACT LOCATION OF ALL DIFFUSERS AND RETURNS WITH EXISTING REFLECTED CEILING PLAN.
3. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FLORIDA BUILDING AND MECHANICAL CODE, NFPA-90A, AND LOCAL CODE AMENDMENTS.
4. ALL DAMPER CONTROLS SHALL BE ACCESSIBLE.
5. ALL OUTSIDE AIR DUCTS OR INTAKES SHALL HAVE DAMPERS.
6. ALL VENTILATION DUCTS SHALL BE SHEET METAL, INSTALLED, SEALED AND SUPPORTED IN ACCORDANCE WITH THE LATEST EDITION "SMACNA" LOW VELOCITY DUCT CONSTRUCTION STANDARDS AND DETAILS ON THESE PLANS.
7. ALL EXHAUST DUCTS SHALL BE SHEET METAL, INSTALLED, SEALED AND SUPPORTED IN ACCORDANCE WITH THE LATEST EDITION OF "SMACNA" LOW VELOCITY DUCT CONSTRUCTION STANDARDS AND DETAILS ON THESE PLANS.
8. AIR CONDITIONING SUPPLY, RETURN, AND TRANSFER DUCTWORK INDICATED AS RIGID FIBERGLASS DUCT BOARD SHALL BE INSTALLED, SEALED, AND SUPPORTED IN ACCORDANCE WITH THE LATEST EDITION OF NAIMA FIBROUS GLASS DUCT CONSTRUCTION STANDARDS AND DETAILS ON THESE PLANS. FLEX DUCT SHALL BE USED IF THERE IS LIMITED SPACE. SUPPLY AND RETURN DUCTWORK SHALL BE REINFORCED & SEALED TO (+/-) TWO (2) INCH PRESSURE CLASS UNLESS NOTED OTHERWISE. TRANSFER DUCTWORK SHALL BE REINFORCED & SEALED TO (+/-) ZERO TO ONE (0-1) INCH PRESSURE CLASS UNLESS NOTED OTHERWISE.

   AIR CONDITIONING DUCTWORK SUPPLY, RETURN, AND TRANSFER DUCTWORK INDICATED AS GALVANIZED SHEET METAL SHALL BE INSTALLED, SEALED AND SUPPORTED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA LOW VELOCITY DUCT CONSTRUCTION STANDARDS AND DETAIL ON THESE PLANS. SUPPLY AND RETURN DUCTWORK SHALL BE REINFORCED & SEALED TO (+/-) TWO (2) INCH PRESSURE CLASS UNLESS NOTED OTHERWISE. TRANSFER DUCTWORK SHALL BE REINFORCED & SEALED TO (+/-) ZERO TO ONE (0-1) INCH PRESSURE CLASS UNLESS NOTED OTHERWISE.

   VENTILATION DUCTWORK SHALL BE GALVANIZED SHEET METAL AND SHALL BE INSTALLED, SEALED AND SUPPORTED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA LOW VELOCITY DUCT CONSTRUCTION STANDARDS AND DETAIL ON THESE PLANS. VENTILATION DUCTWORK SHALL BE REINFORCED & SEALED TO (+/-) ZERO TO ONE (0-1) INCH PRESSURE CLASS UNLESS NOTED OTHERWISE.

   SUPPLY, RETURN, AND TRANSFER GALVANIZED SHEET METAL AND ALUMINUM DUCTWORK SERVICE LAB SHALL BE INSULATED WITH 1.5 INCH THICK R-8.0 MINIMUM EXTERIOR WRAP INSULATION.
9. FLEXIBLE DUCTS SHALL BE R-6.0 MINIMUM UL 181 CLASS 1 CONSTRUCTED WITH A POLYESTER LAMINATED SMOOTH INNER CORE THAT ENCAPSULATES A STEEL WIRE HELIX. THE DOUBLE CORE IS WRAPPED IN A THICK BLANKET OF FIBERGLASS INSULATION AND SHEATHED IN A REINFORCED METALLIZED POLYESTER JACKET.
10. REFRIGERANT PIPING SHALL BE COPPER, REFRIGERATION GRADE, SOFT TEMPER, SEALED AT THE MILL. INSULATE SUCTION PIPE INDOORS: WITH 3/8" IMCOA POLYOLEFIN INSULATION; OUTDOORS: 3/4" IMCOA POLYOLEFIN INSULATION. CIRCULATE DRY NITROGEN THROUGH PIPING WHEN SOLDERING. TEST FOR LEAKS PRIOR TO CHARGING SYSTEM WITH R-410A REFRIGERANT.
11. CONDENSATE DRAINS SHALL BE SCHEDULE 40 PVC PIPING OR COPPER IF LOCATED IN A RETURN AIR PLENUM. INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 1/2" ARMAFLEX SELF-SEAL.
12. A CERTIFIED TEST AND BALANCE REPORT SHALL BE PROVIDED AT THE COMPLETION OF THE PROJECT PRIOR TO FINAL INSPECTION BY A COMPANY SPECIALIZING IN THE TESTING AND BALANCING OF MECHANICAL SYSTEMS AS SUBCONTRACTOR TO THE MECHANICAL CONTRACTOR, GENERAL CONTRACTOR, OR OWNER. THE TEST AND BALANCE CONTRACTOR SHALL BE A MEMBER OF AND CERTIFIED BY EITHER THE AABC OR NEBB.
13. AS PER 2023 FLORIDA BUILDING CODE-ENERGY CONSERVATION, SECTION 503.2.5.4, BOTH OUTDOOR AIR SUPPLY AND EXHAUST SYSTEMS SHALL BE EQUIPPED WITH DAMPERS THAT WILL AUTOMATICALLY SHUT WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE. VENTILATION OUTSIDE AIR DAMPERS SHALL BE CAPABLE OF AUTOMATICALLY SHUTTING OFF DURING PREOCCUPANCY BUILDING WARMUP, COOLDOWN, AND SETBACK, EXCEPT WHEN VENTILATION REDUCES ENERGY COSTS (E.G., NIGHT PURGE) OR WHEN VENTILATION MUST BE SUPPLIED TO MEET CODE REQUIREMENTS. MOTORIZED DAMPERS SHALL BE NOT LESS THAN A CLASS I LEAKAGE-RATED DAMPER WITH A MAXIMUM LEAKAGE RATE OF 4 CFM PER S.F. AT 1" W.G. WHEN TESTED IN ACCORDANCE WITH AMCA 500D.
14. CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 3/4 INCH THICK ARMSTRONG "ARMAFLEX" OR EQUAL. EXTERIOR INSULATION SHALL BE COATED WITH ULTRAVIOLET RESISTANT MATERIAL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. 12"x12" METAL DUCT TO ROOF MOUNTED EXHAUST FAN (COOKING HOOD). EXHAUST DUCT TO BE OF 16 GAUGE BLACK IRON. SLOPE 1/4" PER FOOT TOWARDS HOOD OUTLET. PROVIDE ACCESS DOOR AT EACH TURN IN DUCT FOR GREASE REMOVAL. AT PENETRATION OF WALL, DUCTWORK TO BE INSULATED WITH A MINIMUM OF TWO (2) ONE AND ONE-HALF INCH LAYERS FIRE WRAP INSULATION TO PROVIDE A MINIMUM OF 2 HOUR RATING.

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
O.A.	OUTSIDE AIR
R.A.	RETURN AIR
S.A.	SUPPLY AIR
T.A.	TRANSFER AIR
E.A.	EXHAUST AIR
C.F.M.	CUBIC FEET PER MINUTE
T	THERMOSTAT
H	HUMIDISTAT
SD	SMOKE DETECTOR
R	REMOTE TEST STATION
FD	UL LISTED FIRE DAMPER
VD	VOLUME DAMPER
BD	BACKDRAFT DAMPER
MVD	MANUAL VOLUME DAMPER
MOD	MOTOR OPERATED DAMPER
	TWIST-IN COLLAR WITH DAMPER
	CEILING DIFFUSER - SUPPLY AIR
	SIDE-WALL DIFFUSER - SUPPLY AIR
	TURNING VANES - SUPPLY AIR
	DISTRIBUTION TRIANGLE - SUPPLY AIR
	FIBERGLASS DUCTWORK -SUPPLY /RETURN AIR
	FLEXIBLE DUCT
	METAL OUTDOOR/EXHAUST AIR DUCT
	CEILING MOUNTED EXHAUST FAN

MECHANICAL SHEET INDEX

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M-2.11	MECHANICAL PROPOSED FIRST AND SECOND FLOOR PLAN
M-2.12	MECHANICAL PROPOSED ROOF PLAN
M-2.13	MECHANICAL CONCESSION ROOM PLAN
M-5.0	MECHANICAL DETAILS
M-5.1	MECHANICAL DETAILS
M-5.2	MECHANICAL DETAILS
M-6.0	MECHANICAL EQUIPMENT SCHEDULES - VRF
M-6.1	KITCHEN HOOD DRAWINGS
M-6.2	KITCHEN HOOD DRAWINGS
M-6.3	KITCHEN HOOD DRAWINGS
M-6.4	KITCHEN HOOD DRAWINGS
M-6.5	MECHANICAL EQUIPMENT SCHEDULES
M-6.6	MECHANICAL EQUIPMENT SCHEDULES

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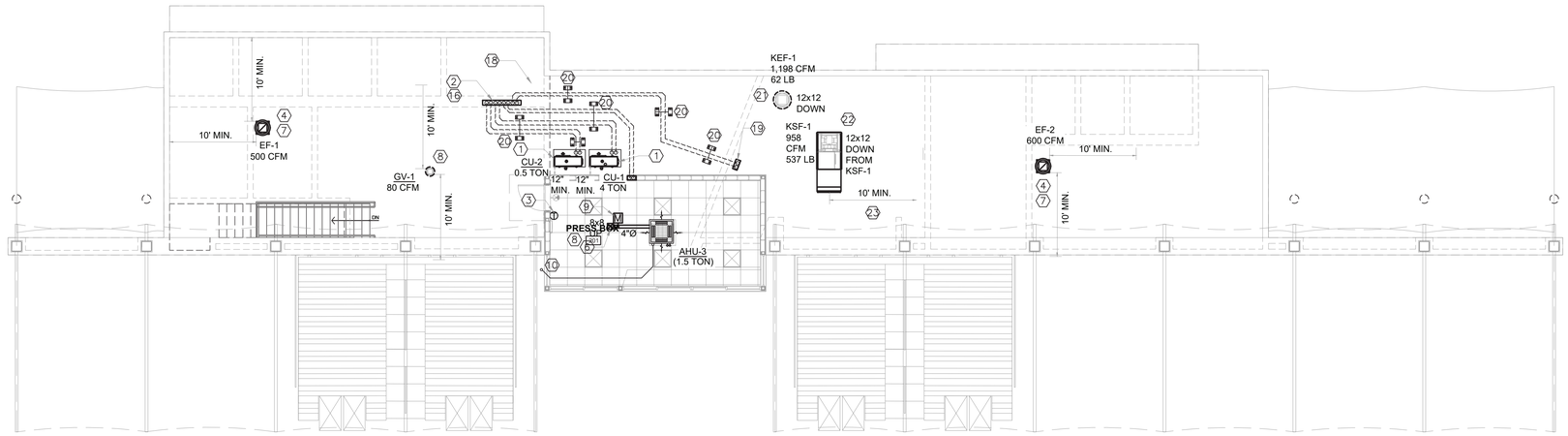
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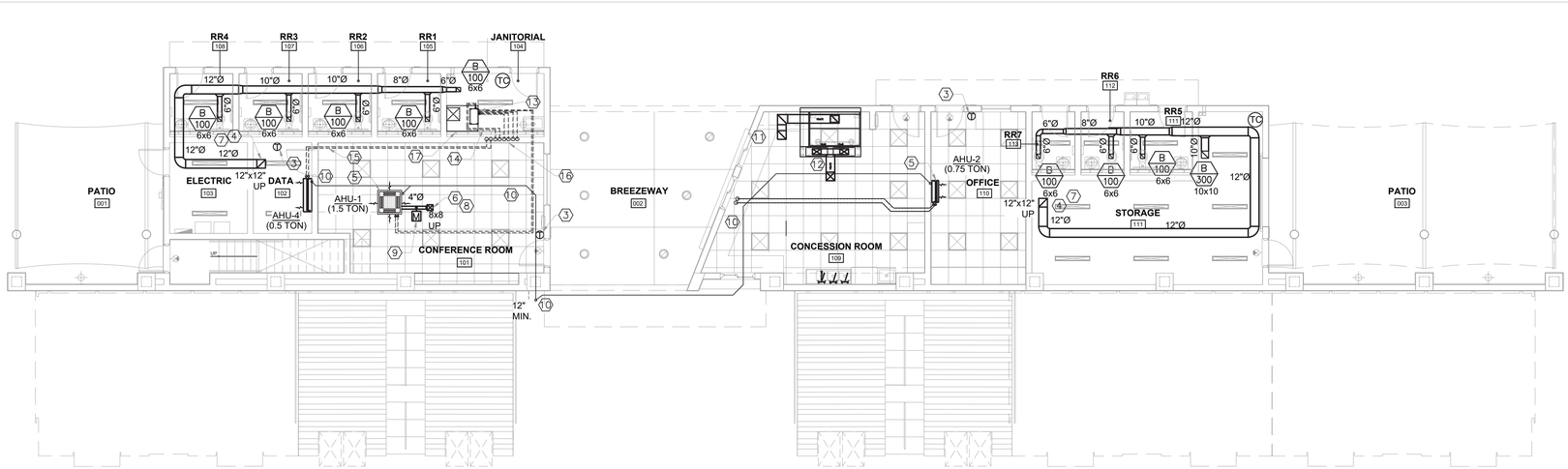
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M0.1

MECHANICAL LEGEND & GENERAL NOTES



1 M2.11 MECHANICAL PROPOSED SECOND FLOOR PLAN

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



2 M2.11 MECHANICAL PROPOSED FIRST FLOOR PLAN

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

KEY NOTES:

1. NEW CONDENSING UNITS TO BE MOUNTED ON NEW STANDS TO MEET CITY OF POMPANO BEACH REQUIREMENT ABOVE ROOF. SEE DETAILS SHEET FOR CONNECTION OF CONDENSING UNITS TO STANDS.
2. RUN REFRIGERANT LINES FROM CU-1 AND CU-2 THROUGH ROOF JACK TO BELOW CONCRETE SLAB. PROVIDE SEALANT AT PENETRATION OF ROOF. SEE DETAILS ON M-5.0
3. PROGRAMMABLE THERMOSTAT WHERE SHOWN.
4. ROUTE 12"X12" METAL EXHAUST DUCT TO ROOF MOUNTED EXHAUST. TO BE INTERLOCKED WITH TIME CLOCK FOR OCCUPANCY SCHEDULES. PROVIDE BACKDRAFT DAMPER AS A MANUFACTURER OPTION. MAINTAIN A MINIMUM OF 10 FEET CLEARANCE FROM OUTDOOR AIR INTAKE TO NEAREST EXHAUST OUTLET. MAINTAIN MINIMUM OF 10 FEET CLEARANCE BETWEEN ROOF MOUNTED EQUIPMENT AND ROOF PARAPET.
5. NEW INDOOR UNITS AHU-1 THROUGH AHU-3 CONNECT TO NEW CONDENSING UNIT CU-1. SEE M6.0 AND M5.2 FOR MORE DETAILS.
6. METAL OUTSIDE AIR DUCT TO ROOF CAP.
7. METAL EXHAUST AIR DUCT TO ROOF MOUNTED EXHAUST FAN. . PROVIDE MINIMUM 3 FEET OF CLEARANCE FROM EXHAUST OUTLET TO BUILDING'S OPERABLE OPENINGS.
8. PROVIDE NEW GREENHECK FGI-8x8 ALUMINUM INTAKE HOOD WITH BIRD SCREEN. MIAMI-DADE NOA#23-1122.03, EXP. 07-08-2029. INCLUDE GRAVITY BACKDRAFT DAMPER. CONNECT 8"x8" OUTDOOR AIR DUCT FROM INTAKE HOOD TO AHU. PROVIDE NEW ROOF CURB TO BE INSTALLED TO ACCOMMODATE THE MOUNTING OF THE NEW INTAKE HOOD. SEE DETAILS. PROVIDE MINIMUM OF 10 FEET CLEARANCE BETWEEN ROOF MOUNTED EQUIPMENT AND ROOF PARAPET. MAINTAIN A MINIMUM 10 FEET CLEARANCE BETWEEN OUTDOOR AIR INTAKE AND EXHAUST OUTLET.
9. MOTORIZED DAMPER (RUSKIN CD-50) W/ ELECTRIC PROPORTIONAL DAMPER ACTUATOR (BELIMO-LF24-SR) CONTROLLED BY AHU SUPPLY FAN MOTOR ACTIVATION. PROVIDE ACCESS DOOR.

   FBC-2023 13-409.1.ABC.3.3 OUTSIDE AIR DUCTS SHALL HAVE DAMPERS CAPABLE OF AUTOMATICALLY SHUTTING OFF DURING PREOCCUPANCY, BUILDING WARMUP, COOL DOWN, AND SETBACK. EXCEPTION2 APPLIES TO UNITS WITH LESS THAN 300 CFM OF OUTDOOR AIR, WHERE NON-MOTORIZED DAMPERS (GRAVITY DAMPERS) ARE ACCEPTABLE.
10. PROVIDE 3/4" CONDENSATE PIPE FROM AIR HANDLING UNITS TO 2" MAIN CONDENSATE LINE. MAIN CONDENSATE LINE SHALL CONNECT TO NEW DRYWELL. INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 1" ARMAFLEX SELF-SEAL. SEE DETAILS FOR DRY WELL INSTALLATION.
11. 12"x12" METAL DUCT TO ROOF MOUNTED EXHAUST FAN (COOKING HOOD). EXHAUST DUCT TO BE OF 16 GAUGE BLACK IRON. SLOPE 1/4" PER FOOT TOWARDS HOOD OUTLET. PROVIDE ACCESS DOOR AT EACH TURN IN DUCT FOR GREASE REMOVAL. AT PENETRATION OF WALL, DUCTWORK TO BE INSULATED WITH A MINIMUM OF TWO (2) ONE AND ONE-HALF INCH LAYERS FIRE WRAP INSULATION TO PROVIDE A MINIMUM OF 2 HOUR RATING.
12. PROVIDE 12"x12" METAL MAKEUP SUPPLY AIR DUCT FROM ROOF MOUNTED MAKEUP AIR FAN TO INLET OF KITCHEN HOOD PLENUM.
13. MODEL NO. TAC-MKA32BC BRANCH CONTROLLER, MANUFACTURED BY MITSUBISHI ELECTRIC TRANE FOR HEAT RECOVERY CAPABILITY.
14. ROUTE CU-1 REFRIGERANT LIQUID AND VAPOR LINESETS TO BRANCH CONTROLLER.
15. ROUTED CU-3 REFRIGERANT LIQUID AND VAPOR LINESETS TO AHU-7.
16. ROUTE 2 BRANCH CONTROLLER REFRIGERANT LIQUID AND SUCTION LINE-SETS BACK UP THROUGH ROOF JACK TO ROOF TO RUN LINES TO AHU-2, AHU-3.
17. PROVIDE SERVICE CLEARANCE AND, IF NECESSARY, ACCESS DOOR AS SHOWN ON DRAWINGS. REFER TO MANUFACTURER REQUIREMENTS FOR MORE INFORMATION.
18. RUN REFRIGERANT LINES FROM BRANCH CONTROLLER THROUGH ROOF JACK TO CONCRETE SLAB. PROVIDE SEALANT AT PENETRATION OF ROOF. SEE DETAILS ON M-5.0
19. ROUTE REFRIGERANT LINE SET FROM ROOF JACK TO AHU-2.
20. REFRIGERANT LINE ROOF SUPPORT.
21. KITCHEN HOOD EXHAUST FAN. SEE M-6.1 THROUGH M-6.4 FOR DETAILS AND SHEET M-5.1 DETAIL 5 FOR FBC-M 304.11 EXCEPTION.
22. KITCHEN AIR MAKEUP FAN. SEE M-6.1 THROUGH M-6.4 FOR DETAILS AND SHEET M-5.1 DETAIL 5 FOR FBC-M 304.11 EXCEPTION.
23. PROVIDE MINIMUM OF 10 FEET CLEARANCE BETWEEN EXHAUST OUTLET AND NEAREST OUTDOOR AIR INTAKE.

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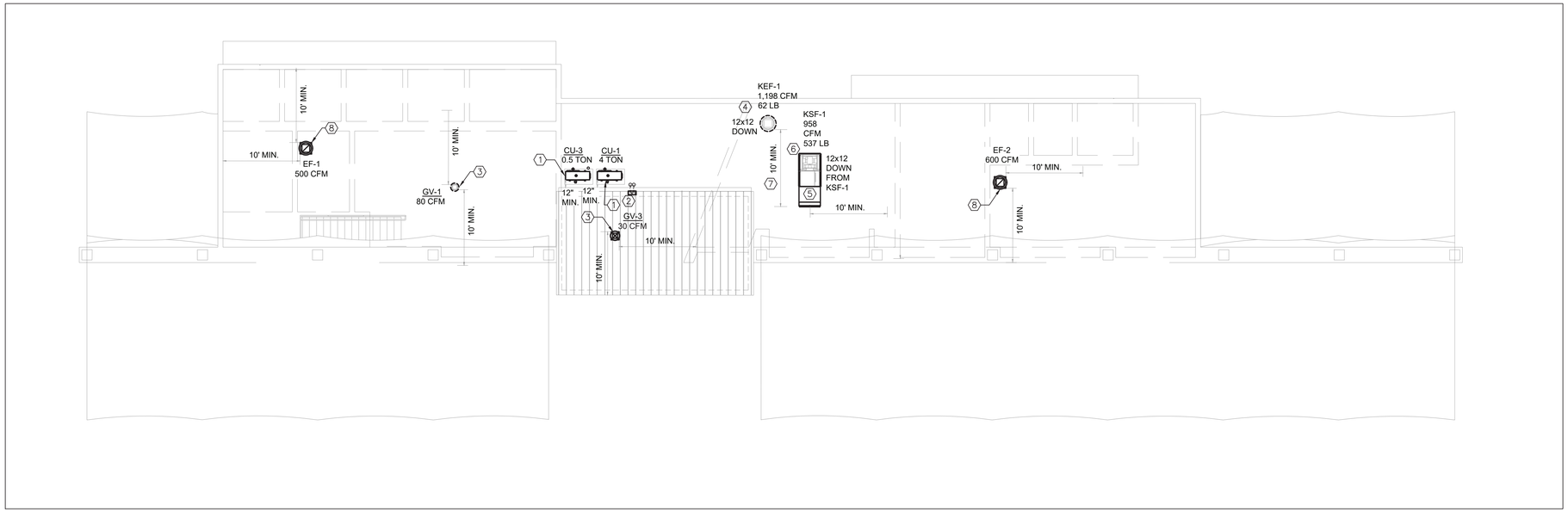
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SHEET
M2.11

MECHANICAL PROPOSED FLOOR PLAN



1 M2.12 MECHANICAL PROPOSED ROOF PLAN

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

N

KEY NOTES:

1. NEW CONDENSING UNITS TO BE MOUNTED ON NEW STANDS TO MEET CITY OF POMPANO BEACH REQUIREMENT. SEE DETAILS SHEET FOR CONNECTION OF CONDENSING UNITS TO STANDS.
2. RUN REFRIGERANT LINES IN WALL TO AHU. PROVIDE WATER PROOF PVC WALL SLEEVE AT PENETRATION.
3. METAL OUTSIDE AIR DUCT TO ROOF CAP MANUFACTURED BY GREENHECK, MODEL NO. FGI-8x8. SEE SHEET M-5.1 FOR MORE DETAILS.
4. KITCHEN HOOD EXHAUST FAN. SEE M-6.1 THROUGH M-6.4 FOR DETAILS AND SHEET M-5.1 DETAIL 5 FOR FBC-M 304.11 EXCEPTION.
5. KITCHEN AIR MAKEUP FAN. SEE M-6.1 THROUGH M-6.4 FOR DETAILS AND SHEET M-5.1 DETAIL 5 FOR FBC-M 304.11 EXCEPTION.
6. PROVIDE 12"x12" METAL MAKEUP SUPPLY AIR DUCT FROM ROOF MOUNTED MAKEUP AIR FAN TO INLET OF KITCHEN HOOD PLENUM.
7. PROVIDE MINIMUM OF 10 FEET CLEARANCE BETWEEN EXHAUST OUTLET AND NEAREST OUTDOOR AIR INTAKE.
8. ROUTE 12"X12" METAL EXHAUST DUCT TO ROOF MOUNTED EXHAUST. TO BE INTERLOCKED WITH TIME CLOCK FOR OCCUPANCY SCHEDULES. PROVIDE BACKDRAFT DAMPER AS A MANUFACTURER OPTION. MAINTAIN A MINIMUM OF 10 FEET CLEARANCE FROM OUTDOOR AIR INTAKE TO NEAREST EXHAUST OUTLET. MAINTAIN MINIMUM OF 10 FEET CLEARANCE BETWEEN ROOF MOUNTED EQUIPMENT AND ROOF PARAPET.

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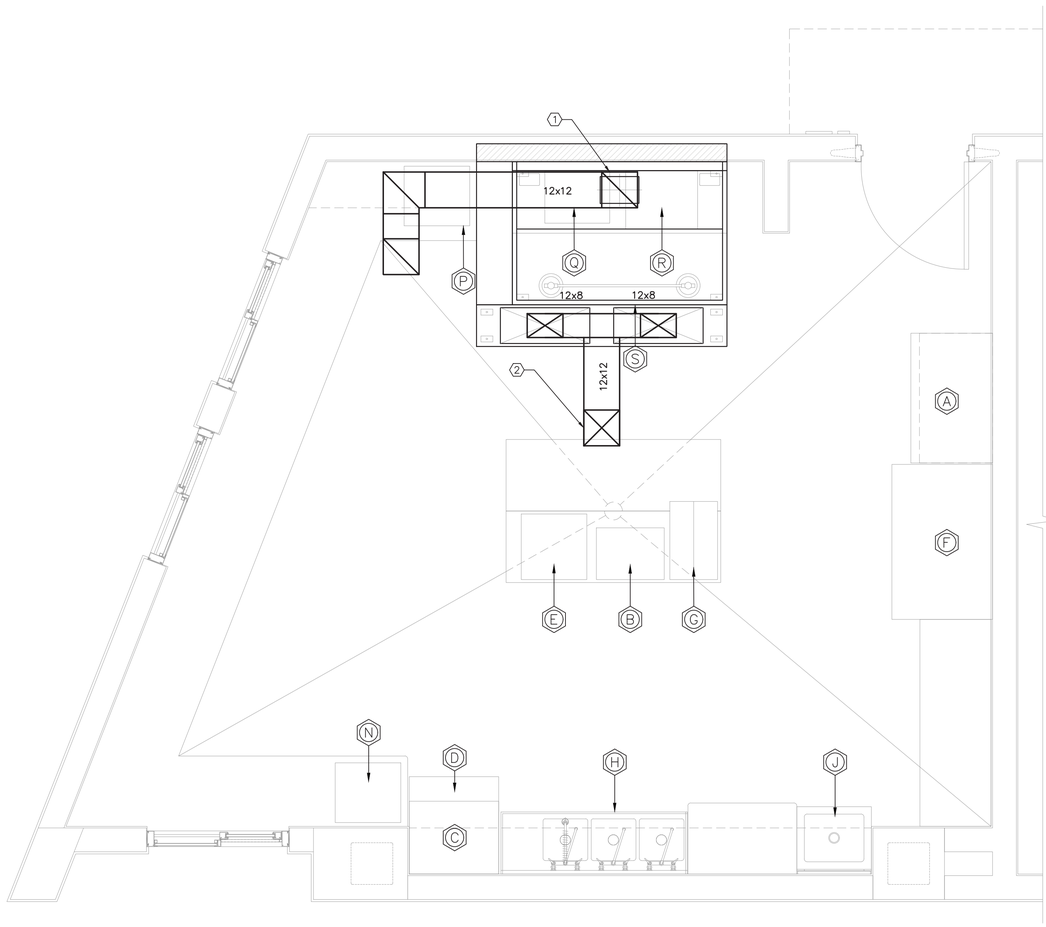
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2406

SHEET
M2.12

MECHANICAL PROPOSED ROOF PLAN



MECHANICAL PROPOSED CONCESSION ROOM PLAN

SCALE: 1/2"=1'-0"

NORTH

GENERAL NOTES:

1. REFER TO SHEET M6.1 THROUGH M6.4 FOR KITCHEN HOOD SCHEDULES.

KEY NOTES:

(1) 12"x12" METAL DUCT TO ROOF MOUNTED EXHAUST FAN (COOKING HOOD). EXHAUST DUCT TO BE OF 16 GAUGE BLACK IRON. SLOPE 1/4" PER FOOT TOWARDS HOOD OUTLET. PROVIDE ACCESS DOOR AT EACH TURN IN DUCT FOR GREASE REMOVAL. AT PENETRATION OF WALL, DUCTWORK TO BE INSULATED WITH A MINIMUM OF TWO (2) ONE AND ONE-HALF INCH LAYERS FIRE WRAP INSULATION TO PROVIDE A MINIMUM OF 2 HOUR RATING.

(2) PROVIDE 12"x12" METAL MAKEUP SUPPLY AIR DUCT FROM ROOF MOUNTED MAKEUP AIR FAN TO INLET OF KITCHEN HOOD PLENUM.

EQUIPMENT SCHEDULE

ITEM	QTY.	DESCRIPTION	SIZE	BRAND	MODEL	PROVIDED
A	1	LOW TEMP DISPLAY FREEZER & ICE CREAM FREEZER	43 1/2" x 27 3/8" x32 5/8"	EXCELLENCE INDUSTRIES	HL-11HC	OWNER
B	1	HOT DOG ROLLER KIT	22 3/4" W x 17 3/4"D x 11"H	AVANTCO	177RG30KIT10	OWNER
C	1	ICE MACHINE	30"W x 24.4"D x 22.4"H	AVANTCO	194MC50030HA	OWNER
D	1	ICE STORAGE BIN	30"W x 32.7"D x 41.6"H	AVANTCO	194BIN27530	OWNER
E	1	PRETZEL MERCHANDISER	22" x 22" x 32 5/8"	NEMCO	6423	OWNER
F	1	DUAL TEMPERATURE REFRIGERATOR FREEZER	52"W x 33 3/4"D x 84"H	BEVERAGE AIR	HBRF49HC-1-A	OWNER
G	1	ULTRA-2 SLUSHY MACHINE	16"W x 26.2"D x 31.9"H	BUNN	3400.0081	OWNER
H	1	3 - COMPARTMENT SINK	62 1/2"W x 20 1/2"D x 43 3/4"H	JOHN BOOS	E3S8-15-14R15	BY CONTRACTOR
J	1	ADA HAND SINK	(SEE PLUMBING DWGS)	-	BY CONTRACTOR	BY CONTRACTOR
K	1	-				
L	1	MOP SINK	28"W x 20"D x 12"H	REGENCY	600SM202812	BY CONTRACTOR
M	1	MOP SINK SPLASH GUARD	28"W x 20"D x 15"H	REGENCY	600SPL2028R	BY CONTRACTOR
N	1	COFFEE MACHINE				
P	1	MICROWAVE	13"W x 12"D x 6 3/4 "H	AMANA	HDC 212	
Q	1	COUNTERTOP FRYER	21 3/4"W x 17 1/2"D x 15 3/4"H	CECILWARE	EL2X15#	
R	1	COUNTERTOP GRILLE	24 1/8"W x 19 7/16"D x 12"H	AVANTCO	#177EG24N	
S	1	EXHAUST HOOD	72"W x 42"D x 24"H	GREENHECK	GHEW-72-S	

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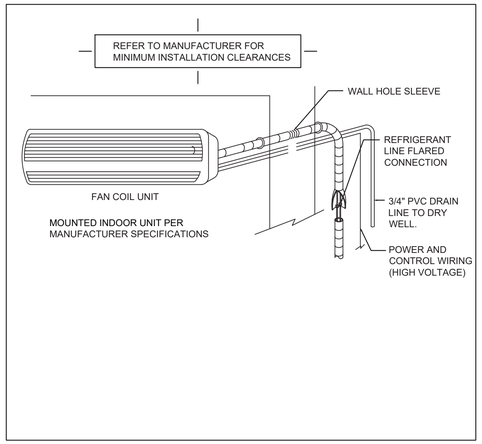
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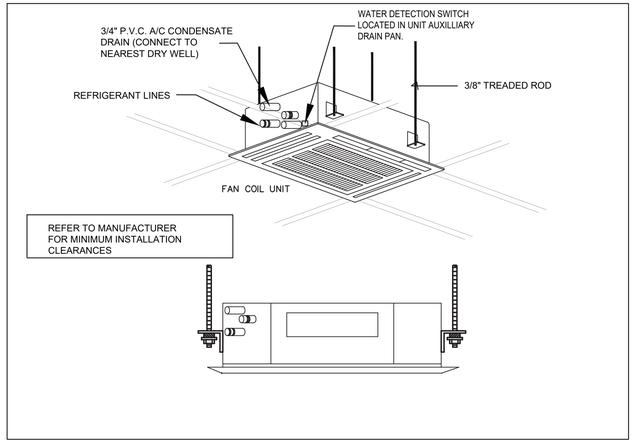
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MECHANICAL PROPOSED CONCESSION RM PLAN



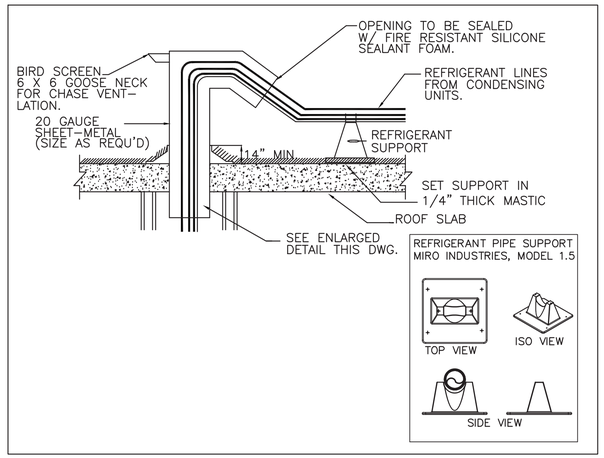
1 M5.0 INDOOR WALL MOUNTED AHU DETAIL

SCALE: N.T.S



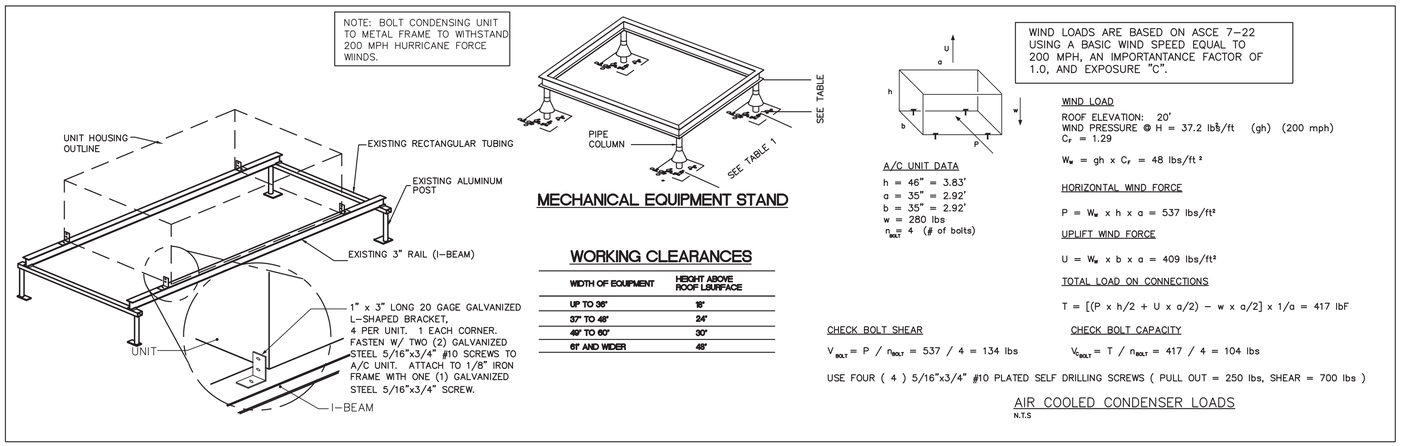
2 M5.0 CEILING CASSETTE TYPE AHU DETAIL

SCALE: N.T.S



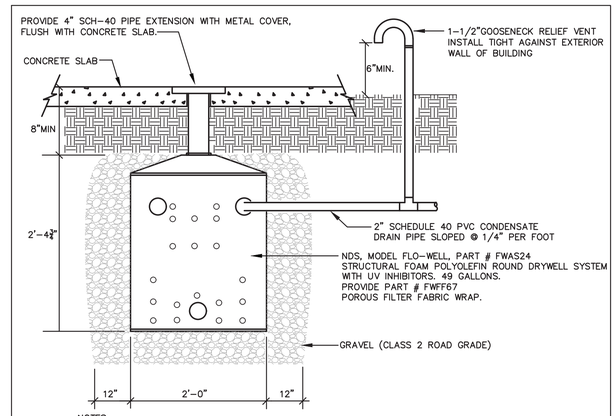
3 M5.0 REFRIGERANT PIPE RAINCOVER DETAIL

SCALE: N.T.S



4 M5.0 TYPICAL CONDENSING UNIT MOUNTING DETAIL

SCALE: N.T.S



5 M5.0 DRYWELL DETAIL

SCALE: N.T.S

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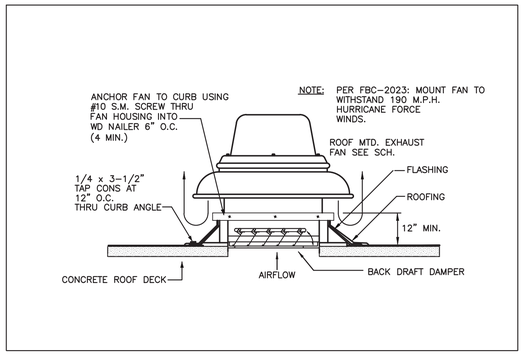
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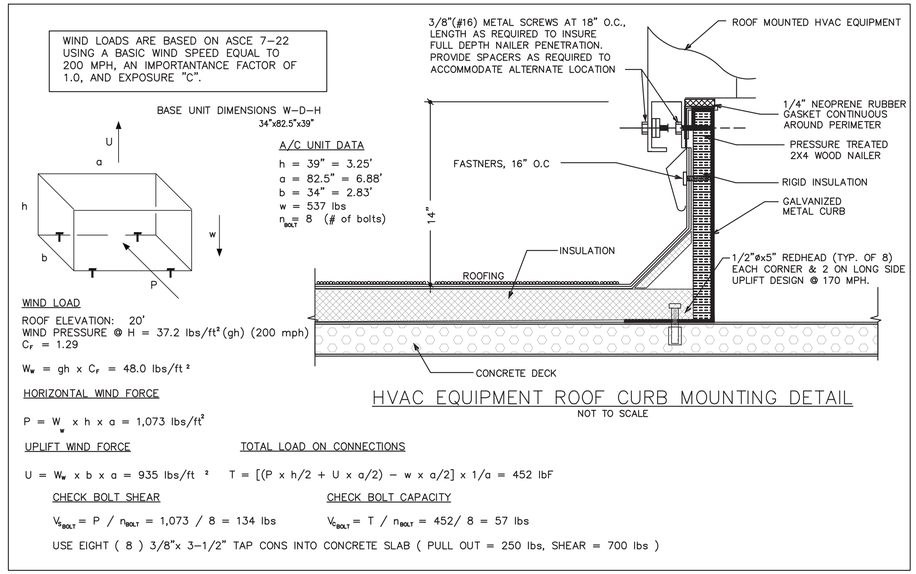
SHEET
M5.0

MECHANICAL EQUIPMENT DETAILS



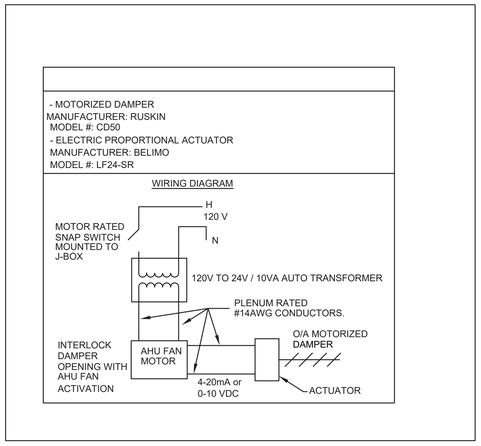
1 M5.1 ROOF FAN MOUNTING DETAIL

SCALE: N.T.S



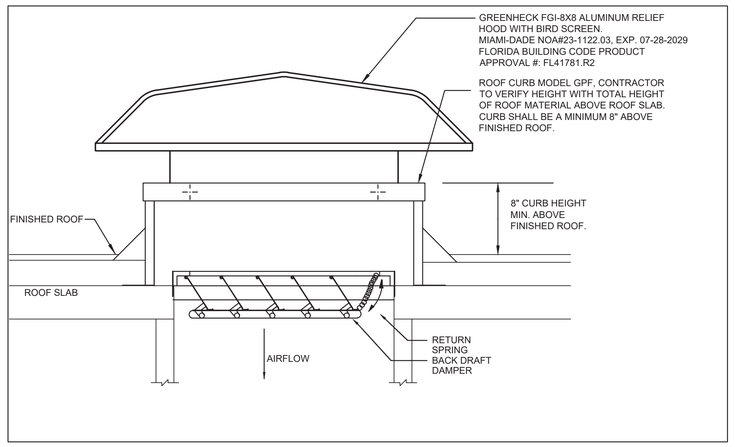
2 M5.1 HVAC CURB MOUNTING DETAIL

SCALE: N.T.S



3 M5.1 MOTORIZED DAMPER DETAIL

SCALE: N.T.S



4 M5.1 OUTSIDE AIR GRAVITY VENTILATOR DETAIL

SCALE: N.T.S

NOTE:
TO PROVIDE FBC-2023 MECHANICAL 304.11 GUARDS, EXCEPTION, A PERMANENT FALL ARREST/RESTRAINT ANCHORAGE CONNECTOR DEVICE SHALL BE PROVIDED AS MANUFACTURED BY SAFETY RAIL COMPANY MODEL SRC MOBILE FALL RESTRAINT SYSTEM.
Product: SRC - Mobile Fall Restraint System.
Weight: 705 lbs (319.8 kg).
Six SRC. bases with a center bracket and 5000 lbs (2268 kg) capacity, attachment point, forged D-ring and pins.
Breaks down for transportation. Single person fall restraint system preventing a worker from reaching a fall hazard.



5 M5.1 MOBILE FALL RESTRAINT DETAIL

SCALE: N.T.S

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M5.1

MECHANICAL EQUIPMENT DETAILS

DIAGRAM SYMBOL LEGEND	
DISPLAY	DESCRIPTION
—//—	POWER WIRE
———	CONTROL WIRE
———	REF. PIPE

PIPING AND CONTROLS		
SYMBOL	BRANCH PIPE MODEL NAME	
J1	MAC-A454JP-E	
SYMBOL	LIQUID PIPE/GAS PIPE SIZE	
P1	3/8	/ 5/8
P2	1/4	/ 1/2
P3	1/4	/ 3/8
SYMBOL	MODEL NUMBER	
MA	TAR-CT01MAU-SB	

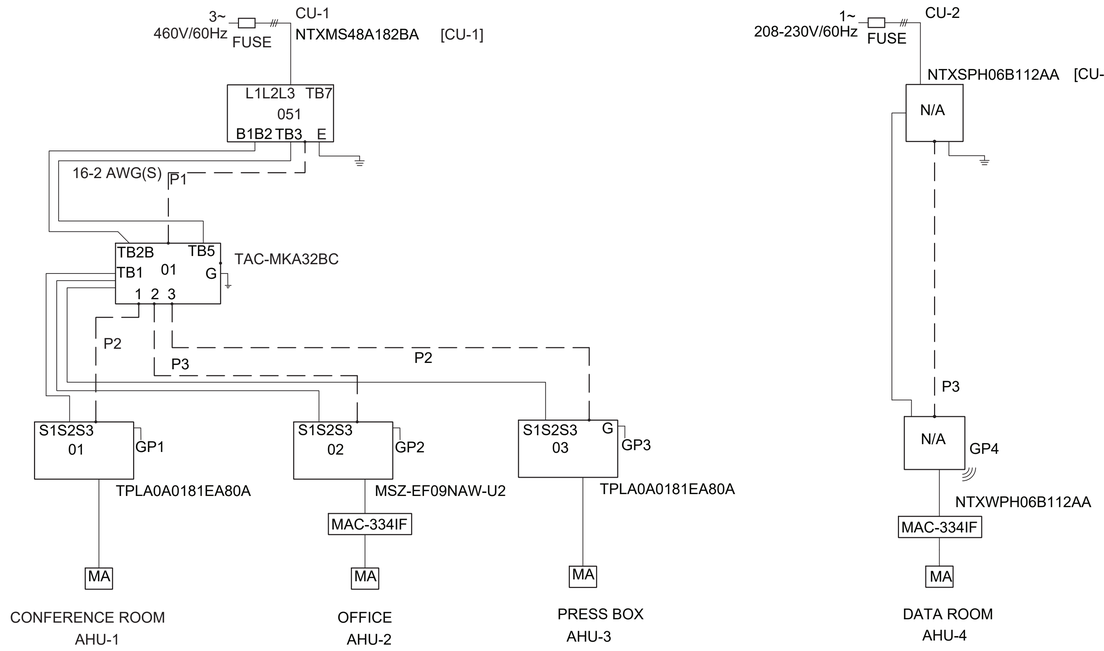
THIS DRAWING IS SCHEMATIC IN NATURE. FINAL ROUTING OF PIPING AND WIRING SHALL BE DETERMINED BY THE INSTALLING CONTRACTOR. ADDITIONAL REFRIGERANT CHARGE IS NEEDED DEPENDING ON THE SIZE AND LENGTH OF EXTENDED PIPING. PLEASE REFER TO THE AMOUNT OF PRE-CHARGE AND THE CALCULATION FORMULA WHICH IS MENTIONED IN THE DATA BOOK.

1.25 mm^2 (16 AWG) : 1.25 mm^2 (16 AWG) or more.

0.75 mm^2 (20 AWG) : BETWEEN 0.5 mm^2 (24 AWG) AND 0.75 mm^2 (20 AWG)

CITY MULTI

SYSTEM SCHEMATIC DWG.



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MECHANICAL EQUIPMENT DETAILS

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF INDOOR UNIT SCHEDULE

	System Tag	CU-1	CU-1	CU-1	CU-2
	Tag Reference	AHU-1	AHU-2	AHU-3	AHU-4
Nominal Data	Room Name	Conference Room	Office	Press Box	Data Room
	M-NET Address	1	2	3	N/A
	Model	TPLA0A0181EA80A	MSZ-EF09NAW-U2	TPLA0A0181EA80A	NTXWPH06B112AA
	Type	Ceiling-Cassette (Four-Way)	Wall -Mounted	Ceiling-Cassette (Four-Way)	Wall -Mounted
	Nominal Cooling Capacity (BTU/h)	18,000	9,000	18,000	6,000
	Nominal Heating Capacity (BTU/h)	19,000	10,900	19,000	8,700
Design Conditions	Cooling Design Entering Temp DB/WB (°F) / [Water in temp]	80.0/67.0	80.0/67.0	80.0/67.0	80.0/67.0
	Heating Design Entering Temp DB/WB (°F) / [Water in temp]	70.0	70.0	70.0	70.0
	Cooling Diversity Full/Partial (See Note 5, 6)	FULL DEMAND	FULL DEMAND	FULL DEMAND	FULL DEMAND
	Heating Diversity Full/Partial (See Note 5, 6)	FULL DEMAND	FULL DEMAND	FULL DEMAND	FULL DEMAND
	Refrig Pipe Dim Liquid/Suction (inch)	1/4 / 1/2	1/4 / 3/8	1/4 / 1/2	3/8 / 1/4
Performance Data	Cooling Total Capacity (BTU/h)	18,016.8	9,008.4	18,016.8	6,228.6
	Cooling Sensible Capacity (BTU/h)	15,346.1	8,994.7	15,346.1	5,842.4
	Heating Capacity (BTU/h)	18,580.5	10,659.3	18,580.5	10,901.7
	Estimated Cooling Coil LAT (°F) / [LWT]	55.8	59.8	55.8	67.4
	Estimated Heating Coil LAT (°F) / [LWT]	98.7	93.5	98.7	93.1
Fan / Water Flow Data	Fan Speed Setting	HIGH	HIGH	HIGH	HIGH
	Peak Fan Airflow (cfm) / [Design gpm]	600	420	600	437
	Max Fan ESP Setting 208V/230V (IN WG)				
	Sound Pressure Per Fan Speed 208V/230V (dBA)	28 - 29 - 31 - 32	21-23-29-36-42/21-24-29-37-39	28 - 29 - 31 - 32	40-36-29-23-20/42-39-29-24
Electrical Data	Voltage / Phase	208/230V/1-phase	208/230V/1-phase	208/230V/1-phase	208/230V/1-phase
	Power Cooling 208V/230V (kW)				
	Power Heating 208V/230V (kW)				
	Electrical MCA/MFS	1/15	1/	1/15	Powered by Outdoor
	Condensate Removal Rate (gal/hr)	0.33	1.11	0.33	0.03
	Actual Port Assignments				
Notes / Options	Applicable System Notes - See Notes Below	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4

Notes & Options:
1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)
2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
3 See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities
4 See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.
5 Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system.
Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply.
It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.
6 It is recommended to always base heating corrected capacity on full demand.

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF OUTDOOR UNIT SCHEDULE

	System Tag	CU-1	CU-2
	Tag Reference	CU-1	CU-2
Nominal Data	M-NET Address	51	N/A
	Model Number	NTXMSM48A182BA	NTXSPH06B112AA
	Modules	P48	
	Nominal Cooling Capacity (BTU/h)	48,000	6,000
	Nominal Heating Capacity (BTU/h)	50,000	8,700
	Cooling Efficiency (I)EER [SEER]	0 / 0	19 [33.1]
	EER2 [SEER2]	11.8	19 [32.2]
	Heating COP @ 47°F [HSPF]	3.600	0 [13.5]
	Nom System Connected Capacity (% of NOM)	93.8 %	100.0 %
Design Conditions	Design Cooling Outdoor Temp DB (°F)	92.0	92.0
	Design Heating Outdoor Temp WB (°F)	38.6	38.6
	Max Pipe Length from BC or 1st Joint (feet)	11.0	0.0
	Refrig Pipe Dim High/Low Pressure (inch) (See Note 4)	3/8 / 5/8	1/4 / 3/8
Performance Data	Corrected Cooling Total Capacity (BTU/h)	47,047.0	6,228.6
	Corrected Heating Capacity (BTU/h)	47,820.3	10,901.7
	Sound Pressure (dBA)	51/54	47/49
Compressor Data	Compressor Type	SCROLL	Rotary
	Compressor Quantity	1	1
	Preliminary Added Field Charge (See Note 5)	7.4	0.0
Electrical Data	Voltage / Phase	208/230V / 1-phase	208/230V / 1-phase
	MCA 208/230 or [460V]	42	10
	Recommended Fuse Size (RFS)	40	15
	MOCP	70	15
Notes / Options	Applicable System Notes - See Notes Below	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9

Notes & Options:
1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)
2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
3 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.
4 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twinning.
5 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.
6 Factory representatives shall review the project prior to and throughout the installation of CITY MULTI equipment
7 Factory representatives shall startup and commission CITY MULTI equipment upon completion of equipment installations
8 Factory representatives shall provide on-site assistance for the BMS integration of the CITY MULTI equipment
9 Factory representatives shall provide end-user training on the CITY MULTI equipment upon completion of the installation of equipment

MXZ Branch Box

	System Tag	CU-1
	Model Number	TAC-MKA32BC
	Connectable number of Indoor unit (Maximum)	3
	Voltage / Phase	208/230 / 1-phase
	Frequency - Hz	60
	Power Input - kW	0
	Running Current - A	0
	External Finish	Galvanized Sheets
Unit Dimension	Width - in(mm)	17-23/32 (450)
	Depth - in(mm)	11-1/32 (280)
	Height - in(mm)	6-11/16 (170)
	Weight - lb(kg)	15 (6.7)
Piping Connection	to ODU Liquid - in(mm)	3/8 (9.52)
	to ODU Gas- in(mm)	5/8 (15.88)
	to IDU Liquid - in(mm)	1/4 (6.35) x 3 {A, B, C}
	to IDU Gas- in(mm)	3/8 (9.52) x 3 {A, B, C}
	Notes / Options	1

Notes & Options:
1 The piping connection size differs according to the type and capacity of indoor units. Match the piping connection size for indoor and branch box. If the piping connection size of branch box does not match the piping connection size of indoor units, use optional different-diameter (deformed) joints to the branch box side. (Connected deformed joint directly to the branch box side.)

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DATE: 05/19/2025
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MECHANICAL EQUIPMENT SCHEDULES

HOOD INFORMATION

HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	EXHAUST						SUPPLY		HANGING WEIGHT LBS.	SECTION LOCATION
			LENGTH	WIDTH	HEIGHT			TOTAL CFM	COLLAR(S)					MUA CFM	AC CFM		
									WIDTH	LENGTH	DIA.	CFM	S.P.				
1	HOOD S	GHEW-72-S	72	48	24	430 SS WHERE EXPOSED	HEAVY	1198	9	12		1198	0.409	958		224	SINGLE

HOOD INFORMATION

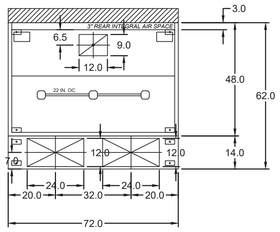
HOOD NO.	MARK	LIGHTING DETAILS			GREASE FILTRATION DETAILS				UTILITY CABINET(S)				
		FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL MATERIAL	QTY	SIZE (IN.)		LOCATION	FIRE SYSTEM		CONTROLS	
							L	H		TYPE	SIZE	MODEL	INTERFACE
1	HOOD S	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	3	42.82	BAFFLE STAINLESS STEEL	2	16	20					
						2	20						

SUPPLY PLENUM INFORMATION

HOOD NO.	MARK	POS.	TYPE	SIZE (IN.)			INSULATED	DAMPER(S)	LED LIGHT(S)		TOTAL CFM	TOTAL S.P.	COLLARS							
				L	W	H			SUPPLIED	QTY			TYPE	MOUNTING	QTY	W	L	DIA.	CFM	VEL.
1	HOOD S	FRONT	ASP	72	14	4	NO	YES	NO		958	0.01	MUA	FACTORY	2	12	24		479	240

HOOD OPTIONS

- UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #MH11726
- BACK INTEGRAL AIR SPACE - 3 IN WIDE
- FACTORY MOUNTED EXHAUST COLLAR(S)
- PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
- STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH



MARK: Hood S - SECTION 1
PLAN VIEW

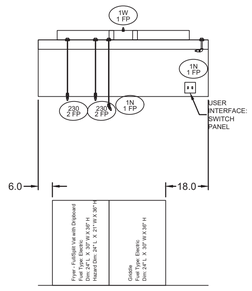
FIRE (PIPING/DROPS/NOZZLES/ETC.) SUBJECT TO CHANGE. AS-BUILT DRAWINGS CAN BE PROVIDED AT TIME OF ORDER AND INCLUDED WITH PRODUCT SHIPMENT

RELEASE PIN / SEAL / TAMPER INDICATOR

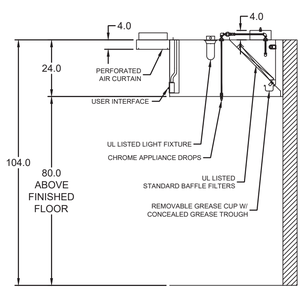
ANSUL R102

FIRE SYSTEM MARK: Fire Surpression

PIPE & CONDUIT
BY ANSUL DISTRIBUTOR



MARK: Hood S - SECTION 1
ELEVATION VIEW



MARK: Hood S
SECTION VIEW

SEPARATE PERMITS AND PLANS ARE REQUIRED FOR KITCHEN EXHAUST HOODS, AND FIRE SUPRESSION SYSTEMS.

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KITCHEN HOODS TO BE STAINLESS STEEL WITH FIRE SUPPRESSION SYSTEM.

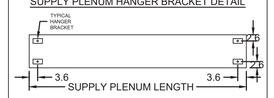
HOOD HANGING HEIGHT FOR FIRE SYSTEMS

VERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F.) IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

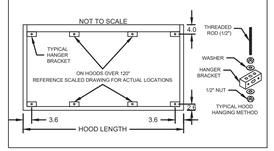
☐ RECOMMENDED HANGING HEIGHT = 80" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.

☐ OTHER HANGING HEIGHT = _____ " FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.

SUPPLY PLENUM HANGER BRACKET DETAIL



HOOD HANGER BRACKET DETAIL



POMPANO BEACH ULTIMATE SPORTS PARK

HOOD S

MARK	PROJECT 1/3/2025

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KITCHEN HOOD SCHEDULES

FIRE SYSTEM INFORMATION

MARK	MODEL	LOCATION	FLOW POINTS		SUPPLY LINE	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
			HOODS	PCU			
FIRE SURPRESSION	ANSUL R-102 WET CHEMICAL	REMOTE MOUNTED	7 UTILIZED 11 AVAILABLE		CONTINUOUS	FUSIBLE LINK	HOOD S SECTION 1

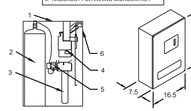
FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
METAL BLOW-OFF CAPS - INCLUDED
HOOD SUPPRESSION TANK - INCLUDED - 3 GAL. - [(1) 3.0 TANK(S)]
REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS

ANSUL R102 (WET CHEMICAL) FIRE PROTECTION SYSTEM - MODEL FSSC

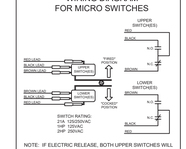
CONTROL PANEL

1. STAINLESS STEEL ENCLOSURE
2. AGENT STORAGE TANK
3. EXPELLENT GAS CARTRIDGE
4. ANSUL AUTOMAN RELEASE
5. REGULATOR
6. KNOCKOUT FOR WIRING MICROSWITCH



NOT TO SCALE

WIRING DIAGRAM FOR MICRO SWITCHES

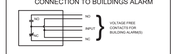


NOTE: IF ELECTRIC RELEASE, BOTH UPPER SWITCHES WILL BE USED FOR ACTUATING ADDITIONAL AUTOMANS (THEY WILL BE WIRED TO EACH OTHER AND TO THE BROWN WIRE OF THE MICRO SWITCH). IF MANUAL PULL, YOU MAY USE THE UNUTILIZED LOWER SWITCHES TO WIRE BACK TO CONTROL PANEL (DO NOT USE EITHER OF THE UPPER SWITCHES).

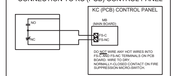
IF USING LOWER SWITCHES TO WIRE BACK TO CONTROL PANEL, NORMALLY-CLOSED WILL BE BLACK LEAD, AND NORMALLY-OPEN WILL BE BROWN LEAD.

DPDT SWITCHES PROVIDED BY MANUFACTURER MAY BE WIRED PER TYPICAL EXAMPLES SHOWN. VERIFY WITH LOCAL CODES AND EQUIPMENT SUPPLIED AS THE CONNECTION NEEDED FOR YOUR INSTALLATION.

CONNECTION TO BUILDINGS ALARM



CONNECTION TO KC (PCB) CONTROL PANEL



NOTES:
1. ——— DENOTES FIELD INSTALLATION.
2. ——— DENOTES FACTORY INSTALLATION.

NOTES:

WET CHEMICAL FIRE PROTECTION SYSTEM TO BE ANSUL R-102, DESIGNED IN COMPLIANCE WITH UL 300 REQUIREMENTS.
- VERIFICATION OF ALL COOKING EQUIPMENT MAKE, MODEL AND LOCATION REQUIRED FOR ALL FIRE PROTECTION SYSTEMS.
-ALL FIRE SYSTEM PIPING IS STANDARDLY TO THE RIGHT END OF THE HOOD UNLESS A WALL IS LOCATED ON THE RIGHT END.
-ANSUL AUTOMAN RELEASE TO BE LOCATED WITHIN 60" OF HOOD.

THE BASIC FIRE SYSTEM WILL INCLUDE THE FOLLOWING:
-GAS SHUT-OFF VALVE, IF REQUIRED, TO BE SUPPLIED BY MANUFACTURER (UP TO 2" DIAMETER AS STANDARD), AND INSTALLED BY A LICENSED PLUMBER.
-MICRO SWITCH TO BE SUPPLIED BY MANUFACTURER FOR CONNECTION TO, BUT NOT LIMITED TO, BUILDING ALARM SYSTEM(S), EXHAUST AND SUPPLY FANS AND ELECTRICAL POWER SHUT DOWN. FIELD WIRING AND CONNECTIONS TO BE PERFORMED BY A LICENSED ELECTRICIAN.

THE BASIC FIRE SYSTEM DOES NOT INCLUDE THE FOLLOWING:
-FULL DUMP TEST OTHER THAN WHT IS SPECIFIED PER THE INSTALLATION MANUAL, OR TO SATISFY A STATE OR LOCAL CODE. PERMIT AND TESTING FEES ARE NOT INCLUDED UNLESS NOTED UNDER THE EQUIPMENT SCHEDULE FOR THE FIRE SYSTEM.
-MORE THEN TWO TRIPS TO THE JOBSITE OR SPECIAL TRANSPORTATION, OR OVERNIGHT LODGING REQUIREMENTS IN REMOTE AREAS. NORMAL TRAVEL DISTANCE IS FIRST 50 MI. (80.5 KM) FROM OFFICE.
- SPECIAL CLASSES OR ADDITIONAL LABOR FOR ACCESS TO SECURITY SENSITIVE AREAS.
-INSTALLATION OF GAS SHUT-OFF VALVE.
-SPECIAL DRAWINGS REQUIRED TO SATISFY STATE OR LOCAL CODE. PLAN EXAMINATION FEES, PE OR FS APPROVAL STAMP.
-UNION LABOR, GOVERNMENT LABOR, OR PREVAILING WAGES REQUIRED FOR FINAL FIELD HOOK-UP.
-ANY AND ALL ELECTRICAL COMPONENTS/CONNECTIONS REQUIRED TO SHUT DOWN FANS, SHUT OFF DEVICE FOR ELECTRIC COOKING EQUIPMENT (SHUNT TRIP BREAKER), OR ACTIVATE AN ALARM SYSTEM, ETC.
-ANY DISMANTLING OR REASSEMBLY REQUIRED TO GAIN ACCESS TO THE FIRE SUPPRESSION PIPING LOCATED ON THE TOP OF THE HOOD.
-ROUGH-IN HIDDEN CONDUIT FOR REMOTE PULL STATION OR GAS VALVE (FLUSH MOUNTED PULL STATION).
-INSTALLATION OF MORE THAN (1) REMOTE PULL STATIONS OR DISTANCES GREATER THAN 20 FT (6.1M.).
-PARTS OR LABOR REQUIRED TO CORRECT PIPING DUE TO COOKING EQUIPMENT CHANGES OR DEVIATION FROM PLANS. OR ANY CHARGES FOR MISSING OR ADDITIONAL PARTS OTHER THEN THOSE INDICATED ON THE FIRE SUPPRESSION DETAIL.

SEPARATE PERMITS AND PLANS ARE REQUIRED FOR KITCHEN EXHAUST HOODS, AND FIRE SUPRESSION SYSTEMS.

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KITCHEN HOODS TO BE STAINLESS STEEL WITH FIRE SUPPRESSION SYSTEM.

PROJECT 1/3/2025
MARK

POMPANO BEACH ULTIMATE SPORTS PARK

FIRE SURPRESSION

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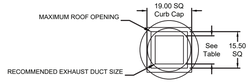
KITCHEN HOOD SCHEDULES

Direct Drive Uplast Centrifugal Roof Exhaust Fan

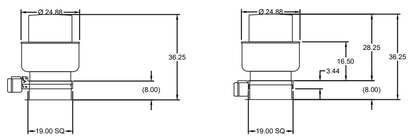
MARK INFORMATION			FAN INFORMATION					MOTOR INFORMATION					
QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)	WEIGHT (LB.)	SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*
1	KEF-1	CUE-100-VG	1,198	0.4	1,705	0.2	62	0.25	208/60/1	TN	1725	1	3.2

*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

KEF-1 : SELECTED OPTIONS AND ACCESSORIES
Standard Curb Cap Size - 19 Square
UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762)
Switch, NEMA-1, Toggle, Shipped with Unit
High Wind Rated (+/- 150 PSF Rating)
Florida Product Approval #FL13225.1 & Miami-Dade NOA #22-0606.03
Hinge, Factory Installed
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
Grease Trap (PN 475538)



DUCT TYPE	SIZE
STANDARD	12 SQ
FIRE-WRAPPED	8 SQ



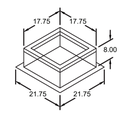
DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB. CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

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KITCHEN HOODS TO BE STAINLESS STEEL WITH FIRE SUPPRESSION SYSTEM.



PROJECT 1/3/2025

MARK

POMPANO BEACH ULTIMATE SPORTS PARK

KEF-1

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GREENHECK

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KITCHEN HOOD DRAWINGS

EQUIPMENT SCHEDULE

Non-Tempered Make-Up Air Unit — **Mark: KSF-1**

Qty	Greenheck Model	Volume	External SP	Total SP	MCA	MOP	Weight	SCCR
1	MSX-P116-H12-D1	958 CFM	0.3 in. wg	0.319 in. wg	10.4	15	537 lb	5kA

Motor Information

Size	VIC/P	Enclosure	Motor with Shaft Grounding	Motor RPM	Operating Power
1 hp	230/60/1	ODP	No	1800	0.08 hp

Outlet Sound Power By Octave Band

62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
63.2	66.9	59	59	55.9	54.5	51.9	46.8	62.1	51.1	5

• Lwa - A weighted sound power level based on ANSI S1.4
• dBA - A weighted sound pressure level base on 1/1 Hz attenuation per octave band at 0.0 ft
• Noise Criteria (NC) based on an average attenuation of 1/1.5 dB per octave band at 0.0 ft

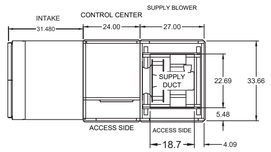
OPTIONS AND ACCESSORIES

Air Flow Arrangement: Outdoor Air Only
Weatherhood: Aluminum Mesh, 16x20x2 - (4)
Damper: Inlet
Outdoor Air Intake Position: End
Discharge Position: Bottom
Coating: Galvanized
Insulation: Double Wall - Entire Unit
Supply Fan Control: VFD
VFD Control: Constant Volume
Hinged Access
Access Side: Right-Hand
Control Center
Freeze Protection
Unit Controls: Microprocessor
Temperature Control: None
Unit Warranty: 18 Months (std.)

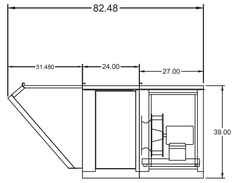
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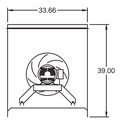
KITCHEN HOODS TO BE STAINLESS STEEL WITH FIRE SUPPRESSION SYSTEM.



PLAN VIEW



ELEVATION VIEW



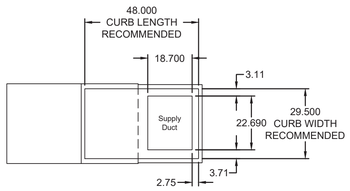
END VIEW

NOTE: Roof Opening Requirements:

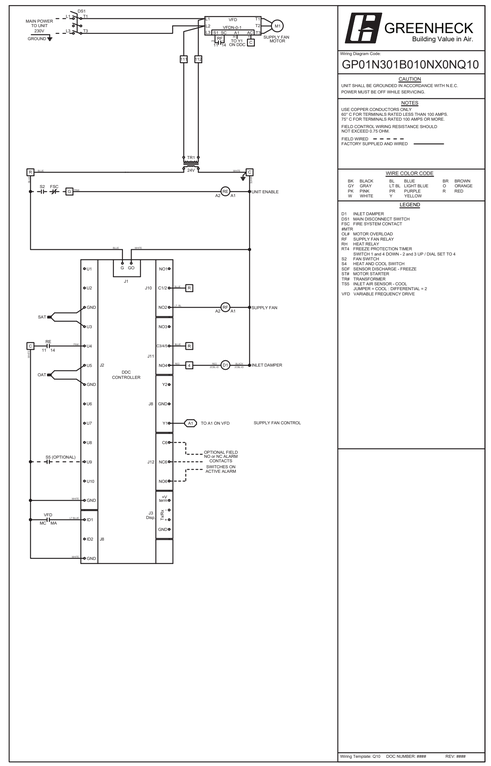
Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides.
For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb.
For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.

NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb.
This is by design, in order to help alleviate water infiltration issues.



FOOTPRINT



GREENHECK
Building Value in Air.

Wiring Diagram Data:
GP01N301B010NX0NQ10

CAUTION
UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES
USE COPPER CONDUCTORS ONLY
60° C FOR TERMINALS RATED LESS THAN 100 AMPS.
75° C FOR TERMINALS RATED 100 AMPS OR MORE.
FIELD CONNECTIONS RESISTANCE SHOULD NOT EXCEED 0.75 OHM.
FIELD WIRED
FACTORY SUPPLIED AND WIRED

WIRE COLOR CODE

BK	BLACK	BL	BLUE	BR	BROWN
GY	GRAY	LT BL	LIGHT BLUE	O	ORANGE
PK	PINK	PR	PURPLE	R	RED
W	WHITE	Y	YELLOW		

LEGEND

D1	INLET DAMPER
DS1	MAIN DISCONNECT SWITCH
FACP	FIRE SYSTEM CONTACT
AUX	
OLR	MOTOR OVERLOAD
R1	FREEZE RELAY
RH	HEAT RELAY
RT4	FREEZE PROTECTION TIMER FACTORY SET 4 DOWN - 2 and 5 UP / DIAL SET TO 4
S1	FREEZE T-STAT
S4	HEAT AND COOL SWITCH
SDF	SENSOR DISCHARGE - FREEZE
ST4	MOTOR STARTER
TB1	TERMINAL BLOCK
TS5	INLET AIR SENSOR - COOL JUMPER = COOL, DIFFERENTIAL = 2
VFD	VARIABLE FREQUENCY DRIVE

Wiring Template: Q10 DOC NUMBER: ##### REV: ####

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PROJECT 1/3/2025 | MARK | KSF-1

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KITCHEN HOOD DRAWINGS

UPBLAST CENTRIFUGAL EXHAUST VENTILATOR - ROOF MOUNTED/DIRECT DRIVE

PERFORMANCE											MOTOR INFORMATION					
MARK	MANUFACTURER	QTY.	CATALOG NUMBER	CFM	SP (IN. WC)	FAN RPM	INPUT (W)	FEG	FEI	SPEED CONTROL	HP	RPM	VOLTS/PH/HZ	ENCLOSURE	TOL	UNIT WEIGHT (LBS.)
EF-1	LOREN COOK	1	90R15DH	500	0.5	1206	99	N/A	1.39	FSC	1/8	1550	115/1/60	OPD-SE	YES	75
EF-2	LOREN COOK	1	90R15DH	600	0.5	1415	117	N/A	1.28	FSC	1/8	1550	115/1/60	OPD-SE	YES	62

STANDARD CONSTRUCTION FEATURES:
- ALL ALUMINUM HOUSING
- BACKWARD INCLINED ALL ALUMINUM WHEEL
- TWO PIECE TO CAP WITH STAINLESS STEEL QUICK RELEASE LATCHES (SIZE 120-300)
- WELDED CURB CAP CORNERS
- BIRDSCREEN
- PERMANENTLY LUBRICATED BALL BEARING MOTORS
- CORROSION RESISTANT FASTENERS
- TRANSIT TESTED PACKAGING

ACCESSORIES
- DISCONNECT NEMA 4X
- BDM-12 24V
- ROOF CURB RCA 16 24H-C+T-N
- EPOXY POWDER W/ UV
- HURRICANE RATED CONSTRUCTION: MIAMI-DADE COUNTY, FL NOA 23-0815.03 / 11-13-2028

AIR DISTRIBUTION SCHEDULE

SYMBOL	SERVICE	DESCRIPTION	MFG. MODEL NO.
B	CEILING RETURN GRILLE	LOUVERED RETURN CEILING GRILLE ALUMINUM CONSTRUCTION, FLUSH FACE PANEL FINISH SHALL BE WHITE ENAMEL. 3/4" SPACING, SURFACE MOUNTED. 30° DEFLECTION.	TITUS (OR EQUAL) INDUSTRIES INC. MODEL NO. 350FL

HVAC DESIGN REQUIRES	YES	NO
DUCT SMOKE DETECTOR		X
FIRE DAMPERS		X
RADIANT DAMPER		X
FIRE RATED ENCLOSURE		X
FIRE RATED ROOF/FLOOR CEILING ASSEMBLY		X
FIRE STOPPING		X

OUTSIDE AIR CALCULATION

AS PER FLORIDA MECHANICAL CODE, TABLE 403.3,
OUTDOOR AIR REQUIREMENTS ARE:

CONFERENCE ROOM – AHU-1

TOTAL AREA = 429 SQ. FT.
TOTAL OCCUPANCY = 10 PEOPLE
TOTAL OUTSIDE AIR = 10 PEOPLE X (5 CFM PER PERSON) = 50 CFM
TOTAL OUTSIDE AIR = 1105 SQ. FT. X (0.06 CFM/FT) =26 CFM
TOTAL OUTSIDE AIR REQUIRED = 76 CFM

PRESS BOX – AHU-3

TOTAL AREA = 327 SQ. FT.
TOTAL OCCUPANCY = 2 PEOPLE
TOTAL OUTSIDE AIR = 2 PEOPLE X (5 CFM PER PERSON) = 10 CFM
TOTAL OUTSIDE AIR = 327 SQ. FT. X (0.06 CFM/FT) = 20 CFM
TOTAL OUTSIDE AIR REQUIRED = 30 CFM

EXHAUST AIR CALCULATION

AS PER FLORIDA MECHANICAL CODE, TABLE 403.3,
EXHAUST AIR REQUIREMENTS ARE:

EF-1 RR1, RR2, RR3, RR4 TOILETS

NUMBER OF FIXTURES = 4 TOILET
TOTAL EXHAUST AIR REQUIRED = 4 TOILET X (70 CFM/TOILET) = 300 CFM
PROVIDED EXHAUST CFM = 500 CFM (TIME CLOCK)

EF-2 RR5, RR6, RR7

NUMBER OF FIXTURES = 3 TOILET
TOTAL EXHAUST AIR REQUIRED = 3 TOILET X (70 CFM/TOILET) = 225 CFM
PROVIDED EXHAUST CFM = 600 CFM (TIME CLOCK)



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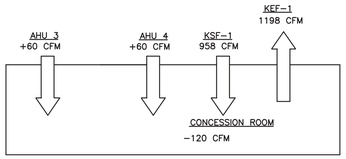
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MECHANICAL EQUIPMENT SCHEDULES



AIR BALANCE SCHEDULE

MARK	SUPPLY AIR	RETURN AIR	OUTSIDE AIR	EXHAUST AIR	RESULTING PRESSURE
AHU No. 1	636	576	60	–	+60
AHU No. 2	636	576	60	–	+60
KEF-1				1198	-1,198
KSF-1	958				+958
TOTALS					-120

* INTERMITTENT OPERATION.

EXHAUST DUCT CFM CALCULATIONS
UTILIZED/HOODS # 1

TOTAL EXHAUST CFM – 1,198
VELOCITY IN DUCT:
VELOCITY = CFM/AREA
CFM= 1,198
AREA= 14x14/144= 1.36 SQ FT
VELOCITY=
1,198/1.36 SQ FT= 880 FPM

HOOD# 1 SYSTEM

AIR BALANCE NOTE:

TOTAL EXHAUST = HOOD EXHAUST – HOOD SUPPLY
TOTAL EXHAUST = 1,198 CFM – 958 CFM
TOTAL EXHAUST = 240 CFM O/A NEEDED FROM HVAC

NOTE:

KITCHEN EXHAUST DUCT HAS BEEN SIZED TO MAINTAIN AN AIR VELOCITY GREATER THAN 500 FPM AND LESS THAN 2500 FPM. ANY MODIFICATIONS, OFFSETS, TRANSITIONS IN THE FIELD MUST COMPLY WITH THIS VELOCITY

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MECHANICAL EQUIPMENT SCHEDULES



POWER SYMBOLS

- SINGLE RECEPTACLE - WALL, CEILING, FLOOR
- DUPLEX RECEPTACLE - WALL, CEILING, FLOOR, SURFACE
- DOUBLE DUPLEX RECEPTACLE - WALL, CEILING, FLOOR
- RECEPTACLE, 220V, 3 PHASE - SINGLE, DUPLEX
- RECEPTACLE, 240/208V, 1 PHASE - WALL, FLOOR
- RECEPTACLE, 480V, 3 PHASE - WALL, FLOOR

RECEPTACLE IDENTIFIERS:

"A"	ABOVE COUNTER
"C"	CEILING
"GFCI"	GROUND FAULT CIRCUIT INTERRUPTER
"WP"	WEATHERPROOF

- POWER POLE - NEW / EXISTING
- POWER AND DATA FURNITURE FEED
- UTILITY METER
- DIGITAL METER
- MAIN DISTRIBUTION PANEL
- RECESSED ELECTRICAL PANEL - NEW / EXISTING
- SURFACE MOUNTED ELECTRICAL PANEL - NEW / EXISTING
- TELEPHONE TERMINAL CABINET
- CONTROL PANEL
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- MOTOR STARTER
- COMBINATION DISCONNECT SWITCH / MOTOR STARTER
- SINGLE-PHASE MOTOR
- THREE-PHASE MOTOR
- VARIABLE FREQUENCY DRIVE
- PUSHBUTTON - 1 BUTTON, 2 BUTTON, 3 BUTTON
- PUSHBUTTON - EMERGENCY OFF

LIGHTING SYMBOLS

- POLE MOUNTED FIXTURE - SINGLE HEAD
- POLE MOUNTED FIXTURE - DOUBLE HEAD
- RECTANGULAR CEILING FIXTURE
- RECTANGULAR EMERGENCY CEILING FIXTURE
- RECTANGULAR WALL MOUNTED FIXTURE
- RECTANGULAR WALL MOUNTED EMERGENCY FIXTURE
- ROUND/MISCELLANEOUS LIGHT FIXTURE - CEILING / WALL MOUNTED
- ROUND/MISCELLANEOUS EMERGENCY LIGHT FIXTURE - CEILING / WALL MOUNTED
- WALL WASHER FIXTURE
- SPOT LIGHT FIXTURE
- TRACK LIGHTING
- LINEAR FIXTURE
- EMERGENCY LINEAR FIXTURE
- WALL MOUNTED LINEAR FIXTURE
- WALL MOUNTED EMERGENCY LINEAR FIXTURE
- EXIT LIGHT - CEILING / WALL MOUNTED, HATCH INDICATES NUMBER OF FACES, ARROWS AS INDICATED ON PLANS
- BATTERY OPERATED EMERGENCY LIGHTING UNIT
- COMBINATION EMERGENCY/EXIT LIGHTING UNIT
- DUAL REMOTE HEAD EMERGENCY UNIT - CEILING/WALL MOUNT
- EMERGENCY LIGHTING UNIT BATTERY
- "NL" 'NL' INDICATES UNSWITCHED NIGHT LIGHT

WIRING SYMBOLS

- CONDUIT RUN
- EXISTING CONDUIT / WIRE
- CONDUIT / WIRE TO BE REMOVED (DEMOLITION)
- CONDUIT UP
- CONDUIT DOWN
- B-1 CONDUIT HOMERUN TO PANEL
- FEEDER NUMBER, REFER TO BRANCH WIRING SCHEDULE
- G UNDERGROUND GROUND WIRE
- G ABOVE GROUND GROUND WIRE/LIGHTNING PROTECTION CONDUCTOR
- T UNDERGROUND TELECOMMUNICATIONS CONDUIT / DUCT
- E UNDERGROUND ELECTRICAL CONDUIT / DUCT
- J JUNCTION BOX
- PB PULL BOX
- GROUND ROD
- TAP
- LIGHTNING PROTECTION AIR TERMINAL
- LIGHTNING PROTECTION BOND

FIRE ALARM SYMBOLS

- FACP FIRE ALARM CONTROL PANEL
- FAA FIRE ALARM REMOTE ANNUNCIATOR PANEL
- FIRE FIGHTER'S PHONE
- F FIRE ALARM PULL STATION
- H FIRE ALARM HORN - WALL / CEILING MOUNTED
- F FIRE ALARM SPEAKER - WALL / CEILING MOUNTED
- X FIRE ALARM COMBO SPEAKER/STROBE OR HORN/STROBE PER PLANS - WALL / CEILING MOUNTED
- X FIRE ALARM STROBE - WALL / CEILING MOUNTED
- H HEAT DETECTOR
- S SMOKE DETECTOR
- D SMOKE DETECTOR - DUCT MOUNTED
- RTS REMOTE STATION FOR DUCT DETECTOR
- PIV POST INDICATOR VALVE
- FS FLOW SWITCH
- TS TAMPER SWITCH

SWITCHING SYMBOLS

- $ SINGLE POLE TOGGLE SWITCH
- $2 DOUBLE POLE SWITCH
- $3 THREE-WAY SWITCH
- $4 FOUR-WAY SWITCH
- $D DIMMER SWITCH
- $F FAN CONTROLLER
- $LV LOW VOLTAGE SWITCH
- $MC MOMENTARY CONTACT SWITCH
- $OS WALL MOUNTED OCCUPANCY SENSOR WITH INTEGRAL SWITCH
- $T TIMER SWITCH
- $WP WEATHERPROOF SWITCH
- $PS MOTORIZED PROJECTION SCREEN SWITCH
- $HP HORSEPOWER RATED SWITCH
- D DIMMING STATION
- OS OCCUPANCY SENSOR - WALL / CEILING MOUNTED
- PC PHOTO CELL
- C LIGHTING CONTACTOR

SECURITY SYMBOLS

- SCP SECURITY CONTROL PANEL
- F FIXED CLOSED CIRCUIT TV CAMERA
- PTZ PTZ CLOSED CIRCUIT TV CAMERA
- D DOOR INTERFACE BOX
- K SECURITY KEYPAD
- DC DOOR CONTACT
- ES ELECTRIC DOOR STRIKE
- MD MOTION DETECTOR
- ML MAGNETIC LOCK
- CR CARD READER
- DA DOOR ALARM
- DH DOOR HOLDER
- B DOOR BELL
- B DOOR BUZZER

TELECOM & A/V SYMBOLS

- TELEPHONE OUTLET - WALL / FLOOR MOUNTED
- DATA OUTLET - WALL / FLOOR MOUNTED
- DUAL TELEPHONE/DATA OUTLET - WALL / FLOOR MOUNTED
- M MICROPHONE OUTLET - WALL / FLOOR MOUNTED
- S SPEAKER - WALL / FLOOR MOUNTED
- VC VOLUME CONTROL
- TV TELEVISION OUTLET IN RECESSED BOX WITH RJ45 AND COAXIAL OUTLETS
- IC INTERCOM
- MI MASTER INTERCOM AND DIRECTORY UNIT
- IP CLOCK - WALL / CEILING MOUNT

ELECTRICAL GENERAL NOTES

1. CONTRACTOR SHALL COMPLY WITH THE LATEST EDITIONS OF ALL RELEVANT NFPA AND FBC REQUIREMENTS.
2. DRAWINGS ARE DIAGRAMMATICAL AND INDICATE DESIGN INTENT.
3. DO NOT SCALE DRAWINGS.
4. FIELD VERIFY EXISTING CONDITIONS AND ACTUAL DIMENSIONS PRIOR TO START OF WORK.
5. THOROUGHLY COORDINATE ELECTRICAL WORK WITH OTHER TRADES TO AVOID PHYSICAL CONFLICTS AND CONFLICTS WITH WORK SEQUENCE.
6. REFER TO ARCHITECTURAL DRAWINGS FOR WALLS WITH SPECIAL WALL FINISHES. COORDINATE OVERALL WALL COVERING THICKNESS AND PROVIDE PLASTER RING WITH APPROPRIATE DEPTH.
7. ALL CONDUITS SHALL CONTAIN PROPERLY SIZED GROUND WIRE.
8. ALL CONDUIT AND WIRING SHALL BE CONCEALED IN WALL OR CEILING CAVITY EXCEPT FOR EXISTING BLOCK WALLS AND AREAS WITH EXPOSED CEILING CONSTRUCTION. ALL AREAS WITH NEW WALLS OR RECONSTRUCTED WALLS SHALL HAVE CONDUIT AND WIRING CONCEALED IN WALL CAVITY. EXPOSED CONDUIT IN HIGH BAY STORAGE, MAINTENANCE AND DELIVERY STORAGE SHALL BE RGS UP TO 10 FT HEIGHT ABOVE FINISHED FLOOR, WHERE MOUNTED EXPOSED.
9. THE ELECTRICAL CONTRACTOR MAY, AT THEIR OPTION, REUSE A PORTION OR ALL OF EXISTING MULTI-BRANCH CIRCUIT WIRING AND/OR CONDUIT(S) PROVIDED THEY MEET ALL THE REQUIREMENTS OF THE NEW INSTALLATIONS (I.E., APPROPRIATE ROUTING, CONDUIT SIZE, CONDUIT TYPE, WIRE SIZE FOR LENGTH WITH DERATING, ETC.).
10. BRANCH CIRCUIT WIRING SHALL BE DERATED PER NEC 310-15. DUE TO HARMONIC LOADING. THE NEUTRAL CONDUCTOR SHALL BE CONSIDERED AS CURRENT CARRYING CONDUCTOR FOR DERATING PURPOSES.
11. MAIN BRANCH CIRCUIT CONDUIT RUNS SHALL BE EMT. FLEXIBLE CONDUIT OR MC CABLE MAY BE USED FOR FINAL RUN TO POWER POLE (MAXIMUM OF 10 FEET LENGTH) OR FOR FISHING DOWN EXISTING WALLS. REFER TO SPECIFICATIONS FOR ADDITIONAL RACEWAY RESTRICTIONS.
12. WHERE GFCI PROTECTION IS INDICATED, A GFCI TYPE RECEPTACLE SHALL BE PROVIDED AT EACH LOCATION. LOAD SIDE PROTECTION OF DOWN STREAM DEVICES WILL NOT BE ACCEPTABLE. GFCI RECEPTACLES SHALL BE READILY ACCESSIBLE.
13. RECEPTACLES WITHIN 6 FT OF SINKS SHALL BE GFCI.
14. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE POWER FEED(S) TO ANY/ALL MECHANICAL EQUIPMENT THAT REQUIRE A POWER FEED, UNLESS OTHERWISE NOTED. COORDINATE WITH INFORMATION ON MECHANICAL DRAWINGS AND MECHANICAL TRADES ON SITE.
15. REFER TO ARCHITECTURAL DRAWINGS FOR WALLS TO BE PROVIDED WITH INSULATION FOR ACOUSTICAL PURPOSES.
16. ALL EMPTY CONDUITS SHALL BE DEBURRED, CLEANED, TAGGED AND PROVIDED WITH A NYLON PULL STRING AND CAPPED AT OPEN ENDS NOT TERMINATED ANY WHERE.
17. IN AREAS WITH GYPSUM BOARD CEILINGS THE ELECTRICAL TRADES SHALL ROUTE CONDUIT AND POSITION PULL/JUNCTION BOXES TO ALLOW ACCESS THRU ACCESS PANELS BY ARCHITECTURAL TRADES, WHERE POSSIBLE. WHERE ADDITIONAL ACCESS PANELS ARE REQUIRED FOR ELECTRICAL EQUIPMENT, THE ELECTRICAL TRADES SHALL INCLUDE THE ACCESS PANEL IN THE BID. ACCESS PANEL SHALL BE INSTALLED BY THE CEILING INSTALLER. ADDITIONAL ACCESS PANEL LOCATIONS SHALL BE APPROVED BY THE ARCHITECT.
18. MOUNTING HEIGHTS OF ELECTRICAL DEVICES ARE TO CENTER OF DEVICE UNLESS OTHERWISE NOTED.
19. ELECTRICAL DEVICE OUTLETS SHALL NOT BE LOCATED BACK TO BACK WITHIN THE SAME STUD SPACE IN INTERIOR WALLS, WHICH ARE INSULATED. THE DEVICES IN ONE ROOM SHALL BE OFFSET TO THE NEXT STUD SPACE.
20. MULTIGANG DEVICES SHALL BE GANGED UNDER SINGLE MULTIGANG COVERPLATE.
21. WHERE ELECTRICAL DEVICES ARE INDICATED ON A COLUMN, THE DEVICE SHALL BE CENTERED ON THE COLUMN SURFACE.
22. ALL EMERGENCY WIRING SHALL BE IN SEPARATE CONDUIT FROM NON-EMERGENCY WIRING (EXCEPT AT J-BOX AND FINAL CONNECTION TO LIGHT FIXTURES).
23. REFER TO ONE LINE DIAGRAM FOR CONDUIT AND WIRE SIZES.
24. PROVIDE CONDUIT CONNECTOR OR BUSHING ON END OF CONDUIT FOR ALL CONDUIT STUB OUTS.
25. WALL COMMUNICATION OUTLET ROUGH IN SHALL BE PROVIDED WITH 2 GANG BACKBOX, REDUCING 1 GANG PLASTER RING, ¾" CONDUIT STUB TO ACCESSIBLE CEILING SPACE AND NYLON PULL STRING.
35. ALL 120 VOLT BRANCH CIRCUITS SHALL BE PROVIDED WITH SEPARATE FULL SIZE NEUTRAL CONDUCTORS.
36. 120 VOLT BRANCH CIRCUITS MAY SHARE FULL SIZE GROUND WITH UP TO 3 CIRCUITS WHICH SERVE SIMILAR LOADS.
37. CIRCUIT NUMBERS ARE INDICATED FOR CIRCUIT QUANTITIES AND GENERAL CONFIGURATION ONLY. ACTUAL CIRCUIT NUMBERS MAY VARY. FIELD VERIFY. PROVIDE ACTUAL CIRCUIT NUMBERS ON AS-BUILTS.
38. PROVIDE FIELD LABELING OF ALL NEW BRANCH CIRCUITS AND ALL EXISTING RECEPTACLE DEVICES TO INDICATE PANEL BOARD AND CIRCUIT NUMBER OF SOURCE. PROVIDE LABELING ON DEVICE COVER PLATE OR J-BOX COVER.
39. ELECTRICAL TRADES TO VERIFY EXISTING CIRCUITS WHICH REMAIN AND QUANTITY OF AVAILABLE SPARE CIRCUITS IN EACH PANEL BOARD AFTER PRE-BID/PRE-DEMOLITION INVESTIGATION IS COMPLETE. IF QUANTITY OF AVAILABLE CIRCUITS IS LESS THAN QUANTITY INDICATED TO BE USED ON NEW WORK PLANS, REVIEW CIRCUITING WITH OWNER'S REPRESENTATIVE AND ENGINEER FOR REVISION OF CIRCUIT QUANTITIES AND LOAD SERVED. CIRCUIT QUANTITY ADJUSTMENTS TO BE MADE BASED ON UNIT PRICING.
40. CONDUCTORS SIZED FOR VOLTAGE DROP THAT ARE TOO LARGE FOR LUGS SHALL BE REDUCED USING STRAIGHT PIN TERMINALS WITH STRANDED PIGTAIL AND INSULATING COVERS. USE STRANDED BI-METALLIC PIN TERMINALS.
41. PROVIDE PULL BOXES AS REQUIRED TO INTERCEPT FEEDER AND BRANCH CIRCUITS AND EXTEND TO NEW PANEL LOCATION. REFER TO SPECIFICATIONS FOR APPROVED SPLICING METHODS. LOCATE PULL BOXES IN JOIST.
42. COORDINATE SEQUENCING AND TEMPORARY REQUIREMENTS TO MAINTAIN LIGHTING SYSTEM OPERATION DURING CONSTRUCTION.
43. THE ELECTRICAL TRADES SHALL PROVIDE FIELD INVESTIGATION TO VISUALLY AND ELECTRICALLY TRACE BRANCH CIRCUITS, WHICH ARE TO BE REMOVED. IF BRANCH CIRCUITS SERVE LIGHTING OR EQUIPMENT OUTSIDE OF THE PROJECT SCOPE, THE EXISTING BRANCH CIRCUIT WIRING SHALL BE MAINTAINED TO SERVE THESE LOADS.

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ELECTRICAL LEGEND & GENERAL NOTES

ELECTRICAL SPECIFICATIONS

GENERAL:

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO BE FAMILIARIZED WITH THE PROJECT AND ALL ASPECTS OF THE WORK TO BE PERFORMED.
2. ALL WORK SHALL CONFORM TO AND COMPLY WITH APPLICABLE BUILDING CODES: REFER TO ARCHITECTURAL COVER SHEET FOR A LIST OF CODES BEING USED ON THIS PROJECT. NOTE: CONTRACTOR SHALL ALSO VERIFY WITH LOCAL AUTHORITY HAVING JURISDICTION AND LOCAL FIRE MARSHAL FOR ANY REQUIREMENTS NOT LISTED IN REQUIRED CODES AND REFERENCES.
3. INSTALL ALL WORK IN A NEAT AND WORKMANLIKE MANNER.
4. GUARANTEE THE WORK FOR A PERIOD OF ONE YEAR.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS INCLUDING ARRANGING ALL INSPECTIONS REQUIRED FOR THE WORK TO BE UNDERTAKEN AND ACCEPTED.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANIES FOR ALL FINAL SERVICE CONNECTION REQUIREMENTS. THE CONTRACTOR SHALL INCLUDE IN CONTRACT PRICE ANY FEES REQUIRED BY UTILITY COMPANIES FOR SERVICE CONNECTIONS.
7. CUT ALL SURFACES AS REQUIRED FOR THE INSTALLATION AND PATCH TO MATCH EXISTING CONDITIONS AND FINISH.
8. ALL MATERIALS AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE TESTED AND LISTED BY UNDERWRITERS LABORATORIES (UL).
9. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED PER NEMA STANDARDS, APPLICABLE ANSI STANDARDS AND IEEE STANDARDS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL CONNECTIONS TO ALL EQUIPMENT REQUIRING POWER.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS, PRODUCT DATA AND WIRING DIAGRAMS AS REQUIRED BY EACH SECTION. PRODUCT DATA SHALL BE MARKED TO IDENTIFY THE EXACT MODEL NUMBER AND OPTIONS THAT ARE TO BE PROVIDED. SHOP DRAWINGS SHALL BE SUBMITTED ELECTRONICALLY TO THE ARCHITECT FOR ENGINEER'S APPROVAL. ONCE THE ENGINEER RECEIVES THE SUBMITTAL, THE REVIEW PROCESS WILL REQUIRE FIVE (5) BUSINESS DAYS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING OPERATION AND MAINTENANCE (O&M) MANUALS. THESE MANUALS SHALL BE A VINYL THREE RING BINDER WHICH IS TO BE LABELED WITH THE OWNER'S PROJECT NAME AND NUMBER ON THE BINDER. THE O&M MANUALS SHALL INCLUDE PRODUCT DATA CUT SHEETS, MAINTENANCE REQUIREMENTS, PROGRAMMING INSTRUCTIONS AND WARRANTIES OF ALL EQUIPMENT.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL CLEANING OF EQUIPMENT INSTALLED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF EXISTING ELECTRICAL EQUIPMENT TO BE REMOVED. ALL MATERIALS SHALL BE REMOVED FROM SITE AND DISPOSED OF PROPERLY BY CONTRACTOR.
16. ALL PENETRATIONS THROUGH FIRE WALLS SHALL BE PROPERLY FIRE SEALED TO CONFORM WITH UL SYSTEM NUMBERS AS LISTED IN VOLUME 2 OF THE UL FIRE RESISTANCE DIRECTORY FOR EACH DIFFERENT INTENDED PROJECT APPLICATION, SUCH AS CABLE TRAY PENETRATION AND CONDUIT PENETRATIONS.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ACCESS DOORS AND FRAMES AT LOCATIONS OF EQUIPMENT REQUIRING ACCESS WHICH IS CONCEALED IN WALLS OR CEILINGS.

RACEWAY AND BOXES:

1. UNLESS NOTED OTHERWISE, USE EMT CONDUIT WITH STEEL COMPRESSION FITTINGS.
2. THE MINIMUM SIZE OF CONDUIT SHALL BE 3/4".
3. ALL RACEWAY SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
4. UNLESS NOTED OTHERWISE USE RIGID GALVANIZED STEEL CONDUIT UP TO 10' A.F.F. OUTDOORS. USE GALVANIZED IMC OVER 10'. PROVIDE EXPANSION COUPLINGS AS REQUIRED.
5. USE PVC SCHEDULE 40 CONDUIT UNDERGROUND.
6. FLEXIBLE METAL CONDUIT SHALL BE USED FOR THE FINAL CONNECTIONS TO ROTATING MACHINERY, VIBRATING EQUIPMENT AND LIGHTING FIXTURES. 3/8" SIZE IS ALLOWED FOR CONNECTIONS TO LIGHTING FIXTURES. USE LIQUIDTIGHT FOR OUTDOOR USE OR FOR CONNECTIONS TO MOTORS OR EQUIPMENT IN AREAS WHERE THE RUPTURE OF A PIPE COULD SPRAY OR LEAK ON THE CONDUIT, SUCH AS IN MECHANICAL ROOMS.
7. PROVIDE PULL AND JUNCTION BOXES AS REQUIRED.
8. ALL OUTLET BOXES SHALL BE 4" SQUARE OR 4-11/16" SQUARE, GALVANIZED METAL. INSTALL TRUE AND PLUMB WITH THE BUILDING FINISH. INSTALL SECURELY AND INDEPENDENT OF RACEWAY. PROVIDE SINGLE OR MULTIGANG RINGS AS REQUIRED. LIGHTING FIXTURE BOXES MAY BE 4" OCTAGONAL.
9. INSTALL ALL RACEWAYS PARALLEL AND PERPENDICULAR TO THE BUILDING WALLS, FLOOR AND CEILING.
10. ALL BOXES FOR RECEPTACLES, TELEPHONE AND DATA OUTLETS SHALL BE MINIMUM 2-1/8" DEEP. ALL BOXES FOR SWITCHES, LOCAL LIGHT CONTROL, AND RECESSED LIGHT FIXTURES TO BE MINIMUM 1-1/2" DEEP.
11. PROVIDE BLANK COVERS ON ALL BOXES THAT ARE NOT TO RECEIVE A DEVICE.
12. ALL RACEWAY SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE USING APPROVED CLAMPS, RODS, FITTINGS, ETC. DO NOT SUPPORT FROM HUNG CEILING WIRES OR THE WORK OF OTHER TRADES. SUPPORT AT INTERVALS AS REQUIRED BY NEC.
13. UNDERGROUND CONDUIT WALL PENETRATIONS SHALL BE SEALED WITH "WS" STEEL SLEEVE AND RUBBER LINKS WHICH WILL CREATE A WATERTIGHT SEAL. SLEEVES AND SEALS SHALL BE PSI-THUNDERLINE "LINK-SEAL" MODEL C.
14. USE STEEL SURFACE RACEWAY (2 SECTIONS) ONE SECTION FOR POWER AND ONE FOR LOW VOLTAGE IN AREAS WHERE CONDUITS MAY NOT BE ROUTED CONCEALED DUE TO EXISTING WALL/CEILING CONSTRUCTION. ALL USE OF SURFACE RACEWAYS MUST BE APPROVED BY OWNER/ARCHITECT PRIOR TO INSTALLATION. SURFACE RACEWAYS SHALL BE EQUAL TO WIREMOLD. ALL SURFACE RACEWAYS PRODUCT DATA CUT SHEETS MUST BE SUBMITTED FOR APPROVAL TO ARCHITECT/ENGINEER.

LUMINAIRES:

1. PROVIDE MANUFACTURERS PRODUCT DATA CUT SHEET SUBMITTALS FOR ENGINEERS AND ARCHITECTS APPROVAL FOR ALL LUMINAIRES.
2. LUMINAIRES TYPES ARE AS SCHEDULED OR NOTED. REFER TO LIGHT FIXTURE SCHEDULE AND LEGENDS ON ELECTRICAL AND ARCHITECTURAL DRAWINGS.
3. PROVIDE LUMINAIRES WITH THE NECESSARY FRAMES, FLANGES, FITTINGS, ETC., AS REQUIRED FOR INSTALLATION IN OR ON THE CEILING OR SURFACE IN OR ON WHICH THEY ARE TO BE INSTALLED AND TO ELIMINATE LIGHT LEAKAGE. CATALOG NUMBERS DO NOT NECESSARILY REFLECT THE TYPE OF CEILING IN WHICH A FIXTURE IS TO BE INSTALLED.
4. COORDINATE FINAL LOCATIONS OF LUMINAIRES IN THE FIELD WITH ARCHITECTURAL REFLECTED CEILING PLANS.

WIRE AND CABLE:

1. ALL WIRE AND CABLE SHALL HAVE COPPER CONDUCTORS.
2. USE NEC TYPE THHN/THWN OR XHHW INSULATION.
3. USE MINIMUM #12 AWG SIZE. #14 AWG MAY BE USED FOR CONTROL WIRING. FOR OTHER SYSTEMS, USE WIRING AS NOTED ON THE DRAWINGS AND AS RECOMMENDED BY THE SYSTEM MANUFACTURER.
4. CONTRACTOR SHALL UPGRADE CONDUCTOR SIZES FOR VOLTAGE DROP AS FOLLOWS:
   - FOR 120V CIRCUITS, UPGRADE BY 1 SIZE FOR EVERY 100' OF CIRCUIT LENGTH.
   - FOR 240-277V CIRCUITS, UPGRADE BY 1 SIZE FOR EVERY 150' OF CIRCUIT LENGTH.
   - FOR 480V CIRCUITS, UPGRADE BY 1 SIZE FOR EVERY 200; OF CIRCUIT LENGTH.

WIRING DEVICES:

1. ALL RECEPTACLES SHALL BE SAME MANUFACTURER. ALL RECEPTACLES SHALL BE COMMERCIAL GRADE 20A, 125 VOLTS, DUPLEX, WHITE COLOR. ACCEPTABLE MANUFACTURERS ARE HUBBELL, COOPER, PASS & SEYMOUR, OR LEVITON. INSTALL RECEPTACLES WITH THE LONG DIMENSION VERTICAL AND WITH THE GROUND SLOT ON TOP. FLUSH MOUNT IN OUTLET BOX AT 18" AFF UNLESS OTHERWISE NOTED.
2. SPECIAL PURPOSE RECEPTACLES SHALL BE AS NOTED ON THE DRAWINGS.
3. ALL SWITCHES SHALL BE SAME MANUFACTURER. ALL SWITCHES SHALL BE 20A, 120V, QUIET OPERATING TYPE, WHITE COLOR. ACCEPTABLE MANUFACTURERS ARE HUBBELL, PASS & SEYMOUR, OR LEVITON. INSTALL SWITCHES VERTICALLY WITH "ON" IN THE UP POSITION. FLUSH MOUNT IN OUTLET BOX AT 48" AFF UNLESS OTHERWISE NOTED.
4. TELEPHONE AND DATA OUTLET BOXES SHALL BE 4-11/16" SQUARE OUTLET BOX WITH A SINGLE GANG VERTICAL RING AND A 1" CONDUIT CONCEALED IN WALL AND STUBBED UP TO NEAREST CABLE TRAY OR ABOVE ACCESSIBLE CEILING. FLUSH MOUNT IN OUTLET BOX AT 18" AFF UNLESS OTHERWISE NOTED. OWNER WILL PROVIDE WIRING, PLATES AND JACKS.
5. PLATES SHALL BE FLEXIBLE THERMOPLASTIC, NON-BREAKABLE, SAME COLOR AS THE DEVICE. FOR SURFACE BOXES, USED RAISED METAL WITH THE SAME DIMENSIONS AS THE BOX. PLATES IN BREAKROOM, KITCHEN, AND TOILET ROOM SHALL BE STAINLESS STEEL.

GROUNDING:

1. INSTALL THE ELECTRICAL SYSTEM CONTINUOUSLY FROM BOX TO BOX AND FROM OUTLET TO OUTLET AND TO CABINETS TO FORM A CONTINUOUS PATH TO GROUND.
2. INSTALL A GREEN INSULATED EQUIPMENT GROUND WIRE, AT A MINIMUM SIZE OF #12 AWG OR LARGER IF REQUIRED BY NEC TABLE 250.95. ROUTE GROUND WIRE WITH CIRCUIT CONDUCTORS TO ALL RECEPTACLES, EQUIPMENT, MOTORS, LIGHTING FIXTURES, ETC. BOND TO THE EQUIPMENT AND TO THE GROUND BUS OR LUG AT THE SOURCE END.
3. SERVICE AND/OR TRANSFORMER GROUNDING. PROVIDE GROUNDING OF THE NEUTRAL CONDUCTOR FOR SERVICES AND SEPARATELY DERIVED SYSTEMS SUCH AS TRANSFORMERS USING A GROUND WIRE (S) SIZED IN ACCORDANCE WITH NEC TABLE 250-66. FOR SERVICE GROUNDING, PROVIDE CONNECTION TO WATER PIPE AND BUILDING STEEL. IN THE ABSENCE OF STEEL, IN LIEU THEREOF USE A 3/4" ROUND X 10"-0" LONG COPPERCLAD GROUND ROD DRIVEN INTO UNDISTURBED EARTH.

DISCONNECTS AND STARTERS:

1. PROVIDE MANUFACTURERS PRODUCT DATA CUT SHEET SUBMITTALS FOR ENGINEERS APPROVAL FOR ALL DISCONNECT SWITCHES AND STARTERS.
2. USE HEAVY-DUTY, HORSEPOWER RATED DISCONNECTS, FUSIBLE OR NON-FUSIBLE AS NOTED ON PLANS.
3. ALL STARTERS AND DISCONNECTS LOCATED IN INTERIOR LOCATIONS SHALL BE NEMA 1 AND ALL EXTERIOR UNITS SHALL BE NEMA 4X UNLESS OTHERWISE NOTED.
4. USE 3 POLE FULL VOLTAGE NON-REVERSING MAGNETIC STARTERS WITH A NON-FUSED DISCONNECT SWITCH FOR ALL MOTORS 1/2 HP AND ABOVE. EQUIP WITH CLASS 10 OVERCURRENT PROTECTION, UNDER VOLTAGE, PHASE LOSS AND REVERSAL PROTECTION. EQUIP EACH STARTER WITH AN H-O-A SELECTOR SWITCH, A RED RUN PILOT LIGHT AND AUXILIARY CONTACTS FOR INTERLOCKING AND CONTROL FUNCTIONS AS NEEDED. COORDINATE WITH THE MECHANICAL CONTRACTOR. PROVIDE ENCLOSURE WITH RESET BUTTON, PILOT LIGHT AND SELECTOR SWITCH IN COVER.
5. USE MANUAL MOTOR STARTERS WITH THERMAL OVERLOAD PROTECTION FOR MOTORS LESS THAN 1/2 HP. PROVIDE RED RUN PILOT LIGHT IN COVER.
6. MOTORS 1/2 HP AND ABOVE SHALL BE THREE PHASE. MOTORS BELOW 1/2 HP SHALL BE SINGLE PHASE, 120 VOLTS.
7. PROVIDE A NAMEPLATE WITH 1/2" ENGRAVED WHITE LETTERS ON A BLACK FIELD ON ALL MOTOR STARTERS AND ALL DISCONNECTS WITH THE DESIGNATION OF THE LOAD SERVED (EQUIPMENT IDENTIFICATION).
8. ALL LUGS SHALL BE RATED FOR 75 DEGREE WIRE.
9. EXTERNAL CONTROL WIRING, EXCEPT FOR FIRE ALARM SYSTEM CONNECTIONS, SHALL BE BY MECHANICAL CONTRACTOR.

PANELBOARDS:

1. PROVIDE MANUFACTURERS PRODUCT DATA CUT SHEET SUBMITTALS FOR ENGINEERS AND ARCHITECTS APPROVAL FOR ALL NEW PANELBOARDS.
2. INTERIOR PANELBOARDS SHALL BE NEMA1 RATED AND EXTERIOR PANELBOARDS SHALL BE NEMA-4X RATED U.O.N.
3. PROVIDE PANELBOARDS WITH HINGED FRONT COVER AND DIRECTORY CARD HOLDER.
4. PROVIDE NEW PRINTED PANEL SCHEDULE FOR ANY NEW OR MODIFIED PANELBOARD.
5. INCOMING MAINS LOCATION, TOP OR BOTTOM, SHALL BE DETERMINED BY CONTRACTOR BASED ON FIELD CONDITIONS.
6. ALL PANELBOARDS SHALL HAVE COPPER BUSSES AND SHALL HAVE A 100% RATED NEUTRAL BUS U.O.N.
7. ALL PANELBOARDS SHALL HAVE A PRINTED EQUIPMENT LABEL.
8. INSTALL PANELBOARDS WITH CLEARANCES BASED ON NEC REQUIREMENTS.
9. MOUNT PANELBOARD CABINET PLUMB AND RIGID WITHOUT DISTORTION OF BOX. MOUNT RECESSED PANELBOARDS WITH FRONTS UNIFORMLY FLUSH WITH WALL FINISH AND MATING WITH BACK BOX.
10. MOUNT TOP OF TRIM AT 90" ABOVE FINISHED FLOOR U.O.N.
11. INSTALL FILLER PLATES IN UNUSED SPACES.
12. PROVIDE EQUIPMENT FROM ONE OF THE FOLLOWING MANUFACTURERS:
    - 12.1. EATON
    - 12.2. SIEMENS
    - 12.3. SQUARE D
    - 12.4. GENERAL ELECTRIC

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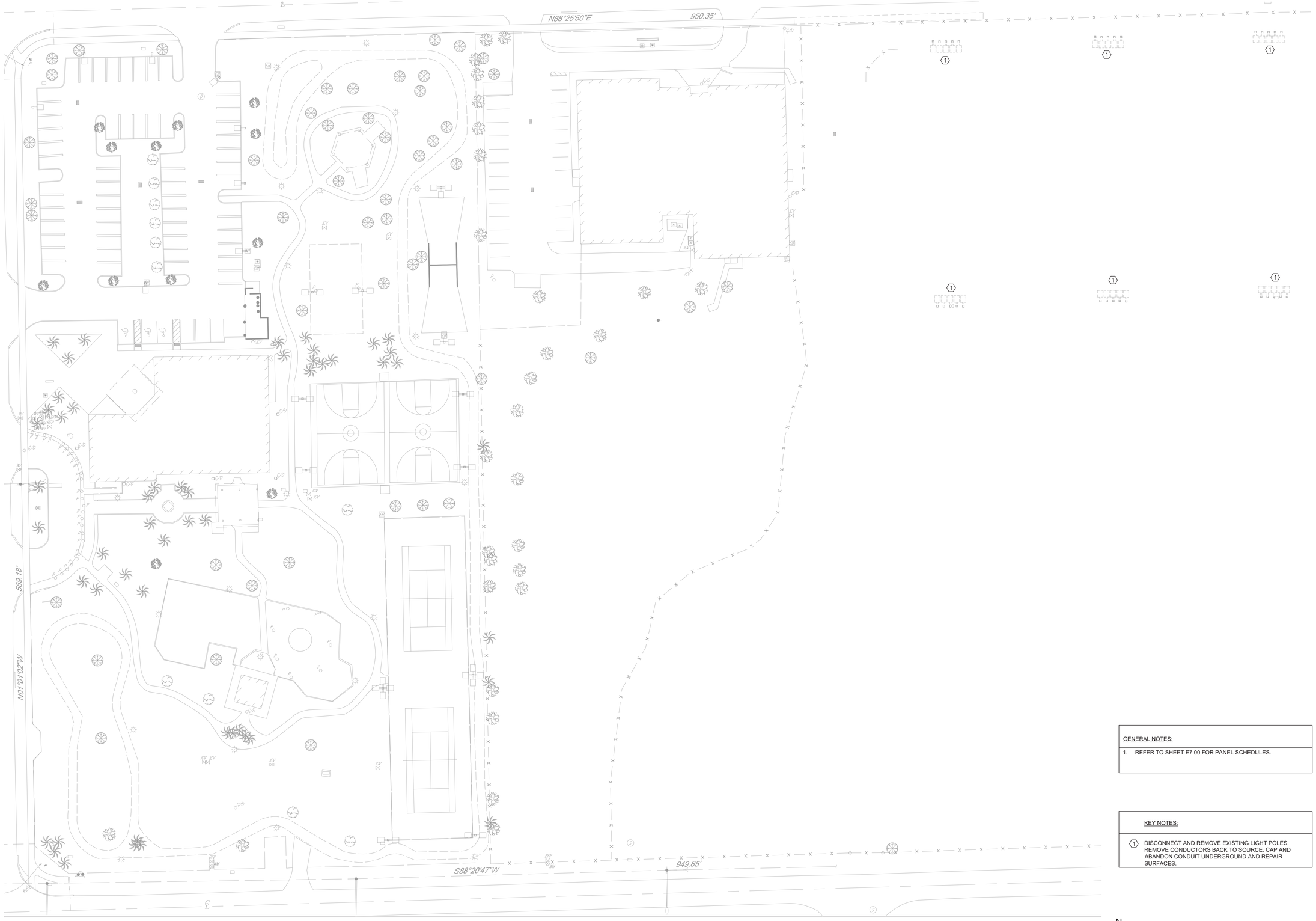
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ELECTRICAL SPECIFICATIONS



GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.

KEY NOTES:

(1) DISCONNECT AND REMOVE EXISTING LIGHT POLES. REMOVE CONDUCTORS BACK TO SOURCE. CAP AND ABANDON CONDUIT UNDERGROUND AND REPAIR SURFACES.

1 DE0.03 ELECTRICAL DEMO SITE PLAN

SCALE: 1/32"=1'-0"

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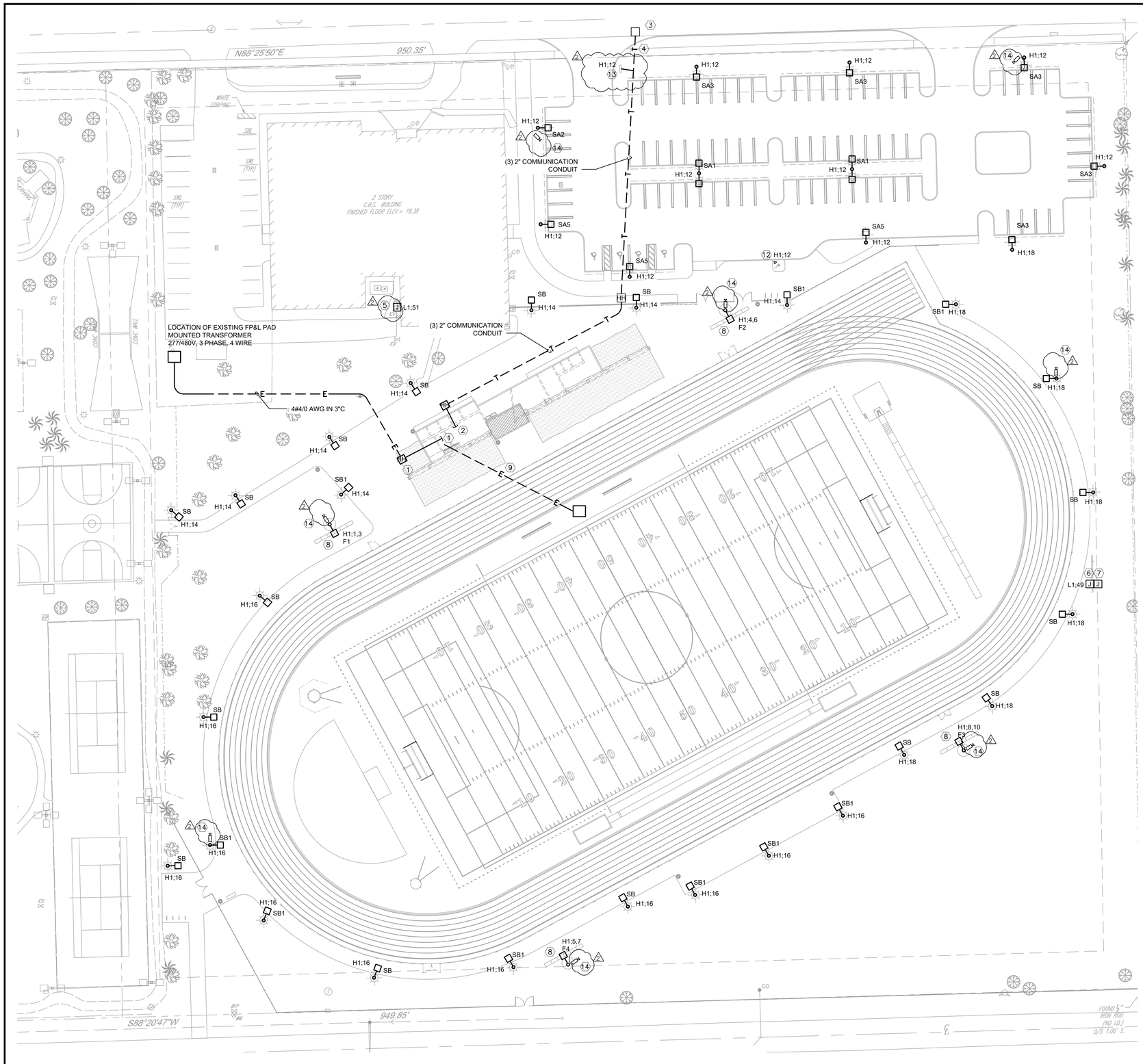
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ELECTRICAL DEMO SITE PLAN



1 E0.03 **ELECTRICAL PROPOSED SITE PLAN**

SCALE: 1/32"=1'-0"

GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.
2. REFER TO SHEET E7.01 FOR LIGHTING FIXTURE SCHEDULES.

KEY NOTES:

1. PROVIDE AN ELECTRICAL HANDHOLE AND LABEL LID AS "ELECTRICAL". STUB CONDUIT INTO ELECTRICAL ROOM. COORDINATE EXACT LOCATION ON SITE. REFER TO RISER DIAGRAM FROM ADDITIONAL INFORMATION.
2. PROVIDE A TELECOM HANDHOLE AND LABEL LID AS "TELECOM". STUB CONDUIT INTO DATA ROOM. COORDINATE EXACT LOCATION ON SITE.
3. PROVIDE A DEMARCATION TELECOM HANDHOLE AT PROPERTY LINE AND PROVIDE A LID LABELED AS "TELECOM".
4. PROVIDE PULLSTRING IN ALL EMPTY CONDUITS. COORDINATE EXACT ROUTING WITH EXISTING AND NEW UTILITIES ON SITE.
5. PROVIDE POWER FOR IRRIGATION CONTROL PANEL FROM BUILDING POWER PANEL. REFER TO SCHEDULES FOR DETAILS. COORDINATE EXACT LOCATION ON SITE. ROUTE POWER IN DEDICATED CONDUIT AND PROVIDE A HANDHOLE EVERY 100'. POWER SHALL BE ROUTED OUTSIDE ATHLETIC FIELD.
6. PROVIDE POWER TO SCOREBOARD AS SHOWN ON SCHEDULES. COORDINATE EXACT LOCATION ON SITE. ROUTE POWER IN DEDICATED CONDUIT AND PROVIDE HANDHOLE EVERY 100'. POWER SHALL BE ROUTED OUTSIDE ATHLETIC FIELD.
7. PROVIDE A 2" CONDUIT WITH PULLSTRING FOR FUTURE TELECOM FROM DATA ROOM TO SCOREBOARD. COORDINATE STUBOUT LOCATION ON SITE. CAP CONDUIT AND LABEL FOR FUTURE. PROVIDE HANDHOLES EVERY 100' AND LABEL AS "TELECOM" ROUTE CONDUIT OUTSIDE ATHLETIC FIELD.
8. REFER TO MUSCO DRAWINGS FOR DETAILS.
9. PROVIDE A 2" CONDUIT WITH PULLSTRING FOR FUTURE USE FROM ELECTRICAL ROOM TO IN BETWEEN THE BENCHES.
12. PROVIDE A FLAGPOLE LIGHT SIMILAR TO THE FOLLOWING FIXTURE:

    LITON AGQ2340B

    COORDINATE EXACT LOCATION AND AIMING ON SITE.

13. PROVIDE POWER & TELECOM TO MONUMENT SIGN. COORDINATE EXACT LOCATION ON SITE. PROVIDE A 500W EXTERIOR TYPE TRANSFORMER MOUNTED ON BACK SIDE OF MONUMENT SIGN.
14. PROVIDE 1" CONDUIT WITH PULL STRING FOR EVERY CAMERA FROM TELECOM ROOM IN BUILDING.

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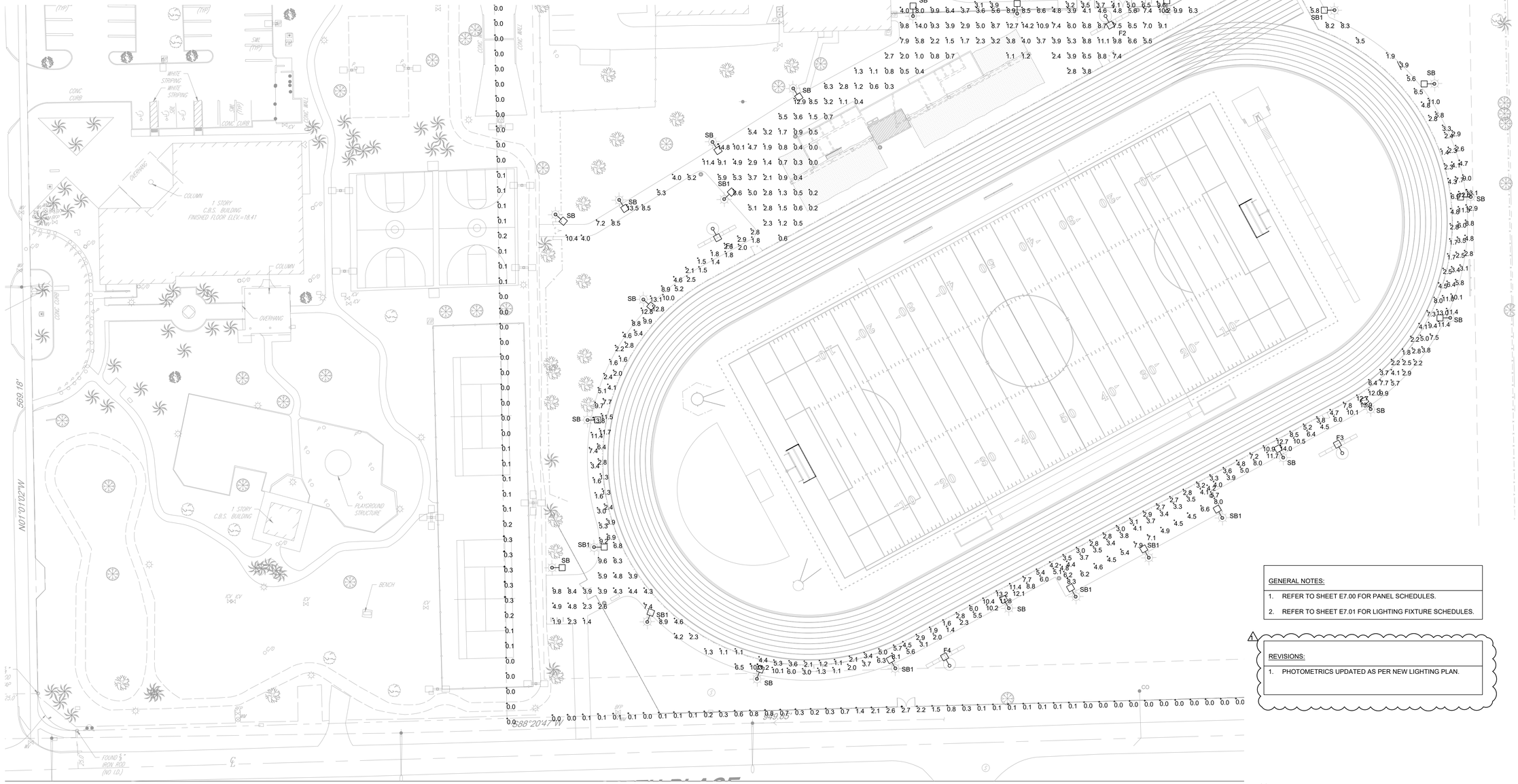
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2. ADDENDUM 3 CO-ORD 10-06-25
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ELECTRICAL PROPOSED SITE PLAN

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Grid Z
BOYS & GIRLS ROAD_2	Illuminance	Fc	2.49	4.2	1.4	1.78	3.00	N.A.
BOYS AND GIRLS CLUB ROAD_Planar	Illuminance	Fc	3.17	9.6	0.9	3.52	10.67	0
EAST SPILL	Illuminance	Fc	0.11	0.5	0.0	N.A.	N.A.	N.A.
PARKING	Illuminance	Fc	3.00	6.8	0.5	6.00	13.60	0
SOUTH SPILL	Illuminance	Fc	0.31	2.7	0.0	N.A.	N.A.	N.A.
WALKWAY	Illuminance	Fc	5.75	14.0	1.4	4.11	10.00	N.A.
WALKWAY_1	Illuminance	Fc	5.19	13.8	1.3	3.99	10.62	N.A.
WALKWAY_10	Illuminance	Fc	4.72	10.3	1.1	4.29	9.36	0
WALKWAY_5	Illuminance	Fc	4.34	11.2	1.1	3.95	10.18	N.A.
WALKWAY_6	Illuminance	Fc	5.84	8.3	4.2	1.39	1.98	N.A.
WALKWAY_7	Illuminance	Fc	4.31	12.4	0.7	6.16	17.71	N.A.
WALKWAY_8	Illuminance	Fc	5.75	13.1	1.4	4.11	9.36	N.A.
WALKWAY_9	Illuminance	Fc	4.20	14.8	0.0	N.A.	N.A.	0
WEST SPILL	Illuminance	Fc	0.06	0.3	0.0	N.A.	N.A.	N.A.
BOYS & GIRLS CLUB ROAD	Illuminance	Fc	2.69	6.1	0.9	2.99	6.78	
GRANDSTAND	Illuminance	Fc	0.43	0.6	0.2	2.15	3.00	
VISITOR WALKWAY	Illuminance	Fc	5.35	14.0	0.7	7.64	20.00	



1 E0.04 **ELECTRICAL SITE PLAN LIGHTING PHOTOMETRICS**

SCALE: 1/32"=1'-0"

N

GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.
2. REFER TO SHEET E7.01 FOR LIGHTING FIXTURE SCHEDULES.

REVISIONS:

1. PHOTOMETRICS UPDATED AS PER NEW LIGHTING PLAN.

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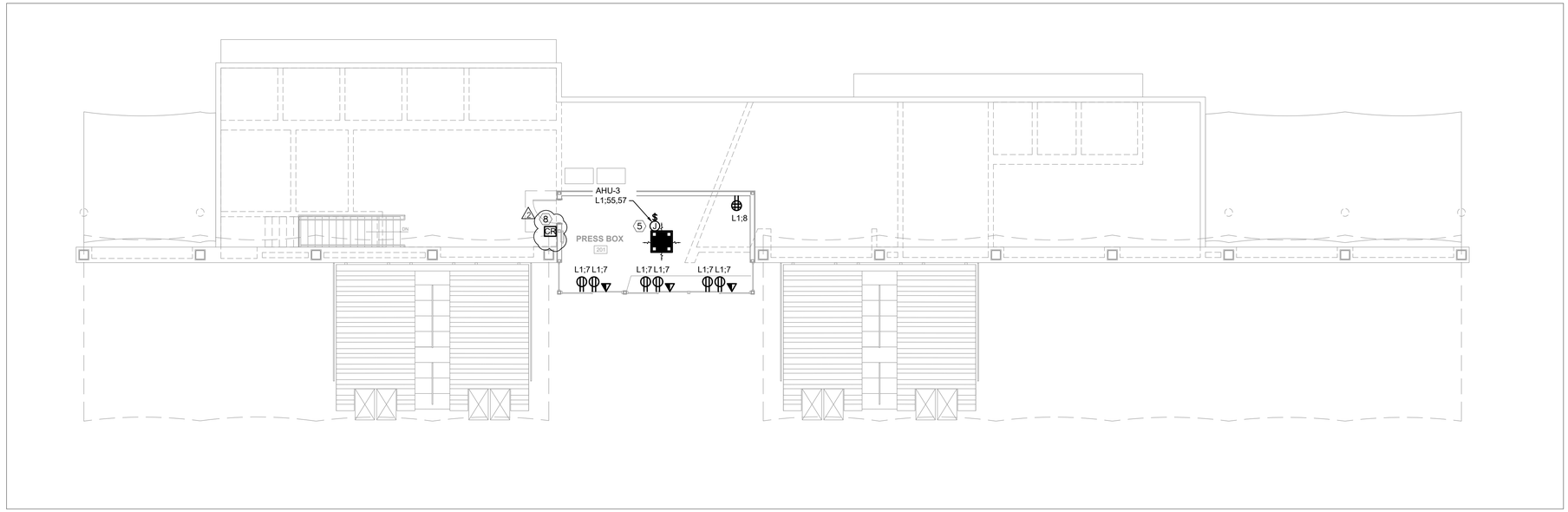
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1 PERMIT CO-ORD 08-04-25
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ELECTRICAL SITE PLAN
LIGHTING PHOTOMETRICS



1 E2.11 ELECTRICAL PROPOSED SECOND FLOOR POWER PLAN

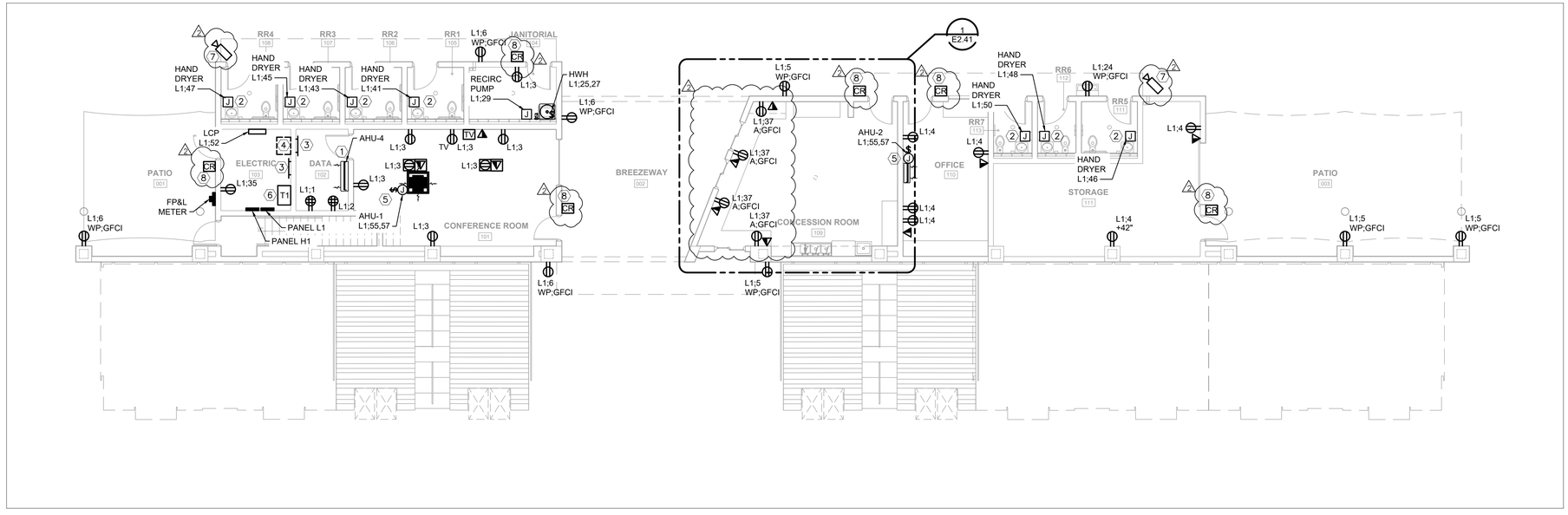
SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.

KEY NOTES:

1. POWER PROVIDED FROM OUTDOOR CONDENSING UNITS.
2. PROVIDE LOCKABLE TYPE CIRCUIT BREAKERS FOR BREAKERS SERVING HAND DRYERS.
3. INSTALL 1'x4"x1/4" PREDRILLED GROUND BAR AND BOND AS SHOWN IN RISER DIAGRAM.
4. ELECTRICAL CONTRACTOR SHALL ROUTE POWER TO SPORTS LIGHTING THROUGH MUSCO CONTROLLER. COORDINATE SCOPE WITH GENERAL CONTRACTOR AND MUSCO CONTRACTOR TO ENSURE THERE ARE NO SCOPE GAPS AND PROVIDE A FULLY FUNCTIONAL SYSTEM THAT MATCHES MUSCO'S DESIGN INTENT. REFER TO MUSCO SHOP DRAWINGS FOR ADDITIONAL DETAILS.
5. PROVIDE 240V RATED TOGGLE TYPE DISCONNECT SWITCH ABOVE CEILING.
6. INSTALL 75KVA TRANSFORMER ON A 4" CONCRETE PAD ON GROUND LEVEL.
7. PROVIDE 1" CONDUIT WITH PULL STRING FOR EVERY CAMERA FROM TELECOM ROOM IN BUILDING.
8. FOR EVERY CARD READER SHOWN, PROVIDE 1" CONDUIT WITH PULLSTRING TO TELECOM ROOM AND PROVIDE BOXES AND CONDUIT AS SHOWN ON DOOR DETAILS. REFER TO DETAIL 4 ON SHEET E5.00.



2 E2.11 ELECTRICAL PROPOSED FIRST FLOOR POWER PLAN

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

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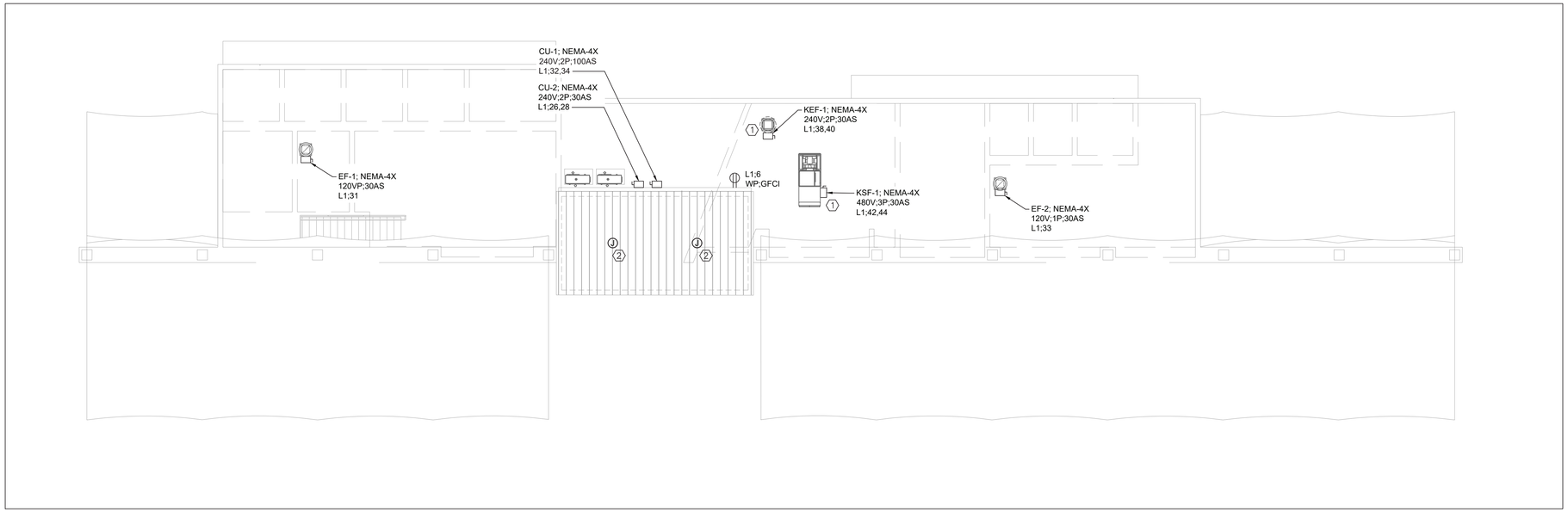
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ELECTRICAL PROPOSED POWER FLOOR PLAN



1 E2.12 ELECTRICAL PROPOSED ROOF POWER PLAN

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

N

GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.

KEY NOTES:

1. MOUNT DISCONNECT SWITCH ON EQUIPMENT. COORDINATE EXACT LOCATION ON SITE.
2. PROVIDE POWER & DATA TO THORGUARD LIGHTNING DETECTION AND ALARM SYSTEM. REFER TO ARCHITECTURAL DRAWINGS AND TO SHOP DRAWINGS FOR DETAILS.

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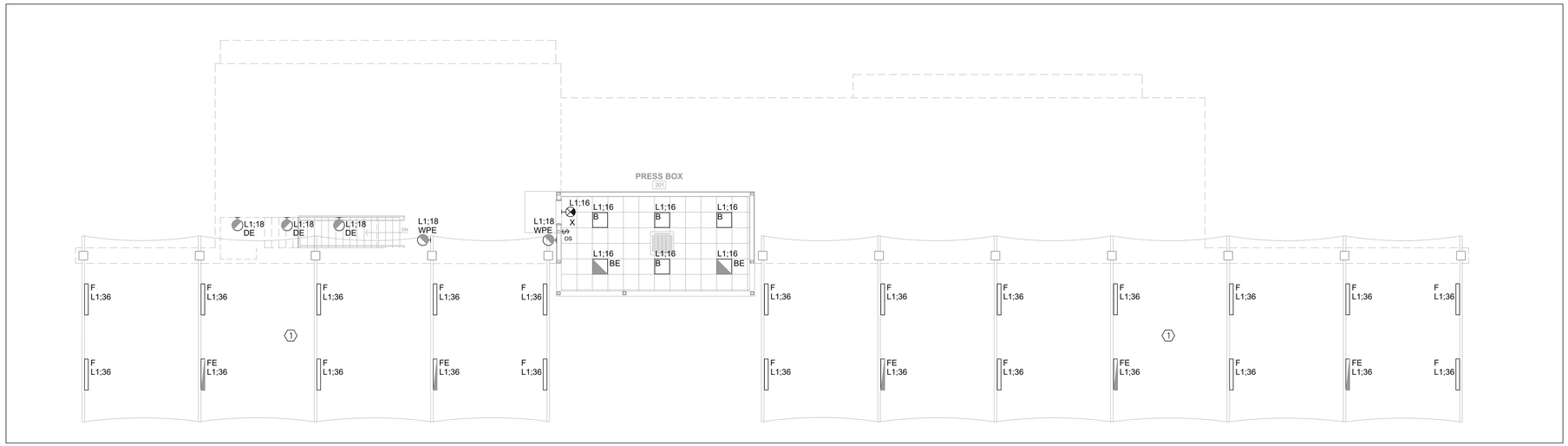
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ELECTRICAL PROPOSED ROOF PLAN



1 E2.13 ELECTRICAL PROPOSED SECOND FLOOR LIGHTING CEILING PLAN

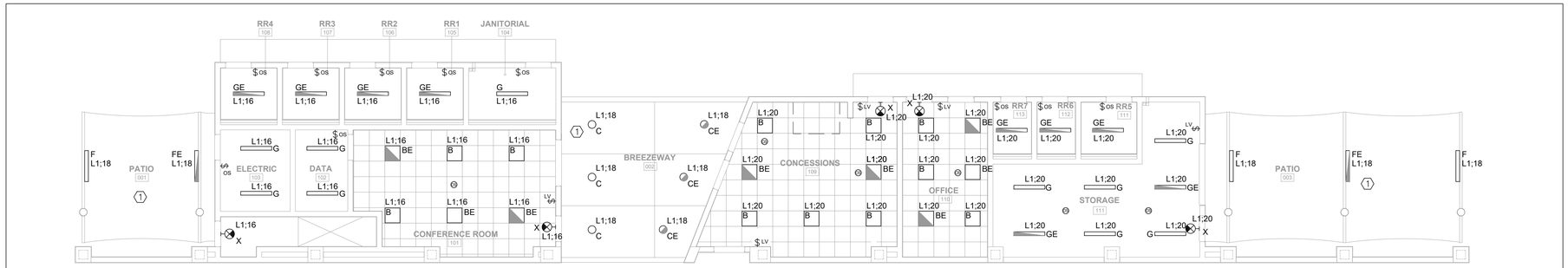
SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.
2. REFER TO SHEET E7.01 FOR LIGHTING FIXTURE SCHEDULES.

KEY NOTES:

1. EXTERIOR LIGHTING CONTROLLED BY TIMER. REFER TO RISER DIAGRAM FOR ADDITIONAL INFORMATION.



2 E2.13 ELECTRICAL PROPOSED FIRST FLOOR LIGHTING CEILING PLAN

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

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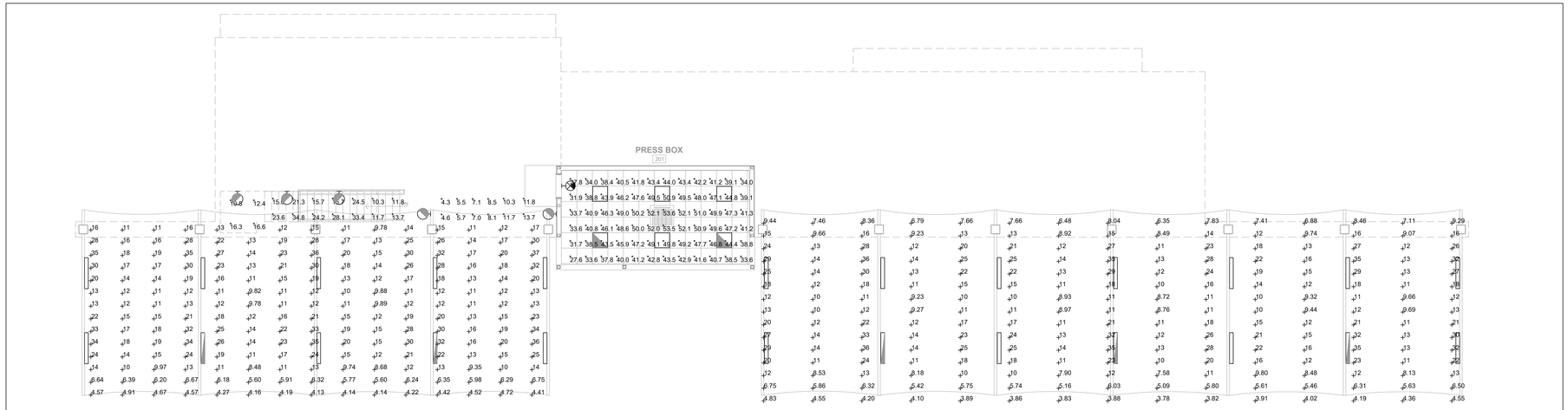
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ELECTRICAL PROPOSED LIGHTING CEILING PLAN



1 SECOND FLOOR LIGHTING NORMAL PHOTOMETRICS PLAN
E2.14

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

GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.
2. REFER TO SHEET E7.01 FOR LIGHTING FIXTURE SCHEDULES.



2 FIRST FLOOR LIGHTING NORMAL PHOTOMETRICS PLAN
E2.14

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

Calculation Summary								
Project: 12_11_2024 ULTIMATE SPORTS PARK, POMPANO BEACH - CONCESSIONS - REV7								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Grid Z
BREEZEWAY_Floor	Illuminance	Fc	14.05	20.3	5.1	2.75	3.98	0
CONCESSIONS_Workplane	Illuminance	Fc	45.01	64.2	19.3	2.33	3.33	2.5
CONFERENCE ROOM_Workplane	Illuminance	Fc	42.94	56.4	20.7	2.07	2.72	2.5
DATA_Floor	Illuminance	Fc	45.21	50.3	40.1	1.13	1.25	0
ELECTRIC_Floor	Illuminance	Fc	41.18	46.8	34.6	1.19	1.35	0
JANITORIAL_Floor	Illuminance	Fc	23.46	30.6	17.7	1.33	1.73	0
OFFICE_Workplane	Illuminance	Fc	66.60	82.6	35.1	1.90	2.35	2.5
PRESS BOX_Workplane	Illuminance	Fc	43.56	53.6	27.6	1.58	1.94	2.5
RR1_Floor	Illuminance	Fc	26.08	30.9	22.7	1.15	1.36	0
RR2_Floor	Illuminance	Fc	26.11	30.9	22.8	1.15	1.36	0
RR3_Floor	Illuminance	Fc	26.10	30.9	22.7	1.15	1.36	0
RR4_Floor	Illuminance	Fc	26.13	30.9	22.8	1.15	1.36	0
RR5_Floor	Illuminance	Fc	26.06	31.0	22.1	1.18	1.40	0
RR6_Floor	Illuminance	Fc	29.68	32.3	27.7	1.07	1.17	0
RR7_Floor	Illuminance	Fc	29.57	32.2	27.6	1.07	1.17	0
STORAGE_Floor	Illuminance	Fc	49.87	62.4	23.8	2.10	2.62	0
Patio_Floor	Illuminance	Fc	11	37	2.04	5.39	18.13	0
Canopy	Illuminance	Fc	11	35	3.60	3.05	9.72	0

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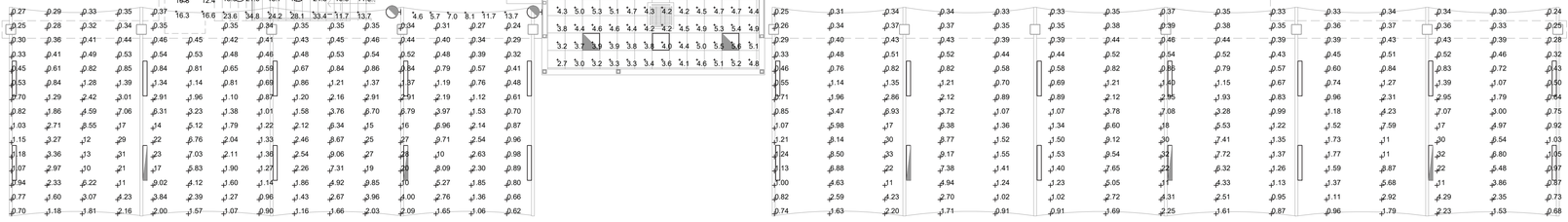
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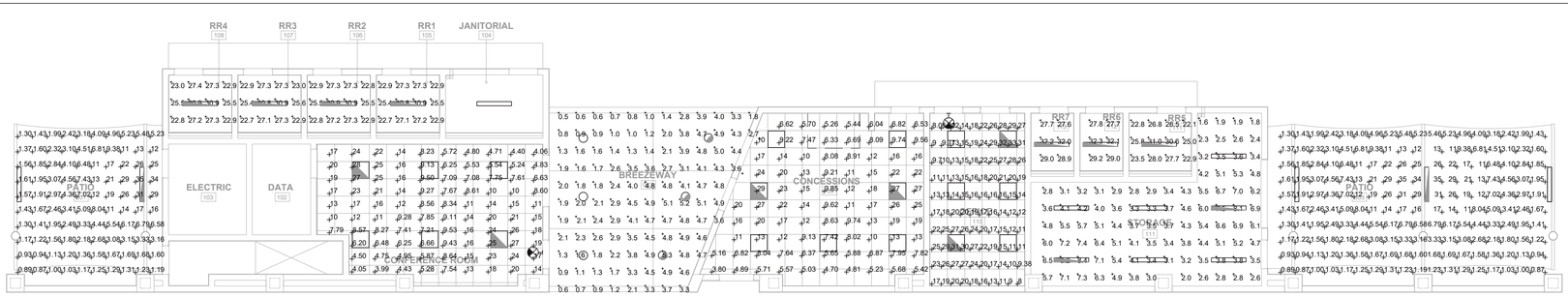
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LIGHTING NORMAL PHOTOMETRICS PLAN



1 E2.14 SECOND FLOOR LIGHTING EMERGENCY PHOTOMETRICS PLAN

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



2 E2.14 FIRST FLOOR LIGHTING EMERGENCY PHOTOMETRICS PLAN

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

Calculation Summary								
Project: 12_11_2024 ULTIMATE SPORTS PARK, POMPANO BEACH - CONCESSIONS - EM - REV7								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Grid Z
BREEZEWAY_Floor	Illuminance	Fc	2.79	5.3	0.5	5.58	10.60	0
CONCESSIONS_Floor	Illuminance	Fc	4.22	7.5	1.1	3.84	6.82	0
CONFERENCE ROOM_Floor	Illuminance	Fc	12	30	3.42	3.50	8.77	0
OFFICE_Floor	Illuminance	Fc	19	33	7.71	2.46	4.26	0
PRESS BOX_Floor	Illuminance	Fc	4.29	5.6	2.7	1.59	2.07	0
RR1_Floor	Illuminance	Fc	8.56	10.1	7.5	1.14	1.35	0
RR2_Floor	Illuminance	Fc	8.57	10.1	7.5	1.14	1.35	0
RR3_Floor	Illuminance	Fc	8.58	10.1	7.5	1.14	1.35	0
RR4_Floor	Illuminance	Fc	8.58	10.1	7.5	1.14	1.35	0
RR5_Floor	Illuminance	Fc	8.59	10.2	7.3	1.18	1.40	0
RR6_Floor	Illuminance	Fc	9.70	10.6	9.0	1.08	1.18	0
RR7_Floor	Illuminance	Fc	9.70	10.5	9.1	1.07	1.15	0
STORAGE_Floor	Illuminance	Fc	4.45	8.4	1.6	2.78	5.25	0
Patio_Floor	Illuminance	Fc	14	35	0.80	17.5	43.75	0
Canopy	Illuminance	Fc	9	32	0.20	45	160	0

GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.
2. REFER TO SHEET E7.01 FOR LIGHTING FIXTURE SCHEDULES.

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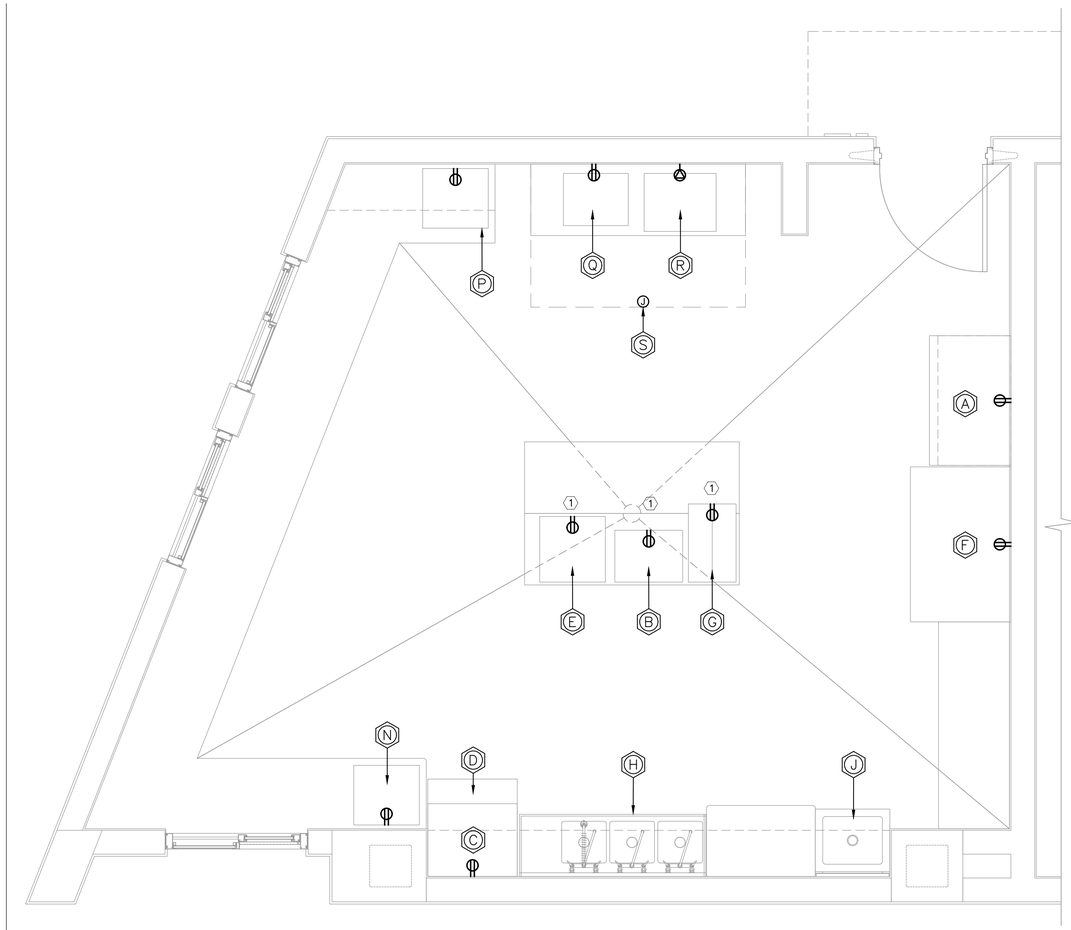
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LIGHTING EMERGENCY PHOTOMETRICS PLAN



1 E2.41 **ELECTRICAL PROPOSED CONCESSION ROOM POWER PLAN**

SCALE: 1/2"=1'-0"

GENERAL NOTES:

1. REFER TO SHEET E7.00 FOR PANEL SCHEDULES.
2. ALL GFCI RECEPTACLES MUST BE ACCESSIBLE. IF RECEPTACLE IS NOT ACCESSIBLE, CONTRACTOR SHALL PROVIDE A GFCI BREAKER INSTEAD. NOTIFY ENGINEER BEFORE ANY CHANGES.

KEY NOTES:

(1) RECEPTACLES UNDER HOOD MUST BE CONNECTED TO SHUNT TRIP TO SHUNT POWER PRIOR TO RELEASE OF ANSUL SYSTEM. REFER TO HOOD DRAWINGS FOR SHUNT TRIP.

EQUIPMENT SCHEDULE

ITEM	QTY.	DESCRIPTION	SIZE	BRAND	MODEL	PROVIDED	ELECTRICAL DATA	CURRENT/ LOAD	CONNECTOIN TYPE	CIRCUIT
A	1	LOW TEMP DISPLAY FREEZER & ICE CREAM FREEZER	43 3/4" x 27 3/8" x32 5/8"	EXCELLENCE INDUSTRIES	HL-11HC	OWNER	115/60/1	1.4A	GFCI RECEPTACLE	L1;9
B	1	HOT DOG ROLLER KIT	22 3/4" W x 17 3/4"D x 11"H	AVANTCO	177RG30KIT10	OWNER	120/60/1	910W	GFCI NEMA 5-20P	L1;10
C	1	ICE MACHINE	30"W x 24.4"D x 22.4"H	AVANTCO	194MC50030HA	OWNER	120/60/1	9.4A	GFCI NEMA 5-20P	L1;19
D	1	ICE STORAGE BIN	30"W x 32.7"D x 41.6"H	AVANTCO	194BIN27530	OWNER	-			
E	1	PRETZEL MERCHANDISER	22" x 22" x 32 5/8"	NEMCO	6423	OWNER	120/60/1	12.9A	GFCI NEMA 5-20P	L1;11
F	1	DUAL TEMPERATURE REFRIGERATOR FREEZER	52"W x 33 3/4"D x 84"H	BEVERAGE AIR	HBRF49HC-1-A	OWNER	115/60/1	6.34A	GFCI NEMA 5-20P	L1;12
G	1	ULTRA-2 SLUSHY MACHINE	16"W x 26.2"D x 31.9"H	BUNN	3400.0081	OWNER	120/60/1	12A	GFCI NEMA 5-20P	L1;13
H	1	3 - COMPARTMENT SINK	62 1/2"W x 20 1/2"D x 43 3/4"H	JOHN BOOS	E3S8-15-14R15	BY CONTRACTOR	-			
J	1	ADA HAND SINK	(SEE PLUMBING DWGS)	-	BY CONTRACTOR	BY CONTRACTOR	-			
L	1	MOP SINK	28"W x 20"D x 12"H	REGENCY	600SM202812	BY CONTRACTOR	-			
M	1	MOP SINK SPLASH GUARD	28"W x 20"D x 15"H	REGENCY	600SPL2028R	BY CONTRACTOR	-			
N	1	COFFEE MACHINE				OWNER	120/60/1	1000W	GFCI RECEPTACLE	L1;22
P	1	MICROWAVE	13"W x 12"D x 6 3/4 "H	AMANA	HDC 212	OWNER	208/60/1	2100W	GFCI NEMA 6-20P	L1;21,23
Q	1	COUNTERTOP FRYER	21 3/4"W x 17 1/2"D x 15 3/4"H	CECILWARE	EL2X15#	OWNER	120/60/1	15A	GFCI NEMA 5-20P	L1;14
R	1	COUNTERTOP GRILLE	24 1/8"W x 19 7/16"D x 12"H	AVANTCO	#177EG24N	OWNER	208/60/1	2675-3560W	GFCI NEMA 6-20P	L1;15,17
S	1	EXHAUST HOOD LIGHT AND POWER	72"W x 42"D x 24"H	GREENHECK	GHFW TYPE 1	BY CONTRACTOR	120/60/1	1000W	JUNCTION BOX	L1;39

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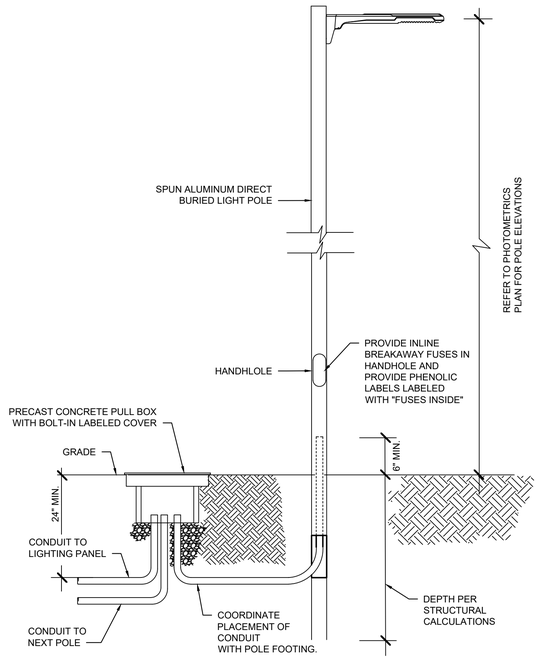
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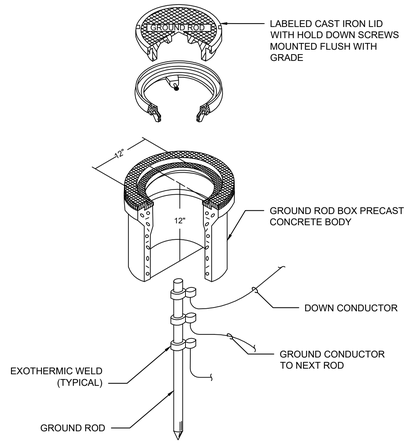
ELECTRICAL PROPOSED CONCESSION RM POWER PLAN



CONTRACTOR SHALL PROVIDE ENGINEERED DRAWINGS SIGNED AND SEALED BY A FLORIDA STRUCTURAL ENGINEER FOR POLE LIGHTS TO MEET FLORIDA WIND LOAD REQUIREMENTS. DRAWINGS AND CALCULATIONS SHALL INCLUDE THE SYSTEM OF POLE, FIXTURE, AND ALL OTHER DEVICES SUCH AS CAMERAS.

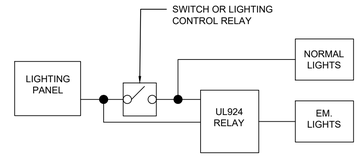
1 E5.00 LIGHTING POLE DETAIL

SCALE: N.T.S.



2 E5.00 GROUND ROD DETAIL

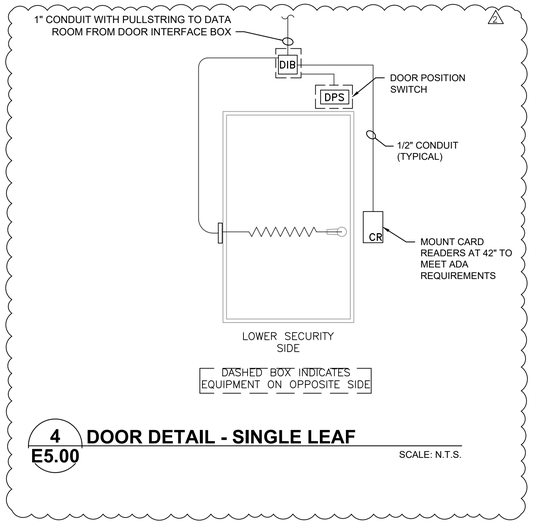
SCALE: N.T.S.



NOTES: EMERGENCY LIGHTS SHALL TURN ON UPON LOSS OF POWER REGARDLESS OF SWITCH POSITION.

3 E5.00 EMERGENCY LIGHTING WIRING DIAGRAM

SCALE: N.T.S.



4 E5.00 DOOR DETAIL - SINGLE LEAF

SCALE: N.T.S.

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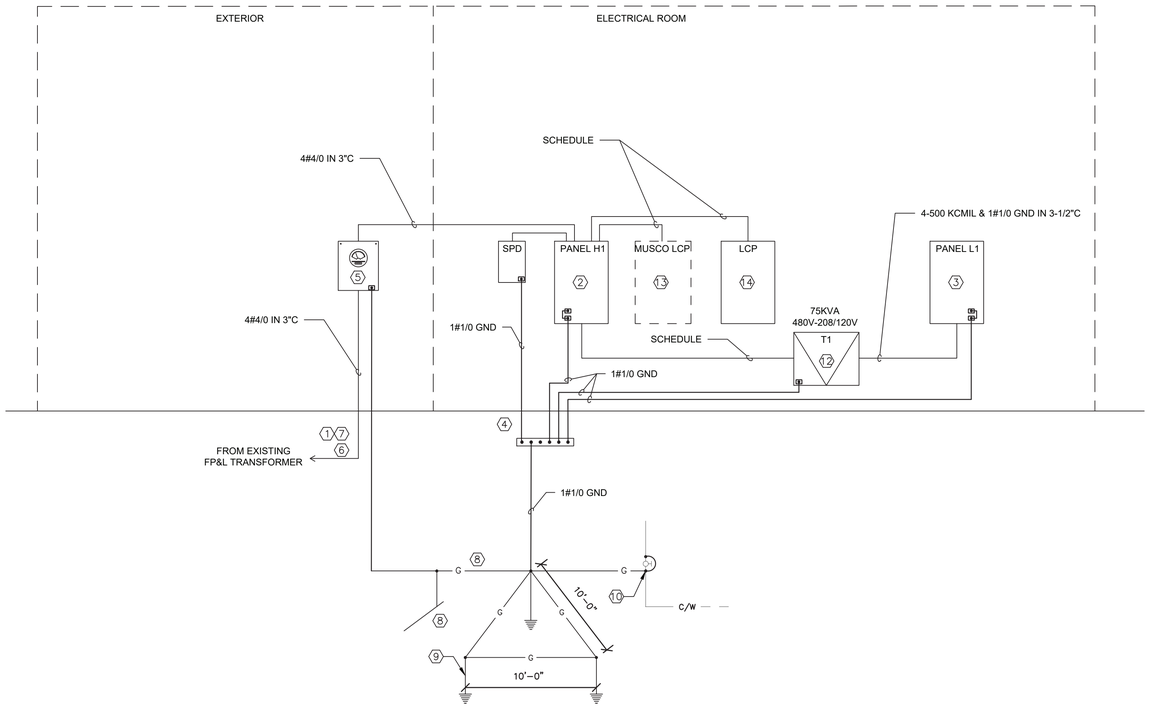
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ELECTRICAL DETAILS



1 E6.00 ELECTRICAL RISER DIAGRAM

N.T.S.

RISER KEY NOTES:

1. PROVIDE SERVICE FROM EXISTING FP&L TRANSFORMER AND HANDHOLE. COORDINATE EXACT LOCATION, SCOPE, TERMINATION, AND DEMARCATION WITH FP&L. REFER TO SITE PLAN FOR EXISTING LOCATION.
2. SERVICE RATED 200A, 480V/277V, 3 PHASE ELECTRICAL PANEL. BOND NEUTRAL BAR TO GROUND BAR IN PANEL.
3. 400A, 208/120V, 3-PHASE, 4-WIRE PANEL WITH MAIN BREAKER. BOND NEUTRAL BAR TO GROUND BAR FOR SEPARATELY DERIVED SYSTEM.
4. PRE-DRILLED 4"x1/4"x1' COPPER GROUND BAR. PROVIDE A SECOND PRE-DRILLED GROUND BAR IN TELECOM ROOM AND BOND TO ELECTRICAL ROOM BAR.
5. PROVIDE NEMA 4X RATED METER CAN. COORDINATE EXACT METER REQUIREMENTS LOCATION WITH FP&L PRIOR TO PROCUREMENT AND INSTALLATION.
6. PVC SCHEDULE 40 AT 36" MIN BELOW GRADE.
7. PROVIDE GALVANIZED RIGID STEEL ELBOW AND CONDUIT UP TO METER CAN.
8. BOND TO BUILDING STEEL REINFORCEMENT. ALL UNDERGROUND BONDING SHALL BE EXOTHERMICALLY WELDED.
9. ALL GROUND RODS SHALL BE 10' LONG x 3/4"DIAMETER COPPER RODS.
10. BOND TO WATER MAINS AND PROVIDE JUMPERS AROUND MAIN VALVES.
11. BOND TO BUILDING STEEL STRUCTURE, GRANDSTANDS, AND ANY METALLIC STRUCTURE WITHIN 6' OF BUILDING.
12. 75KVA, 480V-208/120V 3P, 4W TRANSFORMER TO BE INSTALLED ON A 4" CONCRETE PAD ON GROUND LEVEL.
13. MUSCO LIGHTING CONTROL PANEL. REFER TO MUSCO DRAWINGS FOR ADDITIONAL INFORMATION.
14. LIGHTING CONTROL PANEL WITH INTEGRAL TIMER AND EXTERIOR MOUNTED PHOTOSENSOR. SIMILAR TO WATTSTOPPER LP8 PEANUT LIGHTING CONTROL PANEL WITH GROUP SWITCHING CARD.

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ELECTRICAL RISER

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
H1	ELECTRICAL ROOM 103	SURFACE	FP&L	480 / 277V, 3PH, 4W	200	200

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	FEED	CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CODE	FEED	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1	SPORT FIELD POLE	5255			2F02	L	2	30	X			20	1						SPARE	2
3	LIGHTS - F1		5255			L								L	2F02		5525		SPORT FIELD POLE	4
5	SPORT FIELD POLE			5255	2F02	L	2	30		X		30	2					5525	LIGHTS - F2	6
7	LIGHTS - F4	5255				L			X					L	2F02	5255			SPORT FIELD POLE	8
9											X	30	2	L			5255		LIGHTS - F3	10
11									X			20	1	L	2F01			1386	PARKING LOT LIGHTS	12
13										X		20	1	L	2F01	1184			PEDESTRIAN LTS	14
15									X			20	1	L	2F04		1383		FIELD PED LTS	16
17											X	20	1	L	2F02			791	FIELD PED LTS	18
19									X											20
21										X										22
23											X									24
25									X											26
27										X										28
29											X									30
31									X											32
33										X										34
35											X									36
37									X					S		22867				38
39	SPD									X		125	3	S	3F08		22265		TRANSFORMER T1	40
41											X			S				14197		42

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)
LIGHTING	47.3	1.00	47.3
RECEPT		*	
EQUIPMENT		0.90	
TOTAL	47.3		47.3

SUBFED LOADS	(KVA)
CONNECTED	59.3
DEMAND	59.3

CONNECTED	VA
PH A	39816
PH B	39683
PH C	27154

L LIGHTING R RECEPTACLE
E EQUIPMENT S SUBFED

TOTAL + SUBFED	KVA	AMPS
CONNECTED	106.7	128.3
DEMAND	106.7	128.3

	SERVICE ENTRANCE RATED	X	100% NEUTRAL BUS
X	GROUND BUS		200% NEUTRAL BUS

ISC = 50 KAIC

(1)
(2)
(3)

* DEMAND FACTOR FOR RECEPTACLES IS 100% UP TO 10KVA AND 50% FOR REMAINING LOADS PER NFPA70

PANEL NAME	LOCATION	MOUNTING	SUPPLIED FROM	VOLTAGE	BUS	MAIN
L1	ELECTRICAL ROOM 103	SURFACE	T1	208 / 120V, 3PH, 4W	400	300

CKT NO	LOAD DESCRIPTION	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	FEED	CODE	CB P	CB TR	BUS A	BUS B	BUS C	CB TR	CB P	CODE	FEED	VA LOAD PH A	VA LOAD PH B	VA LOAD PH C	LOAD DESCRIPTION	CKT NO
1	DATA ROOM 102 REC	360			2F01	R	1	20	X			20	1	R	2F01	360			DATA ROOM 102 REC	2
3	CONF ROOM 101 REC		1440		2F01	R	1	20		X		20	1	R	2F01		1080		OFFICE 110 & 111 REC	4
5	OUTDOOR REC			540	2F01	R	1	20			X	20	1	R	2F01			900	OUTDOOR REC	6
7	PRESS BOX 201 REC	1080			2F01	R	1	20	X			20	1	R	2F01	360			PRESS BOX 201 REC	8
9	LOW T FREEZER		168		2F01	E	1	20		X		20	1	E	2F01		910		HOT DOG ROLLER KIT	10
11	PRETZEL MERCH			1548	2F01	E	1	20			X	20	1	E	2F01			761	DUAL TEMP FREEZ	12
13	ULTRA 2 SLUSH MACH	1440			2F01	E	1	20	X			20	1	E	2F01	1800			COUNTERTOP FRYER	14
15	COUNTERTOP GRILLE		1780		2F02	E	2	25		X		20	1	L	2F01		1300		LTS LEFT ZONE+PRESS	16
17				1780		E					X	20	1	L	2F01			650	LTS OUTSIDE	18
19	ICE MACHINE	1128			2F01	E	1	20	X			20	1	L	2F01	1300			LTS RIGHT ZONE	20
21	MICROWAVE		1050		2F01	E	2	20		X		20	1	E	2F01		1000		COFFEE MACHINE	22
23				1050		E					X	20	1	E	2F01			1000	DRINKING FOUTAIN	24
25	HWH	3000			2F03	E	2	40	X			15	2	E	2F01	1040			CU-2	26
27			3000			E				X				E			1040			28
29	RECIRC PUMP			348	2F01	E	1	20			X	20	1						SPARE	30
31	EF-1	99			2F01	E	1	20	X			70	2	E	2F05	4368			CU-1	32
33	EF-2		117		2F01	E	1	20		X				E			4368			34
35	ELECTRICAL 103 REC			180	2F01	R	1	20			X	20	1	L	2F01			1440	LTS OUTSIDE	36
37	CONCESSION RM 109 R	720			2F01	R	1	20	X			20	2	E	2F01	500			KEF-1	38
39	EX HOOD P AND LTS		1000		2F01	E	1	20		X				E			500			40
41	HAND DRYER RR1			1000	2F01	E	1	20			X	20	2	E	2F01			1000	KSF-1	42
43	HAND DRYER RR2	1000			2F01	E	1	20	X					E		1000				44
45	HAND DRYER RR3		1000		2F01	E	1	20		X		20	1	E	2F01		1000		HAND DRYER RR5	46
47	HAND DRYER RR4			1000	2F01	E	1	20			X	20	1	E	2F01			1000	HAND DRYER RR6	48
49	SCOREBOARD	2000			2F05	E	1	25	X			20	1	E	2F01	1000			HAND DRYER RR7	50
51	IRRIGATION CONTROL		1000		2F05	E	1	20		X		20	1	E	2F01		200		LCP	52
53	SPARE						1	20			X	20	1						SPARE	54
55	AHU-1, AHU-2, AHU-3	312			2F01	E	2	20	X			20	1						SPARE	56
57			312			E				X		20	1						SPARE	58
59	SPARE						1	20			X	20	1						SPARE	60

LOAD DESCRIPTION	CONNECTED (KVA)	D.F.	DEMAND (KVA)
LIGHTING	4.7	1.00	4.7
RECEPT	7.0	*	7.0
EQUIPMENT	47.6	1.00	47.6
TOTAL	59.3		59.3

SUBFED LOADS	(KVA)
CONNECTED	
DEMAND	

CONNECTED	VA
PH A	22867
PH B	22265
PH C	14197

L LIGHTING R RECEPTACLE
E EQUIPMENT S SUBFED

TOTAL + SUBFED	KVA	AMPS
CONNECTED	59.3	164.7
DEMAND	59.3	164.7

	SERVICE ENTRANCE RATED	X	100% NEUTRAL BUS
X	GROUND BUS		200% NEUTRAL BUS

ISC = 22 KAIC

(1)
(2)
(3)

* DEMAND FACTOR FOR RECEPTACLES IS 100% UP TO 10KVA AND 50% FOR REMAINING LOADS PER NFPA70

BRANCH CIRCUIT SCHEDULE
(LINEAR LOADS)

NOTES:
1 - USE THIS SCHEDULE FOR FEEDERS AND BRANCH CIRCUIT SIZING IF NOT SPECIFICALLY INDICATED ON DRAWINGS
2 - 4-WIRE SYSTEM CONDUCTOR SIZES ARE BASED ON 90C INSULATION RATING
3 - 3-WIRE SYSTEM CONDUCTOR SIZES ARE BASED ON 75C INSULATION RATING

OVERCURRENT DEVICE RATING (AMPS)	FEEDER CODE	WIRE & CONDUIT SIZE (2 WIRE SYSTEM)	FEEDER CODE	WIRE & CONDUIT SIZE (3-WIRE SYSTEM)	FEEDER CODE	WIRE & CONDUIT SIZE (4-WIRE SYSTEM)
15	2F01	2#12 & 1#12GND IN 3/4"C	3F01	3#12 & 1#12GND IN 3/4"C	4F01	4#12 & 1#12GND IN 3/4"C
20	2F01	2#12 & 1#12GND IN 3/4"C	3F01	3#12 & 1#12GND IN 3/4"C	4F01	4#12 & 1#12GND IN 3/4"C
25	2F02	2#10 & 1#10GND IN 3/4"C	3F02	3#10 & 1#10GND IN 3/4"C	4F02	4#10 & 1#10GND IN 3/4"C
30	2F02	2#10 & 1#10GND IN 3/4"C	3F02	3#10 & 1#10GND IN 3/4"C	4F02	4#10 & 1#10GND IN 3/4"C
35	2F03	2#8 & 1#10GND IN 3/4"C	3F03	3#8 & 1#10GND IN 3/4"C	4F03	4#8 & 1#10GND IN 3/4"C
40	2F03	2#8 & 1#10GND IN 3/4"C	3F03	3#8 & 1#10GND IN 3/4"C	4F03	4#8 & 1#10GND IN 3/4"C
45	2F03	2#8 & 1#10GND IN 3/4"C	3F03	3#8 & 1#10GND IN 3/4"C	4F03	4#8 & 1#10GND IN 3/4"C
50	2F03	2#8 & 1#10GND IN 3/4"C	3F03	3#8 & 1#10GND IN 3/4"C	4F03	4#8 & 1#10GND IN 3/4"C
60	2F04	2#6 & 1#10GND IN 3/4"C	3F04	3#6 & 1#10GND IN 1"C	4F04	4#6 & 1#10GND IN 1"C
70	2F05	2#4 & 1#8GND IN 1"C	3F05	3#4 & 1#8GND IN 1"C	4F05	4#4 & 1#8GND IN 1-1/2"C
80	2F05	2#4 & 1#8GND IN 1"C	3F05	3#4 & 1#8GND IN 1"C	4F05	4#4 & 1#8GND IN 1-1/2"C
90	2F06	2#3 & 1#8GND IN 1"C	3F06	3#3 & 1#8GND IN 1-1/2"C	4F06	4#3 & 1#8GND IN 1-1/2"C
100	2F06	2#3 & 1#8GND IN 1"C	3F06	3#3 & 1#8GND IN 1-1/2"C	4F06	4#3 & 1#8GND IN 1-1/2"C
110	2F07	2#2 & 1#6GND IN 1"C	3F07	3#2 & 1#6GND IN 1-1/2"C	4F07	4#2 & 1#6GND IN 1-1/2"C
125	2F08	2#1 & 1#6GND IN 1-1/2"C	3F08	3#1 & 1#6GND IN 1-1/2"C	4F08	4#1 & 1#6GND IN 1-1/2"C
150	2F09	2#1/0 & 1#6GND IN 1-1/2"C	3F09	3#1/0 & 1#6GND IN 1-1/2"C	4F09	4#1/0 & 1#6GND IN 2"C
175	2F10	2#2/0 & 1#6GND IN 1-1/2"C	3F10	3#2/0 & 1#6GND IN 2"C	4F10	4#2/0 & 1#6GND IN 2"C
200	2F11	2#3/0 & 1#6GND IN 1-1/2"C	3F11	3#3/0 & 1#6GND IN 2"C	4F11	4#3/0 & 1#6GND IN 2"C
225	2F12	2#4/0 & 1#4GND IN 2"C	3F12	3#4/0 & 1#4GND IN 2"C	4F12	4#4/0 & 1#4GND IN 2-1/2"C
250	2F13	2#4/0 & 1#4GND IN 2"C	3F13	3#4/0 & 1#4GND IN 2"C	4F13	4-250 KCMIL & 1#4GND IN 2-1/2"C
300	2F14	2-350 KCMIL & 1#4GND IN 2-1/2"C	3F14	3-350 KCMIL & 1#4GND IN 3"C	4F14	4-350 KCMIL & 1#4GND IN 3"C
350	2F15	2-500 KCMIL & 1#3GND IN 3"C	3F15	3-500 KCMIL & 1#3GND IN 3"C	4F15	4-500 KCMIL & 1#3GND IN 3-1/2"C
400	2F15	2-500 KCMIL & 1#3GND IN 3"C	3F15	3-500 KCMIL & 1#3GND IN 3"C	4F15	4-600 KCMIL & 1#3GND IN 3-1/2"C

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CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: AK
CHECKED BY: RS
DATE: 05/19/2025

REVISIONS:
1 PERMIT CO-ORD 08-04-25
2 ADDENDUM 3 CO-ORD 10-06-25
3
4
5
6

2406

SHEET
E7.00

ELECTRICAL SCHEDULES

LIGHTING FIXTURE SCHEDULE

PICTURE	TAG	DESCRIPTION	VOLTAGE	COLOR TEMP	LUMENS	POWER	MANUF.	MODEL NUMBER	POLE DETAILS				
									HEIGHT	BASE OD	GAUGE	WEIGHT	EPA MAX LOAD 90MPH AASHTO
	F	EXTERIOR LINEAR FIXTURE	120-277V	4000K	3057	15W/FT	INSIGHT LIGHTING	ME-HO-40K-100-SM-48"-277V-DIM-TB	-	-	-	-	-
	FE	EXTERIOR LINEAR FIXTURE WITH NFPA COMPLIANT 90 MIN EMERGENCY BATTERY BACKUP	120-277V	4000K	3057	15W/FT	INSIGHT LIGHTING	ME-HO-40K-100-SM-48"-277V-DIM-TB	-	-	-	-	-
	SA1	EXTERIOR POLE LIGHT	120-277V	4000K	40000	272W	GARDCO LIGHTING	OPF-S-A07-840-T5W-AR1-UNV-CS50-BK	20'	5"	9	63 lbs	6.5
	SA2	EXTERIOR POLE LIGHT	120-277V	4000K	20000	136W	GARDCO LIGHTING	OPF-S-A07-840-T5W-AR1-UNV-CS50-BK	20'	5"	9	63 lbs	6.5
	SA3	EXTERIOR POLE LIGHT	120-277V	4000K	20000	136W	GARDCO LIGHTING	OPF-S-A07-840-T4W-AR1-UNV-CS50-BK/OPF-S-HIS-T4-1-BK	20'	5"	9	63 lbs	6.5
	SA5	EXTERIOR POLE LIGHT	120-277V	4000K	10197	54W	GARDCO LIGHTING	OPF-S-A03-840-T5M	20'	5"	9	63 lbs	6.5
	SB	EXTERIOR POLE LIGHT	120-277V	4000K	15000	99W	VISIONAIRE LIGHTING	LSO-T2-15L-4K-UNV-PTS-BK-WSC-20	14'	4"	11	35 lbs	1
	SB1	EXTERIOR POLE LIGHT	120-277V	4000K	20000	148W	VISIONAIRE LIGHTING	LSO-T2-20L-4K-UNV-PTS-BK-WSC-20	14'	4"	11	35 lbs	1

PICTURE	TAG	DESCRIPTION	VOLTAGE	COLOR TEMP	LUMENS	POWER	MANUF.	MODEL NUMBER
	B	2'x2' INTERIOR RECESSED AND LENSED LED LIGHTING FIXTURE	120-277V	4000K	3800	30W	DAY-BRITE	2FPZ38L840-2-DS-UNV-DIM-F1
	BE	2'x2' INTERIOR RECESSED AND LENSED LED LIGHTING FIXTURE WITH NFPA COMPLIANT 90 MIN EMERGENCY BATTERY BACKUP	120-277V	4000K	3800	30W	DAY-BRITE	2FPZ38L840-2-DS-UNV-DIM-F2-BSL10LST
	C	6" LED DOWNLIGHT	120-277V	4000K	1600	20W	H.E. WILLIAMS	V6DR-L16/840-DIM-UNV-LW-OF-WH-N-F1
	CE	6" LED DOWNLIGHT WITH NFPA COMPLIANT 90 MIN EMERGENCY BATTERY BACKUP	120-277V	4000K	1600	20W	H.E. WILLIAMS	V6DR-L16/840-EM/7W-DIM-UNV-LW-OF-WH-N-F1
	D	SQUARE EXTERIOR LUMINAIRE	120-277V	4000K	2772	32W	FC LIGHTING	FCW3801-UNV-4K-CRI85-28L-BKE
	DE	SQUARE EXTERIOR LUMINAIRE WITH NFPA COMPLIANT 90 MIN EMERGENCY BATTERY BACKUP	120-277V	4000K	2772	32W	FC LIGHTING	FCW3801-UNV-4K-CRI85-28L-BKE
	G	1'x4' INTERIOR LED LIGHTING FIXTURE	120-277V	4000K	4090	35W	BEGHELLI	BS101LED-ECO-4-HT-LO-WT40-120-277
	GE	1'x4' INTERIOR LED LIGHTING FIXTURE WITH NFPA COMPLIANT 90 MIN EMERGENCY BATTERY BACKUP	120-277V	4000K	4090	35W	BEGHELLI	BS101LED-ECO-4-SA-LO-WT40-120-277
	WP	LED WALL PACK	120-277V	4000K	3000	20W	H.E. WILLIAMS	VWPV-L30/840
	WPE	LED WALL PACK WITH NFPA COMPLIANT 90 MIN EMERGENCY BATTERY BACKUP	120-277V	4000K	3000	20W	H.E. WILLIAMS	VWPV-L30/840
	X	EDGE LIT EXIT LIGHT. ARROWS AS SHOWN ON PLANS	120-277V	3500K		2W	BEGHELLI	CRV2SAUW

LIGHTING CONTROL PANEL SCHEDULE

PANEL NAME			LOCATION		MOUNTING		RELAY RATINGS
LCP			ELEC ROOM 103		SURFACE		20A
DESCRIPTION	**CKT NO**	**RELAY VOLTAGE**	**RELAY NO**	**RELAY NO**	**RELAY VOLTAGE**	**CKT NO**	**DESCRIPTION**
PATIO/ BREEZEWAY	L1;18	120	**1**	**2**	270	H1;12	PARKING LOT
PEDESTRIAN	H1;14	270	**3**	**4**	270	H1;16	FIELD PED 1
FIELD PED 2	H1;18	270	**5**	**6**	120	L1;36	CANOPY
SPARE			**7**	**8**			SPARE
FEATURES:							
LCP SHALL BE SIMILAR TO WATTSTOPPER PEANUT PANEL LP8							
RELAY CONTROLLER							
BUILT IN TIMER							
RELAYS INDIVIDUALLY REMOTELY CONTROLLED							

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1 PERMIT CO-ORD 08-04-25
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LIGHTING FIXTURE SCHEDULES

1 REVISIONS:

1. SHEETS UPDATED AS PER REVISED MUSCO DRAWINGS.

GENERAL NOTES:

1. DESIGNED BY MUSCO LIGHTING. SHOWN FOR REFERENCE AND COORDINATION ONLY.

Ultimate Sports Complex
Pompano Beach,FL

LIGHTING SYSTEM

Structure/Fixture Summary

Structure ID	Structure Height	Fixt. Attachment Ht.	Fixture Qty	Fixture Type	Load	Circuit
F1	80'	80'	8	TLC-LED-1200	9.36 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
F2	80'	80'	8	TLC-LED-1200	9.36 kW	A
		70'	1	TLC-LED-550	0.54 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
F3-F4	80'	80'	8	TLC-LED-1200	9.36 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
4			41		42.58 kW	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Football	42.58 kW	41

Fixture Type Summary

Type	Circuit	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-BT-575	A	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-LED-1200	A	LED 5700K - 75 CRI	1170W	150,000	>120,000	>120,000	>120,000	32
TLC-LED-550	A	LED 5700K - 75 CRI	540W	67,000	>120,000	>120,000	>120,000	1

Single Fixture Amperage Draw Chart

Driver Specifications (.90 min power factor)	Line Amperage Per Fixture (max draw)						
Single Phase Voltage	208	220	240	277	347	380	480
	(60)	(60)	(60)	(60)	(60)	(60)	(60)
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8	3.0
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.8	1.4

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination Ave						
		Ave	Min	Max	Max/Min	Ave/Min	Circuits	Fixture Qty
Bleacher - AWAY	Horizontal Illuminance	19.43	17.1	22.2	1.30	1.14	A	41
Bleacher - HOME	Horizontal Illuminance	17.83	13.6	22.3	1.64	1.31	A	41
Football	Horizontal Illuminance	33.40	28.4	39.8	1.40	1.17	A	41
Glare (cd) - East	Max Candela (by Fixture)	29016.08	1.0	149835.9	154414.63	29902.75	A,B	41
Glare (cd) - Residential	Max Candela (by Fixture)	1975.30	0.3	10681.9	38525.49	7124.12	A,B	41
Spill (fc) - East	Horizontal	0.33	0.0	1.1	-	-	A,B	41
Spill (fc) - East	Max Vertical Illuminance Metric	0.80	0.0	3.0	-	-	A,B	41
Spill (fc) - Residential	Horizontal	0.07	0.0	0.5	-	-	A,B	41
Spill (fc) - Residential	Max Vertical Illuminance Metric	0.14	0.0	1.0	-	-	A,B	41
Track	Horizontal Illuminance	22.12	10.2	36.8	3.59	2.16	A	41

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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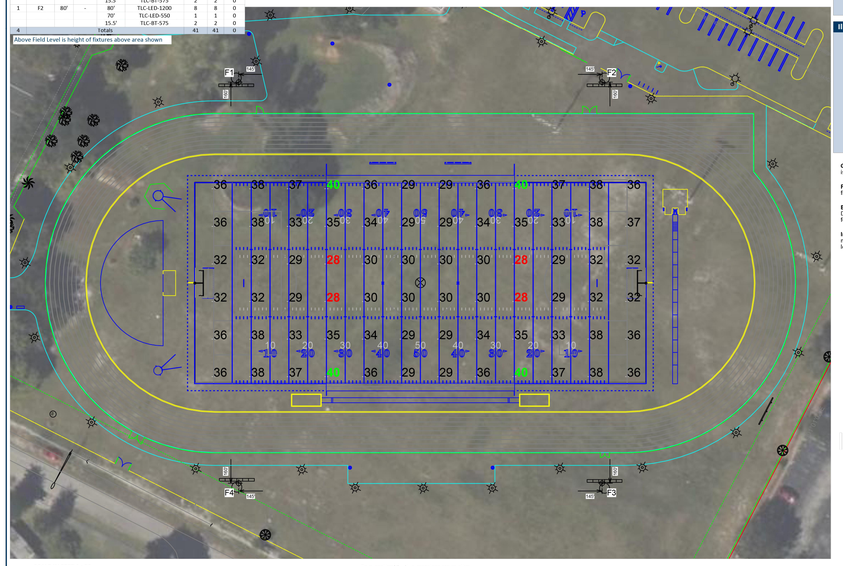
ENGINEERED DESIGN By: Joe Nicholson • File #198894C • 04-Aug-25

PROJECT SUMMARY

Equipment List For Areas Shown

Structure					Fixtures			
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	F1 F3-F4	80'	-	80'	TLC-LED-1200	8	8	0
				15.5'	TLC-BT-575	2	2	0
1	F2	80'	-	80'	TLC-LED-1200	8	8	0
				70'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4				Totals		41	41	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 50 (0' 50' 100')

Pole location(s) dimensions are relative to 0,0 reference point(s)

Ultimate Sports Complex
Pompano Beach,FL

Grid Summary

Name: Football
Size: 360' x 160'
Spacing: 30.0' x 30.0'
Height: 1.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	33.40
Maximum:	39.8
Minimum:	28.4
Avg/Min:	1.17
Guaranteed Max/Min:	**2.5**
Max/Min:	1.40
UG (adjacent pts):	1.25
CU:	0.41
No. of Points:	72
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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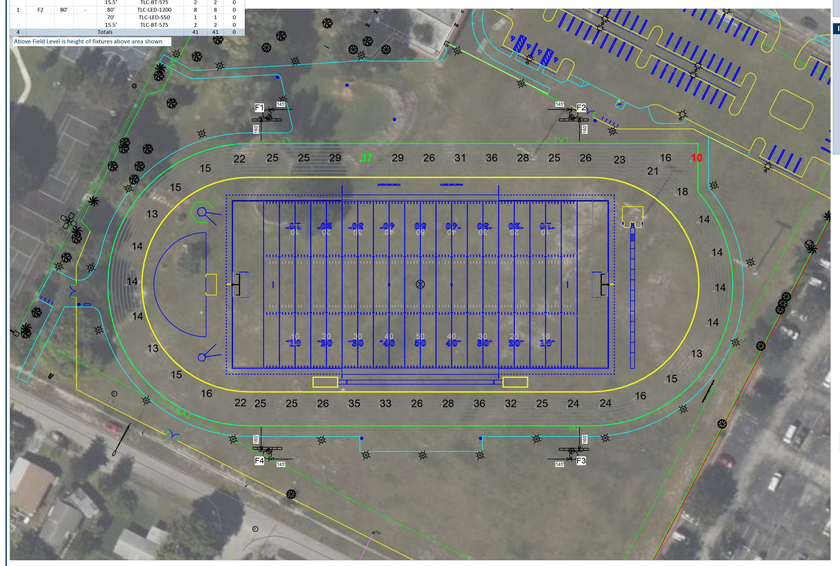
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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Structure					Fixtures			
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	F1 F3-F4	80'	-	80'	TLC-LED-1200	8	8	0
				15.5'	TLC-BT-575	2	2	0
1	F2	80'	-	80'	TLC-LED-1200	8	8	0
				70'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4				Totals		41	41	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 60 (0' 60' 120')

Pole location(s) dimensions are relative to 0,0 reference point(s)

Ultimate Sports Complex
Pompano Beach,FL

Grid Summary

Name: Track
Size: 360' x 160'
Spacing: 30.0' x 30.0'
Height: 1.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**20**
Scan Average:	22.12
Maximum:	36.8
Minimum:	10.2
Avg/Min:	2.16
Guaranteed Max/Min:	**4**
Max/Min:	3.59
UG (adjacent pts):	0.00
CU:	0.17
No. of Points:	46
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Structure					Fixtures			
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	F1 F3-F4	80'	-	80'	TLC-LED-1200	8	8	0
				15.5'	TLC-BT-575	2	2	0
1	F2	80'	-	80'	TLC-LED-1200	8	8	0
				70'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4				Totals		41	41	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 20 (0' 20' 40')

Pole location(s) dimensions are relative to 0,0 reference point(s)

Ultimate Sports Complex
Pompano Beach,FL

Grid Summary

Name: Bleacher - HOME
Size: 360' x 160'
Spacing: 10.0' x 10.0'

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**17.83**
Maximum:	22.3
Minimum:	13.6
Avg/Min:	1.31
Max/Min:	**1.64**
UG (adjacent pts):	1.34
CU:	0.01
No. of Points:	24
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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ILLUMINATION SUMMARY

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ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: AK
CHECKED BY: RS
DATE: 05/19/2025

REVISIONS:
1 PERMIT CO-ORD 08-04-25
2
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6

2406

SHEET
E8.00

MUSCO LIGHTING

1 REVISIONS:

1. SHEETS UPDATED AS PER REVISED MUSCO DRAWINGS.

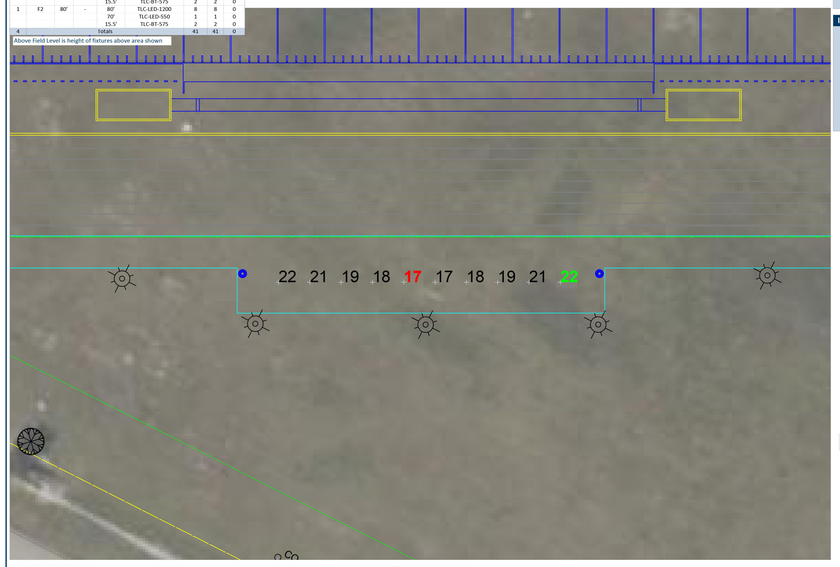
GENERAL NOTES:

1. DESIGNED BY MUSCO LIGHTING. SHOWN FOR REFERENCE AND COORDINATION ONLY.

Equipment List For Areas Shown

Structure					Fixtures			
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	F1 F3-F4	80'	-	80' 15.5'	TLC-LED-1200 TLC-BT-575	8 2	8 2	0 0
1	F2	80'	-	80' 70' 15.5'	TLC-LED-1200 TLC-LED-550 TLC-BT-575	8 1 2	8 1 2	0 0 0
4				Totals		41	41	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 20 (0' 20' 40')

Pole location(s) dimensions are relative to 0,0 reference point(s)

ENGINEERED DESIGN By: Joe Nicholson • File #198894C • 04-Aug-25

Ultimate Sports Complex

Pompano Beach,FL

Grid Summary

Name: Bleacher - AWAY
Size: 360' x 160'
Spacing: 10.0' x 10.0'

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**19.43**
Maximum:	23.2
Minimum:	17.1
Avg/Min:	1.14
Max/Min:	**1.36**
UG (adjacent pts):	1.08
CU:	0.00
No. of Points:	10
FIXTURE INFORMATION	
Applied Circuits:	A
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet [1m] of design locations.

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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Structure					Fixtures			
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	F1 F3-F4	80'	-	80' 15.5'	TLC-LED-1200 TLC-BT-575	8 2	8 2	0 0
1	F2	80'	-	80' 70' 15.5'	TLC-LED-1200 TLC-LED-550 TLC-BT-575	8 1 2	8 1 2	0 0 0
4				Totals		41	41	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 120 (0' 120' 240')

Pole location(s) dimensions are relative to 0,0 reference point(s)

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Ultimate Sports Complex

Pompano Beach,FL

Grid Summary

Name: Glare (cd) - Residential
Spacing: 10.0' x 10.0'
Height: 5.0' above grade

Illumination Summary

INITIAL MAX CANDELA [PER FIXTURE]

	Entire Grid
Scan Average:	**1975.30**
Maximum:	19681.9
Minimum:	0.3
Avg/Min:	7124.12
Max/Min:	**3825.49**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	39
FIXTURE INFORMATION	
Applied Circuits:	A,B
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet [1m] of design locations.

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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Structure					Fixtures			
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	F1 F3-F4	80'	-	80' 15.5'	TLC-LED-1200 TLC-BT-575	8 2	8 2	0 0
1	F2	80'	-	80' 70' 15.5'	TLC-LED-1200 TLC-LED-550 TLC-BT-575	8 1 2	8 1 2	0 0 0
4				Totals		41	41	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 120 (0' 120' 240')

Pole location(s) dimensions are relative to 0,0 reference point(s)

ENGINEERED DESIGN By: Joe Nicholson • File #198894C • 04-Aug-25

Ultimate Sports Complex

Pompano Beach,FL

Grid Summary

Name: Spill (fc) - Residential
Spacing: 10.0' x 10.0'
Height: 3.0' above grade

Illumination Summary

INITIAL HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.07**
Maximum:	0.5
Minimum:	0.0
Avg/Min:	-
Max/Min:	**-**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	38
FIXTURE INFORMATION	
Applied Circuits:	A,B
No. of Fixtures:	**41**
Total Load:	42.58 kW

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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Structure					Fixtures			
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	F1 F3-F4	80'	-	80' 15.5'	TLC-LED-1200 TLC-BT-575	8 2	8 2	0 0
1	F2	80'	-	80' 70' 15.5'	TLC-LED-1200 TLC-LED-550 TLC-BT-575	8 1 2	8 1 2	0 0 0
4				Totals		41	41	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 120 (0' 120' 240')

Pole location(s) dimensions are relative to 0,0 reference point(s)

ENGINEERED DESIGN By: Joe Nicholson • File #198894C • 04-Aug-25

Ultimate Sports Complex

Pompano Beach,FL

Grid Summary

Name: Spill (fc) - Residential
Spacing: 10.0' x 10.0'
Height: 3.0' above grade

Illumination Summary

INITIAL MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.14**
Maximum:	1.0
Minimum:	0.0
Avg/Min:	-
Max/Min:	**-**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	38
FIXTURE INFORMATION	
Applied Circuits:	A,B
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

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CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

DRAWN BY: AK
CHECKED BY: RS
DATE: 05/19/2025

REVISIONS:
1 PERMIT CO-ORD 08-04-25
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MUSCO LIGHTING

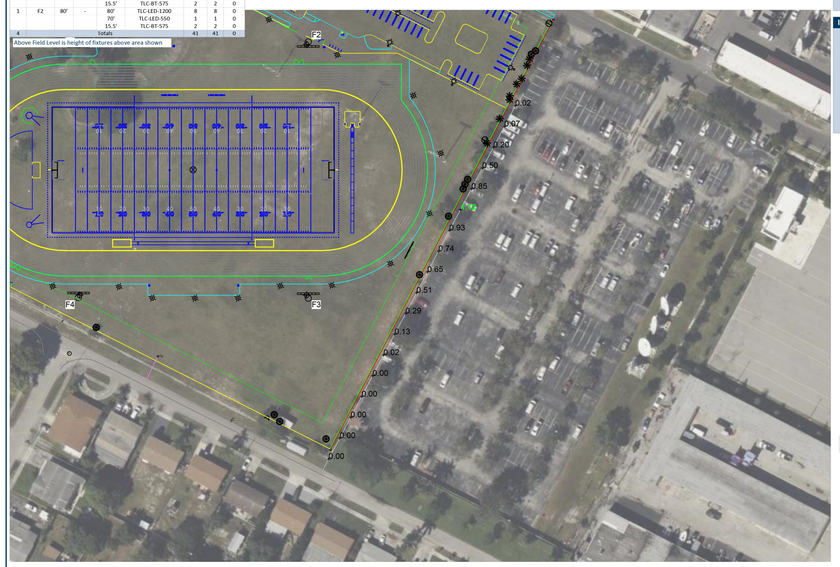
GENERAL NOTES:

1. DESIGNED BY MUSCO LIGHTING. SHOWN FOR REFERENCE AND COORDINATION ONLY.

Equipment List For Areas Shown

Structure					Fixtures			
QTY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	F1 F3-F4	80'	-	80'	TLC-LED-1200	8	8	0
				15.5'	TLC-BT-575	2	2	0
1	F2	80'	-	80'	TLC-LED-1200	8	8	0
				70'	TLC-LED-550	1	1	0
				15.5'	TLC-BT-575	2	2	0
4				Totals		41	41	0

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 80
0' 80' 160'

Pole location(s) dimensions are relative to 0,0 reference point(s)

ENGINEERED DESIGN By: Joe Nicholson • File #198894C • 04-Aug-25

Ultimate Sports Complex

Pompano Beach,FL

Grid Summary

Name:	Spill (fc) - East
Spacing:	30.0' x 10.0'
Height:	3.0' above grade

Illumination Summary

INITIAL HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.33**
Maximum:	1.1
Minimum:	0.0
Avg/Min:	-
Max/Min:	-
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	18
FIXTURE INFORMATION	
Applied Circuits:	A,B
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 80
0' 80' 160'

Pole location(s) dimensions are relative to 0,0 reference point(s)

ENGINEERED DESIGN By: Joe Nicholson • File #198894C • 04-Aug-25

Ultimate Sports Complex

Pompano Beach,FL

Grid Summary

Name: Spill (fc) - East
Spacing: 30.0' x 10.0'
Height: 3.0' above grade

Illumination Summary

INITIAL MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.80**
Maximum:	1.0
Minimum:	0.0
Avg/Min:	-
Max/Min:	-
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	18
FIXTURE INFORMATION	
Applied Circuits:	A,B
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

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ILLUMINATION SUMMARY

Equipment List For Areas Shown

Above Field Level is height of fixtures above area shown



SCALE IN FEET 1 : 80
0' 80' 160'

Pole location(s) dimensions are relative to 0,0 reference point(s)

ENGINEERED DESIGN By: Joe Nicholson • File #198894C • 04-Aug-25

Ultimate Sports Complex

Pompano Beach,FL

Grid Summary

Name: Glare (cd) - East
Spacing: 30.0' x 10.0'
Height: 5.0' above grade

Illumination Summary

INITIAL MAX CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	**29016.08**
Maximum:	149835.9
Minimum:	1.0
Avg/Min:	29002.75
Max/Min:	**154414.63**
UG (adjacent pts):	0.00
CU:	0.00
No. of Points:	18
FIXTURE INFORMATION	
Applied Circuits:	A,B
No. of Fixtures:	**41**
Total Load:	42.58 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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ILLUMINATION SUMMARY



SCALE IN FEET 1 : 80
0' 80' 160'

Pole location(s) dimensions are relative to 0,0 reference point(s)

ENGINEERED DESIGN By: Joe Nicholson • File #198894C • 04-Aug-25

Ultimate Sports Complex

Pompano Beach,FL

Equipment Layout

INCLUDES:
- Football
- Security

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Structure				Fixtures	
QTY	STRUCTURE ID	SIZE	GLOBAL ELEVATION	ABOVE GLOBAL LEVEL	FIXTURE TYPE	QTY/POLE
3	F1 F3-F4	80'	-	80'	TLC-LED-1200	8
				15.5'	TLC-BT-575	2
1	F2	80'	-	80'	TLC-LED-1200	8
				70'	TLC-LED-550	1
				15.5'	TLC-BT-575	2
4				Totals		41

Above Global Level is height of fixtures above design (0,0,0)

Single Fixture Amperage Draw Chart

Drive Specifications (.90 min power factor)	Line Amperage Per Fixture (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8	3.0
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.8	1.4

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EQUIPMENT LAYOUT

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212 NW 16 ST
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DRAWN BY: AK
CHECKED BY: RS
DATE: 05/19/2025

REVISIONS:
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MUSCO LIGHTING

System Requirements: Control System Summary

Project Name: Ultimate Sports Complex | Project #: 198894
Control System ID: 1 of 1
Distribution Panel Location/ID: Football

Project Information

Control System

Control System ID:	1 of 1
Control System Type:	Control-Link ® Control and Monitoring System
Communication Type:	PowerLine-ST

Power Requirements

Control cabinet(s):	
Control voltage (phase to neutral)	120/60
VA loading - Inrush	1553.0
VA loading - Sealed	180.0
Lighting Circuits:	
Voltage/Hertz/Phase	480/60/1

Project Notes:

Equipment Listing		
Description	**Qty**	**Size (in)**
Control and monitoring cabinet - primary	1	24 X 48
Contactors, 30 amperes	4	-
Off/On/Auto switches	1	-

Important Notes:

1. Please confirm that the lighting circuit voltage listed above is accurate for this facility. This is the voltage/phase being connected and utilized at each lighting pole's electrical components enclosure disconnect. Inaccurate voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole location. Musco's single phase luminaires come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each circuit at each pole location. Contactors are 3 pole and 100% rated for the published continuous load.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. Size overcurrent devices using the full load amps column of the Circuit Summary by Switch chart (Minimum power factor is 0.9). Size conduit per code unless otherwise specified as larger to allow for harness connectors.
6. Avoid use of in-ground junction/pull boxes when possible. If used, the following best practices must be followed:
   - Underground handholes (pull boxes) must be supported to prevent settling. Boxes buried directly in soil, without support, are not allowed.
   - Use polymer concrete lids marked with ELECTRIC for underground handholes. Steel lids are not allowed.
   - Avoid underground connections when possible. If used, all wire connectors must be UL listed for Wet Locations to prevent leakage current.
7. Control power wiring must be in separate conduit from line or load power wiring. Communication cables must be in separate conduit from any power wiring.
8. Test wire per ANSI/NETA ATS-2021. Wires with insulation resistance less than 100 MOhms, in water-filled conduit, must be replaced.
9. Refer to Installation Instructions for more details on equipment information and the installation requirements.

System Requirements: Control System Summary

Project Name: Ultimate Sports Complex | Project #: 198894
Control System ID: 1 of 1
Distribution Panel Location/ID: Football

Equipment Layout and Connection Details

Connection Details	
ID	**Description**
1a	Line power to contactors, and equipment grounding conductor. Requires one circuit per contactor, size wiring per load and voltage drop.
1b	Load power from contactors, and equipment grounding conductor. Requires one circuit per contactor, size wiring per load and voltage drop.
2a	Control power with equipment ground to control cabinet. Requires dedicated 20 A circuit. Provide transformer if control voltage not present.

Equipment	
ID	**Description**
1	Control and monitoring cabinet - primary

System Requirements: Control System Summary

Project Name: Ultimate Sports Complex | Project #: 198894
Control System ID: 1 of 1
Distribution Panel Location/ID: Football

Circuit Summary

Switching Schedule	
Field/Switch Description	**Switches**
Football	1

Control Module ID: 1 — **Lighting Circuit Voltage: 480/60/1**

Circuit Summary by Switch							
Switch	**Zone Description**	**Pole ID**	**Qty of Fixtures**	**Full load amperes**	**Contactor Size (Amps)**	**Cabinet #**	**Contactor ID**
1	Football	F1	10	26.9	30	1	C1
	Football	F2	11	28.29	30	1	C2
	Football	F3	10	26.9	30	1	C3
	Football	F4	10	26.9	30	1	C4

GENERAL NOTES:

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REVISIONS:
1 PERMIT CO-ORD 08-04-25
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MUSCO LIGHTING

GENERAL NOTES (INSTALLATION)

1. ALL HOLES CREATED IN CEILING, PARTITIONS, ETC. AS A RESULT OF DEMOLITION SHALL BE PATCHED BACK TO MAINTAIN THE EXISTING FIRE AND SMOKE INTEGRITY.
2. SLEEVE AND FIRE STOP PENETRATIONS OF RATED WALLS, FLOORS, CEILINGS AND ROOFS. FLASH AND COUNTER FLASH ALL ROOF PENETRATIONS.
3. ALL HORIZONTAL SANITARY PIPING SHALL SLOPE AT ⅛" PER FOOT MINIMUM FOR 3" AND LARGER AND AT ¼" SLOPE FOR 2 ½" PIPES AND SMALLER. UNLESS OTHERWISE STATED.
4. DISTANCE OF TRAP FROM VENT. EACH FIXTURE TRAP SHALL HAVE A PROTECTING VENT LOCATED SO THAT THE SLOPE AND THE DEVELOPED LENGTH IN THE FIXTURE DRAIN FROM THE TRAP WEIR TO THE VENT FITTING ARE WITHIN THE REQUIREMENTS SET IN TABLE 909.1 (FBC-PLUMBING).
5. THERE SHALL BE NO LENGTH GREATER THAN 2' FROM THE VENT CONNECTION FOR ANY FUTURE DRAIN OUTLETS.
6. EVERY DRY VENT CONNECTING TO A HORIZONTAL DRAIN SHALL CONNECT ABOVE THE CENTERLINE OF THE HORIZONTAL PIPE FBC 905.3.
7. WHERE CONNECTION TIES INTO HORIZONTAL SANITARY STACK THE CONNECTION SHALL BE A MINIMUM OF 10X THE STACK DIAMETER DOWNSTREAM OF THE VERTICAL TO HORIZONTAL TRANSITION. UNLESS OTHERWISE STATED.
8. SANITARY TEE CAN BE USED ONLY IN THE VERTICAL POSITION. TEE-WYE CAN BE USED FOR HORIZONTAL POSITION AND VENTING ONLY.
9. SHORT TURN FITTINGS SHOULD NEVER BE INSTALLED ON HORIZONTAL PIPING, BUT MAY BE USED VERTICALLY WHEN TRANSFERRING TO A HORIZONTAL.
10. SANITARY WASTE AND VENT PIPING SHALL BE INSTALLED w/NO-HUB JOINTS.
11. ANY PIPE PASSING THROUGH OR UNDER A FOUNDATION WALL OR FOOTER SHALL BE PROVIDED WITH A WITH A PIPE SLEEVE TWO PIPE SIZES GREATER THAN THE PIPE PASSING THROUGH THE FOUNDATION OR FOOTER.
12. CONTRACTOR TO PROVIDE SHUT-OFF VALVES ON ALL HOT AND COLD WATER LINES AT CONNECTION TO MAIN LINES.
13. UNDER GROUND WATER PIPING SHALL BE 5' MINIMUM AWAY FROM SANITARY PIPING. WHERE WATER LINE AND SANITARY LINE CROSS, WATER SHALL BE INSTALLED MINIMUM OF 12" ABOVE SANITARY AND SHALL BE EITHER SCHEDULE 40 PVC OR DOUBLE WALLED PIPING.
14. PIPES PASSING THROUGH CONCRETE, CINDER OR OTHER CORROSIVE MATERIAL SHALL BE PROTECTED AGAINST EXTERNAL CORROSION BY A PROTECTIVE SHEATHING OR WRAPPING AS PER THE FBC 305.1.
15. CONTRACTOR SHALL CONNECT WATER AND WASTE TO EQUIPMENT FURNISHED BY OTHERS AS INDICATED ON DRAWINGS. ALL FIXTURES TO BE PROTECTED AGAINST WATER HAMMER BY SHOCK ARRESTERS.
16. ALL PIPING BEING INSTALLED WITHIN A PLENUM/WALLS/CHASE OR OPENING THAT IS EXPOSED TO PLENUM ARE TO BE PLENUM RATED. IN THE EVENT THAT THERE IS EXISTING PIPING WITHIN A PLENUM CONTRACTOR SHALL FIRE WRAP OR USE OTHER MEANS TO MAKE THE PIPING PLENUM RATED. FIRE CAULK AT PIPING PENETRATIONS SHALL ALSO BE PROVIDED TO MAINTAIN PLENUM RATING.
17. SLEEVE ALL SOFT COPPER PENETRATIONS THROUGH RATED PENETRATIONS AND FIRESTOP.
18. NO PIPING OVER ELECTRICAL EQUIPMENT. ENGINEER SHALL BE IMMEDIATELY NOTIFIED IF THIS OCCURS.
19. PROVIDE ACCESS PANELS TO ALL VALVES, HAMMER ARRESTORS AND STUDOR VENTS LOCATED WITHIN CHASES OR NON-ACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
20. COMPATIBLE UNLEADED SOLDER AND DIELECTRIC FITTINGS AS REQUIRED. DIELECTRIC FITTINGS TO BE PROVIDED AT CONNECTIONS BETWEEN TWO DIFFERENT TYPES OF METAL PIPING.
21. FIXTURES SHALL BE COMPLETE WITH DRAINS, TRAPS, ⅛ TURN VALVES, BRAIDED SUPPLY HOSE AND ANY OTHER ACCESSORY REQUIRED.
22. INDIVIDUAL SHOWER AND TUB-SHOWER COMBINATION VALVES SHALL BE BALANCED- PRESSURE, THERMOSTATIC OR COMBINATION BALANCED-PRESSURE/THERMOSTATIC-MIXING VALVE TYPE WITH A HIGH LIMIT STOP THAT CONFIRM ASSE 1016 & AS PER FBC RES.(2023) P2708.4. THE HIGH LIMIT STOP SHALL BE SET NOT GREATER THAN 120°F. IN-LINE THERMOSTATIC VALVES SHALL NOT BE UTILIZED FOR COMPLIANCE WITH THIS SECTION.
23. COLD OR TEMPERED WATER (85-110degF) SHALL BE DELIVERED FORM LAVATORIES AND GROUP WASH FIXTURES LOCATED IN PUBLIC TOILET FACILITIES PROVIDED FOR CUSTOMERS, PATRONS AND VISITORS. IF TEMPERED WATER IS DELIVERED IT SHALL BE THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B125.3. FPC (2023) 419.5.
24. PROVIDE CLEANOUTS IN ACCORDANCE WITH THE FBC (PLUMBING).
25. EXTERIOR CLEAN OUTS SHALL BE MARKED AND TERMINATED UP TO GRADE. COVER SHALL BE INCLUDED.
26. PROVIDE TRAP PRIMER CONNECTION TO ALL FLOOR DRAINS.
27. CONTRACTOR SHALL PROVIDE NEW VALVES FOR EXISTING VALVES THAT ARE NOT CLOSING WHEN CONNECTING TO EXISTING PIPING IN BID.
28. CONTRACTOR SHALL PROVIDE STOP VALVES BEFORE ALL OPERATING HANDLES AND FAUCETS, WHERE REQUIRED.
29. WHERE CORE DRILLING OF FLOOR/WALLS IS REQUIRED, CONTRACTOR SHALL SEAL OPENINGS WATERTIGHT AFTER UTILITIES HAVE BEEN INSTALLED. LOCATION OF CORED HOLES SHALL BE COORDINATED WITH LOCATION OF EQUIPMENT IN A MANNER TO BE CLEAN AND FUNCTIONAL.
30. INSULATION: HOT WATER AND HOT WATER RETURN PIPING SHALL BE INSTALLED WITH 1" THICK FIBERGLASS INSULATION WITH VAPOR BARRIER JACKET, FLAME SPREAD OF 25 OR LESS, SMOKE DEVELOPED RATING OF LESS THAN 50, OWENS CORNING OR APPROVED EQUAL.
31. INSULATION: ALL STORM WATER HORIZONTAL PIPING, OFFSETS AND ROOF DRAIN BODIES THAT ARE INSTALLED WITHIN CONDITIONED SPACES (ABOVE CEILING INCLUDED) SHALL BE INSULATED TO PREVENT CONDENSATION.
32. LABELING: WHEN PIPING IS EXPOSED, CONTRACTOR SHALL PROVIDE PIPE LABELING EVERY 10'-0".
33. LABELING: IDENTIFY EACH VALVE OR CONTROL DEVICE WITH A PERMANENT, ENGRAVED, BRASS OR PLASTIC VALVE TAG. FOR PLASTIC NAMEPLATE ENGRAVE WITH HIGH WHITE CHARACTERS ON A BLACK OR BLUE BACKGROUND. HANG NAMEPLATES FROM VALVE.

GENERAL NOTES (EQUIPMENT)

1. HOT WATER HEATER:
   a. WATER HEATERS MUST MEET FLORIDA ENERGY CONSERVATION CODE MINIMUM EFFICIENCIES.
   b. ALL WATER HEATERS SHALL MEET THE STANDARDS OF THE LATEST ENERGY EFFICIENCY CODE.
2. GREASE TRAP AND INTERCEPTOR:
   c. PROVIDE HYDRO-MECHANICAL GREASE TRAP AND SOLIDS INTERCEPTOR WITH ADJUSTABLE TUBING ALLOWING COVERS TO BE INSTALLED FLUSH WITH GRADE.
   d. PROVIDE ANTI-FLOATATION ANCHOR KIT WHEN GREASE TRAP IS NOT INSTALLED INSIDE.
   e. PROVIDE H-20 RATED COVERS WHEN INSTALLED IN AREA OF VEHICULAR TRAFFIC.
3. APPLIANCES SHALL BE CONNECTED TO THE FUEL PIPING SYSTEM BY ONE OF THE FOLLOWING:
   f. RIGID METALLIC PIPE AND FITTINGS.
   g. SEMI-RIGID METALLIC TUBING AND METALLIC FITTINGS. LENGTHS SHALL NOT EXCEED 6 FEET AND SHALL BE LOCATED ENTIRELY IN THE SAME ROOM AS THE APPLIANCE. SEMI RIGID METALLIC TUBING SHALL NOT ENTER A MOTOR-OPERATED APPLIANCE. THROUGH AN UNPROTECTED KNOCKOUT OPENING.
   h. LISTED AND LABELED APPLIANCE CONNECTORS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND LOCATED ENTIRELY IN THE SAME ROOM AS THE APPLIANCE.
   i. LISTED AND LABELED QUICK DISCONNECT DEVICES USED IN CONJUNCTION WITH LISTED AND LABELED APPLIANCE CONNECTORS
   j. LISTED AND LABELED CONVENIENCE OUTLETS USED IN CONJUNCTION WITH LISTED AND LABELED APPLIANCE CONNECTORS
   k. LISTED AND LABELED APPLIANCE CONNECTORS COMPLYING WITH ANSI Z 21.69 AND LISTED FOR USE WITH FOOD SERVICE EQUIPMENT HAVING CASTERS, OR THAT IS OTHERWISE SUBJECT TO MOVEMENT FOR CLEANING, AND OTHER LARGE MOVABLE EQUIPMENT.
   l. 6. EQUIPMENT: CONNECTORS AND TUBING SHALL BE INSTALLED SO AS TO BE PROTECTED AGAINST PHYSICAL DAMAGE.
4. APPLIANCE FUEL: CONNECTORS SHALL HAVE AN OVERALL LENGTH NOT TO EXCEED 3 FEET EXCEPT FOR RANGE AND DOMESTIC CLOTHES DRYER CONNECTORS, WHICH SHALL NOT EXCEED 6 FEET IN LENGTH. CONNECTOR S SHALL NOT BE CONCEALED WITHIN, OR EXTENDED THROUGH, WALLS, FLOORS, PARTITION, CEILINGS OR APPLIANCE HOUSING. A SHUTOFF VALVE NOT LESS THAN THE NOMINAL SIZE OF THE CONNECTOR SHALL BE INSTALLED AHEAD OF THE CONNECTOR.
5. WHERE APPLIANCES ARE EQUIPPED WITH CASTERS OR ARE OTHERWISE SUBJECT TO PERIODIC MOVEMENT OR RELOCATION FOR PURPOSES SUCH AS ROUTINE CLEANING AND MAINTENANCE, SUCH APPLIANCES SHALL BE CONNECTED TO THE SUPPLY SYSTEM PIPING BY MEANS OF AN APPROVED FLEXIBLE CONNECTOR AND LABELED FOR THE APPLICATION. SUCH FLEXIBLE CONNECTORS SHALL BE INSTALLED AND PROTECTED AGAINST PHYSICAL DAMAGE IN ACCORDANCE WITH THE MANUFACTURER/S INSTALLATION INSTRUCTIONS.
6. WASHING MACHINE: PROVIDE STAINLESS STEEL BRAIDED HOSES FOR HOT AND COLD WATER SUPPLY.

GENERAL NOTES (ADMINISTRATIVE)

1. REFER TO ALL DRAWINGS FOR COORDINATION OF THE PLUMBING WORK. THEY ARE DIAGRAMMATIC IN NATURE. DO NOT SCALE. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT DIMENSIONED LOCATION OF EQUIPMENT AND CONFIRM WITH OWNER'S REPRESENTATIVE AND/OR ARCHITECT ALSO USING THE MANUFACTURER'S REQUIREMENTS. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER TRADES PLANS. THE FOLLOWING DRAWINGS ARE TO BE CONSIDERED ONE PART OF A SET OF DOCUMENTS.
2. ALL EXISTING LOCATIONS ARE TAKEN FROM EXISTING DRAWINGS AND KNOWN FIELD CONDITIONS. IT SHALL BE WITHIN THE CONTRACTOR'S SCOPE OF WORK TO VERIFY FIELD DIMENSIONS OF EXISTING EQUIPMENT OR SYSTEMS PRIOR TO DEMOLITION OR FABRICATION OF NEW WORK WHICH IS TO BE CONNECTED TO THE EXISTING. CONTRACTOR SHALL MAKE OFFSETS AS REQUIRED IN NEW AND/OR EXISTING PIPING AND CONDUIT TO ACCOMMODATE THE NEW WORK.
3. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE LOCATIONS AND MOUNTING HEIGHTS.
4. CONTRACTOR TO FIELD VERIFY EXACT SIZES AND LOCATIONS OF EXISTING PIPING WITHIN AREAS OF SCOPE PRIOR TO CONSTRUCTION. ANY PIPING WHICH MUST REMAIN AS PART OF AN ACTIVE SYSTEM AND IS IN CONFLICT WITH THE NEW LAYOUT, NEW LAYOUT SHALL BE RELOCATED AT NO ADDITIONAL COST OVER THE CONTRACT AMOUNT.
5. ARCHITECTURAL AND/OR ENGINEERING EXPENSES THAT ARE INCURRED DUE TO REVISIONS OR SUBSTITUTIONS REQUESTED BY THE CONTRACTOR SHALL BE PAID FOR BY THE CONTRACTOR.
6. ALL PIPING CONNECTIONS INCLUDING BUT NOT LIMITED TOO OFFSETS, BENDING AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING PIPING DIFFERS FROM DRAWINGS.
8. CONTRACTOR SHALL ARRANGE AND PAY FOR ALL PERMITS, LICENSES, INSPECTIONS AND TESTS. OBTAIN THE REQUIRED CERTIFICATES AND PRESENT TO OWNER.
9. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATION OR INSTALLATION OF MATERIALS OR EQUIPMENT.
10. ALL DOWN TIME TO BE COORDINATED WITH OWNER IN WRITING. ALL DOWN TIME WORK SHALL BE PERFORMED AS DIRECTED BY THE OWNER.
11. THE WORK THAT IS TO BE DONE UNDER THIS CONTRACT INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS AND EQUIPMENT, PERMITS, FEES, INSPECTIONS, TESTS AND INSURANCE, REQUIRED FOR THE COMPLETION OF THE SYSTEMS AS SHOWN ON THE DRAWINGS AND/OR LISTED BELOW. CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE BIDDING AND FAMILIARIZE THEMSELVES WITH EXISTING EQUIPMENT, SYSTEMS AND BUILDING STRUCTURE.
12. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF SANITARY, STORM, DOMESTIC WATER, AND CONDENSATE PIPING BEFORE STARTING ANY WORK. NOTIFY ARCHITECT/ENGINEER OF ANY DEVIATIONS FROM DESIGN DRAWINGS.
13. ALL WORK SHALL BE COORDINATED WITH EXISTING TRADES AND IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND STANDARDS.
14. ALL MATERIAL, EQUIPMENT, AND APPARATUS SHALL BE NEW, EXCEPT WHEN CALLED FOR AS BEING REUSED OR FURNISHED BY OTHERS. ALL MATERIAL SHALL BE APPROVED BY THE ARCHITECT/ENGINEER BEFORE INSTALLATION.
15. SHOP DRAWINGS: CONTRACTOR SHALL REVIEW SUB SUBMITTALS PRIOR TO SUBMITTING SHOP DRAWINGS FOR APPROVAL. A MINIMUM OF 5 COPIES OF FULLY DESCRIPTIVE, LITERATURE, INCLUDING BUT NOT LIMITED TO: WATER HEATERS, AND PLUMBING FIXTURES. NO WORK SHALL PROCEED WITHOUT THE APPROVAL OF THESE SUBMITTALS. MORE THEN TWO REVIEWS DUE TO OMISSION OR ERROR, OF THE SAME SUBMISSION MAY INCUR COSTS TO THE CONTRACTOR.
16. IN THE EVENT A BEAM SLEEVE PENETRATION IS REQUIRED, COORDINATE PENETRATIONS WITH ALL TRADES, THE ARCHITECT AND THE STRUCTURAL ENGINEER.
17. ALL PRODUCTS SHALL BE MANUFACTURED WITHIN THE UNITED STATES WHERE POSSIBLE. PIPING AND RAW MATERIALS WITH ORIGINS OUTSIDE OF THE UNITED STATES SHALL BE IDENTIFIED AS PART OF THE BID. PIPING, BOLTS, FITTINGS AND MISCELLANEOUS METAL PRODUCTS ORIGINATING FROM OUTSIDE THE USA MUST BE IDENTIFIED.
18. PRODUCTS USED FOR THIS PROJECT SHALL COMPLY WITH APPLICABLE UNITED STATES STANDARDS. COMPLIANCE WITH A FOREIGN STANDARD AS AN ALTERNATE SHALL NOT BE ACCEPTED.
19. GUARANTEE: THE COMPLETED INSTALLATION SHALL BE FULLY GUARANTEED AGAINST DEFECTIVE MATERIALS AND/OR IMPROPER WORKMANSHIP FOR A MINIMUM OF ONE YEAR FOR MATERIAL AND LABOR.

GENERAL NOTES (MATERIAL)

1. PIPING MATERIALS:
   a. SANITARY, DRAINAGE, WASTE, AND VENT:
      a.a. UNDER GRADE: SCH. 40 PVC SOLID WALL (MIN.). FOAM CORE AND GREEN "3034" PVC PIPE WILL NOT BE ACCEPTED.
      a.b. ABOVE GRADE: SCH. 40 CAST IRON (MIN.) HUB-LESS CONNECTION; FOR SPECIAL APPLICATIONS SCH. 40 PVC SOLID WALL (MIN.) CAN BE APPROVED IF REQUESTED AND REQUIRED BUT WILL NOT BE ALLOWED FOR INSTALLATION IN PLENUM SPACE.
   b. DOMESTIC WATER PIPING:
      b.a. UNDER GRADE: COPPER PIPE, TYPE "K" WITH BRAZED JOINTS AND FITTINGS.
      b.b. ABOVE GRADE: COPPER PIPE, TYPE "L" WITH BRAZED, SOLDERED OR PRESS-FIT JOINTS AND FITTINGS. TYPE "L" WITH BRAZED, SOLDERED OR PRESS-FIT JOINTS AND FITTINGS IN CONCEALED SPACES. ISOLATE PIPING FROM CONCRETE WITH INSULATING MATERIAL.
      b.c. PROVIDE BALL TYPE SHUT OFF VALVES AT MAIN SUPPLY.
      b.d. PROVIDE ½ TURN BALL VALVES AT FIXTURES.
      b.e. PROVIDE TYPE "K" PIPING FOR METER TO MAIN SOV WHETHER ABOVE OR BELOW GROUND.
   c. DOMESTIC HOT WATER PIPING:
      c.a. UNDER GRADE: COPPER PIPE, TYPE "K" WITH BRAZED JOINTS AND FITTINGS. PROVIDE IN PRE-INSULTED PIPING.
      c.b. ABOVE GRADE: COPPER PIPE, TYPE "L" WITH BRAZED, SOLDERED OR PRESS-FIT JOINTS AND FITTINGS. TYPE "L" WITH BRAZED, SOLDERED OR PRESS-FIT JOINTS AND FITTINGS IN CONCEALED SPACES. ISOLATE PIPING FROM DIRECT CONTACT WITH CONCRETE AND INSULATING MATERIAL FOR HOT WATER AND HOT WATER RETURN PIPING.
      c.c. PROVIDE BALL TYPE SHUT OFF VALVES AT MAIN SUPPLY.
      c.d. PROVIDE ½ TURN BALL VALVES AT FIXTURES
   d. DOMESTIC WATER PIPING SYSTEM:
      d.a. PROVIDE WATER HAMMER ARRESTERS ON DISTRIBUTION PIPING.
      d.b. PROVIDE INSULATION ON HOT WATER AND HOT WATER RETURN PIPING PER FBC (ENERGY) TABLE C403.2.10 AND R403.5.3. FIBERGLASS, ARMAFLEX OR CLOSED CELL INSULATION (DEPENDING ON LOCATION), WITH SELF SEALING JACKET.
      b.c. UPONOR PEX-A PIPING AS AN APPROVED ALTERNATE TO COPPER PIPING. FOLLOWING UPONOR LOGIC & ASTM F 1960 DESIGN GUIDELINES ALL PIPE, VALVES & FITTINGS MUST BE OF SAME MANUFACTURER. IT IS RECOMMENDED THAT A FACTORY TRAINED REP. MUST BE PRESENT TO QUALIFY INSTALLING CONTRACTOR & BE PRESENT FOR PERIODIC JOBSITE VISITS.
   c. STORM DRAINAGE PIPE:
      c.a. UNDER GRADE: SCH. 40 PVC SOLID WALL (MIN.). FOAM CORE WILL NOT BE ACCEPTED.
      c.b. ABOVE GRADE: SCH. 40 CAST IRON (MIN.); HUB-LESS CONNECTION.
   d. STORM DRAINAGE SYSTEM:
      d.a. PROVIDE SEAMLESS GUTTER SYSTEM, SEE ARCH DRAWINGS FOR TYPE AND STYLE.
      d.b. ALL INTERIOR STORM DRAINAGE PIPING SHALL BE INSULATED WITH ½" (MIN.) ELASTOMERIC SELF SEALING JACKET.
   e. CONDENSATE PIPE:
      e.a. COPPER TYPE "DWV OR M" ABOVE SLAB ON GRADE. SCH. 40 PVC MAY BE USED WHEN NOT BEING INSTALLED IN A PLENUM.
      e.b. INSULATE PIPING WITH ½" (MIN.) ELASTOMERIC SELF SEALING JACKET INSULATION.
   f. GENERAL PIPING REQUIREMENTS:
      f.a. PIPING IN PLENUMS SHALL BE CAST IRON OR FIRE RATED.
      f.b. PIPES SHALL BE INSTALLED IN ACCORDANCE WITH FLORIDA BUILDING CODE, LOCAL CODES/STANDARDS, AND MANUFACTURER'S RECOMMENDATIONS.
      f.c. PREVENT FOREIGN MATTER FROM ENTERING PIPE DURING AND AFTER INSTALLING PIPE. PLUG END OF PIPES FOR OVERNIGHT OR EXTENDED PERIODS.
      f.d. SHARKBITE PIPING AND FITTINGS SHALL NOT BE INSTALLED ON PROJECT.
   g. FUEL/GAS PIPING
      g.a. METALLIC GAS PIPING SHALL BE PAINTED WITH YELLOW RUST INHIBITOR PAINT WHEN PIPING IS EXPOSED TO THE ELEMENTS.
      g.b. POLYETHYLENE UNDERGROUND PIPING SHALL HAVE BURIAL TAPE AND WIRE INSTALLED ABOVE PIPING.
3. VALVES: DOMESTIC WATER VALVES SHALL BE OF BRONZE BODY, SWEAT ENDS.
4. PIPING TESTING AND CLEANING:
   a. PRESSURE TEST ALL UNDERGROUND PIPING BEFORE PIPING IS CONCEALED OR CONNECTED TO EQUIPMENT AND PLUMBING FIXTURES. ALL PIPING TESTING SHALL BE DONE IN THE PRESENCE OF CITY REPRESENTATIVE. GIVE TWO WORKING DAYS (MIN.) NOTICE PRIOR TO PERFORMING TESTING. ALL SANITARY AND DOMESTIC WATER SUPPLY PIPING SHALL BE TESTED FOR LEAKS.
   b. DISINFECTION: ALL DOMESTIC WATER PIPING SHALL BE DISINFECTED BY INTRODUCING A SOLUTION OF CALCIUM HYPOCHLORITE OF 50 PARTS PER MILLION OF CHLORIDE AND AS PER AWWA STANDARDS.

DEMOLITION NOTES

1. CONTRACTOR SHALL REMOVE EXISTING SERVICES SUCH AS WATER, WASTE, VENT, FUEL AND MEDICAL GAS PIPING, SERVING FIXTURES AND/OR CONNECTIONS TO EQUIPMENT WHICH IS TO BE REMOVED, OR RELOCATED AS INDICATED ON DRAWINGS. SEAL AND CAP SERVICES BACK TO MAIN SERVICE LINES.
2. ALL DEMOLITION WORK SHALL BE SCHEDULED WITH OWNER TO MINIMIZE DISRUPTION OF SERVICES AND PROVIDE FOR THE UNINTERRUPTED FUNCTIONING OF THE BUILDING AREA.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION MATERIAL OUTLINED IN THE DRAWINGS PROPERLY OFF SITE IN AN EXPEDITIOUS MANNER. ALL ITEMS LISTED FOR DEMOLITION ARE TO BE REMOVED, NO ITEM IS TO BE ABANDONED, UNLESS OTHERWISE NOTED.
4. EXISTING PLUMBING FIXTURES AND RELATED ITEMS WHICH ARE TO BE REMOVED, SHALL BE TURNED OVER TO THE OWNER. ITEMS THAT THE OWNER WISHES TO RETAIN SHALL BE DELIVERED TO STORAGE AS DIRECTED BY OWNER. ITEMS THAT THE OWNER DOES NOT WISH TO RETAIN SHALL BE DISPOSED OF LEGALLY.
5. EXISTING FIXTURES, EQUIPMENT, SERVICES, AND CONNECTIONS TO REMAIN AS IS UNLESS OTHERWISE NOTED. IF SUCH ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE REWORKED OR REPLACED AS REQUIRED TO PROVIDE ORIGINAL OPERATION.
6. PENETRATIONS OR OPENINGS FROM REMOVED PIPES THROUGH EXISTING WALLS SHALL BE PATCHED TO MATCH THE EXISTING STRUCTURE. SEE ARCHITECTURAL DRAWINGS FOR FINAL FINISHES. PENETRATIONS AND OPENINGS SHALL BE PATCHED, TO MAINTAIN THE EXISTING FIRE AND SMOKE INTEGRITY.
7. CONTRACTOR SHALL EXERCISE CAUTION DURING THE DEMOLITION OR REMOVAL OF ANY ITEMS SO AS NOT TO JEOPARDIZE THE SUSTAINABILITY OR INTEGRITY OF ANY WALL, CEILINGS OR STRUCTURAL REMAINS.
8. CONTRACTOR SHALL COORDINATE INTERRUPTION OF EXISTING SERVICES; WATER, WASTE, VENT, FUEL AND MEDICAL GASES WITH OWNER, BEFORE ANY CONSTRUCTION.
9. EXISTING FIXTURES, EQUIPMENT CONNECTIONS, AND SERVICES SUCH AS; WATER, WASTE, VENT, FUEL AND MEDICAL GAS SERVICES, SHALL BE FIELD VERIFIED FOR SIZE, MATERIAL AND EXACT LOCATIONS. EXISTING INFORMATION SHOWN WAS TAKEN FROM EXISTING DRAWINGS, IT WILL BE WITHIN THE CONTRACTOR'S SCOPE OF WORK TO MAKE ALL NECESSARY OFFSETS. IF DEVIATIONS ARE FOUND, CONTRACTOR SHALL BRING THEM TO THE ARCHITECT'S ATTENTION FOR COORDINATION.
10. REMOVE EXISTING STACKS AND RISERS LOCATED IN EXISTING PARTITIONS TO BE DEMOLISHED AND PROVIDE NEW OFF-SET AT CEILING AND DROP THROUGH FLOOR AND RECONNECT TO EXISTING SERVICES AT THE FLOOR BELOW.
11. ALL EXISTING NON-REUSED MATERIALS AND EQUIPMENT TO BE TURNED OVER TO THE OWNER.
12. WHERE EXISTING PIPING IS REMOVED OR DAMAGED; THE REPLACEMENT PIPING SHALL BE OF EQUAL OR BETTER QUALITY.
13. WHERE DEMOLITION WOULD AFFECT THE STRUCTURAL INTEGRITY OF THE BUILDING THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS. CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY FIELD CONDITION WHICH WOULD PRESENT A HAZARDOUS CONDITION TO THE STRUCTURE OR ITS OCCUPANTS BEFORE PROCEEDING. DO NOT PERFORM ANY STRUCTURAL DEMOLITION UNTIL APPROVED MEANS OF SUPPORT IS INSTALLED.
14. CONTRACTOR SHALL PROVIDE MEANS OF PREVENTING DUST FROM DEMOLITION AND CONSTRUCTION ACTIVITIES PENETRATING OCCUPIED AREAS. DEBRIS SHALL BE PROMPTLY REMOVED FROM THE BUILDING AND SITE AND DISPOSE OF IN A LEGAL APPROVED MANNER. SURFACES IN THE CONSTRUCTION AT THE END OF EACH WORK DAY. SURFACES IN ADJOINING AREAS WHICH BECOME DUST LADEN SHALL BE THOROUGHLY CLEANED.
15. NOT ALL ITEMS TO BE DEMOLISHED ARE SHOWN ON THE DRAWINGS PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING A WALK-THRU OF THE PROJECT PRIOR TO SUBMITTING A BID IN ORDER TO IDENTIFY POSSIBLE CRITICAL ITEMS WHICH ARE NOT OR INCORRECTLY ADDRESSED, REQUIRING CLARIFICATION.
16. FAILURE OF BIDDERS TO MAKE REQUIRED VISITATIONS AND/OR INVESTIGATIONS TO INFORM THEMSELVES FULLY OF EXISTING CONDITIONS AND TO INCLUDE IN THEIR PROPOSALS A SUM SUFFICIENT TO COVER ALL POSSIBLE FIELD CONDITIONS, WILL NOT IN ANYWAY ENTITLE THEM TO ANY EXTRA CHARGES OVER AND ABOVE THE AGREED UPON AMOUNT.
17. CONTRACTOR SHALL PROVIDE DURING DEMOLITION OPERATIONS ALL SAFETY MEASURERS AND FEATURES AS REQUIRED BY THE APPLICABLE CODES, RULES AND REGULATIONS HAVING JURISDICTION OVER THE PROJECT.
18. ALL PRECAUTIONS SHALL BE TAKEN REQUIRED TO PROTECT ALL UNDERGROUND OR OTHER CONCEALED UTILITIES. CONTRACTOR SHALL INSPECT CEILINGS AND CHASES TO ASSURE PROPER IDENTIFICATION OF EXISTING UTILITIES PRIOR TO CUTTING, PATCHING, CAPPING, ETC., AS REQUIRED.
19. CONTRACTOR SHALL PROTECT FROM DAMAGE ALL EXISTING FINISHES AND CONSTRUCTION NOT SCHEDULED FOR DEMOLITION.
20. ALL DRAWINGS AND TRADES SHALL BE REFERENCED BEFORE DEMOLITION CONSTRUCTION SHALL BEGIN TO ENSURE UNDERSTANDING THE TOTALITY OF THE PROJECTS SCOPE.
21. ANY UTILITIES LINES THAT ARE BROKEN OR DAMAGED DURING DEMOLITION OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL CHARGE TO THE CONTRACT PRICE OR SHALL BE REPAIRED BY THE OWNER AT THE CONTRACTOR'S EXPENSE.
22. CONTRACT DOCUMENTS FOR THE DEMOLITION WORK ARE BASED ON AS-BUILT DRAWINGS PROVIDED BY THE OWNER. ANY DISCREPANCIES BETWEEN THE WORK DEPICTED IN THE DOCUMENTS AND THE ACTUAL CONDITIONS ENCOUNTERED SHALL BE BROUGHT PROMPTLY TO THE ARCHITECT FOR REVIEW AND CLARIFICATION.

APPLICABLE CODES

2023 FLORIDA BUILDING CODE 8TH EDITION (BUILDING)
2023 FLORIDA BUILDING CODE 8TH EDITION (ENERGY)
2023 FLORIDA BUILDING CODE 8TH EDITION (PLUMBING)

LOCAL CODES AND ORDINANCES

PLUMBING SYMBOLS

FOR REFERENCE AND MAY NOT APPEAR IN PROJECT

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER SUPPLY
	DOMESTIC HOT WATER SUPPLY (120° UNLESS OTHERWISE NOTED)
	HOT WATER RE-CIRCULATION
	SANITARY (WASTE) PIPING
—	SANITARY VENT PIPING
— G —	GAS LINE PIPING
— SD —	STORM DRAIN
— GW —	GREASE WASTE PIPING
—RWL—	RAIN WATER LEADER (STORM WATER)
	CONDENSATE DRAIN PIPING
— X —	DEMOLITION
—EX CWS—	EXISTING COLD WATER SUPPLY
—EX HWS—	EXISTING HOT WATER SUPPLY
—EX SAN—	EXISTING SANITARY (WASTE) PIPING
—EX GAS—	EXISTING GAS LINE PIPING
— EX SD —	EXISTING STORM DRAIN
— EX GW —	EXISTING GREASE WASTE PIPING
— EX CD —	EXISTING CONDENSATE PIPING
	PIPING TO BE ELECTRICALLY HEAT TRACED
	CONNECT NEW TO EXISTING
	SLEEVED PENETRATION
AQ	AQUASTAT
OR	CHECK VALVE
	FLOOR DRAIN W/ P-TRAP
	HUB DRAIN (ALL TYPES) (SPECIFY)
	FLOOR DRAIN (ALL TYPES) (SPECIFY)
OR	SHUT OFF VALVE
	GATE VALVE
	BALANCING VALVE
	DRAIN W/ P-TRAP
FCO	FLOOR CLEANOUT OR GRADE CLEANOUT
OR	WALL CLEANOUT
OR	FLOOR OR GRADE CLEANOUT
OR	WATER HAMMER ARRESTER
	UNION
	VENT THROUGH ROOF
	HOT WATER RE-CIRCULATION PUMP
OR	FLOOR DRAIN W/TRAP PRIMER CONNECTION
OR	GAS REGULATOR
	GAS DIRT LEG
	FLOOR SINK
E	HOSE BIBB OR WALL HYDRANT
	AIR ADMITTANCE VALVE
	THERMOSTATIC MIXING VALVE

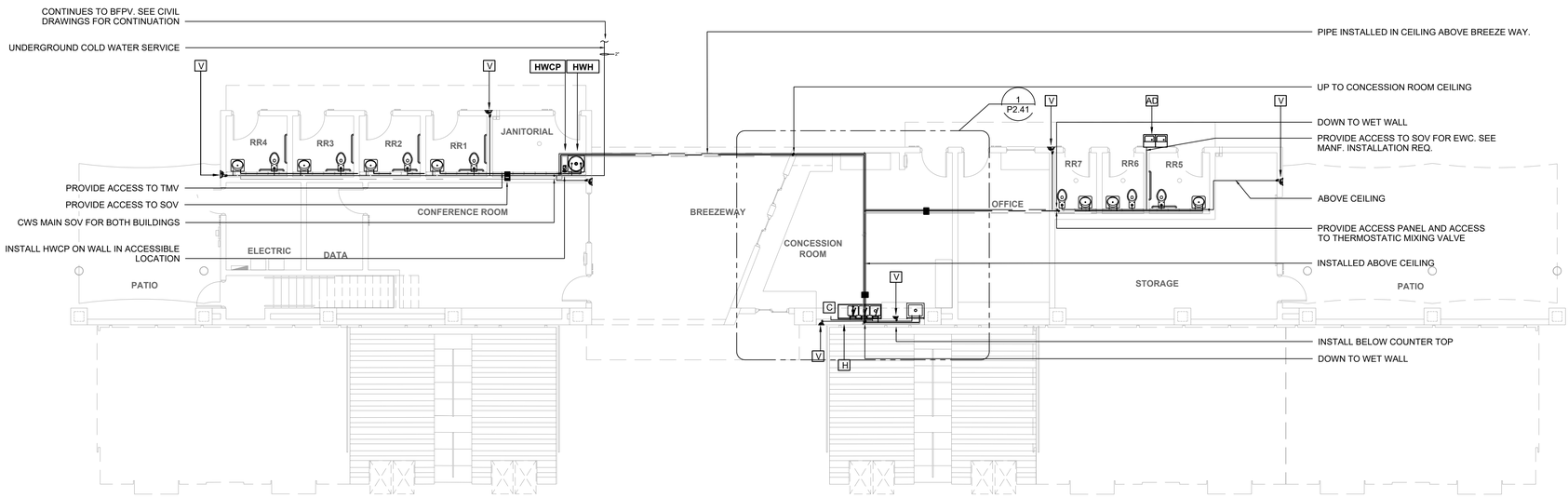
PLUMBING SHEET INDEX

P-0.00	PLUMBING LEGEND & GENERAL NOTES
P-2.11	PLUMBING SANITARY/WATER FLOOR PLAN
P-2.41	PLUMBING ENLARGED KITCHEN & SCHEDULES
P-2.51	PLUMBING ROOF PLAN & ISOMETRIC
P-5.00	PLUMBING DETAILS
P-5.01	PLUMBING GREASE
P-9.00	PLUMBING SANITARY ISOMETRIC
P-9.01	PLUMBING WATER ISOMETRIC

ABBREVIATIONS

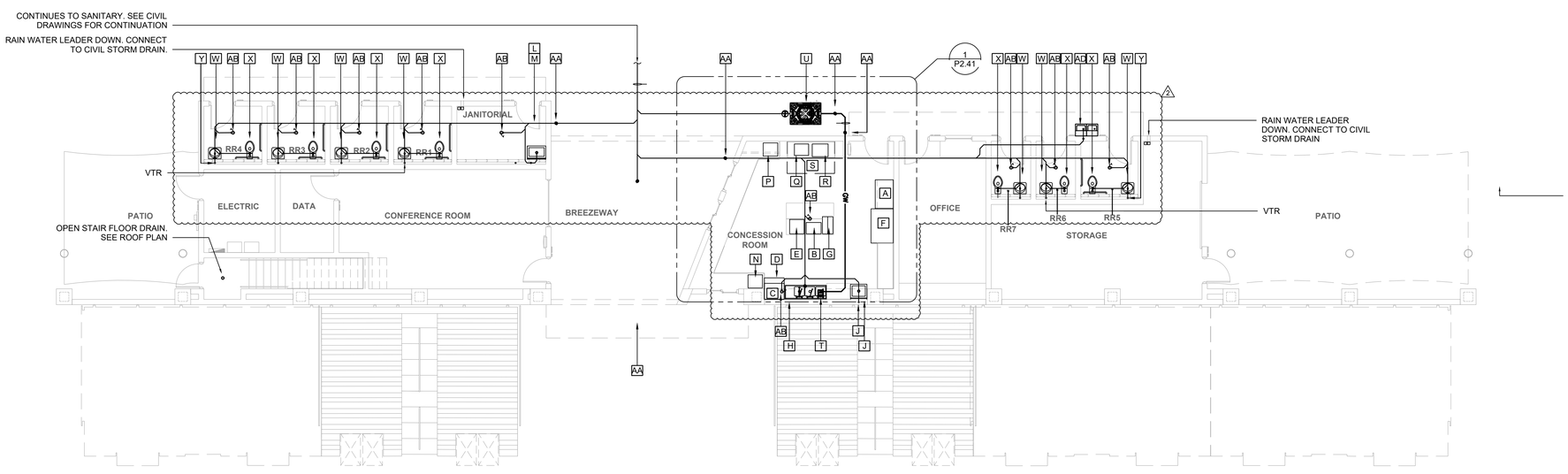
FOR REFERENCE AND MAY NOT APPEAR IN PROJECT

AAV	AIR ADMITTANCE VALVE
ABV	AUTO BALANCING VALVE
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AP	ACCESS PANEL
AVB	ATMOS. VACUUM BREAK
BT	BATHTUB
BFF	BELOW FINISH FLOOR
BFPV	BACK FLOW PREVENTER
C



1 P2.11 PLUMBING PROPOSED FIRST FLOOR PLAN DOMESTIC WATER

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



2 P2.11 PLUMBING PROPOSED FIRST FLOOR PLAN SANITARY

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

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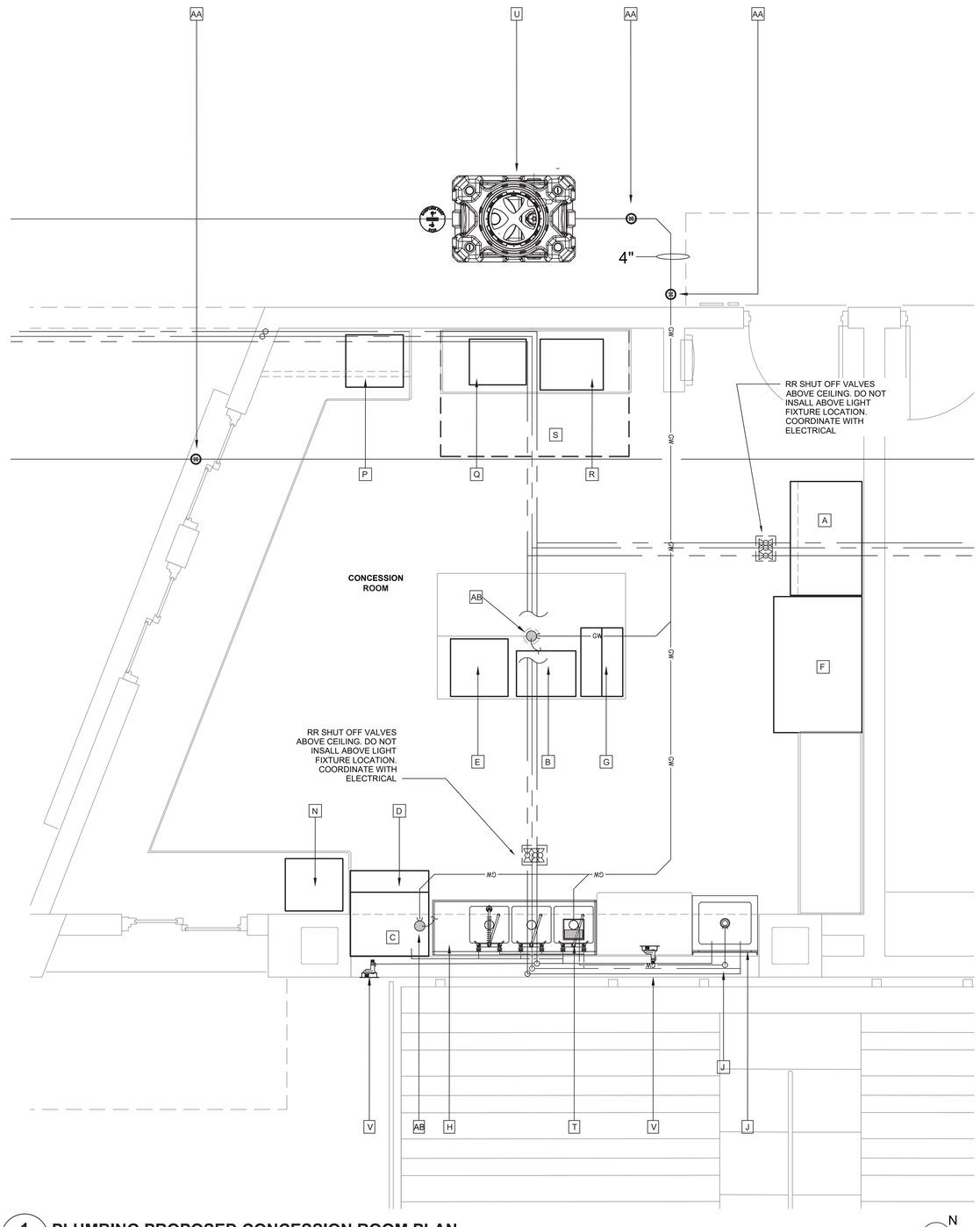
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SHEET
P2.11

PLUMBING PROPOSED FLOOR PLAN



1 P2.41 **PLUMBING PROPOSED CONCESSION ROOM PLAN**

SCALE: 1/2"=1'-0"

KITCHEN EQUIPMENT SCHEDULE (SOME ITEMS SHOWN FOR REFERENCE, SEE ARCH DWGS FOR COMPLETE LIST)

ITEM	QTY.	DESCRIPTION	SIZE	BRAND	MODEL	PROVIDED	WASTE	COLD WATER	HOT WATER	NOTES
A	1	LOW TEMP DISPLAY FREEZER & ICE CREAM FREEZER	43 1/2" x 27 3/8" x32 5/8"	EXCELLENCE INDUSTRIES	HL-11HC	OWNER	-	-	-	-
B	1	HOT DOG ROLLER KIT	22 3/4" W x 17 3/4"D x 11"H	AVANTCO	177RG30KIT10	OWNER	-	-	-	-
C	1	ICE MACHINE	30"W x 24.4"D x 22.4"H	AVANTCO	194MC50030HA	OWNER	-	1/2"	-	-
D	1	ICE STORAGE BIN	30"W x 32.7"D x 41.6"H	AVANTCO	194BIN27530	OWNER	-	-	-	-
E	1	PRETZEL MERCHANDISER	22" x 22" x 32 5/8"	NEMCO	6423	OWNER	-	-	-	-
F	1	DUAL TEMPERATURE REFRIGERATOR FREEZER	52"W x 33 3/4"D x 84"H	BEVERAGE AIR	HBRF49HC-1-A	OWNER	-	-	-	-
G	1	ULTRA-2 SLUSHY MACHINE	16"W x 26.2"D x 31.9"H	BUNN	3400.0081	OWNER	-	-	-	-
H	1	3 - COMPARTMENT SINK	62 1/2"W x 20 1/2"D x 43 3/4"H	JOHN BOOS	E3S8-15-14R15	BY CONTRACTOR	3-1/2"	1/2"	1/2"	FAUCET: T&S BRASS B-0133-CR-B
J	1	ADA HAND SINK	17"W x 15"D x 13'H	ELKAY	SEHS-17X	BY CONTRACTOR	1-1/2"	1/2"	1/2"	FAUCET: FACTORY INCLUDED WITH SEHS MODEL
K	1	SS TABLE	SEE ARCHITECTURAL DWGS			BY CONTRACTOR				
L	1	MOP SINK	28"W x 20"D x 12"H	REGENCY	600SM202812	BY CONTRACTOR	2"	-	-	-
M	1	MOP SINK SPLASH GUARD	28"W x 20"D x 15"H	REGENCY	600SPL2028R	BY CONTRACTOR	-	-	-	FAUCET: T&S BRASS B-0665-BSTP
N	1	COFFEE MACHINE	SEE ARCHITECTURAL DWGS			OWNER	-	-	-	
P	1	MICROWAVE	-	AMANA	HDC212	OWNER	-	-	-	
Q	1	COUNTERTOP FRYER	21 3/4"W x 17 1/2"D x 15 3/4"H	CECILWARE	EL2X15#	BY CONTRACTOR	-	-	-	-
R	1	COUNTERTOP GRILLE	24 1/8"W x 19 7/16"D x 12"H	AVANTCO	#177EG24N	BY CONTRACTOR	-	-	-	-
S	1	EXHAUST HOOD	72"W x 42"D x 24"H	GREENHECK	GHFW TYPE 1	BY CONTRACTOR	-	-	-	-

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	QTY	MAX FLOW (GPM/GPF)	HOT WATER (INCH)	COLD WATER (INCH)	PIPE (INCH)	MAKE	MODEL	NOTES/ACCESSORIES
T	FLOOR SINK	1	---------	---------	---------	4	ZURN	Z1901	PROVIDE ½ GRATE WITH SEDIMENT BUCKET AND DOME STRAINER (12x12")
U	GREASE INTERCEPTOR	1	75 GPM	---------	---------	4	SCHIER	G-75	PROVIDE SV10 SAMPLING PORT, AK1 ANCHOR KIT, FCR AND FCR10 RISER EXTENSIONS. COVERS:H20 RATED GREASE CAPACITY: 861 LBS @ 75GPM; SOLIDS: 31 GAL. CLEAN OUT: 90 DAY
V	WALL HYDRANT	7	---------	---------	1/2	---------	ZURN	Z1330-CL-NB	PROVIDE CYLINDER LOCK, POLISHED NICKEL BRONZE FACE AND CERAMIC CARTRIDGE REMOVAL TOOL.
W	LAVATORY (WALL MOUNT)	7	0.35 GPM	1/2	1/2	2	AMERICAN STANDARD	LUCENRE 0356.421 SINGLE HOLE	FAUCET: SLOAN#EBF-615 OPTIMA(BATTERY POWER) ADJUSTABLE P-TRAP MCT1500752N, OFFSET OPEN GIRD DRAIN #155WCC
X	WATER CLOSET (W/FLUSH VALVE)	7	1.28 GPF	---------	1	3	AMERICAN STANDARD	MADERA 3461.001	FLUSH VALVE MDL: SLOAN SOLIS SENSOR 8111-1.28 SOLAR POW. W/ BAT. BACK UP. FINISH: ARCHITECTURAL APPROVAL SEAT: PROFLO #PFTSCOF2000WH
Y	WALL CLEAN OUT	2	---------	---------	---------	4	ZURN	Z1446	DURA-COATED CAST IRON BODY CLEANOUT TEE WITH GAS AND WATERTIGHT TAPERED THREAD PLUG AND ROUND, SMOOTH STAINLESS STEEL WALL ACCESS COVER WITH SECURING SCREW
Z	TRAP PRIMER (RR)/ TRAP PRIMER (KIT.- JANITOR)	8/ 2	---------	---------	---------	---------	JAY R. SMITH/ SIOUX CHIEF	2698/ 695 SERIES	WATER SAVER TRAP PRIMER CONNECTION/ PROVIDE SPLITTER FOR 2 DRAINS
AA	FLOOR CLEAN OUT (GRADE)	5	---------	---------	---------	MATCH PIPE SIZE	WATTS	CO-200-RX	EPOXY COATED CAST IRON FLOOR CLEANOUT WITH 5" ROUND ADJUSTABLE HEAVY DUTY NICKLE BRONZE TOP. NO HUB OUTLET, AFE LIVE LOAD 7,500-10,000 LBS.
AB	FLOOR DRAIN	9	---------	---------	---------	2	JAY R. SMITH	2005	ACCESSORIES: TRAP PRIMER CONNECTION, HEELPROOF GRATE, SEDIMENT BUCKET. INCLUDE FUNNEL CONNECTION AT ICE MACHINE DRAIN. SIOUX CHIEF 863 SERIES OR APPROVED EQUAL.
AC	THERMOSTATIC MIXING VALVE	4	---------	1/2	1/2	---------	POWERS	LFLM495	INSTALL IN ACCESSIBLE NON VISIBLE LOCATION.
AD	ELECTRONIC WATER COOLER	1	---------	---------	1/2	2	ELKAY	VRCTL8WSK W/BOTTLE FILL	PROVIDED WITH FILTER KIT #EWF172 WATER SENTRY
AE	COMBINATION ROOF / OVERFLOW DRAIN	2	---------	---------	---------	6	JAY R. SMITH	1850	VANDAL PROOF AND ROUGH BRONZE DOME
AF	OVERFLOW DOWNSPOUT NOZZLE	2	---------	---------	---------	6	JAY R. SMITH	1775	STAINLESS STEEL, VANDAL PROOF WITH HINGE

ELECTRIC TANK HOT WATER HEATER SCHEDULE

MARK	CAPACITY (GALLONS)	FIRST HR RATING (GALLONS)	VOLT/PH/ KW	MAX TEMP (DEG F)	EF (UEF)	MANF.	MODEL	ACCESSORIES
HWH	50	41	208 / 1 / 6	140	0.92	LOCHINVAR	LDS-50XK	PROVIDE: UNIONS ON HOT AND COLD PIPING, WATTS PLT-5 EXPANSION TANK, HONEYWELL L6006 SURFACE MOUNT AQUASTAT

HOT WATER RE-CIRCULATION PUMP SCHEDULE

MARK	FLOW RATE (GPM)	TDH (FT)	VOLT/PH/ AMPS	POWER (HP)	MAX PRESSURE (PSI)	MANF.	MODEL	ACCESSORIES
HWCP	0-10	0-35	115 / 1 / --	⅛	---------	TACO	009-SF5	PROVIDE: STAINLESS STEEL FLANGED AND DIGITAL AQUASTAT MDL: 563-2 CAST IRON FLANGED

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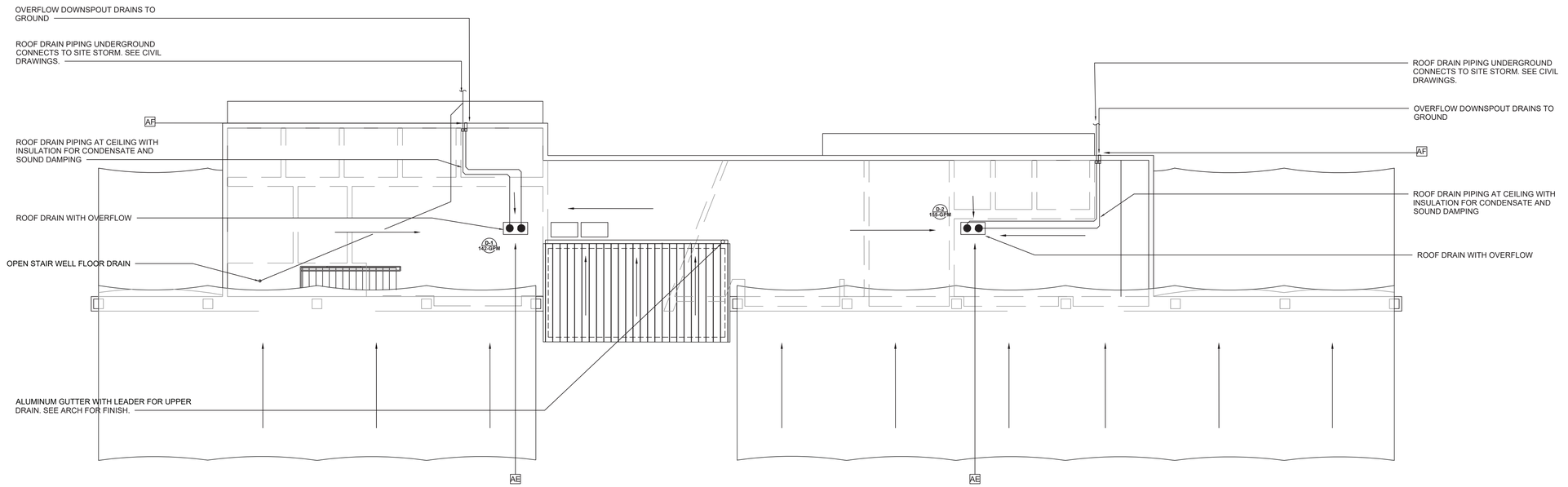
CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

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CHECKED BY: BG
DATE: 05/19/2025
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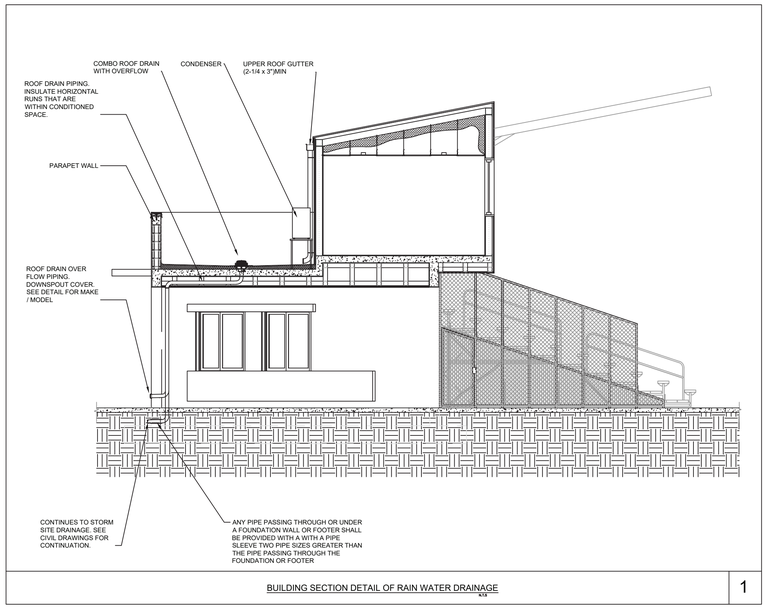
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PLUMBING PROPOSED CONCESSION RM PLAN



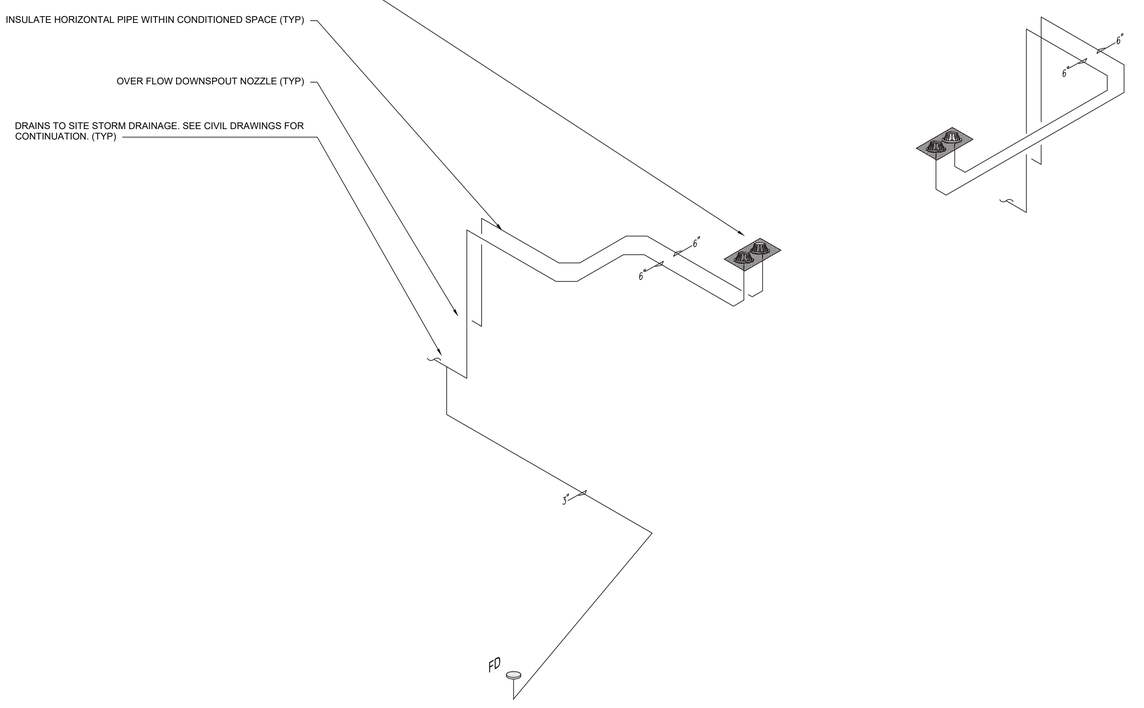
1 P2.51 PLUMBING PROPOSED ROOF PLAN

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



BUILDING SECTION DETAIL OF RAIN WATER DRAINAGE

1



2 P2.51 PLUMBING ROOF ISOMETRIC

SCALE: NTS

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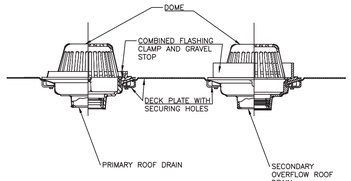
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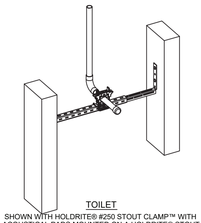
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PLUMBING PROPOSED ROOF PLAN

JAY R. SMITH ROOF DRAIN AND OVERFLOW DRAIN WITH DECK TOP MOUNTING PLATE MODEL 1850, OR APPROVED EQUAL



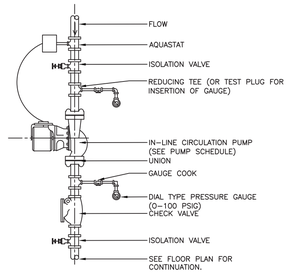
ROOF DRAIN AND OVERFLOW DRAIN DETAIL N.T.S — 21



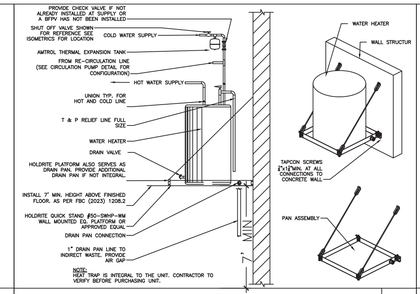
TOILET

SHOWN WITH HOLDRITE® #250 STOUT CLAMP™ WITH ACOUSTICAL PADS MOUNTED ON A HOLDRITE® STOUT BRACKET™. THIS CLAMP ACCEPTS 3/8" THROUGH 1" TUBING.

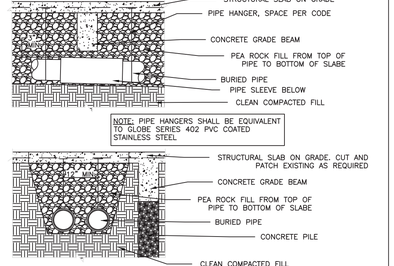
PIPE ACCESSORY DETAIL N.T.S — 16



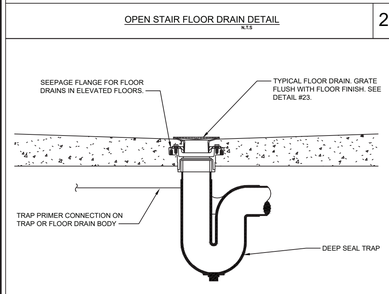
CIRCULATION PUMP DETAIL N.T.S — 11



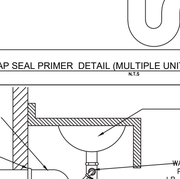
HOT WATER HEATER (WALL MOUNTED) DETAIL-5 N.T.S — 6



BURIED PIPE DETAIL-2 N.T.S — 1



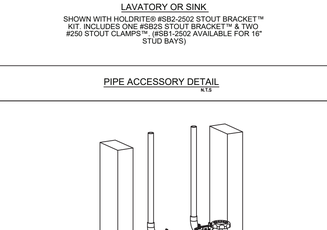
OVERFLOW DRAIN WITH ZURN Z199-DC DOWNSPOUT DETAIL N.T.S — 22



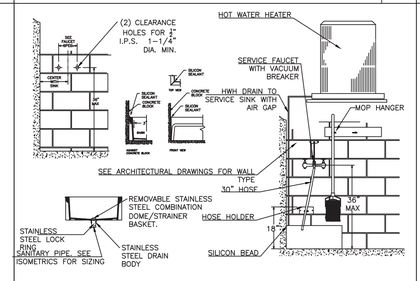
HORIZONTAL / VERTICAL PIPING

SHOWN WITH HOLDRITE® #280 STOUT CLAMP™ WITH ACOUSTICAL PADS HOLDING A 1-½" TUBE. THIS CLAMP ACCEPTS 1" THROUGH 2" TUBING.

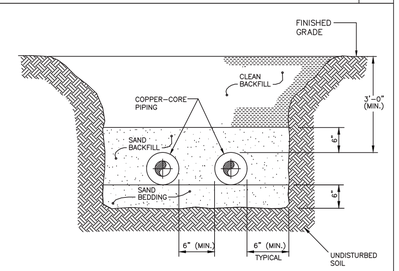
PIPE ACCESSORY DETAIL — 17



LAVATORY MIXING VALVE DETAIL N.T.S — 12



HOT WATER HEATER MOUNTED ABOVE SERVICE SINK DETAIL N.T.S — 7



UNDERGROUND HOT/COLD WATER DETAIL — 2

NOTE:
SEE ARCHITECTURAL DRAWINGS FOR WATER PROOFING MEMBRANE DETAILING

OPEN STAIR FLOOR DRAIN DETAIL N.T.S — 23

VERTICAL / HORIZONTAL PIPING

SHOWN WITH HOLDRITE® #250 STOUT CLAMPS™ WITH ACOUSTICAL PADS HOLDING 1" TUBES MOUNTED TO A HOLDRITE® STOUT BRACKET™. THESE CLAMPS ACCEPT 3/8" THROUGH 1" TUBING.

PIPE ACCESSORY DETAIL — 18

HORIZONTAL OVERHEAD

SHOWN WITH HOLDRITE® #121-D BRACKET. SUPPORTS ½" THROUGH 1" TUBING. SHOWN WITH #404-R INSERTS.

PIPE ACCESSORY DETAIL — 13

GB-75 GREASE INTERCEPTOR DETAIL N.T.S — 8

IN WALL SHUT OFF VALVE N.T.S — 3

FLOOR DRAIN DETAIL N.T.S — 24

TRAP SEAL PRIMER DETAIL (MULTIPLE UNITS) N.T.S — 19

LAVATORY OR SINK

SHOWN WITH HOLDRITE® #SB2-2502 STOUT BRACKET™ KIT. INCLUDES ONE #SB2S STOUT BRACKET™ & TWO #250 STOUT CLAMPS™. (#SB1-2502 AVAILABLE FOR 16" STUD BAYS)

PIPE ACCESSORY DETAIL N.T.S — 14

EXTERIOR TWO-WAY CLEAN OUT N.T.S — 9

TRIPLE SINK TO FLOOR SINK DETAIL N.T.S — 4

LAVATORY WITH WATER SAVER TRAP PRIMER DETAIL N.T.S — 20

HOT WATER TANK

SHOWN WITH HOLDRITE® #250 STOUT CLAMPS™ WITH ACOUSTICAL PADS MOUNTED TO A HOLDRITE® STOUT BRACKET™. THESE CLAMPS ACCEPT 3/8" THROUGH 1" TUBING.

PIPE ACCESSORY DETAIL N.T.S — 15

NOTE:
PROVIDE WCO WHERE SHOWN ON PLAN, AND ON SANITARY WASTE BRANCHES NOT SERVED WITH A FLOOR CLEANOUT: LOCATE ABOVE FIXTURE FLOOD RIM 4" OF FLOOR. CONSULT LOCAL CODES FOR OTHER WCO REQUIREMENTS.

WALL CLEANOUT DETAIL N.T.S — 10

NOTE: VENT PIPE SHALL NOT BE WITHIN 10' HORIZONTALLY OF ANY DOOR, OPERABLE WINDOW OR ANY INTAKE INTO THE BUILDING UNLESS IT IS 3' OR GREATER ABOVE THE TOP OF SUCH OPENING, AS PER PLUMBING FBC 2014.

VENT THRU ROOF DETAIL N.T.S — 5

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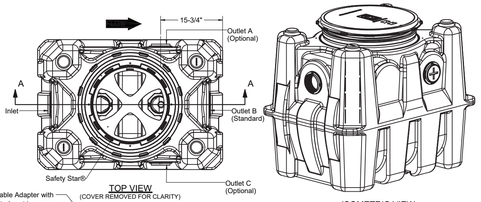
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PLUMBING DETAILS

SPECIFICATIONS
Notes:
1. 4" FPT inlet/outlet with 4" plain end adapters, single inlet and triple outlet.
2. Unit weight - w/ cast iron covers: 190 lbs. (For wet weight add 1,043 lbs.)
3. Maximum operating temperature: 150º F continuous
4. Capacities - Liquid: 125 gal.
   Grease: 861 lbs. (118 gal.) @75 GPM
   Solids: 31 gal.
5. For gravity drainage applications only.
6. Do not use for pressure applications.
7. Cover placement allows full access to tank for proper maintenance.
8. Vent not required unless per local code.
9. Engineered inlet and outlet diffusers with inspection ports are removable to inspect / clean piping.
10. Integral air relief / Anti-siphon / Sampling access.
11. Adjustable cover adapter provides up to 4" of additional height.
12. Designed for below-grade, above-grade, indoor and outdoor installations.
13. Safety Start®, access restrictor built into cover adapter, prevents accidental entry to tank (450 lb rating).

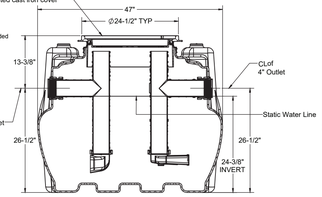


TOP VIEW
(COVER REMOVED FOR CLARITY)

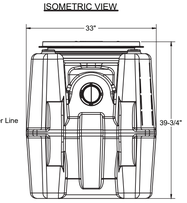
ISOMETRIC VIEW

ENGINEER SPECIFICATION GUIDE
Schier Great Basin™ grease interceptor model # GB-75 shall be lifetime guaranteed and made in USA of seamless, rotationally-molded polyethylene with minimum 3/8" uniform wall thickness. Interceptor shall be furnished for above or below-grade installation with adjustable cover adapter, Safety Start® access restrictor built into each cover adapter, and three outlet options. Interceptor shall be certified to ASME A112.14.3 (Type D) and CSA B481.1. Interceptor flow rate shall be 75 GPM. Interceptor grease capacity shall be 861 lbs. Cover shall provide water/gas-tight seal and have minimum 16,000 lbs. load capacity.

CERTIFIED PERFORMANCE
Great Basin™ hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME #A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code and the International Plumbing Code.



SECTION A-A



END VIEW

Type D certification does not require a flow control

MODEL NUMBER:	PART NUMBER: 4045-007-02			
GB-75	DESCRIPTION: GB-75 GREASE INTERCEPTOR 75 GPM, 4" INLET/OUTLET, H-20 RATED CAST IRON COVER			
PROPRIETARY AND CONFIDENTIAL	DWG BY: C. BUSENITZ	DATE: 4/14/2022	REV: -	ECO: -

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SCHIER
6455 Woodland Dr.
Shawnee, KS 66218
Tel: 913-951-3300
Fax: 913-951-3399
schierproducts.com

GREASE INTERCEPTOR CALCULATIONS

Quote: XXCCB231

Reference No. 77833 — Project Name: 240184 (Pompano Ult Sports)

Step 1: Flow rate to grease interceptor

Fixture flow rate: (cu in / 231) = gal x 0.75 / 2 min = 2 min flow rate

NAME	TYPE	DIMENSIONS	QTY	CU IN	FLOW RATE
Floor Drain	Floor Drain	N/A	1	N/A	0 GPM
Floor Sink	Floor Sink	N/A	1	N/A	1.5 GPM
H (3 Compartment Sink)	3 Compartment Sink	15" x 15" x 14" (3)	1	9,450	15.34 GPM
J (Hand Sink)	Hand Sink	10" x 14" x 5"	1	700	1.14 GPM
Total					**17.98 GPM**

Step 2: Grease Production

Servings per day x Grease production value x Days between pump-outs = Grease output

Servings per day: 250
Grease production value: 0.035 lbs per serving (Cafeteria - Heat & Serve: High / No flatware)
Days between pump-outs: 90 days

250 x 0.035 x 90 = 787.5 lbs of FOG

SCHIER MODEL	Description: GREASE INTERCEPTOR 75 GPM, 4" PLAIN/FPT CONNECTIONS, H-20 RATED PICKABLE CAST IRON COVER
GB-75	**Dimensions: Length: 47", Width: 33", Height: 39.75"** **Flow Rate/Grease Capacity: 75 GPM / 861 lbs** **Liquid Capacity: 125 gal**

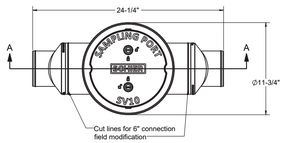
Specification Note: This Great Basin model has been sized to the flow rate and grease production requirements of the application and may not be substituted by liquid capacity alone. Any substitution requests must be approved by the specifying engineer and the authority having jurisdiction.

Please contact support@schierproducts.com for technical and procurement support for the specified Great Basin model.

NOTES
1.4" plain end inlet/outlet
2.Field modifiable to 6" plain end inlet/outlet
3.Unit weight - 9 lbs.
4.Maximum operating temperature: 150º F continuous
5.Offset connections
6.2 rolls of 33' x 2" butyl mastic tape provided for sealing build-your-own riser joints

ENGINEER SPECIFICATION GUIDE
Schier Sewer Viewer™ sampling port model # SV10 shall be lifetime guaranteed and madein USA of seamless, rotationally-molded polyethylene. Sampling port shall be furnished for above or below grade installation. Cover shall provide water/gas-tight seal and have minimum 16,000 lbs. load capacity.

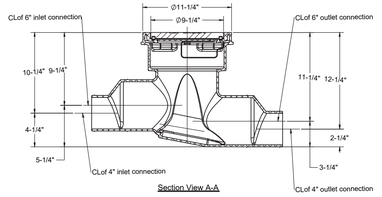
ACCESSORIES:
- Field Cut Risers for extending cover to grade



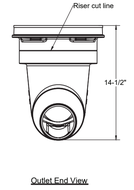
Top View



Iso View



Section View A-A



Outlet End View

MODEL NUMBER:	PART NUMBER: 8065-001-01			
SV10	DESCRIPTION: SV10 SEWER VIEWER SAMPLING PORT, 4" CONNECTIONS (FIELD MODIFIABLE TO 6"), POLYETHELENE COVER			
PROPRIETARY AND CONFIDENTIAL	DWG BY: B.BROWN	DATE: 6/6/2022	REV: -	ECO: -

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Shawnee, KS 66218
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schierproducts.com

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CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK
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POMPANO BEACH, FLORIDA 33060

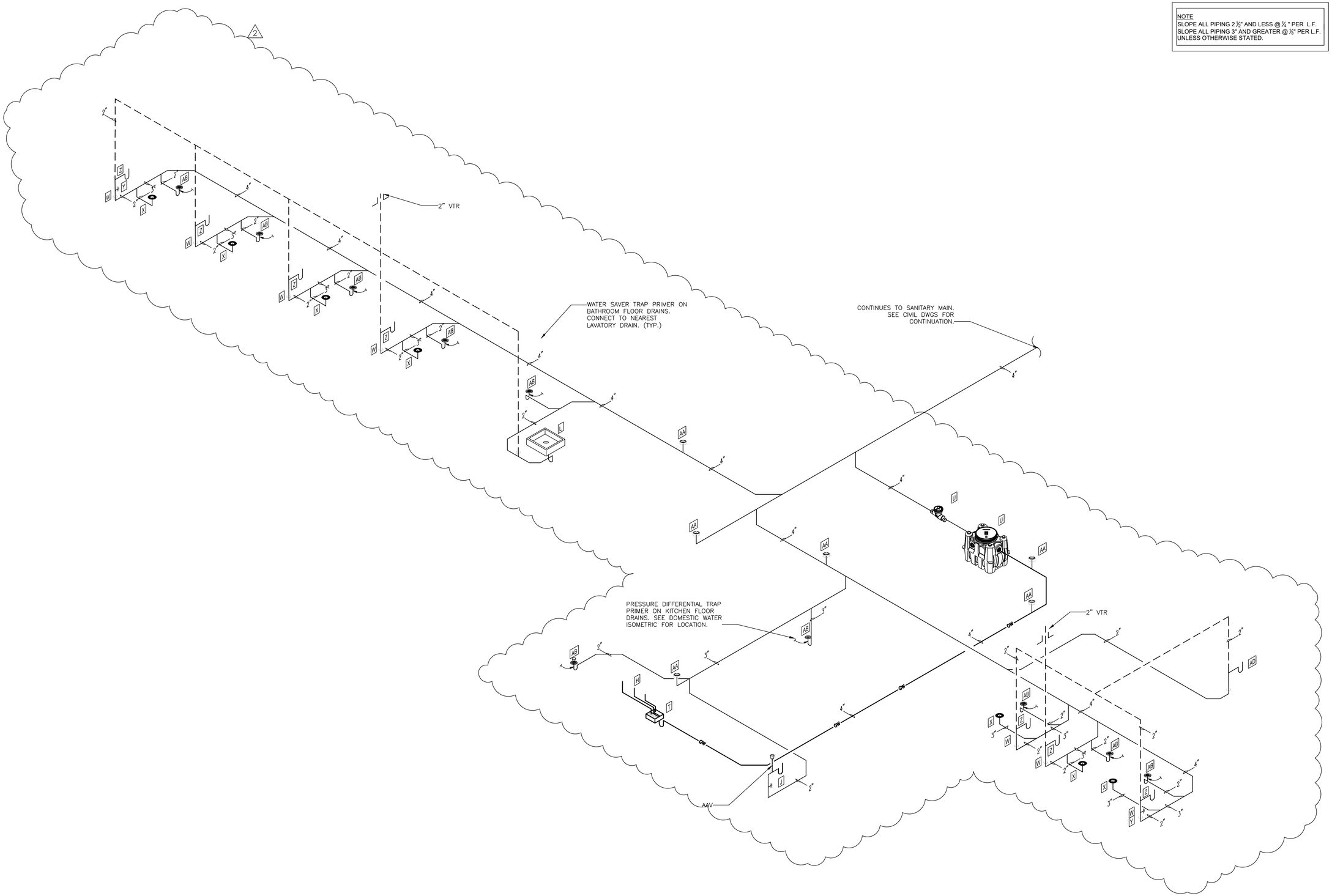
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2406

SHEET
P5.01

PLUMBING
GREASE

NOTE
SLOPE ALL PIPING 2 ½" AND LESS @ ¼ " PER L.F.
SLOPE ALL PIPING 3" AND GREATER @ ⅛" PER L.F.
UNLESS OTHERWISE STATED.



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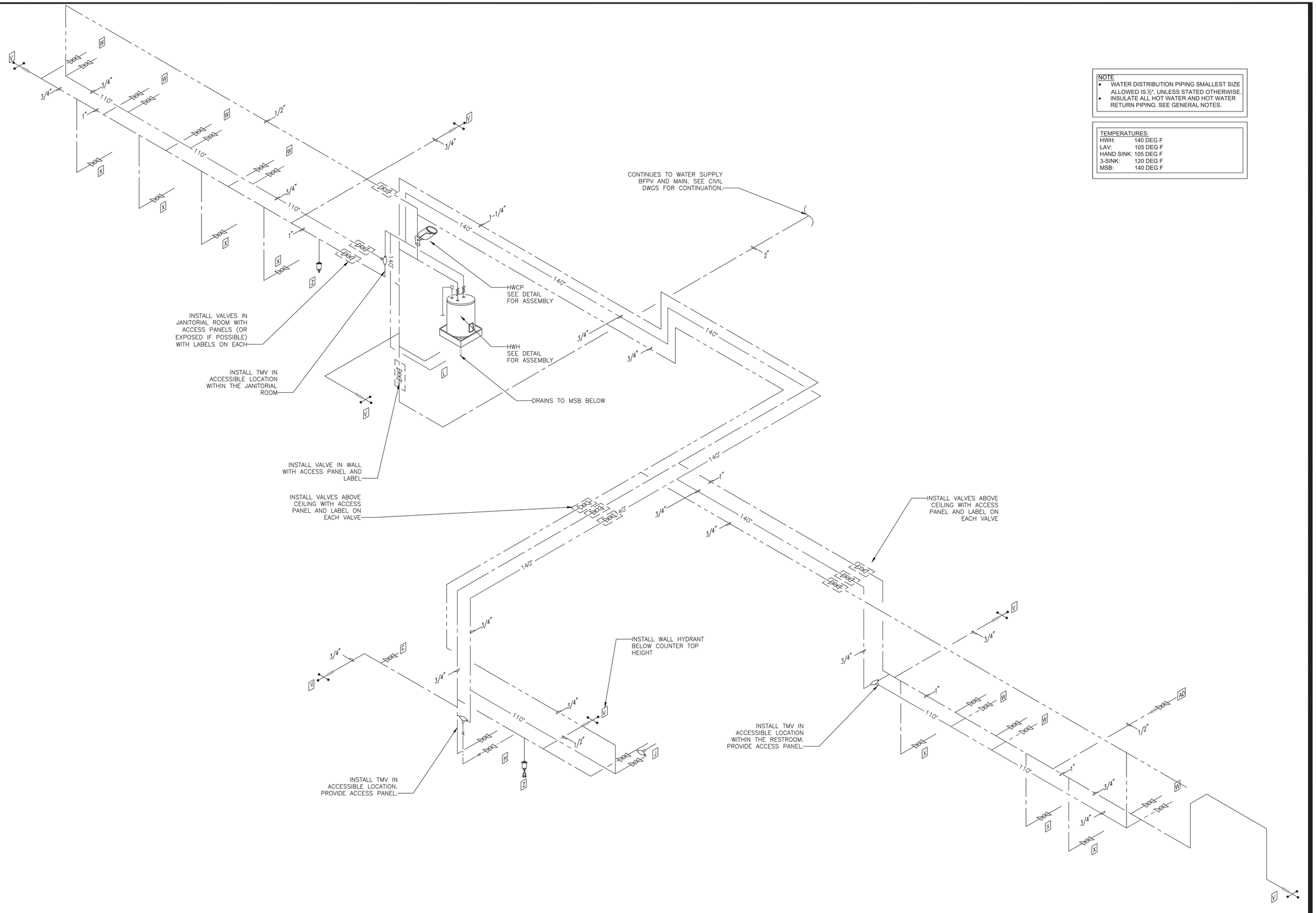
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SHEET
P9.00

PLUMBING
ISOMETRICS



NOTE
- WATER DISTRIBUTION PIPING SMALLEST SIZE ALLOWED IS ½", UNLESS STATED OTHERWISE.
- INSULATE ALL HOT WATER AND HOT WATER RETURN PIPING. SEE GENERAL NOTES.

TEMPERATURES:

HWH:	140 DEG F
LAV:	105 DEG F
HAND SINK:	105 DEG F
3-SINK:	120 DEG F
MSB:	140 DEG F

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212 NW 16 ST
POMPANO BEACH, FLORIDA 33060

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PLUMBING ISOMETRICS

WALTERS ZACKRIA

ARCHITECTS

Florida's Warmest Welcome

CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK

PROJECT SPECIFICATIONS

212 NW 16TH STREET,
POMPANO BEACH, FLORIDA 33060

Architect's Project #2406
August 13, 2025

CITY OF POMPANO BEACH PROJECT NO. 19-370

Construction for this project shall comply with the Florida Building Code 2023, Eighth Edition with latest revisions, and the Florida Prevention Code 2023, Eighth Edition with latest revisions.

CITY OF POMPANO BEACH
ULTIMATE SPORTS PARK

SPECIFICATIONS MANUAL - DIVISIONS 1 TO 16
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SECTION 01010 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Requirements and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
1. Project Information
2. Work covered by the Contract Documents
3. Type of Contract
4. Existing Conditions
5. Limits of Construction
6. Coordination of Work
7. Cooperation Between Contractors
8. Work Hours and Daily Cleanup
9. Time for Performance
10. Discrepancies, Interpretation and Omissions
11. Permits and Fees
12. Job Site Visitation
13. Pre-Construction Meeting
14. Regulatory Requirements
15. Specification Formats and Conventions
16. Definitions

B. Related Sections include the following:

1. Division 1 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
2. City of Pompano Beach’s General Conditions.

1.3 PROJECT INFORMATION

A. Project Identification: Ultimate Sports Park

B. Project Location: 212 NW 16th Street, Pompano Beach, FL 33060

C. Owner: City of Pompano Beach
1. Owner's Representative: Hector Gandia, Engineering Project Manager
City of Pompano Beach
1201 NE 5th Ave.
Pompano Beach, FL 33060
Office: 954-786-5520
Hector.Gandia@copbfl.com

D. Architect: Walters Zackria Associates, PLLC

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work generally includes Construction of the following items, as defined in the Construction documents:
   1. New multipurpose natural turf grass sports field with electronic digital LED scoreboard.
   2. New running track around sports field with synthetic rubberized surfacing and chain-link fence surrounding the track.
   3. New Field events – high jump, long jump, pole vault, discus throw, shot put.
   4. New Concession-Restroom-Storage building with integrated Press Box on 2nd level.
   5. New bleachers with shade structure at building, west of sports field and new bleachers without shade, east of the sports field.
   6. New sports lighting to illuminate field and track.
   7. New parking lot with access from NW 16th Street, north of the park.
   8. New park access from NW 15th Place, south of the park.
   9. New perimeter metal picket & chain-link fence around the park & parking lot.
   10. New site furniture.
   11. New landscape, irrigation, and drainage system.
   12. New site lighting including parking lot, pedestrian and site feature illumination.
   13. New site and building signage.

1.5 TYPE OF CONTRACT

A. Project will be constructed under a single prime contract.

1.6 EXISTING CONDITIONS

A. The proposed work involves improvements, replacement and expansion of existing park & building elements. The existing parking lot and Boys and Girls Club facility shall be protected during construction operations. Parking spaces for and access to the existing Boys and Girls Club shall be maintained as the building shall remain open during construction.

The Contractor is required to perform the work in a way that does not disturb the function or interrupt the planned activities at the adjacent Apollo Park site. All work must be coordinated with the Park's administration and scheduled with approval by the City of Pompano Staff. The areas, equipment, or structures not covered by the work must be protected. Any areas, equipment, or structures damaged or disturbed in any way, must be repaired and brought to the condition it was found just prior to the commencement of work. All repairs must be done by the Contractor as part of this contract and to the complete satisfaction of the City.

B. Refer to City of Pompano Beach's General Conditions for Protection of Work & Materials requirements.

1.7 LIMITS OF CONSTRUCTION

A. The work set forth in the Contract Documents will be performed within the limits established in the site plan. Contractor shall not work outside of the limits without requesting authorization in writing and receiving written approval.

1.8 COORDINATION OF WORK

A. The Contractor shall be responsible for the planning and scheduling, and coordination of all Work performed under the contract, so that materials will arrive on schedule and installation will proceed without delay.

B. Coordinate scheduling, construction documents, submittals, and Work of the various Sections of specifications to assure efficient and orderly sequence and installation of interdependent construction elements.

C. Verify that the utility requirement characteristics of operating equipment are compatible with available utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements and installation of Work, which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable. Utilize spaces efficiently to maximize for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate Sections in preparation for Substantial Completion.

G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with the Contract Documents, to minimize disruption of Owner's activities.

H. Construction Documents: Contractor shall provide entire set of Construction Documents (drawings and specifications) to all subcontractors and suppliers.

1.9 COOPERATION BETWEEN CONTRACTORS

A. One or more contracts may be required to construct the project. When separate contracts are awarded for different portions of the project, the Contractor in each case shall be the person other than the City who signs each separate contract.

B. The City reserves the right to contract for and perform other or additional construction on or near the Work covered by this Contract.

C. When separate contracts are let within or near the limits of the Project, the Contractor shall conduct its Work so as not to interfere with or hinder the progress of completion of the construction performed by other Contractors. Contractors working on the same Project shall cooperate with each other as directed by the City.

D. The Contractor shall assume all liability, financial or otherwise, in connection with this Contract and shall protect and save harmless the City from any and all damages or claims.

E. The Contractor shall arrange its Work and shall place or dispose of the materials being used as not to interfere with the operations of the other Contractors within or near the limits of the Project. The Contractor shall join its work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

1.10 WORK HOURS AND DAILY CLEANUP

A. On-Site Work Hours: Work shall be performed during normal business hours from 8:00 a.m. to 5:00 p.m., Monday through Friday, except otherwise indicated. No work is allowed after normal business hours or on weekends without prior permission from the owner. In addition, work shall not be allowed to start before:
   1. The contractor obtains a Building Permit from the Building Division having jurisdiction at this location.
   2. The contractor coordinates with the Building Division for all required inspections.
   3. The contractor protects users of the Boys & Girls Club, Apollo Park and other adjacent areas.

1.11 TIME FOR PERFORMANCE

A. The work to be performed under this Contract shall be commenced upon issuance of A Notice to Proceed, which will not be issued until receipt of all required documents.

B. Time is of the essence for this Contract. The work shall be completed within Two Hundred and Seventy (270) calendar days from the Project Initiation Date specified in the Notice to Proceed.

C. Refer to City of Pompano Beach's General Conditions for amount to be paid by Contractor to Owner upon failure of the Contractor to complete a project awarded pursuant to this contract within the specified time (plus approved extensions if any). This amount is not a penalty but liquidated damages to the Owner. Liquidated damages are hereby fixed and agreed upon between the parties, recognizing the impossibility of precisely ascertaining the amount of damages that will be sustained by the Owner as a consequence of such delay. Contractor acknowledges and agrees that damages to Owner from untimely completion are extremely difficult to determine, and accordingly the Contractor agrees that the amount of liquidated damages provided for in the General Conditions is the nearest and most exact measure of damages for such delays.

   1. Contractor shall also pay for all additional Consultant Fees incurred by the Owner for Contractor delays.

1.12 DISCREPANCIES, INTERPRETATION AND OMISSIONS

A. Contractor shall bring any apparent discrepancies to the attention of the City and Architect for resolution prior to commencing with the Work. Contractor shall use a Request for Information (RFI) form to communicate discrepancies and receive direction.

B. Should conflict occur between the Code requirements, Plans, or Specifications, the Contractor is deemed to have based the bid upon the more expensive method of performing the Work and the most rigid requirements shall apply provided they are not in conflict with the Florida Building Code.

1.13 PERMITS AND FEES

A. Contractor shall be responsible for obtaining required permits from all authorities having jurisdiction.

B. Any permit fees to non-city agencies will be paid by the Contractor. The City will pay for all permit fees to City Agencies. Contractor is responsible for all failed inspection fees.

C. Contractor is required to maintain all permits in an active status. Any permit that expires shall be reactivated by the contractor at no additional cost to the owner.

1.14 JOB SITE VISITATION

A. Job site visitation is mandatory, submission of a Bid will be construed that the Bidder is acquainted sufficiently with the work to be performed. For access to the site, contact:
Hector Gandia, Engineering Project Manager
City of Pompano Beach
1201 NE 5th Ave.
Pompano Beach, FL 33060
Office: 954-786-5520
Hector.Gandia@copbfl.com

1.15 PRE-CONSTRUCTION MEETING

A. The Owner will schedule and administer a conference to be attended by the Contractor and the Owner's Construction Manager to discuss official Notice to Proceed date, coordination, schedules, submittals and related matters.

1.16 REGULATORY REQUIREMENTS

A. The following codes are to be considered an integral part of the Project Manual:

1. Florida Building Code, Eighth Edition – 2023, with latest revisions.
2. Florida Fire Prevention Code, Eighth Edition, with latest revisions.
3. National Electric Code – 2023 edition.
4. ASCE 7-22
5. OSHA safety standards.

B. All work for this project shall conform to the above codes and to the requirements of any regulatory authority having jurisdiction.

1.17 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.

1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
2. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

    a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.18 DEFINITIONS

A. Refer to City of Pompano Beach's General Conditions for list of Definitions.

B. **Products**: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the work. Products may also include existing materials or components required for reuse.

C. **Furnish**: To supply and deliver, unload, inspect for damage (same as supply).

D. **Install**: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, and make ready for use.

E. **Provide**: To furnish or supply, plus install.

F. **Supply**: To supply and deliver, unload, inspect for damage (same as furnish).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01010

SECTION 01020 – ALLOWANCES

PART 1 - GENERAL

1.1 PERMIT ALLOWANCE (Bid Item No. 21)

A. Included in the TOTAL BASE BID AMOUNT is the sum of Fifty thousand dollars ($50,000.00) for obtaining building permits, inspections and certificates of completion required by the State of Florida, any State Agencies, or by other local governmental entities including the City of Pompano Beach.

B. Permit fees payable under this allowance shall be limited to the actual cost of the permits only.

C. Fees excluded from this allowance include but are not limited to re-inspection fees, expired permit fees, and contractor's overhead and profit. These costs should be included elsewhere in the Bid.

1.2 OWNER'S CONTINGENCY ALLOWANCE (Bid Item No. 22)

A. The Allowance for this Bid Item shall be used for Owner directed contract changes.

B. Included in the TOTAL BASE BID AMOUNT is the sum of Two Hundred and Fifty thousand dollars ($250,000.00) for owner directed modifications and approved increases to Contractor's scope of work.

C. Payment under this allowance shall be made to the Contractor for only approved change orders.

D. Payment under this allowance shall be limited to the actual cost plus 5% mark-up applied to the total amount of labor, Materials and equipment.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01020

SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 EXPLANATION AND DEFINITIONS

A. The following explanation of the Measurement and Payment for the bid form items is made for information and guidance. The omission of reference to any item in this description shall not, however, alter the intent of the bid form or relieve the Contractor of the necessity of furnishing such as part of the Contract.

1.2 PAYMENT

A. Payment shall be made for the items listed on the Bid Form on the basis of the work actually performed and completed, such work including but not limited to, the furnishing of all necessary labor, materials, equipment, transportation, clean up, and all other appurtenances to complete the construction and installation of the work to the configuration and extent as shown on the drawings and described in the specifications.

B. It is intended that all mobilization, license and other miscellaneous administrative costs, and all other costs to the Contractor not specifically identified in the following item description be distributed among and included in the unit prices stated. No additional payment shall be made for transportation, communications, office maintenance, project signs, and other incidental work or services, and no further payment shall be made for remobilization unless all of the work is suspended by the Owner for a period in excess of three months and through no fault to the Contractor.

C. All required manufacturer testing, and certification shall be included in the unit prices shown in the Bid Form. Passing results for testing required for concrete strength and materials testing required at the time of construction shall be arranged for by Contractor and paid for by the Contractor.

PART 2 - MATERIALS

NOT USED

PART 3 - EXECUTION

3.1 MOBILIZATION (Bid item no. 1)

A. Measurement for payment will include all expenses not specifically listed below but required by the contract documents and specifications, such as temporary fencing, erosion and pollution controls, storage containers, signage, etc.

B. Payment will be based upon the lump sum price and paid as a percentage completed, upon verification by the Owner’s Designee.

3.2 INSURANCE PAYMENT BOND, PERFORMANCE BOND (Bid Item No. 2)

A. Measurement for payment will include all expenses related to Insurance Payment Bond, Performance Bond, etc. required by the contract documents and specifications.

B. Payment will be based upon the lump sum price for the Insurance Payment Bond, Performance bond**.**

3.3 GENERAL CONDITIONS (Bid item no. 3)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as supervision, project management, temporary utilities, temporary fencing, shoring, and permits, material testing and special inspections, etc.

B. Payment will be based upon the lump sum price for the GENERAL CONDITIONS paid as a percentage of the project completed, upon verification by the Owner's Designee.

3.4 DEMOLITION (Bid item no. 4)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as demolition of existing concrete sidewalk, fence, light poles, etc.

B. Payment will be based upon the lump sum price and paid as a percentage completed, upon verification by the Owner's Designee.

3.5 SITE PREPARATION (Bid Item No. 5)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as tree protection, clear & grubbing, trench & excavation, grading, etc.

B. Payment will be based upon the lump sum price for Site Preparation paid as a percentage completed, upon verification by the Owner's Designee.

3.6 FIELD SURVEYING (Bid Item No. 6)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as as-builts for water, sewer, finish grade, site features, etc.

B. Payment will be based upon the lump sum price for Field Surveying paid as a percentage completed, upon verification by the Owner's Designee.

3.7 PARKING LOT & ENTRY PLAZA (Bid Item No. 7)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as asphalt surfacing, parking lot striping, construction of concrete plaza, curbs, etc.

B. Payment will be based upon the lump sum price for the Parking lot & Entry Plaza paid as a percentage completed, upon verification by the Owner's Designee.

3.8 CONCRETE SIDEWALK & CURB (Bid Item No. 8)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as construction of concrete sidewalk within project extents, concrete curbs, etc.

B. Payment will be based upon the lump sum price for the Concrete sidewalk & Curb paid as a percentage completed, upon verification by the Owner's Designee.

3.9 RESTROOM & CONCESSION BUILDING WITH PRESSBOX (Bid Item No. 9)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as new restroom & concession building including but not limited to foundations, walls, beams, staircase, finishes, doors, windows, louvers, lighting, accessories, roofing, canopy, etc.

B. Payment will be based upon the lump sum price for the Restroom & Concession Building with PressBox paid as a percentage completed, upon verification by the Owner's Designee.

3.10 SHADE METAL STRUCTURE WITH FABRIC CANOPY (Bid Item No. 10)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as fabrication and installation of shade structures with fabric canopy at restroom-concession building above bleachers and picnic area, etc.

B. Payment will be based upon the lump sum price for the Shade metal structure with Fabric canopy paid as a percentage completed, upon verification by the Owner's Designee.

3.11 BLEACHERS (Bid Item No. 11)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as purchase/fabrication and installation of aluminum bleachers, guardrail fence, etc.

B. Payment will be based upon the lump sum price for the Bleachers paid as a percentage completed, upon verification by the Owner's Designee.

3.12 SYNTHETIC TRACK SURFACING (Bid Item No. 12)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as purchase and installation of synthetic surface for running track & field events, sub-base, etc.

Payment will be based upon the lump sum price for the Synthetic track surfacing paid as a percentage completed, upon verification by the Owner's Designee.

3.13 FIELD MARKINGS (Bid Item No. 13)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as multipurpose field markings, running track markings, field event markings, etc.

B. Payment will be based upon the lump sum price for the Field markings paid as a percentage completed, upon verification by the Owner's Designee.

3.14 FENCE & GATES (Bid Item No. 14)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as fabrication and installation of Chain-Link fence and gates with foundations, etc.

Payment will be based upon the lump sum price for the Chain-link Fence & Gates paid as a percentage completed, upon verification by the Owner's Designee.

B. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as fabrication and installation of Metal picket fence and gates with foundations, etc.

Payment will be based upon the lump sum price for the Metal Picket Fence & Gates paid as a percentage completed, upon verification by the Owner's Designee.

3.15 SITE LIGHTING & POWER including MUSCO (Bid Item No. 15)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as purchase and installation of site pedestrian light poles, light fixtures for parking lot, MUSCO sports lighting, etc.

B. Payment will be based upon the lump sum price for the Site lighting & Power paid as a percentage completed, upon verification by the Owner's Designee.

3.16 MULTIPURPOSE SPORTS FIELD NATURAL TURF (Bid Item No. 16)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as multipurpose field sod, grading, etc.

B. Payment will be based upon the lump sum price for the Multipurpose Sports Field Natural Turf paid as a percentage completed, upon verification by the Owner's Designee.

3.17 LANDSCAPE & IRRIGATION (Bid Item No. 17)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as tree relocation, new landscape, sodding, irrigation system, multipurpose field sod, etc.

B. Payment will be based upon the lump sum price for the Landscape & Irrigation paid as a percentage completed, upon verification by the Owner's Designee.

3.18 UNDERGROUND DRAINAGE UTILITIES (Bid Item No. 18)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as capping/abandoning existing unused utilities, new water system, sewer system, drainage system, etc.

B. Payment will be based upon the lump sum price for the Underground Utilities paid as a percentage completed, upon verification by the Owner's Designee.

3.19 FIELD SPORTS EQUIPMENT, FURNITURE AND SIGNAGES (Bid Item No. 19)

A. Measurement for payment will include all expenses not specifically listed below but required by the construction documents and specifications, such as field sports event equipment, site furniture, traffic signage, etc.

B. Payment will be based upon the lump sum price for the Field Sports Equipment, Furniture & Signages paid as a percentage completed, upon verification by the Owner's Designee.

3.20 ITEMS NOT INCLUDED IN OTHER SECTIONS (Bid Item No. 20)

A. Measurement for payment will include all expenses not specifically listed above but required by the construction documents and specifications.

B. Payment will be based upon the lump sum price for this work paid as percentage completed, upon verification by the Owner's Designee.

3.21 PERMIT ALLOWANCE (Bid item no. 21)

A. Included in the TOTAL BASE BID AMOUNT is the sum of Fifty thousand dollars ($50,000.00) for obtaining building permits, inspections and certificates of completion required by the State of Florida, State Agencies, or by other local governmental entities. See specification section 01020.

B. Fees excluded from this allowance include but are not limited to re-inspection fees, expired permit fees, and contractor's overhead and profit. These costs should be included elsewhere in the Bid.

C. Payment under the allowance item shall be made only for the actual cost of the permits. Payment against the lump sum for each permit shall be included under the appropriate item in the approved Application for Payment.

3.22 OWNER'S CONTINGENCY ALLOWANCE (Bid Item No. 22)

A. The Allowance shall be used for Owner directed contract changes.

B. See specification section 01020.

3.23 INDEMNIFICATION (Bid Item No. 23)

A. Bidder must state the amount of consideration required by the Bidder in return for the Bidder's promise of Indemnity contained in the GENERAL CONDITIONS. The amount stated shall be no less than $10.00, Payment will based upon the lump sum price.

END OF SECTION

SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination Drawings.
2. Administrative and supervisory personnel.
3. Project meetings.
4. Requests for Interpretation (RFIs).

B. Related Sections include the following:

1. Division 1 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 1 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors or subcontractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.5 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
   a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
   b. Indicate required installation sequences.
   c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Owner’s Designee for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 24 by 36 inches.
3. Number of Copies: Submit **pdf** copies of each submittal. Mark up and retain the returned copy as a Project Record Drawing. The owner requires one pdf copy only.
4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

B. Key Personnel Names: At the pre-construction conference, submit a list of key personnel assignments, including full time superintendent, full time project manager, and other personnel responsible for the project. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide resumes, list of project completed with similar scope in the last three years, and references with contact information for each individual.

1. Key personnel shall be full time employees of the company contracted with the Owner.

2. Any individual not acceptable shall be replaced someone satisfactory to the Owner and Owner's Designee.
    a. The Owner's Designee or Owner may require replacement of supervisory individuals for poor performance and management, quality control problems, project delays, lack of oversight, etc. The contractor shall comply with such request within 5 working days.
    b. The Contractor shall provide independently certified background checks, if required, to comply with state and local regulations. Any individual who does not pass the mandated requirements shall be removed immediately and replaced with someone with a clean background.
3. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.
4. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

C. Refer to General Requirements for additional requirements.

1.6 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Owner's Designee of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Owner's Designee, within **three** days of the meeting.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Owner's Designee. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Owner's Designee, and their consultants; Contractor and its superintendent; project manager; major subcontractors; suppliers; and other parties concerned shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
    a. Tentative construction schedule.
    b. Critical work sequencing and long-lead items.
    c. Designation of key personnel and their duties.
    d. Procedures for processing field decisions and Change Orders.
    e. Procedures for RFIs.
    f. Procedures for testing and inspecting.
    g. Procedures for processing Applications for Payment.
    h. Distribution of the Contract Documents.
    i. Submittal procedures.
    j. Preparation of Record Documents.
    k. Responsibility for temporary facilities and controls.
    l. Construction waste management and recycling.
    m. Office, work, and storage areas.
    n. Equipment deliveries and priorities.
    o. First aid.
    p. Security.
    q. Progress cleaning.
    r. Working hours.

3. Minutes: Record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Owner's Designee of scheduled meeting dates.
2. Agenda: Review of the progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    a. The Contract Documents.
    b. Related RFIs.
    c. Related Change Orders.
    d. Submittals.
    e. Review of mockups.
    f. Possible conflicts.
    g. Time schedules.
    h. Weather limitations.
    i. Manufacturer's written recommendations.
    j. Warranty requirements.
    k. Acceptability of substrates.
    l. Temporary facilities and controls.
    m. Regulations of authorities having jurisdiction.
    n. Testing and inspecting requirements.
    o. Installation procedures.
    p. Coordination with other work.
    q. Required performance results.
    r. Protection of adjacent work.
    s. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at biweekly intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner and Owner's Designee, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule

revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review the present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Site utilization.
8) Temporary facilities and controls.
9) Hazards and risks.
10) Progress cleaning.
11) Quality and work standards.
12) Status of correction of deficient items.
13) Field observations.
14) RFIs.
15) Pending changes.
16) Status of Change Orders.
17) Documentation of information for payment requests.

3. Minutes: Record the meeting minutes.

4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.7 REQUESTS FOR INTERPRETATION (RFIs)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.

1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

1. Project name.
2. Date.
3. Name of Contractor.
4. Name of Owner’s Designee.
5. RFI number, numbered sequentially.
6. Specification Section number and title and related paragraphs, as appropriate.
7. Drawing number and detail references, as appropriate.
8. Field dimensions and conditions, as appropriate.

9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
10. Contractor's signature.
11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.

    a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.

C. Hard-Copy RFIs: CSI Form 13.2A.
1. Identify each page of attachments with the RFI number and sequential page number.

D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
1. RFIs shall be electronic files in Microsoft Word Document Format.
2. Attachments shall be electronic files in Adobe Acrobat PDF format.

E. Owner’s Designee's Action: Owner’s Designee will review each RFI, determine action required, and return it. Allow **seven** working days for Owner’s Designee's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for coordination information already indicated in the Contract Documents.
    d. Requests for adjustments in the Contract Time or the Contract Sum.
    e. Requests for interpretation of Owner’s Designee’s actions on submittals.
    f. Incomplete RFIs or RFIs with numerous errors.

2. Owner’s Designee's action may include a request for additional information, in which case Owner’s Designee's time for response will start again.

3. Owner’s Designee's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Order.
    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Owner’s Designee in writing within **10** days of receipt of the RFI response.

F. On receipt of Owner’s Designee's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Owner’s Designee within **seven** days if Contractor disagrees with response.

G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log bi-weekly. Use CSI Log Form 13.2B. Include the following:
1. Project name.
2. Name and address of Contractor.
3. Name and address of Owner’s Designee.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Owner’s Designee's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01310

SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division l Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Preliminary Construction Schedule.
   2. Contractor's Construction Schedule.
   3. Submittals Schedule.
   4. Daily Construction Reports.
   5. Weekly Progress Reports.
   6. Material Location Reports.
   7. Field Condition Reports.
   8. Special Reports.

B. Related Sections include the following:
   1. Division 1 Section "Summary" for work sequence and Owner’s Occupancy.
   2. Division 1 Section "Payment Procedures" for application for payment and schedule of values.
   3. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
   4. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
   5. Division 1 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
   1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
   2. Predecessor Activity: An activity that precedes another activity in the network.
   3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by Owner’s Designee.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.
1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

H. Major Area: A story of construction, a separate building, or a similar significant construction element.

I. Milestone: A key or critical point in time for reference or measurement.

J. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

K. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 SUBMITTALS

A. Qualification Data: For scheduling consultant.

B. Submittals Schedule: Submit PDF copy of the schedule to Owner and Owner’s Designee for review. Arrange the following information in a tabular format:
1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Owner’s Designee's final release or approval.

C. Contractor's Construction Schedule: Submit PDF copy of the initial schedule, large enough to show entire schedule for entire construction period within first 14 days of the Notice of Proceed.
1. Submit an electronic copy of schedule, using software indicated, in ZIP File, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.

D. CPM Reports: Concurrent with CPM schedule, submit four copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.

E. Daily Construction Reports: Submit one copy with every Weekly Progress Reports. Make reports immediately available on site to the Project Consultant, Owner and other jurisdictional authorities.

F. Weekly Progress Reports: Submit one copy of "Weekly Progress Report" with corresponding Daily Construction Reports to the Project Consultant at the end of each week.

G. Material Location Reports: Submit one copy at monthly intervals.

H. Field Condition Reports: Submit one copy at the time of discovery of differing conditions.

I. Special Reports: Submit one copy at the time of unusual event.

1.5 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Owner’s Designee's request.

1.6 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
   1. Secure time commitments for performing critical elements of the Work from parties involved.
   2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

B. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.

C. Initial Submittal: Submit concurrently with preliminary bar-chart schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

D. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Quality Assurance: Provide a scheduling specialist (from either the Contractor’s own staff or as a consultant to the Contractor) specializing in CPM with experience in scheduling construction work of a

complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed printout within 72 hours of request.

B. Prepare network analysis diagrams and supporting mathematical analyses based upon information provided by Contractor using MS Project or “Primavera Project Planner” by Primavera System, Inc.

C. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

D. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

E. Activities: Identify work of separate stages, phases, buildings, floor levels and other logically grouped activities and major project milestones based on the schedule of values. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 15 days, unless specifically allowed by Owner’s Designee.
   a. Provide sub-schedules for each stage of Work identified in Division 1 Section "Summary" or elsewhere in the Contract Documents.
   b. Provide sub-schedules to define critical portions of the entire schedule.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery. Refer to related requirements in Division 1 Section "Submittal Procedures".
3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
4. Startup and Testing Time: Include not less than 10 days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Owner’s Designee's administrative procedures necessary for certification of Substantial Completion.
   a. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
6. Final Completion shall be allotted 15 days after substantial completion and shall be included in the total time under the contract.

F. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 1 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
2. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.

G. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

2.3 PRELIMINARY CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within fourteen (14) days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for the first 60 days of construction. Include a skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. CPM Schedule: Prepare Contractor's Construction Schedule using a computerized, cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.
1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than fourteen (14) days after date established for the Notice to Proceed.
    a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Owner’s Designee's approval of the schedule.
2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
4. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.

C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    a. Preparation and processing of submittals.
    b. Mobilization and demobilization.
    c. Purchase of materials.
    d. Delivery.
    e. Fabrication.
    f. Utility interruptions.
    g. Installation.
2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
    a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

D. Initial Issue of Schedule: Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:
1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Principal events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in calendar days.
8. Total float or slack time.
9. Average size of workforce.

10. Dollar value of activity (coordinated with the Schedule of Values).

E. Schedule Updating: Concurrent with revising schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in calendar days.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

F. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.
1. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.
2. In second list, tabulate activity number, late finish date, dollar value, and cumulative dollar value.
3. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.
4. Prepare list for ease of comparison with payment requests, coordinate timing with progress meetings.
   a. In both value summary lists, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.

   b. Submit value summary printouts three days before each regularly scheduled progress meeting.

2.5 REPORTS

A. Daily Construction Reports:
1. Contractor to prepare a daily construction report recording project activity including but not limited to:
   a. List of subcontractors at Project site.
   b. List of separate contractors at Project site.
   c. Number of workers in each trade on site (and the duration of their stay).
   d. Number of journeymen and certified journeymen on site for each trade.
   e. High and low temperature and general weather conditions (including a summary of changing conditions through the day).
   f. Approximate hours on the project site.
   g. Equipment at Project site.
   h. Material deliveries.
   i. Accidents.
   j. Meetings and significant decisions.
   k. Unusual events (refer to special reports).
   l. Stoppages, delays, shortages, and losses.
   m. Meter readings and similar recordings.
   n. Emergency procedures.
   o. Orders and requests of authorities having jurisdiction.
   p. Visits by the Owner, Project Consultant and Sub-Consultant.
   q. Change Orders received and implemented.
   r. Construction Change Directives received and implemented.
   s. Services connected and disconnected.
   t. Equipment or system tests and startups.
   u. Partial Completions and occupancies.
   v. Substantial Completions authorized.
2. Make Daily Construction Reports immediately available on site to the Project Consultant, Owner and other jurisdictional authorities.

B. Weekly Progress Reports: At the end of each week, Contractor is to summarize and attach the Daily Construction Reports. Include reports from subcontractors.

C. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

2.6 SPECIAL REPORTS

A. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.
   1. Submit special reports to the Project Consultant and the Owner within one day of an occurrence. Submit copies of the report to other entities that are affected by the occurrence.
   2. Reporting Accidents: Prepare and submit reports of significant accidents on the project site or anywhere else the Work is in progress.
      a. Record and document data and actions. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.

B. Contractor's Construction Schedule Updating: At bi-weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule three days before each regularly scheduled progress meeting.
   1. Revise the schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
   2. Include a report with an updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
   3. As the Work progresses, indicate Actual Completion percentage for each activity.

C. Distribution: Distribute copies of approved schedule to Owner and Owner’s Designee, subcontractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
   1. Post copies in Project meeting rooms and temporary field offices.
   2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01320

SECTION 01322 PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:
   1. Pre-construction photographs.
   2. Pre-construction video.
   3. Periodic construction photographs.
   4. Final Completion construction photographs.

B. Related Sections include the following:
   1. Section 01330 for submitting photographic documentation.

1.3 QUALITY ASSURANCE

A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects.

1.4 COORDINATION

A. Auxiliary Services: Cooperate with Photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

B. Coordinate with FAA regulations for restrictions with drone photography.

1.5 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from Photographer to Owner and Owner's Designee for unlimited reproduction of photographic documentation.

1.6 ADDITIONAL ITEMS

A. Extra Prints: If requested by Owner's Designee, photographer shall prepare extra prints of photographs. Photographer shall distribute these prints directly to designated parties who will pay the costs for extra prints.

B. Digital Images: Provide a flash drive, with each submittal, containing digital images of the photographs. Digital Images shall be in JPEG format with minimum 1200 dpi resolution.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Camera: Digital camera, 15 megapixels, or greater.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
   1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Film Images:
   1. Field Office Prints: Retain one set of progress photographs in the field office at Project site, available at all times for reference. Identify photographs same as for those submitted to Owner's Designee.

C. Pre-construction Photographs and Videos: Take color photographs and videos of Project site and surrounding properties, including existing items to remain during construction and those that will be re-located, from different vantage points, as directed by Owner's Designee within 30 days before start of work.
   1. Flag construction limits before taking construction photographs.
   2. Take at least eight photographs to show existing conditions adjacent to property before starting the Work.
   3. Take at least eight photographs of existing buildings either on or adjoining property to accurately record physical conditions at the start of construction.
   4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
   5. Provide (3) flash drives with pre-construction digital images in JPEG format with minimum 1200 dpi and digital videos in AVI, MWV, MOV or MP4 format with minimum 1080p resolution.

D. Periodic Construction Photographs: Take at least four aerial color photographs monthly**,** with the cutoff date associated with each Application for Payment. Select vantage points to show the status of construction and progress since the last photographs were taken.
   1. Employ professional commercial aerial photographer acceptable to the Project Consultant, to take construction record photographs periodically during the course of work. Photographer shall be a firm or individual of established reputation who has been regularly engaged as a professional aerial photographer for not less than two years. Provide two references for which the aerial photographer has performed work of similar nature during the preceding twelve (12) months.
   2. Provide aerial photograph with each monthly application for payment and as follows:
      a. Existing site prior to the start of Contractor operations.
      b. Demolition.
      c. Structural framing.
      d. Substantial and Final Completion of a major phase or component of work.
   3. Digital Images: Provide (3) flash drives, with each submittal, containing digital images of the aerial photographs. Digital Images shall be in JPEG format with minimum 1200 dpi resolution.
   4. Costs photographer:
      a. Pay costs for specified photography and prints.
      b. Parties requiring additional photography or prints authorized by the Owner will pay photographer directly.
      c. Additional Photo Missions/Views/Prints: From time to time the Owner or Owner's Designee may issue requests for additional photo missions/views/prints, in addition to periodic photo missions/views/prints specified. Additional requirements will be paid to the Photographer directly by the Owner or Owner's Designee.
      d. The Owner's Designee will give the photographer 3 working days' notice where feasible.
      e. In emergency situations, the photographer shall take additional photographs within 24 hours of the Owner's Designee's request.

f. Additional Prints, when requested by the Owner's Designee and approved by the Owner, shall be provided at prevailing local commercial prices to designated parties. The designated parties, in each case, shall pay the photographer directly for such prints.

5. Technique:
   a. Provide factual presentation
   b. Photographs shall be taken during good weather conditions with adequate lighting. Photographs with cloud shadows on the primary target shall not be acceptable.
   c. Maximum depth of field and critical focus is required to produce images with high resolution and contrast to show maximum detail with minimum grain. A lens corresponding to the film format, which will control optical distortion, shall be used.
   d. Aerial Views and Quantities Required:
      aa. Photograph the work from a minimum of three (4) different directions (views) as approved by the Owner's Designee with vantage points to best show the entire site and detailed close-ups, status of construction and progress since taking the previous photographs. Unless requested otherwise, take all monthly photographs from the same direction and altitude.
      bb. The altitude and angle of view selected by the aerial photographer will be such that the image captured will include and emphasize the entire site while eliminating, as much as possible, excessive amounts of foreground, background and especially horizon and sky.
6. Photography Submittals:
   a. Deliver PDF of each view with each Application for Payment with transmittal letter specified under Division 1 Section "Submittal Procedures".
7. Deliver prints not required for an Application for Payment three (3) days after exposure with transmittal letter specified under Division 1 Section "Submittal Procedures

E. Final Completion Construction Photographs: Take at least twelve color photographs after date of Substantial Completion for submission as Project Record Documents. Owner's Designee will direct the photographer for desired vantage points.
   1. Do not include date stamp.

F. Submittals:
   1. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.
   2. Deliver prints with each Application for Payment with transmittal letter specified under Division 1 Section "Submittal Procedures".
   3. Deliver prints not required for an Application for Payment three (3) days after exposure with transmittal letter specified under Division 1 Section "Submittal Procedures".

END OF SECTION 01322

SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Sections include the following:

1. Division 1 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
3. Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
4. Division 1 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
5. Division 1 Section "Closeout Procedures" for submitting warranties.
6. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
7. Divisions 2 through 16 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Owner’s Designee's responsive action.

B. Informational Submittals: Written information that does not require Owner’s Designee's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings may be provided by Owner’s Designee for Contractor's use in preparing submittals. The cost for each CAD file will be $200 and paid by the contractor at the receipt of the file.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Owner’s Designee reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Owner’s Designee's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Owner’s Designee will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Owner’s Designee's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Owner’s Designee.
3. Include the following information on label for processing and recording action taken:
    a. Project name.
    b. Date.
    c. Name and address of Owner’s Designee.
    d. Name and address of Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.
        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

F. Deviations: Highlight, encircle, and otherwise specifically identify deviations from the Contract Documents on submittals.

G. Additional Copies: Unless additional copies are required for final submittal, and unless Owner’s Designee observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Owner’s Designee.
2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.

H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Owner’s Designee will return submittals, without review, received from sources other than Contractor.
1. Transmittal Form: Provide locations on form for the following information:
    a. Project name.

b. Date.
c. Destination (To:).
d. Source (From:).
e. Names of subcontractor, manufacturer, and supplier.
f. Category and type of submittal.
g. Submittal purpose and description.
h. Specification Section number and title.
i. Drawing number and detail references, as appropriate.
j. Transmittal number - numbered consecutively.
k. Submittal and transmittal distribution record.
l. Remarks.
m. Signature of transmitter.

2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Owner's Designee on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
3. Submit CONTRACTOR'S SHOP DRAWING SUBMITTAL CERTIFICATION at the end of this section with each submittal. Submittals without the certification will be returned without action.

I. Resubmittals: Make resubmittals in the same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "Reviewed" or "Reviewed as Noted".

J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

K. Use for Construction: Use only final submittals with mark indicating "Reviewed" or "Reviewed as Noted" taken by Owner's Designee.

L. All shop drawings and samples are to be submitted in the following groups. All data is to be reviewed by General Contractor as indicated in Sections 01330. Submittal groups must be complete - Incomplete submittals will be rejected.

GROUP SUBMITTALS are as follows:

1. HVAC
All HVAC equipment, controls ductwork, accessories, piping diagrams, etc. All submittals in one group.

2. Electric
Lighting Fixture package, controls, switch gear, etc. All submittals in one group.

3. Plumbing
Fixture package, risers, accessories, fire sprinklers, etc. All submittals in one group.

4. Structural
Group 1: Foundation rebar, soil compaction reports, concrete mix, concrete block, column rebar.
Group 2: Roof framing systems (Restroom & Concession building), miscellaneous metals, miscellaneous steel column, exterior framing, etc.

5. Architectural
Group 1: All Interior finishes, equipment, accessories, etc.
Group 2: Exterior finishes, curtainwall, doors, hardware, windows, roofing, stucco reglet, trims, reveals, pavers, etc.

6. Site Elements
   Group 1: Synthetic track surfacing
   Group 2: Field Sports equipment
   Group 3: Bleachers
   Group 4: Shade structures
   Group 5: Signage, fencing, benches, trashcans, bike racks, etc.

7. Civil
   Group 1: Water and Sewer
   Group 2: Paving and Drainage
   Group 3: Pollution Prevention
   Group 4: Signage

8. Landscape
   Group 1: Landscape material
   Group 2: Irrigation material

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.
   1. Number of Copies: Submit pdf copies of each submittal. Mark up and retain the returned copy as a Project Record Drawing. The owner requires one pdf copy only.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy of each submittal to show which products and options are applicable.
   3. Include the following information, as applicable:
      a. Manufacturer's written recommendations.
      b. Manufacturer's product specifications.
      c. Manufacturer's installation instructions.
      d. Standard color charts.
      e. Manufacturer's catalog cuts.
      f. Wiring diagrams showing factory-installed wiring.
      g. Printed performance curves.
      h. Operational range diagrams.
      i. Standard product operation and maintenance manuals.
      j. Compliance with specified referenced standards.
      k. Testing by recognized testing agency.
      l. Notation of coordination requirements.
   4. Submit Product Data concurrent with Shop Drawings and Samples.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
   1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      a. Dimensions.
      b. Identification of products.
      c. Fabrication and installation drawings.
      d. Roughing-in and setting diagrams.
      e. Schedules.
      f. Design calculations.

g. Compliance with specified standards.
h. Notation of coordination requirements.
i. Notation of dimensions established by field measurement.
j. Relationship to adjoining construction clearly indicated.
k. Seal and signature of professional engineer if specified.
l. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 24 by 36 inches.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of appropriate Specification Section.
3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
a. Number of Samples: Submit Three (3) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Owner’s Designee will return submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
a. Number of Samples: Submit Six (6) sets of Samples. Owner’s Designee will retain three Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product.
2. Number and name of room or space.
3. Location within room or space.
4. Number of Copies: Submit pdf copies of product schedule or list.
a. Mark up and retain one returned copy as a Project Record Document.

F. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

G. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures."

H. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures."

I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. **Use** CSI Form 1.5A. Include the following information in tabular form:
   1. Name, address, and telephone number of entity performing subcontract or supplying products.
   2. Number and title of related Specification Section(s) covered by subcontract.
   3. Drawing number and detail references, as appropriate, covered by subcontract.
   4. Number of Copies: Submit pdf copies of subcontractor list.
      a. Mark up and retain one returned copy as a Project Record Document.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
   1. Number of Copies: Submit pdf copies of each submittal. Mark up and retain the returned copy as a Project Record Drawing. The owner requires one pdf copy only.
   2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
   3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

M. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."

N. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

O. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."

P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

Q. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

R. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

S. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

T. Construction Photographs: Comply with requirements specified in Division 1 Section "Photographic Documentation."

2.3 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Owner's Designee.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit six copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include a list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner's Designee.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 OWNER'S DESIGNEE'S ACTION

A. General: Owner's Designee will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Owner's Designee will review each submittal, make marks to indicate corrections or modifications required, and return it. Owner's Designee will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. Final Unrestricted Release: Where the submittals are marked as follows, the work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents; acceptance of the work will depend upon that compliance.

   Marking: "No Exceptions taken"

2. Final-But-Restricted Release: When the submittals are marked as follows, the work covered by the submittal may proceed provided it complies with both the Owner's Designee's/Engineer's notations or corrections on the submittal and with the requirements of the contract documents; acceptance of the work will depend on that compliance.

   Marking: "Make corrections noted".

3. Returned for Re-Submittal: When the submittal is marked as follows do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise the submittal or prepare a new submittal in accordance with the Owner's Designee's/Engineer's notations stating the reasons for returning the submittal; re-submit the submittal without delay. Repeat if necessary to obtain a different action marking. Do not permit submittals with the following marking to be used at the project site, or elsewhere where work is in progress.

   Marking: "Rejected"
   Marking: "Revise and Resubmit"
   Marking: "Submit Specified Item"

C. Informational Submittals: Owner's Designee will review each submittal and will not return it, or will return it if it does not comply with requirements. Owner's Designee will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

F. Submit CONTRACTOR'S SHOP DRAWING SUBMITTAL CERTIFICATION at the end of this section with each submittal. Failure to submit required certification will result in rejection of the submittal. Additional time or compensation will not be given to the Contractor for delays caused by the contractor not following the stated submittal requirements.

G. The first submittal for each required item will be reviewed free of charge. Each subsequent submittal review, for previously failed or incomplete submittals, will be billed on an hourly basis at $180 / hr. Contractor shall be responsible for payment of rejected submittals on a monthly basis. Non-payment will result in termination of review services.

END OF SECTION 01330

CONTRACTOR'S SHOP DRAWING SUBMITTAL CERTIFICATION

Project Name:
Owner:
Contractor:

Date:

Submittal Title: Specification Section:
Submittal Group:

I, _____, as the General Contractor's authorized representative of the said project, certify that the attached shop drawing submittal complies specification section 01330, all other applicable specification sections, and the construction documents. I have reviewed the shop drawings submitted by the suppliers or sub-contractors and the following conditions have been satisfied:

Yes	*No*	*N/A*	
☐	☐	☐	Have minimum required quantity of submittals attached. Number of submittals _____
☐	☐	☐	Have you reviewed the shop drawing submittal for conformance with the plans and specifications. All dimensions been cross-checked with plans and field verified for actual dimensions.
☐	☐	☐	Have you marked all applicable options and accessories to be supplied or required.
☐	☐	☐	Have you coordinated with all other trades or associated items (i.e. elec. voltage, data, water supply, venting, etc.)
☐	☐	☐	Is the submitted product identical to the specified item in section _____
☐	☐	☐	All deviations from the plans or specification have been clearly identified on each page.
☐	☐	☐	For all exterior components, are the Metro-Dade product approvals attached
☐	☐	☐	Have you reviewed the Metro-Dade product approval.
☐	☐	☐	For sample specified, are material samples with specified finish and color attached
☐	☐	☐	If sign and sealed engineering is specified, are the engineering calculations attached.
☐	☐	☐	If manufacturer's product data is specified, is the information attached
☐	☐	☐	Have you reviewed and noted manufacturer's instructions and recommendations
☐	☐	☐	If a warranty is specified, is a sample warranty for the specified period attached.
☐	☐	☐	If installer's qualification certification specified, is the certification attached.
☐	☐	☐	If Producer's Statement of applicability required, is one attached.

If you answered 'NO' to any question listed above, do not forward the submittal to the Owner's Designee. It will not be reviewed. All reviews after the first review, will be billed directly to the general contractor.

Signature _____ Title_____ Date_____

SECTION 01400 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division l Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-assurance and -control services required by Owner’s Designee, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:
   1. Division 1 Section "Project Record Documents" for final testing reports, inspection records, and certifications.
   2. Divisions 2 through 16 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Owner’s Designee.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

F. Product Testing: Tests and inspections that are performed by a nationally recognized testing laboratory, a national voluntary laboratory accreditation program, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
   1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Owner’s Designee for a decision before proceeding.

B. Quantities or Amounts: If conflict arises on the quantity or amount of a particular item or material, Contractor shall include in his/her bid the one of greater quantity or amount between the two. Contractor shall inform Owner’s Designee’s office of conflict prior to ordering any materials.

C. Systems or Conditions: If conflict arises between two systems or conditions, Contractor shall include in his/her bid the one of highest cost. Contractor shall inform Owner’s Designee’s office of conflict prior to ordering any materials.

D. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Owner’s Designee for a decision before proceeding.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
   1. Specification Section number and title.
   2. Description of test and inspection.
   3. Identification of applicable standards.
   4. Identification of test and inspection methods.
   5. Number of tests and inspections required.
   6. Time schedule or time span for tests and inspections.
   7. Entity responsible for performing tests and inspections.
   8. Requirements for obtaining samples.
   9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:
   1. Date of issue.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making tests and inspections.
   6. Description of the Work and test and inspection method.
   7. Identification of product and Specification Section.
   8. Complete test or inspection data.
   9. Test and inspection results and an interpretation of test results.
   10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
   11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
   12. Name and signature of laboratory inspector.
   13. Recommendations on retesting and reinspecting.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.7 QUALITY CONTROL

A. Tests and inspections are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
6. The following tests, inspections, and certifications shall be performed by independent testing agencies, special inspectors, or professional engineers hired by the contractor to provide quality control services:
    a. Soils compaction and density.
    b. Concrete cylinder tests.
    c. Structural Welding certification.
    d. Structural Engineered Masonry Inspections
    e. Structural Steel Erection and Connections
    f. As-built site lighting photometric plan.
    g. ADA compliance certification.

B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Owner's Designee and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   1. Notify Owner's Designee and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
   3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
   4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
   6. Do not perform any duties of Contractor.

E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notifying agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   1. Access to the Work.
   2. Incidental labor and facilities necessary to facilitate tests and inspections.
   3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   4. Facilities for storage and field curing of test samples.
   5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
   6. Security and protection for samples and for testing and inspecting equipment at Project site.

F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
   1. Schedule times for tests, inspections, obtaining samples, and similar activities.

G. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.
   1. Distribution: Distribute schedule to Owner, Owner's Designee, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Contractor will engage a qualified testing agency, special inspector, or professional engineer to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
   1. Notifying Owner's Designee and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
   2. Submitting six copies of a certified written report of each test, inspection, and similar quality-control service to Owner's Designee with copy to Contractor and to authorities having jurisdiction.

3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
5. Retesting and reinspecting corrected work.
6. The following inspections and certifications shall be performed by independent testing agencies, special inspectors, or professional engineers hired by the contractor to provide quality control services:
    a. Engineered Masonry
    b. Welding
    c. Truss / Joist Erection
    d. Fastening and Connections

B. Contractor shall be responsible for paying for inspections and delegated professional engineering required during construction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Owner’s Designee.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Owner’s Designee 's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

SECTION 01410 – REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control, but not limited to the following:
   1. Description of Requirements
   2. Codes and Standards
   3. Governing Regulations and Authorities
   4. Submittal

B. Related Sections include the following:
   1. Division 1 Section "Quality Requirements"

1.3 DESCRIPTION OF REQUIREMENTS

A. General:
   1. This section specifies procedural and administrative requirements for compliance with governing regulations and codes and standards imposed upon the Work. These requirements include obtaining permits, licenses, inspections, releases and similar requirements associated with the regulations, codes and standards.
   2. The term “Regulations” is defined to include laws, statutes, ordinances, and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively controls the performance of the Work regardless of whether they are lawfully imposed by governing authority or not.
   3. Governing Authority: For requirements related to compliance with governing regulations, refer to:
      1) City of Pompano Beach
      2) Broward County
      3) South Florida Water Management District
      4) State of Florida
   4. General Requirements: Provisions and requirements of the Contract and other Division 1 specification sections apply to the entire Work defined by the Construction Documents. As such, there is no need to separately enumerate the application of those documents within the individual specification sections or the drawings.

1.4 DEFINITIONS

A. Certain terms used in the Construction Documents are defined in this Section. Definitions and explanations contained in this Section are not necessarily complete, but are general for the Work to the extent that they are not stated more explicitly in another document within the Construction Documents.
   1. Indicated: refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in Specifications, and similar requirements in Construction Documents.

Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.

2. Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Architect/Owner's Designee", "requested by the Architect/Owner's Designee", and similar phrases. However, no implied meaning shall be interpreted to extend the Architect's/Owner's Designee's responsibility into the Contractor's area of construction supervision.
3. Approve: The term "approved," where used in conjunction with the Architect's/ Owner's Designee's action on the Contractor's submittals, applications, and requests, is limited to the duties and responsibilities of the Architect/ Owner's Designee as stated in the Contract, General Requirements of the Contract or other Division 1 Specifications. Such approval shall not release the Contractor from responsibility to fulfill Contract requirements unless otherwise provided in the Construction Documents.
4. Furnish: The term "furnish" is used to mean "supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations."
5. Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations."
6. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."
7. Project Site: is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other construction activities as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land upon which the Project is to be built.
8. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.5 CODES AND STANDARDS

A. Except where earlier editions are specifically indicated, latest editions with current revisions and amendments of the following codes and standards are considered minimum requirements for materials, workmanship and safety where not covered elsewhere in these specifications.

B. Codes and Standards:
   1. Obtain copies of the following regulations (unless otherwise indicated) and retain at the project site, available for reference by parties who have a reasonable need for such reference:
      a. Florida Building Code – 2023, Eighth Edition with latest revisions.
      b. Florida Fire Prevention Code – Eighth Edition with latest revisions.
      c. National Electric Code – 2023 edition.
      d. ASCE 7-22
      e. OSHA safety standards.

1.6 GOVERNING REGULATIONS/AUTHORITIES FEES

A. Coordinate inspections and regulatory requirements of the agencies specified above under provisions of Division 1 Section "Quality Requirements".

B. Contractor shall obtain all permits.
   1. Review / Permit fees for all agencies and all re-inspection fees will be paid by the Contractor.
   2. All impact fees to the County or other agencies will be paid by the Contractor.

1.7 SUBMITTALS

A. Licenses and Certificates: Submit copies of licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon the performance of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01410

SECTION 01420 REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Related Sections include the following:

1. Division 1 Section "Quality Requirements"
2. Division 1 Section "Regulatory Requirements"
3. Division 1 Section "Quality Assurance"

1.3 DRAWING SYMBOLS

A. Except as otherwise indicated, graphic symbols used on the Drawings are those symbols recognized in the construction industry for the purposes indicated. Where not otherwise noted, symbols are defined by “Architectural Graphic Standards”, published by John Wiley & Sons, Inc., eleventh edition or later.

B. Mechanical and Electrical Drawings: Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by ASHRAE and/or The National Electric Code (NEC). Where appropriate these symbols are supplemented by more specific symbols as recommended by other technical associations including ASME, ASPE, IEEE and other similar organizations.

C. Refer instances of uncertainty to the Project Consultant for clarification prior to proceeding.

1.4 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's format and MASTERFORMAT numbering system.

B. Specification Conventions: This Specification uses certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the full context of the Contract Documents so indicates.
2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
3. The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.
4. Abbreviations: Actual word abbreviations of a self-explanatory nature may be included within the Technical Specification. Specific abbreviations have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of specifications with notations on drawings and schedules. These abbreviations are frequently defined in the specification section at the first instance of use. Trade association names and titles of general standards are frequently abbreviated. Singular words will be interpreted as plural and plural

word will be interpreted as singular where applicable and where full context of the Contract Documents so indicates. Refer instances of uncertainty to the Project Consultant for decision prior to proceeding.

C. Specification Content:
   1. The techniques or methods of specifying to record requirements vary throughout the Technical Specification. These methods may include: “prescriptive”, “open generic-descriptive”, “compliance with standards”, “performance”, “proprietary” or a combination of these. The method used for specifying one element of the Work has no bearing on requirements for another element of the Work.
   2. Overlapping and Conflicting Requirements: Where compliance with two or more industry standards or sets of requirements is specified, and overlapping of those different standards establishes different or conflicting minimums or levels of quality, the most stringent (which is generally recognized to also be the most costly) is intended and will be enforced unless specifically detailed language written into the Contract Documents (not by way of reference to an industry standard) clearly indicates that a less stringent requirement is to be fulfilled. Refer apparently-equal-but-different requirements and other uncertainties to the Project Consultant for a decision prior to proceeding.
   3. Contractor’s Options: Except for overlapping or conflicting requirements where more than one set of requirements are specified for a particular unit of Work, option is intended to be Contractor’s regardless of whether or not it is specifically intended as such.

D. Minimum Quality/Quantity: In every instance, the quality level or quantity shown or specified is intended as minimum for the Work to be performed or provided. Except as otherwise specifically indicated, actual Work may either comply exactly with that minimum (within reasonable specified tolerances) or may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are either minimums or maximums as not or as appropriate for the context of the requirements. Refer instances of uncertainty to the Project Consultant for decision prior to proceeding.

E. Assignment of Specialists: The Specification requires that certain specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
   1. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
   2. Trades: Use of titles such as "carpentry" is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that the requirements specified apply exclusively to tradespersons of the corresponding generic name.

1.5 INDUSTRY STANDARDS

A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference. Individual Sections indicate which codes and standards the Contractor must keep available at the Project Site for reference.

B. Publication Dates: Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of bidding.
   1. Updated Standards: At the request of the Project Consultant, Contractor, or authority having jurisdiction, submit a Change Order proposal where an applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work

affected. The Project Consultant and Owner will decide whether to issue a Change Order to proceed with the updated standard.

C. Copies of Standards:
   1. Each entity engaged in construction on the Project shall be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.
   2. Where copies of standards are needed for the performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
   3. Although copies of standards needed for enforcement of requirements also may be included as part of required submittals, the Project Consultant reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.

D. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co. or other similar guides available from The Construction Specifications Institute, American Institute of Architects, etc.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01430 – QUALITY ASSURANCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division l Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance, but not limited to, the following:
   1. Fabricator's Qualifications
   2. Installer's Qualifications
   3. Manufacturer's Qualifications
   4. Manufacturer's Field Services
   5. Supplier Qualifications
   6. Professional Engineer Qualifications
   7. Testing and Inspection Agency Qualifications

1.3 FABRICATOR'S QUALIFICATIONS

A. A "Fabricator" is the Contractor, or an entity engaged by the Contractor, either as en employee, subcontractor or sub-subcontractor to construct assemblies required for the Work from diverse, usually standardized manufactured parts or components either on the project site or in a shop setting.

B. The term "experienced," when used with the term "fabricator" means:
   1. Having a minimum of five (5) previous consecutive years of experience in the regular fabrication of assemblies, sub-assemblies, or components similar to those specified, and
   2. Being familiar with the requirements of Florida High Velocity Hurricane Zone.

C. Fabricators, and the Contractor's workforce in general, are required to comply with the workforce composition requirements specified in General Requirements and further specified below.

1.4 INSTALLER'S QUALIFICATIONS

A. An "Installer" is the Contractor, or an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged in performing.

B. The term "experienced," when used with the term "Installer" means:

   1. Having a minimum of (5) previous Projects similar in size and scope to this Project,
   2. Being familiar with the precautions required.
   3. Having complied with the workforce composition and other requirements of the City of Pompano Beach, Florida and other jurisdictional authorities involved in the Work.

C. Provide the levels of more extensive experience that may be specified within the respective specification sections contained in this Project Manual.

D. Installers, and the Contractor's workforce in general, are required to comply with the workforce composition requirements specified in General Requirements and further specified below.

1.5 MANUFACTURER'S QUALIFICATIONS

A. A "Manufacturer" is a person or entity who produces materials or equipment for the Work, including that manufactured to a special design, but who does not perform labor at the site. Manufacturers are required to be experienced in the operations they are engaged in performing.

B. The term "experienced," when used with the term "Manufacturer" means:
   1. Having a minimum of (5) previous consecutive years of experience in the regular manufacture of products, materials, components, and assemblies similar to those specified.

C. Upon request, provide:
   1. Location of the Manufacturer including foreign or domestic status.
   2. Evidence of the time period in which the manufacturer has been producing the specified products, materials, components or assemblies without formulation, engineering, design or other production changes which would alter or modify their performance characteristics.
   3. Listings of the manufacturer's authorized franchised distributors, installers, or applicators.
   4. Manufacturer's latest product performance criteria and test results.
   5. List of the manufacturer's technical services and their local availability.
   6. Other pertinent information to establish the capacity, capability and quality of the manufacturer as may be requested by the Project Consultant or Owner.

D. The Owner reserves the right to require replacement of any manufacturer to whom reasonable objection is made by the Owner or Project Consultant.

1.6 MANUFACTURER'S FIELD SERVICES

A. Submit qualifications of manufacturer's, suppliers, distributors or other entity's observers to Project Consultant and Owner (30) days in advance of required observations. Observer subject to approval of Project Consultant and Owner and the Owner reserves the right to replace any observer for whom reasonable objection is made.

B. When specified in individual specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, or other conditions as applicable, and to initiate instructions when necessary.

C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Submit report in duplicate within (15) days of observation to Owner for review.

1.7 SUPPLIER QUALIFICATIONS

A. A "Supplier" is a person or entity who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site. Suppliers are required to be experienced in the operations they are engaged in performing.

B. The term "experienced," when used with the term "Supplier" means:
   1. Having supplied products or materials for a minimum of (5) previous projects similar in size and scope to the Work specified herein.
   2. Having been in the regular business of supplying similar products and materials for the preceding consecutive (3) years.

C. The Owner reserves the right to require replacement of any Supplier to whom reasonable objection is made by the Owner or the Project Consultant.

1.8 PROFESSIONAL ENGINEER QUALIFICATIONS

A. A professional engineer who is legally qualified to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

1.9 TESTING AND INSPECTION AGENCY QUALIFICATIONS

A. An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
   1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
   2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

B. Testing and Inspection Agencies may be hired, paid for, and utilized by the Contractor for the Contractor’s use at no additional expense to the Owner except as otherwise provided in the Contract Documents.

C. Such testing and inspection agencies: meet the following qualifications:
   1. Laboratory: Authorized to operate in State in which Project is located.
   2. Laboratory Staff: Maintain a full-time registered Engineer and the necessary specialists on staff to review services.
   3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

1.10 LICENSURE REQUIREMENTS

A. City of Pompano Beach requires the utilization of a workforce, which holds State of Florida Certification, or a certificate of competency obtained through a proctored examination for the following crafts or trades. Ensure compliance with the licensure requirements if the listed crafts or trades (as mandated by Chapter 489 of the Florida Statute) are required for the execution of the Work:

   1. Plumbing and Specialty Plumbing Contractors:
      a. Master Plumber
      b. Specialty Plumbing Contractors:
         1) Lawn Sprinkler Plumber
         2) Master Natural Gas Fitter
         3) Solar Heat Installer
      c. Journeyman Plumber
      d. Journeyman Natural Gas Fitter: Specialty Journeyman Plumber

2. Electrical and Specialty Electrical Contractors:
   a. Master Electrician
   b. Specialty Electricians:
      1) Burglar Alarm Electrician
      2) Central Community TV and Radio Specialty Contractor
      3) Electrical Sign Master Electrician
      4) Fire Alarm Electrician
      5) Lightning Protection Systems Contractor
      6) Low Voltage Electrician
      7) Communications
   c. Journeyman Electrician
   d. Electrical Sign Journeyman
   e. Maintenance Electrician Journeyman

3. Mechanical and Specialty Mechanical Contractors:
   a. Sheet Metal Contractor
   b. Class A Air Conditioning Contractor
   c. Mechanical Contractor
   d. Transport Assembly Contractor
   e. Insulation Contractor
   f. Central Vacuum System Contractor
   g. Pneumatic Control Contractor
   h. Specialty Mechanical Technicians
   i. Specialty Air Conditioning Technicians Class "C"
   j. Specialty Air Conditioning Technicians Class "D":
      1) Class "A" Refrigeration Technician
      2) Class "B" Refrigeration Technician
      3) Warm Air Heating Technician
      4) Insulation Contractor
      5) Mechanical Maintenance Technician
   k. Mechanical Journeyman:
      1) Insulation Journeyman
      2) Journeyman Mechanical Technician
      3) Sheet Metal Journeyman

4. Engineered Construction Contractors:
   a. General Engineered Construction Builder
   b. Special Engineered Construction Categories
   c. Specialty Engineered Utility and Drainage Builders:
      1) Primary Pipelines (Water, Sewer, Drainage) - Class "A"
      2) Secondary Pipelines (Water, Sewer, Drainage incidental to parking lots) - Class "B"
      3) Plant Construction (Water Treatment, sewage treatment, industrial complexes, pump and lift stations, incinerators) - Class "C"
      4) Fuel Transmission and Distribution Lines - Class "D"
      5) Underground and Aerial Utility Transmission and Distribution Lines - Class E"
      6) Feeder Distribution Interface (FDI Telephone Boxes) Installer - Class "F"
      7) Cable Television - Class "G"
      8) Jack and Bore Installer - Class "H"
      9) Limited to Irrigation Systems in the Public Right of Way
   d. Specialty Engineered Structural Builders:
      1) Heavy Marine (Harbor facilities, Docks, Shipyards, Bulkheads, Retaining Walls, Seawalls, Dams, Locks) - Class "A"
      2) Bridges, Overpasses, Underpasses - Class "B"
      3) Tunnels - Class "C"

4) Light Marine (Seawalls, Retaining Walls, Davits, Boat Lifts, Small Docks) - Class "D"
5) Pile Driving - Class "E"

e. Specialty Engineered Paving Builders:
1) Major Roads (Asphalt and Concrete Paving for Interstate, Primary, Secondary and Arterial Roadways and Airports and Work Incidental Thereto) - Class "A"
2) Minor Roads - (Asphalt and Concrete Paving for Subdivision Facilities and Work Incidental Thereto) - Class "B"
3) Concrete Driveways, Curbs, Gutters, and Sidewalks - Class "C"
4) Sealcoating - Class "D"
5) Surfacing (Tennis Courts, bikepaths, driveways, parking lots, with drainage incidental thereto being limited to soakage pits and drywells) - Class "E"
6) Striping, Marking, and Signage of Major and Minor Roadways to include pavements - Class "F"

f. Specialty Engineered Earthwork Builders:
1) Excavating (canals, lakes, levees) - Class "A"
2) Clearing and Grading - Class "B"
3) Dredging (Canals, lakes and waterways) - Class "C"

5. General and Specialty Building Contractors:
a. General Building - Class "A" - Unlimited
b. General Building - Class "B" - Commercial
c. General Building - Class "C" - Residential
d. Limited Specialty Building Categories:
1) Acoustical Ceilings Category - Class "A"
2) Awning Erection Category - Class "AE"
3) Cabinet Installation Category - Class "C"
4) Concrete Placing and Finishing Category - Class "CP"
5) Demolition Category (Nonexplosive) - Class "A"
6) Down Spouts and Gutters: Under Miscellaneous metals or roofing.
7) Drywall and Lathing Category - Class "DL"
8) Elevator Installation and Maintenance Category - Class "E"
9) Fence Erection Category - Class "F"
10) Finish Carpentry Category - Class "FC"
11) Flooring Category - Class "FL"
12) Glazing Category - Class "G"
13) Gunite Category - Class "GU"
14) Insulation Category - Class "I"
15) Masonry Category - Class "M"
16) Miscellaneous Metals Erection Category - Class "MM"
17) Painting (Interior and Exterior) Category - Class "P"
18) Painting Unlimited Category - Class "PU"
19) Plastering and Stucco Category - Class "PS"
20) Roof Decks Category - Class "RD"
21) Roof Painting and Cleaning Category - Class "RP"
22) Roofing Category - Class "R"
23) Rough Carpentry and Framework Category - Class "RC"
24) Screen Enclosures Category - Class "SC"
25) Sign Erection Category - Class "SE"
26) Steel Reinforcing and Iron Category - Class "SR"
27) Structural Steel Category - Class "SS"
28) Tile and Marble Category - Class "TM"
29) Waterproofing Category - Class "W"

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01430

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.4 EXISTING CONDITIONS

A. The site is in use 24 hours / day, 7 days / week. Contractor is required to perform the needed work for their construction effort in a way that does not disturb the function or interrupt ongoing operations. All work must be coordinated and scheduled with approval from the owner's staff. Contractor shall provide temporary chain link fencing at the perimeter of the construction area. Also provide barricades, signage, and all other means necessary to protect the public from harm. Contractor shall provide protected temporary access paths to all existing facilities adjacent to the construction area. Contractor shall frequently remove all construction debris from the protected temporary access paths and areas outside the work limits, but not less than once a day. Contractor shall remove temporary paths and restore those areas after the construction work is complete.

B. Contractor shall construct the project in phases as indicated on the construction drawings. Contractor may coordinate with the Owner and submit an alternate plan to the Owner for approval.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 8-feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails. Provide screen mesh vision barrier. Provide minimum (2) 12' wide x 8' high gates for construction access.

B. Traffic Barricades: High-visibility Water-filled Plastic Jersey barriers for use in construction areas, temporary work zones to ensure safety and minimize damage to vehicles. Provide flashing lights for night-time visibility.

C. Field Offices, General: Contractor may use a portion of the site being renovated as a field office.

D. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly. Furnish and equip offices as follows:
1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Drinking water and private toilet.
3. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
4. Lighting fixtures capable of maintaining average illumination of 50 fc at desk height.
5. Codes: Contractor shall have a copy of the reference codes and standards, including but not limited to Florida Building Code, latest edition, on site at all times during construction.
6. Fire Extinguisher: Contractor shall provide and maintain in working order, at least one twenty (20) pound capacity dry chemical type fire extinguisher, suitable for Class A, B or C fires.

D. Contractor Use Storage Container: Provide storage container sized, furnished, and equipped to accommodate materials and equipment for construction operations.
1. Contractor to include rental cost for contractor's storage container in the base bid.
2. Store combustible materials apart from building.

E. Environmental Protection: Provide Best Management Practices environmental protection equipment to prevent air, soil, and water pollution in and around the project site. BMP's shall comply with contract specifications, FDEP regulations and FDOT standards. Contractor shall be solely liable and responsible for any fines issued by the regulatory agencies due to non-compliance or inadequate compliance. BMP's shall be maintained for the construction duration.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove it until facilities are no longer needed.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

B. Electric Power Service: Contractor may utilize existing building power on site.

C. Lighting: Provide temporary lighting, if required, with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

D. Telephone Service: Construction Personnel must have access to a cellular telephone.

E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

F. Water Service: Provide hydrant meter connected to existing fire hydrant. Pay for install and water usage fees to the City.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:
   1. If used, provide incombustible construction for sheds located within demolition area or within 30 feet of building lines. Comply with NFPA 241.
   2. Maintain support facilities until near Project Completion. Remove before Project Completion.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
   1. Protect existing adjacent areas to remain.
   2. Maintain access for fire-fighting equipment.
   3. Contractor shall arrange for the delivery of materials and equipment to the site and for the removal of surplus and debris.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
   1. Comply with work restrictions specified in Division 1 Section "Summary."
   2. Comply with section 02200, City, County, and State FDEP and FDOT regulations.

B. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

C. Tree and Plant Protection: Comply with requirements specified in Division 2 Section "Tree Protection and Trimming."

D. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
   1. Extent of Fence: Enclose Construction Materials and work areas – install warning signs and barricades.

E. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Prior to the owner taking full possession, contractor will be fully responsible for replacing any items damaged, destroyed, or removed by vandalism, theft, etc.

F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting. Protection for work in or adjacent to any right-of-way shall comply with FDOT standards.

G. Temporary Protection: The Contractor shall provide safe access to and from entranceways and/or exits from existing buildings. This may include overhead protection in some areas, with planking or other means when within fenced-in work areas. Also, temporary protection shall be provided at openings through floors or roofs and at edges of slabs in construction areas.

H. The Contractor shall provide necessary weather protection against rain, wind, storms, or heat so as to maintain work, materials and existing building areas free from damage. Cover new work likely to be damaged at the end of each day's work.

I. All contractors shall be responsible for the protection of adjoining areas and materials, including glass, when welding, flame cutting or performing any other operation requiring the use of flame, arcs or sparking devices in the course of the work. Use only flame-proof type tarpaulins.

J. Contractor shall provide and maintain in working order, at least one twenty (20) pound capacity dry chemical type fire extinguisher, suitable for Class A, B or C fires for every 2500sf of new construction / renovation area, or 75 foot on center distance, whichever is greater.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.
   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
   1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
   2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."

END OF SECTION 01500

SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Special Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition waste.
2. Recycling non-hazardous demolition waste.
3. Disposing of nonhazardous construction waste.

B. Related Sections include the following:

1. Division 1 Section "Temporary Facilities and Controls" for environmental-protection measures during construction, and location of waste containers at Project site.

1.3 DEFINITIONS

A. Demolition Waste: Building and site materials and other solid waste resulting from demolition, or repair operations.

B. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

C. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.

D. Salvage: Recovery of demolition waste and subsequent sale or reuse in another facility.

1.4 PERFORMANCE REQUIREMENTS

A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of 75 percent by weight of total waste generated by the Work

B. Salvage/Recycle Requirements: The project requirement is to salvage and recycle as much non-hazardous construction waste as possible including the following materials:

1. Construction Waste:

a. Site-clearing waste.
b. Masonry and CMU.
c. Lumber.
d. Wood sheet materials.
e. Wood trim.

f. Metals.
g. Roofing.
h. Insulation.
i. Carpet.
j. Gypsum board.
k. Piping.
l. Electrical conduit.
m. Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100 percent of the following uncontaminated packaging materials:

1) Paper.
2) Cardboard.
3) Boxes.
4) Plastic sheet and film.
5) Polystyrene packaging.
6) Wood crates.
7) Plastic pails.

1.5 SUBMITTALS

A. Waste Management Plan: Submit 3 copies of plan within 7 days of date established for commencement of the Work.

B. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

C. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

D. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices

1.6 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

1.7 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis for all demolition waste. Indicate quantities by weight or volume but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include methods that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:
1. Total quantity of waste.
2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
3. Total cost of disposal (with no waste management).
4. Revenue from salvaged materials.
5. Revenue from recycled materials.
6. Savings in hauling and tipping fees by donating materials.
7. Savings in hauling and tipping fees that are avoided.
8. Handling and transportation costs. Include cost of collection containers for each type of waste.
9. Net additional cost or net savings from waste management plan.

E. Documents: Prepare waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Architect. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with Division 1 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.

B. Waste Management Coordinator: The Job Superintendent or other person designated by the Contractor shall serve as waste management coordinator, responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to everyone concerned within **three** days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Division 1 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

E. Waste Removal Company: Contractor must use Owner mandated solid waste and / or recycling company specified in Owner ordinance, if such ordinance exists. Contractor shall verify with the requirements with the Owner prior to submitting bid. Solid waste or recycling containers from other than approved companies shall not be brought to site under any circumstances.

3.2 SALVAGING DEMOLITION WASTE

Contractor shall have Salvage Rights 10 (Ten) days after the Notice to Proceed is issued. Salvage Rights are only to materials shown on drawings to be demolished or removed from site.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Requirement: A minimum of 80% of all waste generated during construction shall be recycled. Contractor shall submit a monthly report documenting compliance.

C. Procedures: If co-mingled recycling hauler is used, this is not a requirement. Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
   a. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Asphaltic Concrete Paving: Grind asphalt to maximum 4-inch size.

B. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility, which is not suitable for being used as fill.

C. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

D. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

E. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

F. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:
1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees on-site.
1. Comply with requirements for use of chipped organic waste as organic mulch.

C. Wood Materials:
1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

D. Documentation: Contractor shall maintain a detailed log of all solid waste disposed and/or recycled. Such log shall include, but not limited to, date, types of material, name of disposal facility, measurement (by weight or cubic yards). Contractor shall maintain disposal tickets and shall have them available for City’s review and Audit.

END OF SECTION 01524

SECTION 01561 - CONSTRUCTION CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division l Specification Sections, apply to this Section.

1.2 REQUIREMENTS INCLUDED

A. Contractor shall enforce daily cleaning during progress of Work and enforce final cleanup prior to Substantial Completion.
   1. Hazards Control:
      a. Store volatile wastes in covered metal containers outside the building.
      b. Remove containers from premises daily.
      c. Prevent accumulation of wastes that create hazardous conditions.
      d. Provide adequate ventilation during use of volatile or noxious substances.

B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws:
   1. Do not burn or bury rubbish or waste materials on Project Site.
   2. Do not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
   3. Transport waste materials and debris across airport property in covered trucks.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use cleaning materials recommended by manufacturer or surface to be cleaned which will not create hazards to health or property and which will not damage surfaces.

B. Use green cleaning products and procedures to comply with LEED IEQ requirements.

PART 3 - EXECUTION

3.1 CLEANING DURING CONSTRUCTION

A. Enforce cleaning to keep building, grounds, and public properties free of accumulation of waste materials, rubbish, and windblown debris resulting from construction operations.

B. Have protective covering applied on newly installed Work where reasonable required to ensure freedom from damage or deterioration at time of Substantial Completion. Enforce cleaning and maintenance on other newly installed Work as frequently as necessary through remainder of construction period.

C. Have operable components adjusted and lubricated to ensure operability without damaging effects.

D. Furnish on-site containers for collection of waste materials, debris, and rubbish.

E. Remove waste material, debris, and rubbish from Site daily.

F. Do not drop or throw materials from heights.

G. Continue enforcing cleaning daily until site is ready for occupancy.

3.2 DUST CONTROL

A. Wet down materials and rubbish to prevent blowing dust on a regular basis.

B. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.3 FINAL CLEANING

A. Provide final cleaning of the Work at the time indicated, consisting of cleaning each surface or unit of Work to "clean" condition expected for a first-class building and maintenance program. Comply with manufacturer's instructions for cleaning operations. The following are examples, but not by way of limitation, of cleaning levels required:
   1. Remove labels which are not required as permanent labels.
   2. Clean exposed exterior hard-surfaced finishes, to dirt-free condition, free of dust, stains, films, and similar noticeable distracting substances.
   3. Restore reflective surface to original reflective condition.
   4. Remove debris and surface dust from limited access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, and similar spaces.
   5. Broom clean concrete floors in non-occupied spaces.
   6. Clean light fixtures and lamps to function with full efficiency.
   7. Clean Project Site, including landscape development areas, of litter and foreign substances.
   8. Sweep paved areas to broom-clean condition: remove stains, petro-chemical spills, and other foreign deposits.
   9. Rake grounds that are neither planted nor paved, to smooth, even-textured surface.

B. Remove waste materials from Site daily and dispose of them in a lawful manner.

C. Removal of protection:
   1. Remove temporary protection devices and facilities that were installed during course of the Work to protect previous completed Work during remainder of construction period.

END OF SECTION 01561

SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:
   1. Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.
   2. Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the bidding.
   2. New Products: Items that have not previously been incorporated into another project or facility**,** except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
   3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
   1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
   2. Form: Tabulate information for each product under the following column headings:
      a. Specification Section number and title.
      b. Generic name used in the Contract Documents.
      c. Proprietary name, model number, and similar designations.
      d. Manufacturer's name and address.
      e. Supplier's name and address.
      f. Installer's name and address.
      g. Projected delivery date or time span of delivery period.
      h. Identification of items that require early submittal approval for scheduled delivery date.
   3. Initial Submittal: Within 15 days after Notice to Proceed, submit in pdf format, initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
      a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
   4. Completed List: Within 30 days after Notice to Proceed, submit in pdf format, completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
   5. Owner's Action: Owner will respond in writing to Contractor within 15 days of receipt of completed product list. Owner's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Owner's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit six copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Substitution Request Form: Use CSI Form 13.1A.
   2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
      a. Statement indicating why specified material or product cannot be provided.
      b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
      c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
      d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      e. Samples, where applicable or requested.
      f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
      g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
      h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
      i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
      j. Cost information, including a proposal of change, if any, in the Contract Sum.
      k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
      l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within **7** days of receipt of a request for substitution. Owner will notify Contractor of acceptance or rejection of proposed substitution within **15** days of receipt of request, or **7** days of receipt of additional information or documentation, whichever is later.
    a. Form of Acceptance: Change Order.
    b. Use product specified if Owner cannot make a decision on use of a proposed substitution within time allocated.

C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Owner will notify Contractor of approval or rejection of proposed comparable product request within **15** days of receipt of request, or **7** days of receipt of additional information or documentation, whichever is later.
    a. Use product specified if Owner cannot make a decision on use of a comparable product request within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Refer to Divisions 2 through 9 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Owner will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.

2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Requests **for substitution will only be accepted during the bid period.**

B. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect/Owner’s Designee for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.

2.3 COMPARABLE PRODUCTS

A. Conditions: Architect/Owner’s Designee will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect/Owner’s Designee will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01600

SECTION 01700 - EXECUTION AND HURRICANE PROTECTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division l Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Progress cleaning.
5. Starting and adjusting.
6. Protection of installed construction.
7. Correction of the Work.
8. Hurricane, Flood, and Other Perils Protection.

B. Related Sections include the following:

1. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS

A. Not Used

1.4 QUALITY ASSURANCE

A. Not Used

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

    a. Description of the Work.
    b. List of detrimental conditions, including substrates.
    c. List of unacceptable installation tolerances.
    d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Owner. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Owner promptly.

B. General:
1. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
2. Inform installers of lines and levels to which they must comply.
3. Check the location, level and plumb, of every major element as the Work progresses.
4. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
5. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Owner.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended.

If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

3.9 HURRICANE, FLOOD, AND OTHER PERILS PROTECTION

A. In the event the National Weather Service issues a Hurricane or Flood watch:
1. Contractor shall cease all regularly scheduled construction activities.
2. Contractor shall take immediate action to secure the building and the site.
3. Secure all loose materials, supplies, debris, equipment, etc.
4. All openings in the building exterior shall be boarded up with minimum 3/4” plywood, 2 x 4 lumber, and tap-cons.
5. Any construction material or equipment that has been delivered to the site with the intent of being used for the project shall be secured within the building or within a sealed metal shipping container placed above the 100-year flood elevation.
6. Tie down construction trailer, storage shed, etc. with tie down cables secured to ground anchors.
7. Contractor shall make arrangements to secure pumps, dehumidifying equipment, generator, and gasoline / diesel prior to the storm in the event those items are needed for clean-up.
8. Contractor shall prepare a project damage assessment report no later than 72 hours after the storm conditions have ceased. A copy of the report shall be sent to the owner, the architect and the insurance company providing builder’s risk / wind storm coverage.
9. Contractor shall prepare an updated project schedule no later than 7 days after the storm conditions have ceased. Highlight any delays to the project specifically caused by the storm event. Consideration shall be made for availability or shortage of labor, material supplies, equipment, and any delays in shipments.

END OF SECTION 01700

SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures
2. Maintenance Materials
3. Warranties
4. Final cleaning

B. Related Sections include the following:
1. Division 1 Section "Execution and Hurricane Protection Requirements" for progress cleaning of Project site.
2. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
3. Divisions 1 through 16 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
    a. Contractor shall be responsible for meeting all construction and paper work requirements to obtain such approval within the timeframe stipulated in the contract. Failure on the part of the contractor to secure timely approval will result in assessment of liquidation damages owed to the owner for any resulting delays.
5. Prepare and submit (1) copy in a ring binder and 1 electronic copy of the Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.

9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in electric, water, and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
15. Complete Owner’s provided project closeout spreadsheet. See appendix.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment.
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. If more than one final completion inspection is required, the Contractor will be responsible for paying the Architect for all additional inspections and punch list preparation required by the architect to verify compliance. Final payment application will not be processed until all items have been completed, closeout documentation completed, and re-inspection fees paid.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Architect.
d. Name of Contractor.
e. Page number.

1.6 MAINTENANCE MATERIALS

A. Submit maintenance materials, equipment and accessories of the types and in the quantities specified within the respective specification Sections of Divisions 2 through 16.

B. Provide maintenance materials, equipment and accessories in original manufacturer's packaging with manufacturer's original, clearly legible labeling.

C. Coordinate delivery date and final storage location of maintenance materials, equipment and accessories to the Owner through the Project Consultant prior to requesting Substantial Completion Inspection.

D. Do not utilize maintenance materials or equipment for cleaning, maintenance or other Contractor operations.

E. Test and inspect maintenance materials, equipment and accessories to ensure operability, fitness for purpose and new condition prior to submitting to the Owner.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Owner for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Partial Occupancy: Submit properly executed warranties within **15** days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    g. Sweep concrete floors broom clean in unoccupied spaces.
    h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
    i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
    j. Remove labels that are not permanent.
    k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
        1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
    l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    m. Replace parts subject to unusual operating conditions.
    n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
    o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
    p. Clean ducts, blowers, and coils if units were operated without filters during construction.
    q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

r. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770

SECTION 01780 – CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division l Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for closeout submittals, including the following:
   1. Operation and Maintenance Data
   2. Maintenance Materials
   3. Product Warranties
   4. Product Bonds
   5. Project Record Documents
   6. Spare Parts
   7. Electronic Media
   8. Miscellaneous Schedules
   9. Owner’s Spreadsheet

B. Related Sections include the following:
   1. Division 1 Section "Closeout Procedures"
   2. Division 1 Section "Project Record Documents"

1.3 SUBMITTALS

A. Project closeout submittals required by the Construction Documents for the Work, or a portion thereof, shall be submitted by the Contractor at or prior to the time of his request for the Owner's inspection unless otherwise specified in this Section or elsewhere in the Construction Documents.

B. Architect (assisted by the Owner’s Staff, Test and Balance Consultant and others as applicable) will review project closeout submittals with the Owner for content, accuracy, and format:
   1. If the Owner disapproves or rejects any project closeout submittal, it shall be returned to the Contractor for correction and modification.
   2. The Contractor shall then submit his revised and corrected project closeout submittals to the Owner for review and approval.
   3. The Contractor shall continue to revise and resubmit project closeout submittals until all required submittals have been accepted by the Owner.
   4. The Contractor will forward approved project closeout submittals to the Owner prior to the Substantial Completion Inspection.
   5. Corrections or modifications of Project Closeout Submittals shall not be used as justification for an extension of Time.

C. Submit closeout submittals under provisions of "Submittal Procedures", with content and in formats specified within this Section and elsewhere in the Construction Documents.

1.4 OPERATION AND MAINTENANCE DATA

A. Quality Assurance:
   1. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

B. Organization: Unless otherwise indicated, organize each manual into separate sections. Each manual shall contain the following materials, in the order listed:
   1. Title page.
   2. Table of contents.
   3. Manual contents.

C. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name, address, and telephone number of Contractor.
   6. Name and address of Architect.
   7. Cross-reference to related systems in other operation and maintenance manuals.

D. Format:
   1. Prepare data in the form of an instructional manual.
   2. Bind in commercial quality 8-1/2 inch x 11 inch three D side ring binders with durable plastic covers, 3 inch maximum ring size:
      a. When multiple binders are used, correlate data into related consistent groupings.
      b. Provide sheet lifters for front and back of binder.
      c. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
      d. Index Tab Dividers:
         1) Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.
         2) Provide index tab sheet identified as “Contents” in front of the first page of the table of contents to prevent laser printer or copier toner from sticking to vinyl binder.
   3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
   4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
   5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
      a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts. Provide Photo reduced 11” x 17” copies folded in half of the as-built record drawings.
      b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations

E. Contents, Each Volume:
   1. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Project Consultant, Sub-Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
      a. If record documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
   2. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts and applicable local maintenance Contractors.

3. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
4. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
5. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
6. Warranties: Bind a copy of each.

F. Manual For Materials and Finishes:
1. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured Products.
2. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
3. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
4. Additional Requirements: As specified in individual Product specification sections.
5. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

G. Manual for Equipment and Systems:
1. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
2. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
3. Include color-coded wiring diagrams as installed.
4. Operating Procedures:
    a. Include start-up, break-in, and routine normal operating instructions and sequences.
    b. Include regulation, control, stopping, shutdown, and emergency instructions.
    c. Include summer, winter, and any special operating instructions.
5. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
6. Provide servicing and lubrication schedule, and list of lubricants required.
7. Include manufacturer's printed operation and maintenance instructions.
8. Include sequence of operation by controls manufacturer.
9. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
10. Provide control diagrams by controls manufacturer as installed.
11. Provide Contractor's coordination drawings, with color-coded piping diagrams as installed.
12. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
13. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
14. Additional Requirements: As specified in individual Product specification sections.
15. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

H. Instruction of Owner Personnel:

1. Provide copies of all instructional materials, including video taped documentation of training sessions or other instructional audio-visual materials, as specified in Division 1 Section "Demonstration and Training" and other locations in the Construction Documents.
2. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

I. Submittals:
1. Review Copy:
   a. Submit 1 copy of completed volumes (30) days prior to submitting Contractor's Request for Substantial Completion Inspection.
   b. This copy will be reviewed and returned with comments by the Owner, and other Owner consulting reviewers as applicable.
   c. Revise content of all document sets as required by comments provide by the Owner prior to final submission.
2. Final Submittals:
   a. Submit (1) set of revised final volumes in final form prior to submitting Contractor’s Request for Substantial Completion Inspection.
   b. In addition to hard copies, scan and submit (1) set of the closeout documents on a flash drive in PDF format.

1.5 MAINTENANCE MATERIALS

A. Submit maintenance materials, equipment and accessories of the types and in the quantities specified within the respective specification Sections of Divisions 1 through 16.

B. Provide maintenance materials, equipment and accessories in original manufacturer’s packaging with manufacturer’s original, clearly legible labeling.

C. Coordinate delivery date and final storage location of maintenance materials, equipment and accessories with the Owner prior to submittal of Contractor's Request for Substantial Completion Inspection.

D. Do not utilize maintenance materials or equipment for cleaning, maintenance or other Contractor operations.

E. Test and inspect maintenance materials, equipment and accessories to ensure operability, fitness for purpose and new condition prior to submitting to the Owner.

1.6 PRODUCT WARRANTIES

A. Summary:
1. This article specifies general administrative and procedural requirements for warranties required by the Construction Documents, including manufacturers standard warranties on products and special warranties.
   a. Refer to the Construction Documents for terms of the Contractor's special warranty of workmanship and materials.
   b. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of Divisions 2 through 16.
2. Disclaimers and Limitations: Manufacturer's exclusions, disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

B. Definitions:

1. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
2. Special Warranties:
    a. Are written warranties required by or incorporated in the Construction Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.
    b. Refer to individual Sections of Divisions 1 through 16 for specific content requirements, standard form documents, and particular requirements for submittal of special warranties.

C. Warranty Requirements
1. Related Damages and Losses: When correcting warrantied Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warrantied Work.
2. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
3. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Construction Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
4. Owner’s Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
5. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Design-Build Criteria Package and Construction Documents.
6. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

D. Submittals:
1. Draft Copies:
    a. When a warranty document is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner for approval.
    b. Forms for special warranties are included in the Project Manual in the respective Sections of Divisions 1 through 16 or are available through the Project Consultant. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or the Contractor and subcontractor, supplier or manufacturer. Submit a draft to the Owner for approval.
    c. Submit draft copies of all proposed final warranty documents to the Architect under provisions of Division 1 Section "Submittal Procedures", for the Owner’s review.
    d. Edit warranty documents to make them project specific for the Owner.
    e. Remove exclusions, disclaimers and limitations on product warranties not allowed by the Construction Documents.
    f. Include terms and conditions in addition to the “standard” warranty as may be required by the Construction Documents.
    g. Catalog copies or other “sample” warranty forms not presented in project specific format for the Owner shall be resubmitted.

2. Form of Submittal:

a. Prior to Substantial Completion compile (5) five copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer.
b. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
c. Bind in commercial quality 8-1/2 x 11 inch three D side ring binders with durable plastic covers, 3 inch maximum ring size:
    1) Provide sheet lifters for front and back of binder.
    2) Cover: Identify each binder with typed or printed title WARRANTIES with title of Project; name, address and telephone number of Contractor and name of responsible company principal.
    3) Table of Contents:
        a) Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of Product or work item.
        b) Provide index tab sheet identified as “Contents” in front of the first page of the table of contents to prevent laser printer or copier toner from sticking to vinyl binder.
    4) Separate each warranty with index tab sheets keyed to the Table of Contents listing.
        a) Provide full information, using separate typed sheets as necessary.
        b) List subcontractor / Builder, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
d. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty documents, as necessary, for inclusion in each required manual.

E. Timing of Submittals:
1. Draft warranty documents: Submit with shop drawings, product data or samples as otherwise required for the specified product. If no other submittals are required for a specific product, submit required draft warranty documents in a timely manner prior to delivery and installation of the product on the site.
2. Submit final warranty documents to the Architect & Owner not later than (7) days after the date of Substantial Completion for the Work or a portion thereof as established on the Project Consultant’s executed Consultant's Letter Establishing Substantial Completion Date.
3. If the Owner's executed Letter Establishing Substantial Completion Date designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Owner.
4. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within (7) days of completion of that designated portion of the Work.

1.7 PROJECT RECORD DOCUMENTS

A. General Requirements:
1. Do not use record documents for construction purposes.
2. Protect from deterioration and loss in a secure, fire resistive location.
3. Provide access to record documents for reference by the Architect, the Owner, and other Owner related personnel during normal working hours.
4. Make project record documents available for inspection by jurisdictional authorities at all times.
5. Ensure special protection of project record documents

B. Maintain at the site for the Owner one record copy of:
1. Drawings.
2. Specifications.
3. Addenda.

4. Change Orders, Project Consultant’s Supplementary Instructions and other modifications to the Contract.
5. Approved submittals including all administrative submittals as may be required in the Project Manual.
6. Field Test Records and Reports.
7. Construction Photographs.

C. Maintenance of Project Record Documents:
1. Store documents, samples in Contractor's field office apart from documents used for construction.
   a. Provide fire resistive files and racks for storage of documents.
   b. Provide locked fire resistive cabinets or secure storage spaces for storage of samples.
2. Filing Organization:
   a. File information concerning individual products according to the 1995 edition of MasterFormat as published by the Construction Specifications Institute.
   b. File information concerning assemblies and systems according to the CSI/CSC UniFormat as published by the Construction Specifications Institute, edition current upon Notice to Proceed date.
3. Maintain documents in a clean, dry, legible condition and in good order.

D. Record Drawings:
1. Maintain a clean, undamaged set of blue or black line on white prints of Construction Documents and Shop Drawings.
2. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown.
3. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Construction Documents.
4. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
5. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
6. Mark new information that is important to the Owner, but was not shown on Construction Documents or Shop Drawings.
7. Note related Change Order numbers where applicable.
8. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
9. Content: Types of items requiring marking include, but are not limited to, the following:
   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Depths of foundations below first floor.
   d. Locations and depths of underground utilities.
   e. Revisions to routing of piping and conduits.
   f. Revisions to electrical circuitry.
   g. Actual equipment locations.
   h. Duct size and routing.
   i. Locations of concealed internal utilities.
   j. Changes made by Change Order or Construction Change Directive.
   k. Changes made following Architect's written orders.
   l. Details not on the original Construction Documents.
   m. Field records for variable and concealed conditions.
   n. Record information on the Work that is shown only schematically.

E. Record Specifications:
1. Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction.

2. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
3. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation.
4. Note related record drawing information and Product Data.
5. Upon completion of the Work, submit record Specifications for the Owner's records.

F. Record Product Data:
1. Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted.
2. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations.
3. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation.
4. Note related Change Orders and markup of record drawings and Specifications.
5. Upon completion of markup, submit complete set of record Product Data for the Owner 's records.

G. Record Testing Data / Certifications
1. Record Testing Data / Certifications: Contractor shall submit (1) set of signed and sealed reports prepared during the course of the construction. Testing Data shall include, but not limited to:
   a. Soils compaction and density.
   b. Concrete cylinder tests.
   c. Structural threshold inspector in-progress inspections.
   d. Structural threshold inspector final structural certifications.
   e. Structural welding certification.
   f. Insulation certification.
   g. As-built site lighting photometric plan.
   h. Mechanical test and balance report.
   i. Surge protection certification.
   j. Flood plain elevation certification.

H. Record Sample Submitted:
1. Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Architect and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes.
2. Comply with delivery to the Owner's Sample storage area.

I. Record Cad As-Built Drawings:
1. Update all Electronic Construction Document CAD Drawings for all construction deviations and submit copies of the drawings to the Owner in native CAD and PDF formats.
   a. All redline markup shown on the field record set shall be incorporated into the electronic files at the end of the construction phase.
   b. Include Civil As-built final survey with site and utility improvements.

J. Miscellaneous Record Submittals:
1. Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work.
2. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference.
3. Submit to Owner for their records.

1.8 SPARE PARTS

A. Submit spare parts and related accessories of the types and in the quantities specified within the respective specification Sections of Divisions 1 through 16.

B. Provide spare parts in original manufacturer’s packaging with manufacturer’s original, clearly legible labeling.

C. Coordinate delivery date and final storage location of spare parts through the Architect prior to submittal of Contractor's Request for Substantial Completion Inspection.

D. Do not utilize spare parts for any purpose during construction.

E. Test and inspect spare parts to ensure operability, fitness for purpose and new condition prior to submitting to the Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01780

SECTION 01781 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings
2. Record Specifications
3. Record Product Data
4. Record Testing Data / Certifications

B. Related Sections include the following:

1. Division 1 Section "Closeout Procedures" for general closeout procedures.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:
1. Number of Electronic Copies: Submit two (2) Flash Drives – each containing (1) set of scanned marked-up Record Prints in PDF format.

B. Record Specifications: Comply with the following:
1. Number of Electronic Copies: Submit two (2) Flash Drives – each containing (1) set of scanned Project's Specifications, including addenda and contract modifications in PDF format.

C. Record Product Data: Comply with the following:
1. Number of Electronic Copies: Submit two (2) Flash Drives – each containing (1) set of scanned each Product Data submittal in PDF format.
2. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

D. Record Testing Data: Comply with the following:
1. Number of Electronic Copies: Submit two (2) Flash Drives – each containing (1) set of scanned each Test Data submittal in PDF format.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an understandable drawing technique.
    c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations below first floor.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order or Construction Change Directive.
    k. Changes made following Architect's written orders.
    l. Details not on the original Contract Drawings.
    m. Field records for variable and concealed conditions.
    n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Owner determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.

1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
2. Consult Owner for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.

3. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect.
    e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

3.2 RECORD DOCUMENTATION MANUAL

A. Organization: Include a section in the manual for each of the following:
   1. Table of Contents.
   2. Record Drawings.
   3. Record Specifications.
   4. Record Product Data.
   5. Record Testing Data / Certification.
   6. Miscellaneous Record Submittals.

B. Tables of Contents: Include a table of contents for each record manual.

3.3 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into separate sections. Each manual shall contain the following materials, in the order listed:

   1. Title page.
   2. Table of contents.
   3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name, address, and telephone number of Contractor.
   6. Name and address of Architect.
   7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

   1. If record documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically.

   1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

      a. If two or more binders are necessary to accommodate data, organize data in each binder into groupings by sections.
      b. Identify each binder on front and spine, with printed title "RECORD DOCUMENTATION MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

   2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts. Provide Photo reduced 11 x 17 copies folded in half of the as-built record drawings.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

END OF SECTION 01781

SECTION 01820 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
   1. Demonstration of operation of systems, subsystems, and equipment.
   2. Training in operation and maintenance of systems, subsystems, and equipment.
   3. Demonstration and training videos.

B. Related Sections include the following:
   1. Divisions 2 through 16 Sections for specific requirements for demonstration and training for products in those Sections.

1.3 SUBMITTALS

A. Attendance Record: For each training module, submit list of participants and length of instruction time.

B. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

C. Demonstration and Training Videos: Submit two copies within seven days of end of each training module.
   1. Identification: On each copy, provide an applied label with the following information:
      a. Name of Project.
      b. Name and address of photographer.
      c. Name of Architect.
      d. Name of Contractor.
      e. Date videotape was recorded.
      f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.4 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section 01400 "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Photographer Qualifications: A professional photographer who is experienced in photographing construction projects.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Owner.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
   1. Synthetic turf field system, including maintenance and care procedures.
   2. Shade systems.
   3. Electrical service and distribution, including transformers, switchboards, panelboards, uninterruptible power supplies, and motor controls.
   4. Lighting equipment and controls system.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
   1. Documentation: Review the following items in detail:
      a. Emergency manuals.
      b. Operations manuals.
      c. Maintenance manuals.
      d. Project Record Documents.
      e. Identification systems.
      f. Warranties and bonds.
      g. Maintenance service agreements and similar continuing commitments.
   2. Emergencies: Include the following, as applicable:
      a. Instructions on meaning of warnings, trouble indications, and error messages.
      b. Instructions on stopping.
      c. Shutdown instructions for each type of emergency.
      d. Operating instructions for conditions outside of normal operating limits.
      e. Sequences for electric or electronic systems.
      f. Special operating instructions and procedures.
   3. Operations: Include the following, as applicable:
      a. Startup procedures.
      b. Equipment or system break-in procedures.
      c. Routine and normal operating instructions.
      d. Regulation and control procedures.
      e. Control sequences.
      f. Safety procedures.
      g. Instructions on stopping.
      h. Normal shutdown instructions.
      i. Operating procedures for emergencies.
      j. Operating procedures for system, subsystem, or equipment failure.
      k. Seasonal and weekend operating instructions.
      l. Required sequences for electric or electronic systems.
      m. Special operating instructions and procedures.
   4. Adjustments: Include the following:
      a. Alignments.

b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

5. Troubleshooting: Include the following:
   a. Diagnostic instructions.
   b. Test and inspection procedures.
6. Maintenance: Include the following:
   a. Inspection procedures.
   b. Types of cleaning agents to be used and methods of cleaning.
   c. List of cleaning agents and methods of cleaning detrimental to product.
   d. Procedures for routine cleaning
   e. Procedures for preventive maintenance.
   f. Procedures for routine maintenance.
   g. Instruction on use of special tools.
7. Repairs: Include the following:
   a. Diagnosis instructions.
   b. Repair instructions.
   c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
   d. Instructions for identifying parts and components.
   e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
   1. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
   1. Schedule training with Owner with at least seven days' advance notice.

D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a written and a demonstration performance-based test.

E. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

3.3 DEMONSTRATION AND TRAINING VIDEOS

A. General: Engage a qualified commercial photographer to record demonstration and training videotapes. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Video Format: Provide videos in AVI, MWV, MOV or MP4 format with minimum 1080p resolution for each training session on a Flash Drive.

C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and training. Display continuous running time.

END OF SECTION 01820

SECTION 02010 – SUBSURFACE INVESTIGATIONS

PART 1 - GENERAL

Applicable provisions of "General Conditions", "Supplementary Conditions", and Division One, govern work under this Section.

DESCRIPTION:

SOILS INFORMATION: A Geotechnical investigation report and Hydraulic conductivity test report; both dated June 13, 2019 have been prepared by **Florida Engineering & Testing, Inc.**, hereinafter referred to as the Soils Engineer. This report was obtained only for the Owner's use in design. Its accuracy or completeness is not guaranteed by Owner or Architect and in no event is it to be considered part of the Contract Documents. The report and log of borings follows and is for Contractor's/Construction Manager's information but is not a warrant of subsurface conditions. Neither Owner nor Architect will be responsible in any way for additional compensation for excavation work performed under the Contract due to Contractor's/Construction Manager's assumptions based on sub-soil data prepared solely for Owner's use.

ADDITIONAL INFORMATION: Contractor/Construction Manager should visit the site and become acquainted with existing conditions. Prior to bidding, bidders may make their own subsurface investigations to satisfy themselves as to site and subsurface conditions.

The Contractor/Construction Manager is required to prepare the site for all new construction. Refer to geotechnical report for allowable soil bearing capacity used for the Contract Documents. All organic material will be required to be removed. Submit soil compaction testing report to architect prior to placing concrete.

END OF SECTION 02010

FLORIDA ENGINEERING & TESTING, INC.

Phone: (866) 781-6889 •Fax: (866) 784-8550
www.floridaengineeringandtesting.com
250 S.W. 13th Avenue
Pompano Beach, FL 33069

REPORT OF GEOTECHNICAL EXPLORATION

FOR:

Walters-Zackria Associates
1500 W. Cypress Creek Road Suite # 105
Fort Lauderdale, Florida 33309

PREPARED FOR:

Proposed Apollo Park Expansion
212 N.W. 16th Street
Pompano Beach, Florida

PREPARED BY:

Florida Engineering & Testing, Inc.
250 S.W. 13th Avenue
Pompano Beach, Florida 33069
(954) 781-6889

ON:

June 13, 2019

Quality QA Assurance

TABLE OF CONTENTS

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II.) COVER LETTER
- SOIL STRATAS
- WATER LEVELS
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III.) STANDARD (DYNAMIC CONE) PENETRATION LOG(S)
IV.) FIELD SKETCH
V.) MAP OF SUBJECT SITE
VI.) GENERAL NOTES
- KEY CLASSIFICATIONS & SYMBOLS

VII.) LIMITATIONS OF LIABILITY

DISCLAIMER

Our report findings are based on present onsite soil conditions encountered. **It is imperative that you read our reports in their entirety and follow all recommendations as listed.** Failure to follow our recommendations, may result in delays and additional costs due to permitting agencies (Building Department, etc.) withholding a Certificate of Occupancy for your proposed structure(s).

All recommendations shall be followed in order to receive a final certification, which may include but not be limited to density testing per lift of fill material, demucking verifications, piling inspections. In addition, these reports are for foundation analysis only and shall not be used for excavating, backfilling, or pricing estimates.

Please schedule us at least 24 hours in advance for all tests and inspections. If you choose to use another engineering firm for further testing and inspections, it is your responsibility to ensure that they provide you with the proper certification in writing, as outlined in our report.

FLORIDA ENGINEERING & TESTING, INC.

Phone: (866) 781-6889 •Fax: (866) 784-8550
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250 S.W. 13th Avenue
Pompano Beach, FL 33069

June 13, 2019 **Job Order No.: 19-2925**

Walters-Zackria Associates
1500 W. Cypress Creek Road Suite # 105
Fort Lauderdale, Florida 33309

RE: SUBSOIL EXPLORATION
Proposed Apollo Park Expansion
212 N.W. 16th Street
Pompano Beach, Florida 33060

Dear Sir or Madam;

Pursuant to your request, Florida Engineering & Testing, Inc., has completed a subsoil exploration on June 6, 2019, at the above referenced site. The purpose of our exploration was to verify subsoil conditions relative to the proposed structure(s) foundation preparation and design. Our recommendations are based on the assumption that the proposed structure(s) are as follows: mulitpurpose synthetic turf field, skate park/bmx track (approximately 6,000 square feet), concession and restroom buildings.

A total of six (6) **SPT** borings were performed according to **ASTM D-1586** down to depths of twenty feet to twenty-five feet (20' to 25') (BEGL) below existing ground level (see attached field sketch for locations). Please see the attached SPT Test Boring Report(s) for soil profiles.

Groundwater table elevation was measured immediately at the completion of the boring and was found at depths of seven feet four inches to seven feet seven inches (7'4" to 7'7") BEGL. Fluctuation in water levels should be anticipated due to surface runoff, tidal influences, seasonal variations, varying ground elevation, construction dewatering and pumping activities in the area. Site contractor must familiarize themselves with site conditions in the event groundwater controls and dewatering is needed. The contractor shall make sure that groundwater levels on adjacent properties are not affected by the contractors dewatering activities. Specialty groundwater contractors shall be consulted for all work below the groundwater level.

The boring log(s) attached present(s) a detailed description of the soils encountered at the test location(s). The soil stratification shown on the boring log(s) is based on the examination of the recovered soil samples and interpretation of the driller's field log(s). It indicates only the approximate boundaries between soil types. The actual transitions between adjacent soil types may be gradual.

Based on our understanding of the proposed structure and the information obtained from our field boring log(s); we recommend the following procedures for foundation preparation:

1) Strip the entire construction areas plus five feet (5') past the outer perimeter of the structure of topsoil and ground vegetation (when encountered) down to clean granular material.
2) Saturate and compact all construction areas with a vibratory roller to a minimum of 95% of the A.S.T.M. D-1557 modified proctor method. Make a minimum of ten (10) passes with the roller in each direction.
3) Backfill construction areas to proper elevation if needed using a clean granular material placed in lifts not to exceed twelve inches (12") in thickness and compacted as per item 2.
4) Care should be taken when using vibration in case of existing structures in the vicinity of the construction area. If vibration cannot be used for compaction, static compaction may be applied. However, in this case, the compacted layers should not exceed six inches (6") in thickness.
5) All construction fill material shall be clean granular soil, free of organics or other deleterious material, and shall contain no more than twelve (12) percent fines passing a U.S. Standard No. 200 sieve (0.075mm).
6) Representative samples of the on-site and proposed fill material should be collected and tested to determine the classification and compaction characteristics.
7) Verify all densification procedures by taking an adequate number of field density tests in each layer of compacted material and bottom of footing excavations. **This must be scheduled immediately after Tamp and Spray and/or Compaction but before steel placement. If steel is already in-place, it must be removed from all areas to be tested prior to performing densities.**
8) All Geotechnical work shall be performed under the supervision of a Geotechnical Engineer or his representative.
9) After the installation of any plumbing and electrical piping; we recommend that the disturbed areas be recompacted and additional density tests be performed to verify proper compaction of the disturbed areas.

Provided the above foundation recommendations are achieved and verified; it is our opinion that the proposed structure can be designed for a shallow foundation system with a permissible soil bearing pressure not to exceed 2,500 P.S.F. Bearing capacity certification requires satisfactory completion and verification of all the above foundation recommendations.

We recommend a minimum width of 16 inches for continuous footings and 30 inches for individual footings, even though the soil bearing pressure may not be fully developed in all cases. We recommend that the bottom of footings be at least 12 inches below the lowest adjacent finished grade.

It is our opinion that the floor slab system may be constructed as a slab on grade. We recommend that a vapor barrier be placed between the soil and concrete. We also recommend that the reinforcing steel mesh be placed at the approximate center of the slab for tensile support.

It was estimated that upon proper completion, long-term total settlements should be on the order of less than one inch. Differential settlements should be approximately one-half of the total settlement.

Provisions shall be made by the architect, engineer of record and contractor to address differential settlements when tying in new to existing structures. Mixing of different foundation types shall not be used unless provided with expansion joints to address differential settlement. If applicable, the seawall structure should be inspected to verify the structural integrity and prevent undermining due to the piling installation or excavation operations.

Regardless of the thoroughness of a Geotechnical exploration there is always a possibility that conditions may be different from those of the test location(s); therefore Florida Engineering & Testing, Inc., does not guarantee any subsoil condition surrounding the bore test hole(s). For a more accurate portrayal of subsurface conditions, the site contractor should perform test pits. The discovery of any site or subsurface conditions during construction which substantially deviate from the information in our subsoil exploration should be reported to us immediately for our evaluation. In accepting this report the client understands that all data from this soil boring report is intended for foundation analysis only and is not to be used for excavating, backfilling, or pricing estimates. The site contractor must familiarize themselves with the job site conditions prior to bidding.

As mutual protection to clients, the public, and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions, or extracts from or regarding our reports is reserved pending our written approval. All work must be conducted under the supervision of our Geotechnical engineer. All work shall be conducted in compliance with the Florida Building Code FBC and OSHA workers protection rules and all applicable Federal, State, County and City rules and Regulations.

Florida Engineering & Testing, Inc., appreciates the opportunity to be of service to you at this phase of your project. If you should have any questions or comments, please give us a call. We would be pleased to help any way we can. It has been a pleasure working with you and look forward to doing so in the near future.

Sincerely,

Mark A. Mesiano, P.E.
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6923

MARK ALAN MESIANO LICENSE No. 48202 STATE OF FLORIDA PROFESSIONAL ENGINEER

SPT Test Boring Report

Client: Walters-Zackria Associates **Hole No:** B-1

Project: Proposed Apollo Park Expansion **Date:** 6/6/19

Address: 212 N.W. 16th Street Pompano Beach, Florida

Location: See Attached Field Sketch

Depth (Ft)	Soil Descriptions	Hammer Blows	N
0	0' - 3' Light Grayish Brown Fine Sand	1 1 2 5	3
		4 4 6 5	10
	3' - 6' Light Orangish Brown Slightly Silty Fine Sand	7 7 6 9	13
	6' - 8' Mottled Light Brown and Light Grayish Brown Fine Sand	8 8 7 10	15
		5 7 7 9	14
10	8' - 15' Light Brown Fine Sand	-- -- -- -- -- --	A
		8 8 7 10	15
		-- -- -- -- -- --	A
	15' - 25' Tan Fine Sand	9 11 7 10	18
20		-- -- -- -- -- --	A
		8 12 10 10	22
30			

Penetration "N" Value: 10 20 30 40

Water Level: 7'6" **BEGL**

As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

A = Auger
Ref = Refusal
BEGL = Below Existing Ground Level
0 = Weight of Hammer

6/7/19

MARK ALAN MESIANO LICENSE No. 48202 STATE OF FLORIDA PROFESSIONAL ENGINEER

Mark A. Mesiano, P.E.
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6923

SPT Test Boring Report

Client: Walters-Zackria Associates **Hole No:** B-2

Project: Proposed Apollo Park Expansion **Date:** 6/6/19

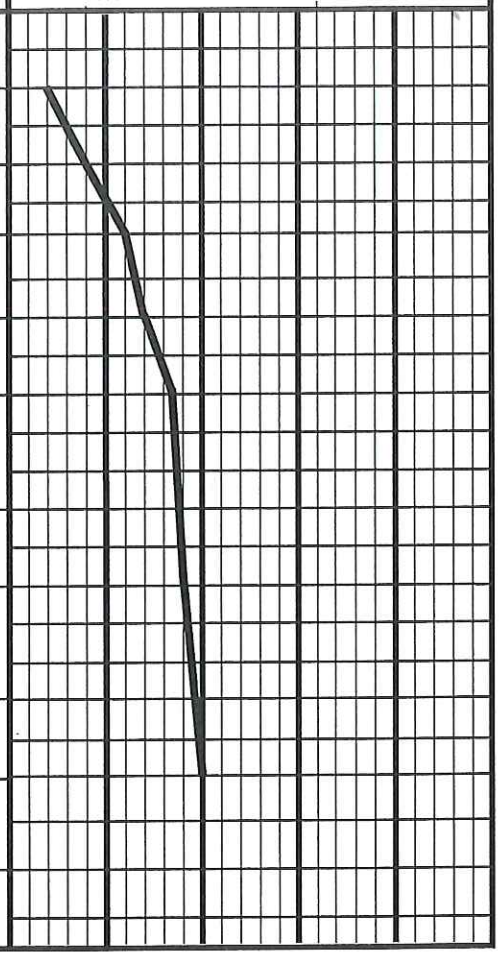
Address: 212 N.W. 16th Street Pompano Beach, Florida

Location: See Attached Field Sketch

Depth (Ft)	Soil Descriptions	Hammer Blows	"N"
	0' - 2' Gray to Grayish Brown Slightly Silty Fine Sand	1 1 3 5	4
	2' - 4' Light Grayish Brown Fine Sand	2 2 6 5	8
	4' - 6' Light Orangish Brown Slightly Silty Fine Sand	7 7 5 11	12
	6' - 8' Brown to Grayish Brown Slightly Silty Fine Sand	8 7 7 6	14
		9 7 10 11	17
10		-- -- -- -- -- --	A
	8' - 20' Tan to Light Brown Fine Sand	8 8 10 12	18
		-- -- -- -- -- --	A
		13 10 10 14	20
20			

Penetration "N" Value

10 20 30 40



Water Level: 7'7" **BEGL**

As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

A = Auger/Straight Rod
Ref = Refusal
BEGL = Below Existing Ground Level
0 = Weight of Hammer



6/7/19

Mark A. Mesiano, P.E.
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6933

SPT Test Boring Report

Client: Walters-Zackria Associates **Hole No:** B-3

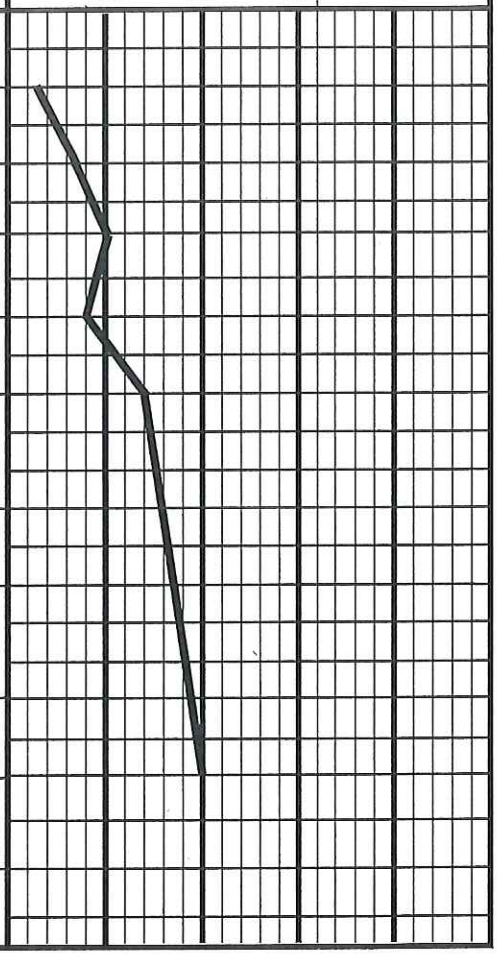
Project: Proposed Apollo Park Expansion **Date:** 6/6/19

Address: 212 N.W. 16th Street Pompano Beach, Florida

Location: See Attached Field Sketch

Depth (Ft)	Soil Descriptions	Hammer Blows	"N"
0	0' - 2' Tan to Light Brown Slightly Silty Fine Sand with Some Shell Fragments	1 1 2 5	3
	2' - 4' Tan to Light Brown Slightly Silty Fine Sand	4 4 3 5	7
	4' - 7' Tan Slightly Silty Fine Sand	3 5 5 7	10
		6 4 4 8	8
		7 7 7 9	14
10	7' - 15' Mottled Tan and Light Grayish Brown Slightly Silty Fine Sand	-- -- -- -- -- --	A
		8 7 10 12	17
	15' - 20' Light Brown Fine Sand	-- -- -- -- -- --	A
		9 9 11 14	20
20			

Penetration "N" Value: 10 20 30 40



Water Level: 7'4" BEGL

As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

A = Auger/Straight Rod
Ref = Refusal
BEGL = Below Existing Ground Level
0 = Weight of Hammer



6/19

Mark A. Mesiano, P.E.
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6923

SPT Test Boring Report

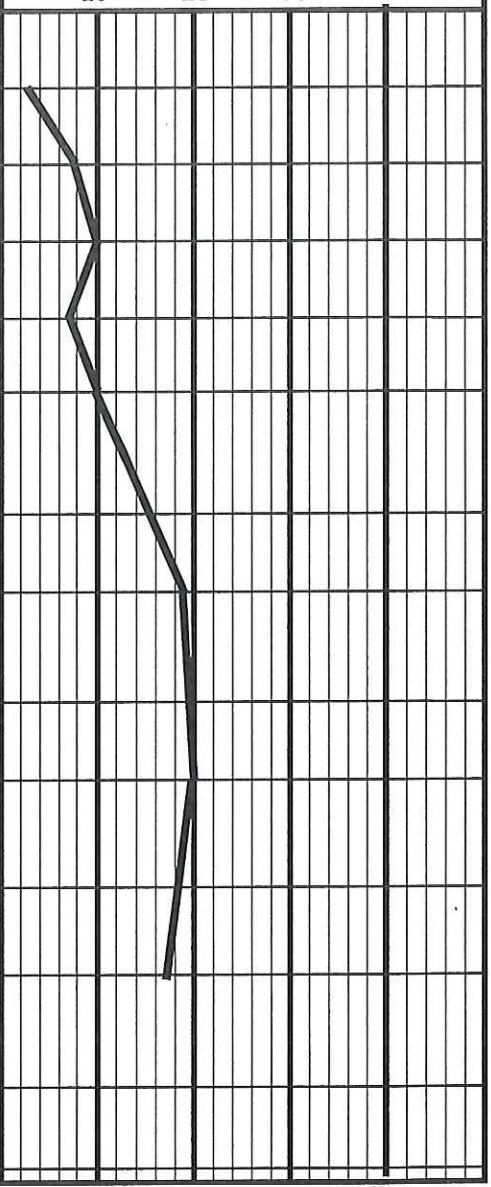
Client: Walters-Zackria Associates **Hole No:** B-4

Project: Proposed Apollo Park Expansion **Date:** 6/6/19

Address: 212 N.W. 16th Street Pompano Beach, Florida

Location: See Attached Field Sketch

Depth (Ft)	Soil Descriptions	Hammer Blows	N
	0' - 2' Dark Brown Slightly Silty Fine Sand with Some Rock	1 1 2 6	3
	2' - 4' Very Light Grayish Brown Fine Sand	4 3 5 7	8
	4' - 6' Orangish Brown Slightly Silty Fine Sand with Some Rock	6 6 4 5	10
	6' - 12' Light Brown Slightly Silty Fine Sand	7 4 3 5	7
		4 4 6 9	10
10		-- -- -- --	A
		-- --	
	12' - 16' Light Orangish Brown Sandy Limestone with Little Light Brown Silty Fine Sand	8 8 11 13	19
		-- -- -- --	A
		-- --	
	16' - 25' Tan to Light Brown Slightly Silty Fine Sand with Some Light Brown Sandy Limestone	12 10 10 15	20
20		-- -- -- --	A
		-- --	
		9 9 8 12	17
30			



Water Level: 7'5" **BEGL**

As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

A = Auger
Ref = Refusal
BEGL = Below Existing Ground Level
0 = Weight of Hammer

MARK ALAN MESIANO LICENSE No. 48202 STATE OF FLORIDA PROFESSIONAL ENGINEER

6-7-19

Mark A. Mesiano, P.E.
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6923

SPT Test Boring Report

Client: Walters-Zackria Associates **Hole No:** B-5

Project: Proposed Apollo Park Expansion **Date:** 6/6/19

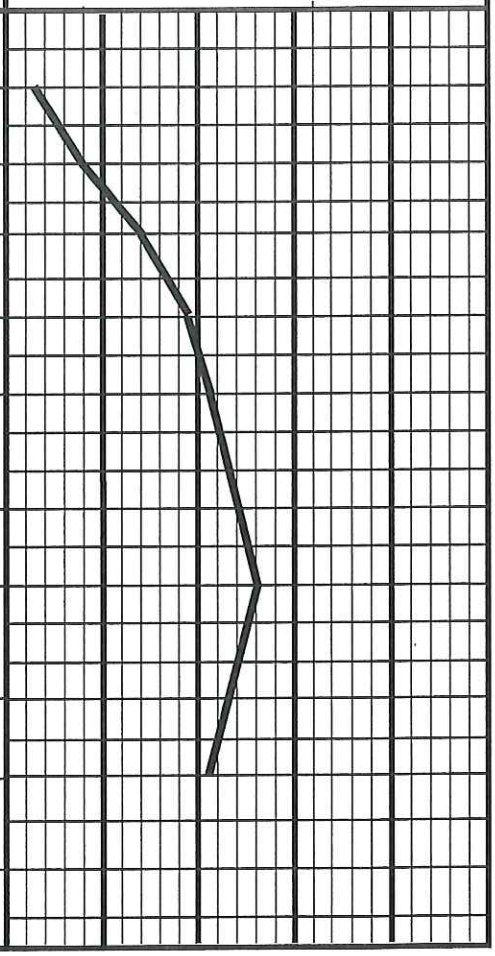
Address: 212 N.W. 16th Street Pompano Beach, Florida

Location: See Attached Field Sketch

Depth (Ft)	Soil Descriptions	Hammer Blows	"N"
0	0' - 2' Dark Brown Slightly Silty Fine Sand with Some Rock	1 1 2 6	3
	2' - 4' Very Light Grayish Brown Fine Sand	4 4 4 7	8
	4' - 6' Dark Brown Silty Fine Sand	6 6 8 11	14
	6' - 12' Light Brown Slightly Silty Fine Sand	10 10 9 7	19
		8 11 10 13	21
10		-- -- -- -- -- --	A
	12' - 16' Light Brown Slightly Silty Fine Sand with Some Tan Sandy Limestone	12 12 14 17	26
	16' - 20' Light Brown Sandy Limestone with Some Tan Fine Sand	-- -- -- -- -- --	A
		9 11 10 10	21
20			

Penetration "N" Value

10 20 30 40



Water Level: 7'7" **BEGL**

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A = Auger/Straight Rod
Ref = Refusal
BEGL = Below Existing Ground Level
0 = Weight of Hammer



Mark A. Mesiano, P.E.
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6923

SPT Test Boring Report

Client: Walters-Zackria Associates **Hole No:** B-6

Project: Proposed Apollo Park Expansion **Date:** 6/6/19

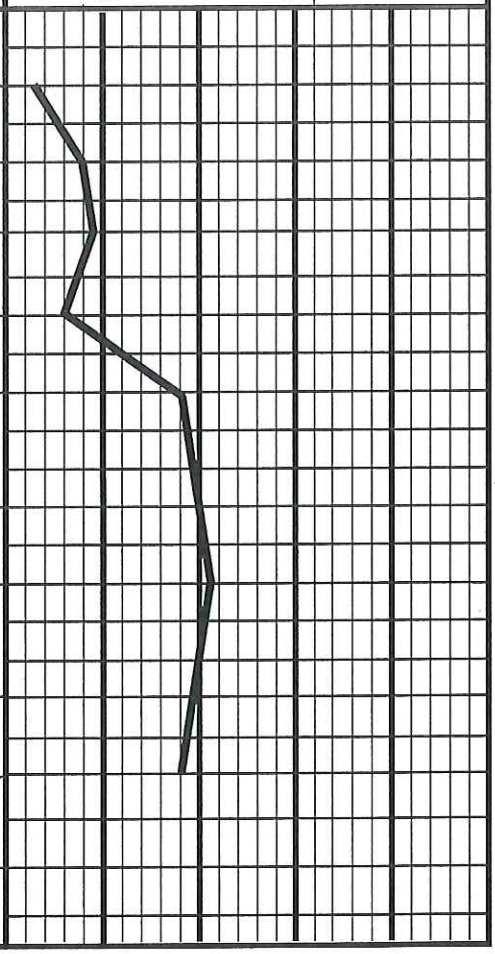
Address: 212 N.W. 16th Street Pompano Beach, Florida

Location: See Attached Field Sketch

Depth (Ft)	Soil Descriptions	Hammer Blows	"N"
	0' - 2' Dark Brown Silty Fine Sand with Trace of Rock	1 1 2 3	3
	2' - 4' Light Grayish Brown Fine Sand	3 4 4 7	8
	4' - 6' Dark Brown Silty Fine Sand with Slight Trace of Rock	6 4 5 9	9
	6' - 12' Brown Slightly Silty Fine Sand	5 3 3 9	6
		8 8 10 14	18
10		-- -- -- -- -- --	A
	12' - 16' Light Brown Sandy Limestone and Light Brown Fine Sand	12 11 10 10	21
	16' - 20' Light Brown Sandy Limestone with Tan Fine Sand	-- -- -- -- -- --	A
		9 8 10 15	18
20			

Penetration "N" Value

10 20 30 40



Water Level: 7'4" **BEGL**

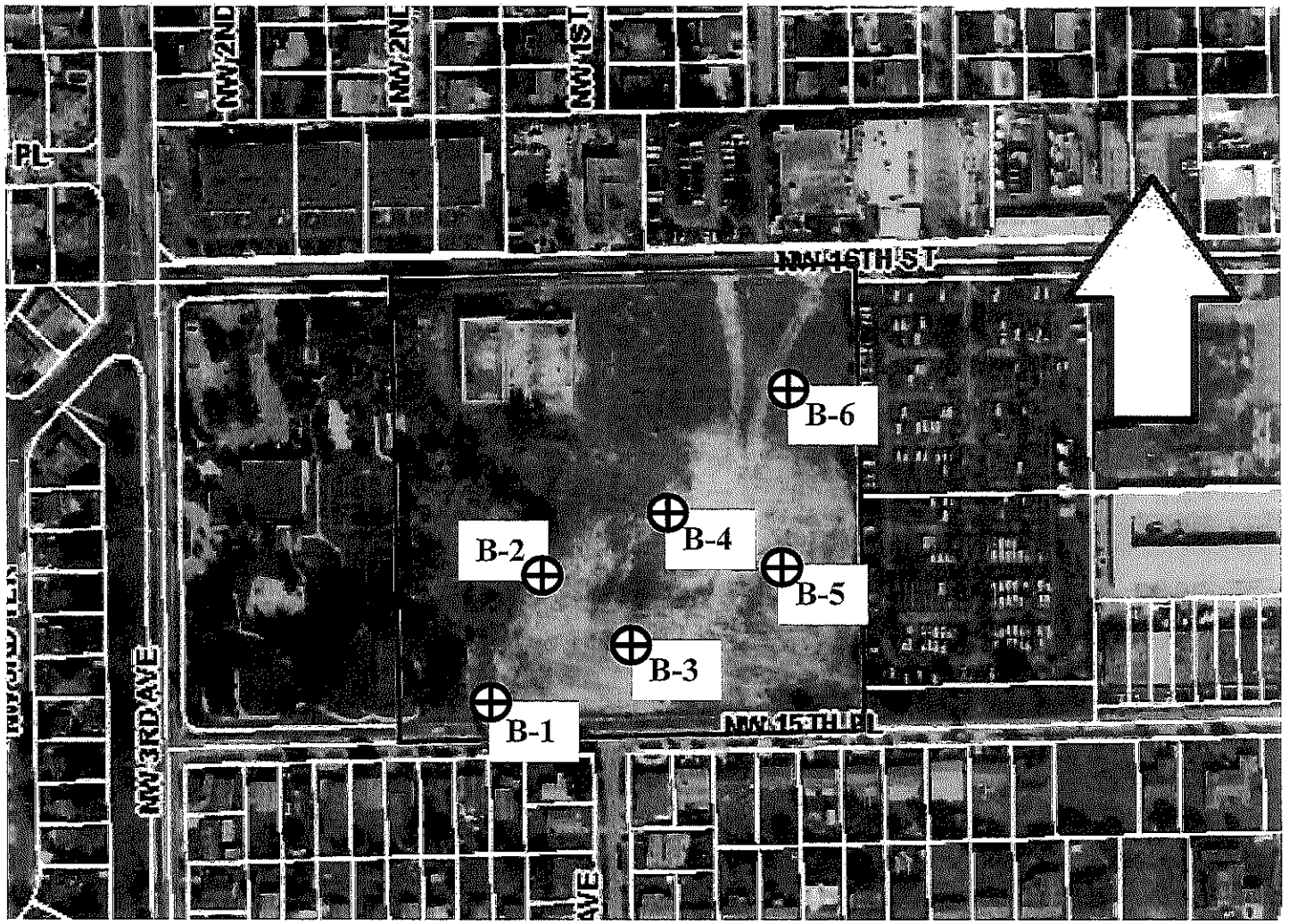
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A = Auger/Straight Rod
Ref = Refusal
BEGL = Below Existing Ground Level
0 = Weight of Hammer



6-17-19

Mark A. Mesiano, P.E.
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6923



Field Sketch
Not to Scale
212 N.W. 16th Street
Pompano Beach, Florida

Exhibit A

bing maps

212 NW 16th St, Pompano Beach, FL 33060

Type your notes here.



Exhibit A



GENERAL NOTES

- Soil boring(s) on unmarked vacant property or existing structure(s) to be demolished should be considered preliminary with further boring(s) to be performed after building pad(s) are staked out.
- As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.
- It is not our field inspector's responsibility to supervise, schedule, or stop any phase of the project. His/her responsibility is limited by the duties stated in the contract.
- It is the client's responsibility to provide adequate safety for the site and personnel.

KEY CLASSIFICATIONS & SYMBOLS

Correlation of Penetration Resistance with Relative Density and Consistency

	Dynamic Cone Penetrometer (Penetrometer Resistance)	Standard Penetration (Hammer Blows)	Relative Density
Sands	0 - 10	0 - 3	Very Loose
	10 - 25	3 - 8	Loose
	25 - 45	8 - 15	Firm
	45 - 75	15 - 25	Very Firm
	75 - 120	25 - 40	Dense
	> 120	> 40	Very Dense
Silts & Clay	0 - 6	0 - 2	Very Soft
	6 - 15	2 - 5	Soft
	15 - 30	5 - 10	Firm
	30 - 45	10 - 15	Stiff
	45 - 90	15 - 30	Very Stiff
	90 - 150	30 - 50	Hard

Particle Size

Boulder	> 12in
Cobble	3 - 12in
Gravel	4.75mm - 3in
Sand	0.075mm - 4.75mm
Silt/Clay	< 0.075mm

Modifiers – Silt/Clay

0 - <5%	N/A
5 - 12%	Slightly Silty/Clayey
12 - 30%	Silty/Clayey
30 - 50%	Very Silty/Clayey

Modifiers – Other Inclusions

0 - 2%	Very Slight Trace
2 - 5%	Slight Trace
5 - 10%	Trace
10 - 15%	Little
15 - 30%	Some
> 30%	With

Rock Hardness Description

Soft	Rock core crumbles when handled.
Medium	Can break core with your hands.
Moderately Hard	Thin edges of rock core can be broken with fingers.
Hard	Thin edges of rock core cannot be broken with fingers.
Very Hard	Rock core rings when struck with a hammer.

LIMITATIONS OF LIABILITY

WARRANTY

We warrant that the services performed by Florida Engineering and Testing, Inc., are conducted in a manner consistent with the level of skill and care ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranties, expressed or implied, are made. While the services of Florida Engineering & Testing, Inc., are an integral and valuable part of the design and construction process, we do not warrant, guarantee, or insure the quality or completeness of services or satisfactory performance provided by other members of the construction process and/or the construction plans and specifications which we have not prepared, nor the ultimate performance of building site materials.

As mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings. The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata and groundwater data. The log represents conditions specifically at the location and time the boring was made. The boundaries between different soil strata are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling. The transitions between soil stratum are often gradual. Water level readings are made at the time the boring was performed and can change with time, precipitation, canal levels, local well drawdown, and other factors.

Regardless of the thoroughness of a Geotechnical exploration there is always a possibility that conditions may be different from those of the test locations; therefore Florida Engineering & Testing, Inc., does not guarantee any subsoil condition surrounding the bore test holes. For a more accurate portrayal of subsurface conditions, the site contractor should perform tests pits. If different conditions are encountered, Florida Engineering & Testing, Inc., shall be notified to review the findings and make any recommendations as needed.

LABORATORY AND FIELD TESTS

Tests are performed in accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test report indicates the measurements and determinations actually made.

ANALYSIS AND RECOMMENDATIONS

The Geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it is not intended to determine the cost of construction or to stand alone as construction specifications. In accepting this report the client understands that all data from the soil boring is intended for foundation analysis only and is not to be used for excavating, backfilling or pricing estimates. The site contractor must familiarize themselves with the job site conditions.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations may exist between borings and may not become evident until construction. If variations are then noted, Florida Engineering & Testing, Inc., should be contacted so that field conditions can be examined and recommendations revised if necessary.

The Geotechnical report states our understanding as to the location, dimensions, and structural features proposed of the site. Any significant changes in the nature, design, or location of the site improvements must be communicated to Florida Engineering & Testing, Inc,, so that the Geotechnical analysis, conclusions, and recommendations can be appropriately adjusted.

CONSTRUCTION OBSERVATIONS

Construction observation and testing is an important element of Geotechnical services. The Geotechnical Engineer's Field Representative (Field Rep.) is the "owner's representative" observing the work of the contractor, performing tests, and reporting data from such tests and observations. The Geotechnical Engineer's Field Representative does not direct the contractor's construction means, methods, operations, or personnel. The Field Rep. does not interfere with the relationship between the owner and the contractor, and except as an observer, does not become a substitute owner on site. The Field Rep. is only collecting data for our Engineer to review.

The Field Rep. is responsible for his/her safety only, but has no responsibility for the safety of other personnel and/or the general public at the site. If the Field Rep. does not feel that the site is offering a safe environment for him/her, the Field Rep. will stop his/her observation/ testing until he/she deems the site is safe. The Field Rep. is an important member of a team whose responsibility is to observe the test and work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications.

FLORIDA ENGINEERING & TESTING, INC.

Phone: (866) 781-6889 •Fax: (866) 784-8550
www.floridaengineeringandtesting.com
250 S.W. 13th Avenue
Pompano Beach, FL 33069

June 13, 2019 **Job Order No.: 19-2926**

Walters-Zackria Associates
1500 W. Cypress Creek Road Suite # 105
Fort Lauderdale, Florida 33309

RE: HYDRAULIC CONDUCTIVITY USUAL OPEN - HOLE TEST
Proposed Drainage System
Apollo Park Expansion
212 N.W. 16th Street
Pompano Beach, Florida

Dear Sir or Madam;

Pursuant to your request, Florida Engineering & Testing, Inc. (FE&T), has completed hydraulic conductivity (usual open-hole) tests on June 6, 2019, at the above referenced site. A total of two (2) hydraulic conductivity tests were performed according to South Florida Water Management District (SFWMD), "Management and Storage of Surface Waters Permit Information Manual", "Usual Open-Hole Test" (see attached field sketch for locations).

The test results are specific to the locations tested. Variations should be expected between the test locations. These results are time and sample dependent since water table conditions are continuously changing. The above referenced test method is affected by the following: specific soil types encountered and fluctuations in the ground water table. Fluctuation in water levels should be anticipated due to surface runoff, tidal influences, seasonal variations, varying ground elevation, construction dewatering and pumping activities in the area. The discovery of any site or subsurface conditions during construction which substantially deviate from the information obtained from our tests is always a possibility and should be reported to us immediately for our evaluation.

Florida Engineering & Testing, Inc., appreciates the opportunity to be of service to you at this phase of your project. If you have any questions or comments, please give us a call. We would be pleased to help any way we can. It has been a pleasure working with you and look forward to doing so in the near future.

Sincerely,

MARK ALAN MESIANO LICENSE No. 48202 STATE OF FLORIDA PROFESSIONAL ENGINEER

6-17-19

Mark A. Mesiano, P.E.
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6925

Attachments:
Hydraulic Conductivity Test Results
Field Sketch

Quality QA Assurance

FLORIDA ENGINEERING & TESTING, INC.

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www.floridaengineeringandtesting.com
250 S.W. 13th Avenue
Pompano Beach, FL 33069

HYDRAULIC CONDUCTIVITY USUAL OPEN – HOLE TEST

DATE: 6/6/19 ORDER #: 19-2926
CLIENT: Walters-Zackria Associates
PROJECT: Proposed Drainage System Apollo Park Expansion
ADDRESS: 212 N.W. 16th Street Pompano Beach, Florida
LOCATION: Ex-1 (See Attached Sketch)
DIAMETER OF HOLE: 6 inches DEPTH OF HOLE: 10 feet
TESTED BY: C.G. REPORTED TO: Client

Gallons/Minute	Elapsed Time in Minutes
2.9	1
2.2	2
1.9	3
2.1	4
2.3	5
2.9	10
2.9	15
2.4	20
2.6	25
2.4	30

Hydraulic Conductivity: K = 7.1×10^{-5} CFS/FT^2 - FT. HEAD

Depth Below Existing Ground Surface (BEGL)	Soil Description
0' - 3'	Grayish Brown to Dark Brown Silty Fine Sand With Some Rock
3' - 6'	Tan to Light Brown Fine Sand
6' - 10'	Brown Slightly Silty Fine Sand

Water table elevation : 7'8" Below Existing Ground Surface

6-17

MARK A. MESIANO, P.E. No. 48202
Florida Engineering & Testing, Inc.
Florida Reg. No. 48202
Certificate of Authorization No. 6923

MARK ALAN MESIANO LICENSE No. 48202 STATE OF FLORIDA PROFESSIONAL ENGINEER

Quality QA Assurance

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www.floridaengineeringandtesting.com
250 S.W. 13th Avenue
Pompano Beach, FL 33069

HYDRAULIC CONDUCTIVITY USUAL OPEN – HOLE TEST

DATE: 6/6/19 ORDER #: 19-2926
CLIENT: Walters-Zackria Associates
PROJECT: Proposed Drainage System Apollo Park Expansion
ADDRESS: 212 N.W. 16th Street Pompano Beach, Florida
LOCATION: Ex-2 (See Attached Sketch)
DIAMETER OF HOLE: 6 inches DEPTH OF HOLE: 10 feet
TESTED BY: C.G. REPORTED TO: Client

Gallons/Minute	Elapsed Time in Minutes
2.2	1
2.1	2
2.1	3
2.1	4
1.9	5
2.0	10
1.9	15
2.0	20
2.0	25
2.0	30

Hydraulic Conductivity: K = 5.9×10^{-5} CFS/FT^2 - FT. HEAD

Depth Below Existing Ground Surface (BEGL)	Soil Description
0' - 2'	Grayish Brown to Dark Brown Silty Fine Sand With Some Rock
2' - 5'	Tan to Light Yellowish Brown Silt
5' - 7'	Tan to Light Brown Fine Sand
7' - 10'	Brown Slighlty Silty Fine Sand

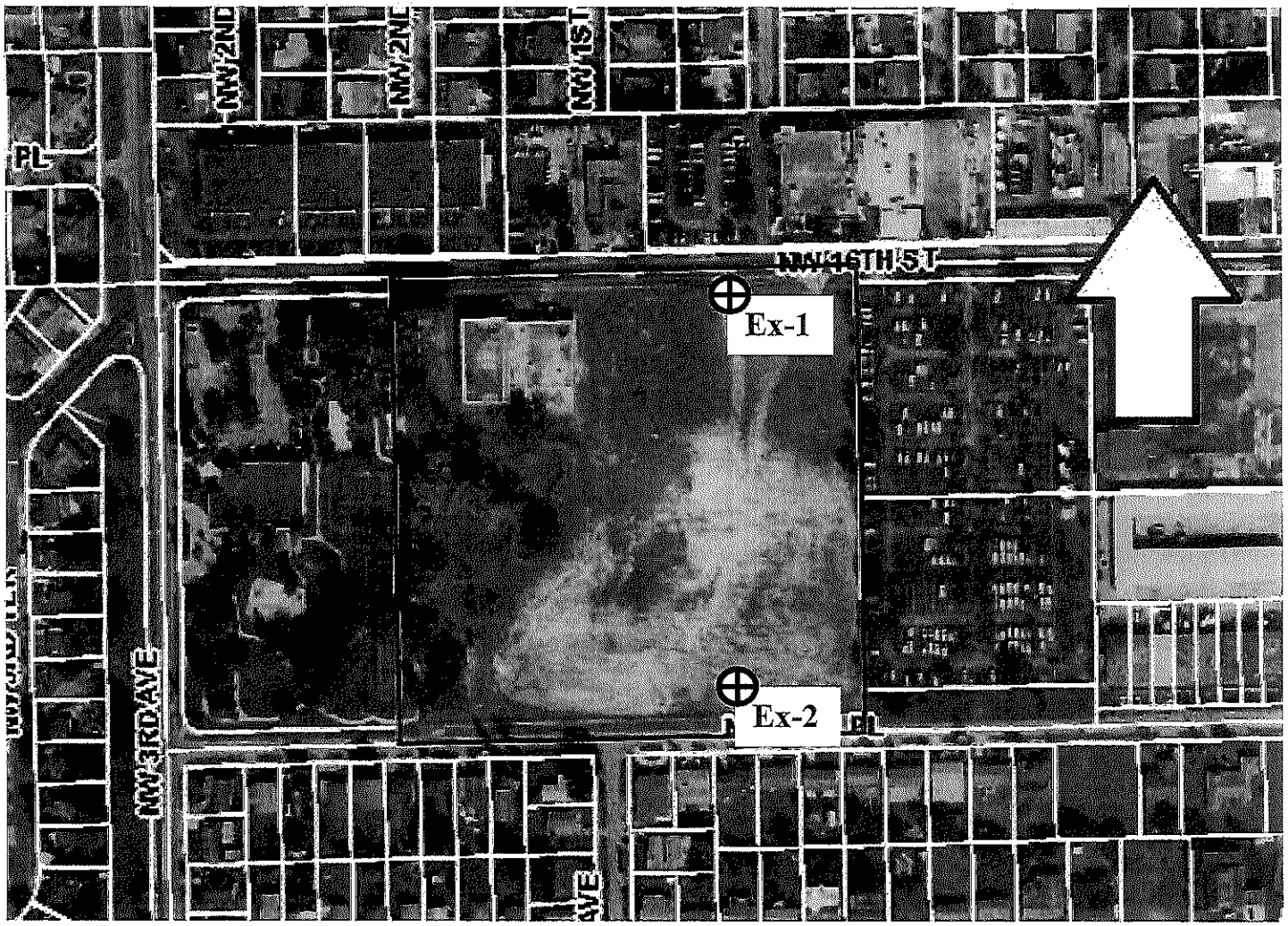
Water table elevation : 7'6" Below Existing Ground Surface

6-17-19

MARK A. MESIANO, P.E.
Florida Engineering & Testing, Inc.
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Certificate of Authorization No. 6923

MARK ALAN MESIANO LICENSE No 48202 STATE OF FLORIDA PROFESSIONAL ENGINEER

Quality QA Assurance



Field Sketch
Not to Scale
212 N.W. 16th Street
Pompano Beach, Florida

Exhibit A

SECTION 02070 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplemental Conditions, and other Division 1 Specification Sections, apply to this all sections of specifications.

1.2 SUMMARY

A. This Section includes the following:
   1. Demolition and removal of selected site elements shown on drawings such as, but not limited to:
      a. Existing fence.
      b. Existing light poles.
      c. Existing concrete sidewalk.
      d. And other items as per the demolition drawings.

1.3 DEFINITIONS

A. Remove: Remove and legally dispose of items except those indicated to be salvaged, or to remain.

1.4 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition legally at the Contractor's option.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Pre-Demolition Conference: Conduct conference at Project site to comply with the requirements of Division 1.

1.6 PROJECT CONDITIONS

A. This facility is in use every day of the week. There are existing sections that are fully operational. The Contractor is required to perform the needed work for his/her demolition project in a way that does not disturb the function or interrupt ongoing operations of adjacent areas. All work must be coordinated and scheduled with approval from Owner’s staff. The areas not covered by the work must be protected. Any areas damaged or disturbed by the demolition process in any way must be repaired and brought to the condition it was found just prior to commencement of work. Any areas damaged or disturbed by the demolition process must be repaired immediately after happening in order to avoid further damage to the

inside of the buildings due to rain or weather. All repairs must be done by the Contractor as part of this contract and to the complete satisfaction of the Owner. Contractor must take all necessary actions to insure the safety of all occupants and visitors.

B. Contractor shall sequence the project in the manner that will allow Owner the use of their building at all times. Contractor shall clean up at the end of each workday and with thorough cleaning and material / equipment disposal on Fridays in preparation for the weekend.

C. Contractor shall not block any means of egress.

D. Conduct selective demolition so that Owner's operations will not be disrupted. Provide not less than 10 days advance notice to the Owner of activities that will affect their operations.

E. Owner and Consultant assume no responsibility for actual condition of elements to be selectively demolished.
   1. Conditions existing at time of inspection for bidding purpose will be maintained by the Owner as far as practical.

F. Asbestos: When required by the City or any regulatory agency having jurisdiction over this Project, Contractor shall obtain an Asbestos Inspection and Report by a legally licensed company to perform this type of work. Contractor shall carefully read the Asbestos Report and comply with all its recommendations.
   1. Contractor shall hire a certified asbestos abatement contractor to remove all asbestos containing material in accordance with EPA and OSHA regulation.
   2. The asbestos abatement contractor shall supply all labor, material services, insurance, permits and equipment necessary to carry out the work.
   3. Contractor will include in his/her contract all asbestos abatement required by all agencies having jurisdiction over this site.

G. Protections: Provide temporary barricades and other forms of protection to protect all adjacent tenants and general public from injury due to selective demolition work.
   1. Provide protective measures as required to provide free and safe passage of the Owner and tenants and all vehicles and general public to areas affected by demolition.
   2. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities or work to remain.
   3. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
   4. Protect floors with suitable coverings when necessary.
   5. Provide temporary seals for supply and return diffusers.
   6. Provide temporary seals for electrical or data outlets.
   7. Provide temporary weather protection during demolition to ensure that no water leakage or damage occurs to structure or interior areas of existing structures to remain.
   8. Provide temporary dust and debris barriers of fire resistant materials to control dust and debris and to confine demolition of existing and finished work.
   9. Remove protections at completion of work.

H. Damages: Immediately repair damages caused to adjacent facilities by demolition work.

I. Traffic: Conduct selective demolition operations and debris removal to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
   1. Do not close, block, or otherwise obstruct streets, walks, or other occupied or used facilities without approval from the Owner and providing alternate routes around all closed or obstructed traffic ways.

J. Flame Cutting: Do not use cutting torches for removal until work area is cleared of flammable materials. At concealed spaces, such as interior of pipe spaces, verify condition of hidden space before starting flame-cutting operations. Maintain portable fire suppression devices during flame-cutting operations.

K. Explosives:
1. Use of explosives will not be permitted.

L. Utility Services: Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.
1. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by the Owner. Provide temporary services during interruptions to existing utilities or schedule work to install interrupted utilities first, as acceptable to the Owner.
2. Maintain fire protection services during selective demolition operations.

M. Environmental Controls: Use water sprinkling, temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.
1. Do not use water when it may create hazardous or objectionable conditions such as flooding and pollution.
2. Provide ventilation to maintain non-toxic unpolluted working area for adjacent Owner's operating areas and construction/ demolition areas. Welding and cutting torches producing smoke or toxic fumes must be adequately ventilated.

N. Special Conditions: The Contractor shall provide labor, materials and equipment to complete the work as by the Contract Documents, including but not limited to the following:
1. The filing of all required notifications and variances, including the payment of all fees charged by all regulatory agencies.
2. Work area preparation.
3. General protection.
4. Isolation barrier construction.
5. Re-establishment of all building systems disrupted by the work of this contract.
6. Repair or replacement, to the Owner's satisfaction, of any existing finishes, construction or other building components damaged during the work.
7. Conduct daily inspections of all adjacent spaces and clean up as required.

1.7 SCHEDULING

A. Arrange a selective demolition schedule so as not to interfere with the operations of the users of the building.

1.8 WARRANTY

A. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials.

1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
2. Use materials whose installed performance equal or surpasses that of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

C. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Owner.

D. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

E. Locate all existing utilities within project limits prior to any demolition.

3.2 OWNER'S FURNISHINGS AND EQUIPMENT

A. Provide not less than 10 days advance notice to the Owner of activities that will affect their operations.

3.3 PREPARATION

A. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.
   1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by the Owner, or as shown on drawings.
   2. Provide protective measures as required to provide free and safe passage of Owner's personnel and general public to and from occupied portions of building.
   3. Provide temporary barricades and other forms of protection as required to protect Owner's personnel and general public from injury due to selective demolition work.

B. Protect existing site improvements, appurtenances, and landscaping to remain.
   1. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

C. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.

3.4 ENVIRONMENTAL CONTROLS

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.5 SELECTIVE DEMOLITION

A. Demolish and remove existing construction only to the extent required and as indicated in drawings. Use methods required to complete Work within limitations of governing regulations and as follows:
   1. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
   2. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

B. If unanticipated mechanical, electrical, or structural elements that conflict with intended function are encountered, investigate and measure both nature and extent of the conflict. Submit report to the Owner in written, accurate detail. Pending receipt of directive from the Owner, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.

3.6 PATCHING AND REPAIRS

A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials.

C. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.

D. Disposal: Transport demolished materials from Owner's property and legally dispose of them.

3.8 CLEANUP AND REPAIR

A. General: Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior adjacent areas broom clean.
   1. Repair demolition performed in excess of that required. Return adjacent elements of building and surfaces to remain to condition existing prior to start operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

3.9 SELECTIVE DEMOLITION SCHEDULE

A. General: furnish schedule for demolition to obtain approval from the Owner.

END OF SECTION

SECTION 02200 - PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 DESCRIPTION

A. Provide erosion control measures on the project site and in areas outside the limits of construction where work is accomplished in conjunction with the project, so as to prevent pollution of water, detrimental effects to public or private property adjacent to the project site and damage to work on the project. Construct and maintain temporary erosion control features or, where practical, construct and maintain permanent erosion control features as shown in the plans or as may be directed by the Owner.

B. Coordinate the installation of temporary erosion control features with the construction of the permanent erosion control features to the extent necessary to ensure economical, effective, and continuous control of erosion and water pollution throughout the life of the Contract.

1.4 CONTROL OF CONTRACTOR'S OPERATIONS

A. Prevent pollution of streams, canals, lakes, reservoirs, and other water impoundments with fuels, oils, bitumens, calcium chloride, or other harmful materials. Also, conduct and schedule operations to avoid or otherwise minimize pollution or siltation of such water impoundments, and to avoid interference with movement of migratory fish. Do not dump any residue from dust collectors or washers into any live stream or lake.

B. Restrict construction operations in rivers, streams, lakes, tidal waters, reservoirs, canals, and other water impoundments to those areas where it is necessary to perform filling or excavation to accomplish the work shown in the plans and to those areas which must be entered to construct temporary or permanent structures. As soon as conditions permit, promptly clear rivers, streams, and impoundments of all obstructions placed therein or caused by construction operations.

C. Do not frequently ford live streams with construction equipment. Wherever an appreciable number of stream crossings are necessary at any one location, use a temporary bridge or other structure.

D. Except as necessary for construction, do not deposit excavated material in rivers, streams, lakes, canals, or impoundments, or in a position close enough thereto, to be washed away by high water or runoff.

E. Where pumps are used to remove highly turbid waters from enclosed construction areas such as cofferdams or forms, treat the water by one or more of the following methods prior to discharge into State waters: pumping into grassed swales or appropriate vegetated areas or sediment basins, or confined by an appropriate enclosure such as turbidity barriers when other methods are not considered appropriate.

F. Do not disturb lands or waters outside the limits of construction as staked, except as authorized by the authorities having jurisdiction.

1.5 SUBMITTALS, PLANS, AND PERMITS

A. The contractor shall apply for and obtain a National Pollutant Discharge Elimination System (NPDES) Permit or approval by the U.S. Environmental Protection Agency (EPA) pursuant to 40 CFR Part 122.26.

B. The Contractor shall prepare the Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will include this erosion control plan and all additional measures that will be employed to dispose of, control, or prevent the discharge of solid, hazardous, and sanitary wastes to waters of the U.S. Include procedures to control off-site tracking of soil by vehicles and construction equipment and a procedure for cleanup and reporting of non-storm water discharges, such as contaminated groundwater or accidental spills. The Owner will review the Contractor's SWPPP, including required signed certification statements, before soil disturbing activities begin.

C. Failure to sign any required documents or certification statements will be considered a default of the Contract. Any earth disturbing activities performed without the required signed documents or certification statements may be considered a violation of the Clean Water Act by the EPA.

D. Prepare the erosion control plan in accordance with the sequence of operations and present in the NPDES Storm Water Pollution Prevention Plan required format provided by State of Florida Department of Environmental Protection. The erosion control plan shall describe, but not be limited to, the following items or activities:
   1. For each phase of construction operations or activities, supply the following information:
      a. Locations of all erosion control devices
      b. Types of all erosion control devices
      c. Estimated time erosion control devices will be in operation
      d. Monitoring schedules for maintenance of erosion control devices
      e. Methods of maintaining erosion control devices
      f. Containment or removal methods for pollutants or hazardous wastes
   2. The name and telephone number of the person responsible for monitoring and maintaining the erosion control devices.
   3. Submit for approval the erosion control plans meeting standards listed below:
      a. Projects permitted by the South Florida Water Management District require the following:
         1) Obtain SFWMD's approval of the erosion control plan.
         2) Do not begin construction activities until the erosion control plan receives written approval from SFWMD.

1.6 PROJECT CONDITIONS

A. Temporary Erosion Control Facilities: Installer of temporary erosion control facilities shall assume responsibility for operation, maintenance, and proper function of each facility during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 – PRODUCTS

2.1 MATERIALS

A. The Owner will not require testing of materials used in construction of temporary erosion control features other than as provided for geo-textile fabric in FDOT 985-3 unless such material is to be incorporated into the completed project. When no testing is required, the Owner will base acceptance on visual inspection.

B. The Contractor may use new or used materials for the construction of temporary silt fence, staked turbidity barriers, and floating turbidity barrier not to be incorporated into the completed project, subject to the approval of the Owner.

C. Environmental Protection: Provide Best Management Practices environmental protection equipment to prevent air, soil, and water pollution in and around the project site. BMP's shall comply with contract specifications, FDEP regulations and FDOT standards. Contractor shall be solely liable and responsible for any fines issued by the regulatory agencies due to non-compliance or inadequate compliance. BMP's shall be maintained for the construction duration.

PART 3 – EXECUTION

3.1 PRECONSTRUCTION CONFERENCE

A. At the Pre-construction conference, provide to the Owner a special plan to prevent, control, and reduce erosion and water pollution, meeting the requirements or special conditions of all permits authorizing project construction. If no permits are required or the approved permits do not contain special conditions or specifically address erosion and water pollution, the project erosion control plan will be governed by this section.

3.2 CONSTRUCTION REQUIREMENTS

A. Limitation of Exposure of Erodible Earth:
   1. The Owner may limit the surface areas of unprotected erodible earth exposed by the construction operation and may direct the Contractor to provide erosion or pollution control measures to prevent contamination of any river, stream, lake, tidal waters, reservoir, canal, or other water impoundments or to prevent detrimental effects on property outside the project right-of-way or damage to the project. Limit the area in which excavation and filling operations are being performed so that it does not exceed the capacity to keep the finish grading, grassing, sodding, and other such permanent erosion control measures current in accordance with the accepted schedule.

B. Do not allow the surface area of erodible earth that clearing and grubbing operations or excavation and filling operations expose to exceed 750,000 ft2 [70,000 m2] without specific prior approval by the Owner. This limitation applies separately to clearing and grubbing operations and excavation and filling operations.

C. Incorporation of Erosion Control Features:

   1. Incorporate permanent erosion control features into the project at the earliest practical time. Use approved temporary erosion control features to correct conditions that develop during construction which were not foreseen at the time of design, to control erosion prior to the time it is practical to construct permanent control features, or to provide immediate temporary control of erosion that develops during normal construction operations, which are not associated with permanent erosion control features on the project.

D. Scheduling of Successive Operations:
   1. Schedule operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposure of uncompleted construction to the elements is as short as practicable.

2. Schedule and perform clearing and grubbing so that grading operations can follow immediately thereafter. Schedule and perform grading operations so that permanent erosion control features can follow immediately thereafter if conditions on the project permit.

E. Details for Temporary Erosion Control Features:
1. General: Use temporary erosion and water pollution control features that consist of, but are not limited to, temporary grassing, temporary sodding, temporary mulching, sandbagging, slope drains, sediment basins, sediment checks, berms, baled hay or straw, floating turbidity barrier, staked turbidity barrier and silt fence. For design details for some of these items, refer to the Water Quality Section of the FDOT Design Standards.
2. Temporary Grassing: The Contractor may designate certain areas of grassing constructed in accordance with the SWPPP as temporary erosion control features. Keep the grass in a moist condition in order to ensure growth. The contractor will pay for all required watering and mowing.
3. Temporary Sod: Furnish and place sod in accordance within areas designated by the SWPPP to temporarily control erosion. Keep the sod in a moist condition in order to ensure growth. The contractor will pay for all required watering and mowing.
4. Temporary Mulching: Furnish and apply a 2 to 4 inch [50 to 100 mm] thick blanket of straw or hay mulch to designated areas, then mix or force the mulch into the top 2 inches [50 mm] of the soil in order to temporarily control erosion. Use only undecayed straw or hay which can readily be cut into the soil and which otherwise complies with FDOT 981-3. The Contractor may substitute other measures for temporary erosion control, such as hydromulching, chemical adhesive soil stabilizers, etc., for mulching with straw or hay, if approved by the Owner. When beginning permanent grassing operations, plow under temporary mulch materials in conjunction with preparation of the ground.
5. Sandbagging: Furnish and place sandbags in configurations to control erosion and siltation.
6. Slope Drains: Construct slope drains in accordance with the details shown in the plans, the FDOT Design Standards, or as may be approved as suitable to adequately perform the intended function.
7. Sediment Basins: Construct sediment basins in accordance with the details shown in the plans, the FDOT Design Standards, or as may be approved as suitable to adequately perform the intended function. Clean out sediment basins as necessary in accordance with the plans or as directed.
8. Berms: Construct temporary earth berms to divert the flow of water from an erodible surface.
9. Baled Hay or Straw:
    a. Provide bales having minimum dimensions of 14 by 18 by 36 inches [350 by 450 by 900 mm], at the time of placement. Construct baled hay or straw dams to protect against downstream accumulations of silt. Construct the baled hay or straw dams in accordance with the details shown in the plans or the FDOT Design Standards. Meet the provisions of FDOT 981-3.1 for all baled hay or straw.
    b. Place the dam to effectively control silt dispersion under conditions present on this project. The Contractor may use alternate solutions and usage of materials if approved.
10. Temporary Silt Fences:
    a. General: Furnish, install, maintain, and remove temporary silt fences, in accordance with the manufacturer’s directions, these Specifications, the details as shown on the plans, and the FDOT Design Standards.
    b. Materials and Installation: Use a geotextile fabric made from woven or nonwoven fabric, meeting the physical requirements of Section 985 according to those applications for erosion control.
    c. Choose the type and size of posts, wire mesh reinforcement (if required), and method of installation. Do not use products which have a separate layer of plastic mesh or netting. Provide a durable and effective temporary silt fence that controls sediment comparable to the FDOT Design Standards, Index No. 102.
    d. Install all sediment control devices in a timely manner to ensure the control of sediment and the protection of lakes, streams, gulf or ocean waters, or any wetlands associated therewith and to any adjacent property outside the right-of-way as required.

e. At sites where exposure to such sensitive areas is prevalent, complete the installation of any sediment control device prior to the commencement of any earthwork.
f. After installation of sediment control devices, repair portions of any devices damaged at no expense to the Owner.
g. Erect temporary silt fence at upland locations across ditchlines and at temporary locations shown on the plans or approved by the Owner where continuous construction activities change the natural contour and drainage runoff. Do not attach temporary silt fence to existing trees unless approved by the Owner.
h. Inspect all temporary silt fences immediately after each rainfall and at least daily during prolonged rainfall. Immediately correct any deficiencies. In addition, make a daily review of the location of silt fences in areas where construction activities have changed the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, install additional silt fences as directed by the Owner.
i. Remove sediment deposits when the deposit reaches approximately 1/2 of the volume capacity of the temporary silt fence or as directed by the Owner. Dress any sediment deposits remaining in place after the temporary silt fence is no longer required to conform with the finished grade.

11. Floating Turbidity Barriers and Staked Turbidity Barriers:
a. Install, maintain, and remove turbidity barriers to contain turbidity that may occur as the result of dredging, filling, or other construction activities which may cause turbidity to occur in the waters of the State. The Contractor may need to deploy turbidity barriers around isolated areas of concern such as seagrass beds, coral communities, etc. both within as well as outside the project limits. The Owner will identify such areas. Place the barriers prior to the commencement of any work that could impact the area of concern. Install the barriers in accordance with the details shown in the plans or as approved by the Owner. Ensure that the type barrier used and the deployment and maintenance of the barrier will minimize dispersion of turbid waters from the construction site.
b. Operate turbidity barriers in such a manner to avoid or minimize the degradation of the water quality of the surrounding waters.

12. Rock Bags: Furnish and place rock bags to control erosion and siltation. Place the bags as shown in the plans, the FDOT Design Standards or as directed by the Owner. Use a fabric material with openings that are clearly visible to minimize clogging yet small enough to prevent rock loss. Use material of sufficient strength to allow removing and relocating bags without breakage. The bag size when filled with rocks shall be approximately 12 by 12 by 4 inch [300 by 300 by 100 mm]. Use No. 4 or No. 5 coarse aggregate rock.
13. Watering: Provide temporary water during earthwork operation to minimize airborne sediment pollution.

3.3 MAINTENANCE OF EROSION CONTROL FEATURES.

A. Provide routine maintenance of permanent and temporary erosion control features, at no expense to the Owner, until the project is complete and accepted. If reconstruction of such erosion control features is necessary due to the Contractor’s negligence or carelessness or, in the case of temporary erosion control features, failure by the Contractor to install permanent erosion control features as scheduled, the Contractor shall replace such erosion control features at no expense to the Owner.

B. Inspect all erosion control features at least once every seven calendar days and within 24 hours of the end of a storm of 0.25 inches [6 mm] or greater. Maintain all erosion control features as required in the Storm Water Pollution Prevention Plan and as specified in State and/or Federal environmental regulatory permits. Use an inspection form to report all inspection findings and to document all corrective actions taken as a result of the inspection. Sign each inspection report and submit with final closeout document package.

C. Mow of areas within the limits of the project. Mow these areas within every twenty-one days or more frequently. Do not mow slopes that are steeper than three horizontal to one vertical.

3.4 PROTECTION DURING SUSPENSION OF CONTRACT TIME

A. If it is necessary to suspend the construction operations for any appreciable length of time, shape the top of the earthwork in such a manner to permit runoff of rainwater, and construct earth berms along the top edges of embankments to intercept runoff water. Provide temporary slope drains to carry runoff from cuts and embankments that are in the vicinity of rivers, streams, canals, lakes, and impoundments. Locate slope drains at intervals of approximately 500 feet [150 m], and stabilize them by paving or by covering with waterproof materials. Should such preventive measures fail, immediately take such other action as necessary to effectively prevent erosion and siltation. The Owner may direct the Contractor to perform, during such suspensions of operations, any other erosion control work deemed necessary.

3.5 REMOVAL OF TEMPORARY EROSION CONTROL FEATURES

A. In general, remove or incorporate into the soil any temporary erosion control features existing at the time of construction of the permanent erosion control features in an area of the project in such a manner that no detrimental effect will result. The Owner may direct that temporary features be left in place.

3.6 BASIS OF PAYMENT

A. Prices and payments will be full compensation for all work specified in this Section, including construction and routine maintenance of temporary erosion control features and for mowing. Any and all costs resulting from compliance with the requirements of this Section, including permitting, construction, routine maintenance, and removal of temporary erosion control features, watering and mowing, shall be included in the lump sum Contract within the general conditions of the contract.

B. Separate payment will not be made for the cost of erosion control features, including constructing temporary earth berms along the edges of the roadways to prevent erosion during grading and subsequent operations. The Contractor shall include these costs in the Contract prices for grading items.

C. In case of repeated failure on the part of the Contractor to control erosion, pollution, or siltation, the Owner reserves the right to employ outside assistance or to use the Owner’s own forces to provide the necessary corrective measures. Any such costs incurred, including design costs and fines, will be charged to the Contractor and appropriate deductions made from the monthly progress estimate.

END OF SECTION

SECTION 02230 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Protecting existing trees and shrubs to remain.
2. Removing existing trees, shrubs, groundcovers, plants, and grass.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, and removing site utilities.
7. Temporary erosion and sedimentation control measures.

B. Related Sections include the following:

1. Division 1 Section "Temporary Facilities and Controls" for temporary utilities, temporary construction and support facilities, temporary security and protection facilities.
2. Division 1 Section "Construction Cleaning" for recycling requirements.
3. Division 1 Section "Execution and Hurricane Protection Requirements" for verifying utility locations and for recording field measurements.
4. Division 2 Section “Prevention, Control, And Abatement of Erosion and Water Pollution” for temporary erosion and sedimentation control procedures.
5. Division 2 Section "Tree Protection and Trimming" for protecting trees remaining on-site that are affected by site operations.
6. Division 2 Section "Earthwork" for soil materials, excavating, backfilling, and site grading.

1.3 DEFINITIONS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil materials.

B. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.4 MATERIAL OWNERSHIP

A. Except for stripped topsoil or other materials indicated to remain; cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

B. Record drawings, according to Division 1 Section "Project Record Documents," identifying and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

E. Do not commence site clearing operations until all existing above and underground utilities in the path of site clearing operations have been located, marked, and capped or disconnected for safe operations.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 2 Section "Earthwork."

1. Obtain approved borrowing soil materials off-site when satisfactory soil materials are not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Contractor shall be responsible for obtaining all necessary permits from all authorities having jurisdiction prior to commencing site clearing and tree removal.

B. Protect and maintain benchmarks and survey control points from disturbance during construction.

C. Locate and clearly flag trees and vegetation to remain or to be relocated.

D. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways. The Contractor shall be required to prepare and submit an NPDES permit application utilizing the Stormwater Pollution Prevention Plan.

B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 TREE REMOVAL AND TREE PRESERVATION

A. No trees shall be removed until approved by the City.

B. If trees are determined to remain, biobarrier shall be installed in accordance with the biobarrier detail as shown on the Construction Documents.

3.4 TREE PROTECTION

A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.

1. Do not store construction materials, debris, or excavated material within fenced area.
2. Do not permit vehicles, equipment, or foot traffic within fenced area.
3. Maintain fenced area free of weeds and trash.

B. Do not excavate within tree protection zones, unless otherwise indicated.

C. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

1. Cover exposed roots with burlap and water regularly.
2. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
3. Coat cut faces of roots more than 1-1/2 inches in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
4. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.

D. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Owner.

1. Employ an arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.

2. Replace trees that cannot be repaired and restored to full-growth status, as determined by Owner and authorities having jurisdiction.

3.5 UTILITIES

A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.

1. Arrange with utility companies to shut off indicated utilities.

B. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Owner's written permission.

C. Excavate for and remove underground utilities indicated to be removed.

D. Contractor is responsible for locating all existing utilities. Any utilities not located by the contractor and damaged during the construction shall be repaired or replaced to the owner's satisfaction solely at the contractor's own expense. No additional compensation shall be given to the contractor for repairing or replacing underground utilities damaged by the contractor or any sub-contractors.

3.6 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
3. Grind stumps and remove roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
4. Use only hand methods for grubbing within tree protection zone.
5. Chip removed tree branches and dispose of off-site.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.7 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within tree protection zones.
3. Stockpile surplus topsoil to allow for respreading deeper topsoil.

3.8 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain to prevent corrosion.

3.9 DISPOSAL

A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

1. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

END OF SECTION 02230

SECTION 02231 - TREE PROTECTION AND TRIMMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the protection and trimming of existing trees that interfere with, or are affected by, execution of the Work, whether temporary or permanent construction.

B. Related Sections include the following:

1. Division 1 Section "Summary" for limits placed on Contractor's use of the site.
2. Division 2 Section "Earthwork" for building and utility trench excavation, backfilling, compacting and grading requirements, and soil materials.

1.3 DEFINITIONS

A. Tree Protection Zone: Area surrounding individual trees or groups of trees to remain during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.4 SUBMITTALS

A. Tree Pruning Schedule: Written schedule from arborist detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

B. Qualification Data: For tree service firm and arborist.

C. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.

1.5 QUALITY ASSURANCE

A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of tree protection and trimming.

B. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices (Pruning)."

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of weeds, roots, and toxic and other non-soil materials.

1. Obtain topsoil only from well-drained sites where topsoil is 4 inches deep or more; do not obtain from bogs or marshes.

B. Chain-Link Fence: Metallic-coated steel chain-link fence fabric of 0.120-inch- diameter wire; a minimum of 48 inches high; with 1.9-inch- diameter line posts; 2-3/8-inch- diameter terminal and corner posts; 1-5/8-inch- diameter top rail; and 0.177-inch- diameter bottom tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.

C. Organic Mulch: Shredded hardwood, Ground or shredded bark, Wood and bark chips, free of deleterious materials.

PART 3 - EXECUTION

3.1 PREPARATION

A. Temporary Fencing: Install temporary fencing around tree protection zones to protect remaining trees and vegetation from construction damage. Maintain temporary fence and remove when construction is complete.

1. Install chain-link fence according to ASTM F 567 and manufacturer's written instructions.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

C. Mulch areas inside tree protection zones and within drip line of trees to remain and other areas indicated.

1. Apply 3-inch average thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.

D. Do not store construction materials, debris, or excavated material inside tree protection zones. Do not permit vehicles or foot traffic within tree protection zones; prevent soil compaction over root systems.

E. Maintain tree protection zones free of weeds and trash.

F. Do not allow fires within tree protection zones.

G. No trees shall be removed until approved by the City.

3.2 EXCAVATION

A. Install shoring or other protective support systems to minimize sloping or benching of excavations.

B. Do not excavate within tree protection zones, unless otherwise indicated.

C. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks and comb soil to expose roots.

1. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction.
2. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

D. Where utility trenches are required within tree protection zones, tunnel under or around roots by drilling, auger boring, pipe jacking, or digging by hand.

1. Root Pruning: Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots with sharp pruning instruments; do not break or chop.

3.3 REGRADING

A. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade beyond tree protection zones. Maintain existing grades within tree protection zones.

1. Root Pruning: Prune tree roots exposed during grade lowering. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots with sharp pruning instruments; do not break or chop.

B. Minor Fill: Where existing grade is 6 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.

3.4 TREE PRUNING

A. Prune trees to remain that are affected by temporary and permanent construction.

B. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by arborist.

C. Pruning Standards: Prune trees according to ANSI A300 (Part 1) as follows:

1. Type of Pruning: Cleaning, Thinning, and Raising.
2. Specialty Pruning: Restoration, Vista, Palm, and Utility.

D. Cut branches with sharp pruning instruments; do not break or chop.

E. Chip removed tree branches and dispose of off-site.

3.5 TREE REPAIR AND REPLACEMENT

A. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to arborist's written instructions.

B. Remove and replace trees indicated to remain that die or are damaged during construction operations that Architect and City or County inspector determines are incapable of restoring to normal growth pattern.

1. Provide new trees of same size and species as those being replaced; plant and maintain as specified.

C. Aerate surface soil, compacted during construction, 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch- diameter holes a minimum of 12 inches deep at 24 inches o.c. Backfill holes with an equal mix of augered soil and sand.

D. Provide hand watering or irrigation system for replacement trees for a minimum of 6 months.

E. Warrant replacement trees for a minimum of 1 year. If the replacement tree dies, the warranty will restart from the planting or the replacement for minimum for 1 year for the second replacement tree.

3.6 DISPOSAL OF WASTE MATERIALS

A. Burning is not permitted.

B. Disposal: Remove excess excavated material and displaced trees from Owner's property.

END OF SECTION 02231

SECTION 02300 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Preparing subgrades for slabs-on-grade, walks, pavements, lawns and grasses, and exterior plants.
2. Excavating and backfilling for buildings and structures.
3. Drainage course for slabs-on-grade.
4. Subbase course for concrete walks and pavements.
5. Subbase and base course for asphalt paving.
6. Subsurface drainage backfill for walls and trenches.
7. Excavating and backfilling for utility trenches.
8. Excavating and backfilling trenches for buried mechanical and electrical utilities and pits for buried utility structures.
9. Grading
10. Berms

B. Related Sections include the following:

1. Division 2 Section "Tree Protection and Trimming" for protecting and trimming trees to remain.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Course placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Course supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Geotechnical Engineer or Civil Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. Yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:

1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- wide, maximum, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,090 lbf and stick-crowd force of not less than 18,650 lbf; measured according to SAE J-1179.
2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp flywheel power and developing a minimum of 48,510-lbf breakout force with a general-purpose bare bucket; measured according to SAE J-732.

I. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by an independent geotechnical testing agency, according to ASTM D 1586.

J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

K. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or course placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

L. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

M. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:

1. Classification according to ASTM D 2487 of each on-site and borrow soil material proposed for fill and backfill.
2. Laboratory compaction curve according to ASTM D 698 for each on-site and borrow soil material proposed for fill and backfill.

B. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins.

1.5 QUALITY ASSURANCE

A. Contractor Qualification: The Sub-Contractor responsible for earthwork shall be an established company with a minimum of 10 years of experience and shall be certified by the Florida Department of Transportation for performing pavement operations on FDOT projects. Contractors must supply evidence of similar work having been performed on at least 10 other sites maintaining the degree of accuracy outlined in the grading specifications.

B. Field Contractor Qualifications: Sub-contractor in charge of field construction shall supply evidence of similar work having been performed on at least 10 other sites maintaining the degree of accuracy outlined in the grading specifications for field laser grading.

C. Field Grading Equipment: Specialized grading equipment shall be utilized to minimize compaction of prepared subgrade and topsoil. The grader shall be equipped with dual laser pickup, dual laser grade range mode, and the laser pickup shall operate the blade elevation controls automatically once they are locked on the laser beam. Each of the two laser pickups will operate only one end of the grader blade respectively. The laser source shall be capable of accuracy to three places of a percent (i.e., 1.234% of grade) and shall be capable of operating either the positive or negative angle of configuration without physically moving the laser source head.

D. Field Grading Operator Qualifications: Laser Grader operator shall supply evidence of similar work having been performed on at least 5 other sites maintaining the degree of accuracy outlined in the grading specifications for field laser grading.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Owner and then only after arranging to provide temporary utility services according to requirements indicated.

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Owner's written permission.
3. Contact utility-locator service for area where Project is located before excavating.

B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrowed soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM or AASHTO M 145 Soil Classification Groups A-1, A-2-4, A-2-5, and A-3, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487 or A-2-6, A-2-7, A-4, A-5, A-6, and A-7 according to AASHTO M 145, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Drainage Course: Narrowly graded mixture of [**washed] crushed** stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

2.2 CONTROLLED LOW-STRENGTH MATERIAL

A. Controlled Low-Strength Material: Low-density, self-compacting, flowable concrete material as follows:

1. Portland Cement: ASTM C 150, Type I.
2. Fly Ash: ASTM C 618, Class C or F.
3. Normal-Weight Aggregate: ASTM C 33, 3/4-inch nominal maximum aggregate size.
4. Foaming Agent: ASTM C 869.
5. Water: ASTM C 94/C 94M.
6. Air-Entraining Admixture: ASTM C 260.

B. Produce low-density, controlled low-strength material with the following physical properties:

1. As-Cast Unit Weight: 30 to 36 lb/cu. ft. at point of placement, when tested according to ASTM C 138/C 138M.
2. Compressive Strength: 140 psi, when tested according to ASTM C 495.

C. Produce conventional-weight, controlled low-strength material with 140-psi compressive strength when tested according to ASTM C 495.

2.3 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.

3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 2 Section "Site Clearing."

C. Protect and maintain erosion and sedimentation controls, which are specified in Division 2 Section "Site Clearing," during earthwork operations.

D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

3.2 EXPLOSIVES

A. Explosives: Do not use explosives.

3.3 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:

    a. 24 inches outside of concrete forms other than at footings.
    b. 12 inches outside of concrete forms at footings.
    c. 6 inches outside of minimum required dimensions of concrete cast against grade.
    d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    e. 6 inches beneath bottom of concrete slabs on grade.
    f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.

3.4 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Over Excavation: If over excavation is required in the foundation recommendations from the geotechnical engineer, the Contractor shall over excavate, backfill, and compact the soil below the foundations as recommended by the Geotechnical Engineer. See Soil Test Boring Report.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades. See section 02526 - Concrete Pavement Curb and Walkways for final slope requirements

3.6 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe elevation to allow for bedding course. Hand excavate for bell of pipe.

1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.7 SUBGRADE INSPECTION

A. Notify Geotechnical Engineer when excavations have reached required subgrade.

B. If Geotechnical Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Civil Engineer, and replace with compacted backfill or fill as directed.

D. Reconstruct subgrades damaged by accumulated water or construction activities, as directed by Civil Engineer, without additional compensation.

3.8 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Clean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction or utility pipe as directed by Architect.

3.9 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.10 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, damp proofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud or standing water.

3.11 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud or standing water.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Division 3 Section "Cast-in-Place Concrete."

D. Provide 4-inch- thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase.

E. Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

F. Backfill voids with satisfactory soil while installing and removing shoring and bracing.

G. Place and compact final backfill of satisfactory soil to final subgrade elevation.

H. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.12 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.13 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 12 inch in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 98 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
3. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.

3.15 GENERAL GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
   1. Provide a smooth transition between adjacent existing grades and new grades.
   2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
   1. Lawn or Unpaved Areas: Plus or minus **1 inch**.
   2. Walks: Plus or minus **1/2 inch**.
   3. Pavements: Plus or minus **1/2 inch**.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.16 GRADING – FOOTBALL AND SOCCER FIELD

A. General: Uniformly grade field areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
   1. Provide a smooth transition between adjacent existing grades and new grades.
   2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Equipment: Specialized grading equipment shall be utilized to minimize compaction of prepared subgrade and topsoil. The grader shall be equipped with dual laser pickup, dual laser grade range mode, and the laser pickup shall operate the blade elevation controls automatically once they are locked on the laser beam. Each of the two laser pickups will operate only one end of the grader blade respectively. The laser source shall be capable of accuracy to three places of a percent (i.e., 1.234% of grade) and shall be capable of operating either the positive or negative angle of configuration without physically moving the laser source head.

C. Operator Qualifications: Laser Grader operator shall supply evidence of similar work having been performed on at least 5 other sites maintaining the degree of accuracy outlined in the grading specifications for field laser grading.

D. Site Grading: Slope field grades to direct water away from crown of field and to prevent ponding. Finish grades to required elevations within the following tolerances:
   1. Football / Soccer Field: Plus or minus **1/8" from specified elevation and no deviations greater 1/8" inch in 10'-0"**.
   2. Football / Soccer Outfield: Plus or minus **1/4 inch in 10'-0" from specified elevation and no infield deviations greater 1/4" inch in 10'-0"**.

E. Synthetic Track Boundary: Finish formwork around all areas to receive synthetic track surfacing. Top of the formwork shall be set at finish grade. Synthetic surface shall be installed and compacted before removal of formwork.

F. Top dressing: Top dress all sodded field areas with sand utilizing laser controlled top dressing equipment. Fields shall be top dressed prior to transferring the project to the owner.

3.17 SUBBASE AND BASE COURSES

A. Place subbase and base course on subgrades free of mud or standing water.

B. On prepared subgrade, place subbase and base course under pavements and walks as follows:
   1. Place base course material over subbase course under hot-mix asphalt pavement.
   2. Shape subbase and base course to required crown elevations and cross-slope grades.
   3. Place subbase and base course 6 inches or less in compacted thickness in a single layer.
   4. Place subbase and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
   5. Compact subbase and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 98 percent of maximum dry unit weight according to ASTM D 698.

C. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 98 percent of maximum dry unit weight according to ASTM D 698.

3.18 BERMS

A. Construct perimeter berms as per Civil Engineering Drawings, if shown. Berm slopes shall not exceed 6:1 gradient in from the crown to the toe.

B. Finish grades for all berms shall be certified by a registered surveyor at intervals no less than 100 feet o.c. shown on the final as-built survey.

3.19 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

   1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION 02300

SECTION 02361 - TERMITE CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Soil treatment with termiticide.
2. Wood treatment with borate.

1.3 PERFORMANCE REQUIREMENTS

A. Service Life of Soil Treatment: Soil treatment by use of a termiticide that is effective for not less than five years against infestation of subterranean termites.

1.4 SUBMITTALS

A. Product Data: For termiticide, borate.

1. Include the EPA-Registered Label for termiticide and borate products.

B. Product Certificates: For termite control products, signed by product manufacturer.

C. Qualification Data: For Installer of termite control products.

D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's record information, including the following:

1. Date and time of application.
2. Moisture content of soil before application.
3. Brand name and manufacturer of termiticide.
4. Quantity of undiluted termiticide used.
5. Dilutions, methods, volumes, and rates of application used.
6. Areas of application.
7. Water source for application.

E. Wood Treatment Application Report: After application of borate is completed, submit report for Owner's record information, including the following:

1. Date and time of application.
2. Brand name and manufacturer of borate.
3. Quantity of undiluted borate used.
4. Dilutions, methods, volumes, and rates of application used.

5. Areas of application.

F. Warranty: Special warranty specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located.

B. Regulatory Requirements: Formulate and apply termiticides according to the EPA-Registered Label.

C. Source Limitations: Obtain termite control products through one source.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with the requirements of the EPA-Registered Label and requirements of authorities having jurisdiction.

1.7 COORDINATION

A. Coordinate soil treatment applications with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs before construction.

B. Apply borate treatment after framing, sheathing, and exterior weather protection is completed but before electrical and mechanical systems are installed.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

1. Warranty Period: Five years from date of Substantial Completion.
2. Warranty shall include initial treatment, full coverage, and retreatment for five years for all native and non-native termites, including Formosan subterranean termites and Asian subterranean termites.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Termiticides:
   a. BASF; Termidor.
2. Borates:
   a. U.S. Borax Inc.; Tim-Bor.

2.2 SOIL TREATMENT

A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to product's EPA-Registered Label.

2.3 WOOD TREATMENT

A. Borate: Provide an EPA-registered borate complying with requirements of authorities having jurisdiction, in an aqueous solution for spray application and a gel solution for pressure injection, formulated to prevent termite infestation in wood. Provide quantity required for application at the label volume and rate for the maximum diffusible borate concentration allowed for each specific use, according to product's EPA-Registered Label.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of soil, interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control.

1. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparation before beginning application of termite control treatment. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.

1. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.4 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute treatment evenly.

1. Slabs-on-Grade and Basement Slabs: Underground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Adjacent soil including soil along the entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating the slab, and around interior column footers, piers, and chimney bases; also along the entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
3. Masonry: Treat voids.
4. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

D. Post warning signs in areas of application.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

3.5 APPLYING BORATE TREATMENT

A. Application: Mix wood treatment borate solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of borate, according to manufacturer's EPA-Registered Label, so that wood framing, sheathing, siding, and structural members subject to infestation receive treatment.

1. Framing and Sheathing: Apply borate solution by spray to bare wood for complete coverage.
2. Wood Members Thicker Than 4 Inches: Inject borate gel solution under pressure into holes of size and spacing required by manufacturer for treatment.
3. Exterior Uncoated Wood Trim and Siding: Apply borate solution to bare wood siding. After 48 hours, apply a seal coat of paint as specified in Division 9 painting Sections.

END OF SECTION 02361

SECTION 02444 - CHAIN LINK FENCE AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Galvanized chain link fabric with galvanized steel framework and accessories.
   2. Galvanized chain link swing gates

B. Related Sections include but are not necessarily limited to:
   4. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
   5. Division 1 - General Requirements.

1.2 QUALITY ASSURANCE

A. American Society for Testing and Materials (ASTM):
   1. ASTM A36 Standard Specification for Carbon Structural Steel
   2. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-dip Galvanized Coatings
   3. ASTM F552 Standard Terminology Relating to Chain Link Fencing
   4. ASTM F567 Standard Practice for Installation of Chain Link Fence
   5. ASTM F626 Standard Specification for Fence Fittings
   6. ASTM F900 Standard Specification for Industrial and Commercial Swing Gates
   7. ASTM F1083 Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
   8. ASTM F1184 Standard Specification for Industrial and Commercial Horizontal Slide Gates
   9. WLG2445 Chain Link Fence Manufacturers Institute, Chain Link Fence Wind Load Guide for the Selection of Line Posts and Line Post Spacing
   10. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
   11. UL Standard: Provide gate operators that comply with UL 325.
   12. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.
   13. Emergency Access Requirements: Comply with requirements of authorities having jurisdiction for automatic gate operators on gates that must provide emergency access.

B. Chain Link Fence Manufacturer's Institute (CLFMI):
   1. CMFMI PM - Product Manual.

C. Qualifications:
   1. Manufacturer: Company having manufacturing facilities in the United States with 5 years experience specializing in manufacturing of chain link fence products.
   2. Manufacturer: A company specializing in the manufacture of hydraulic gate operators of the type specified, with a minimum of ten years' experience.
   3. Fence contractor: Contractor having 5 years' experience installing similar projects in accordance with ASTM F567.
   4. Tolerances: ASTM current specification and tolerances apply and supersede any conflicting tolerance.
   5. Single source: To ensure system integrity obtains the chain link system, framework, fabric, fittings, gates and accessories from a single source.
   6. Installer bonded and licensed in the Project state.
   7. Utilize only AWS certified welders.

1.3 DEFINITIONS

A. See ASTM F552.

B. NPS: Nominal pipe size, in inches.

C. Installer or Applicator:
   1. Installer or applicator is the person actually installing or applying the product in the field at the Project site.
   2. Installer and applicator are synonymous.

1.4 SUBMITTALS

A. Product Data: Submit product data for fabric, posts, accessories, fittings, and hardware.

B. Shop Drawings: For gates. Include plans, elevations, sections, details, and attachments to other work.
   1. Product Data: Submit product data for fabric, posts, accessories, fittings, and hardware.
   2. Shop Drawings: Include plan layout, grid, spacing of components, accessories, fittings, hardware, anchorage's, and schedule of components.
   3. Signed and Sealed Engineering Drawings and Calculations - Contractor shall provide engineered, signed and sealed shop drawings by a Florida Registered Engineer to comply with ASCE 7-22 and Florida Building Code, Latest Edition. Size and spacing of posts, rails, gates and footings shall comply with engineering supplied by contractor's engineer, but not less than sizes and spacing specified in the construction documents.
   4. Submit drawings showing connections to adjacent construction, range of travel, and all electrical and mechanical connections to the operator. Drawings shall also show the size and location of the concrete mounting pad. Underground electrical runs shall be shown on shop drawings.

C. Installation Instructions: Submit two copies of the manufacturer's installation instructions for this specific project.

D. Samples: For each fence material and for each color specified.
   1. Provide Samples 12 inches in length for linear materials.

1.5 CODES AND REGULATORY REQUIREMENTS

A. Before submitting a proposal, the Contractor shall become familiar with the rules of the governing boards having jurisdiction and shall notify the Owners Representative before submitting a proposal, if in the Contractors opinion, any work or material specified is contrary to such rules. Otherwise, the Contractor is responsible for the approval of all work or material at no extra cost to the Owner, and in case the use of any material specified is not permitted, a substitute shall be approved by the Owners Representative and shall be provided at no extra cost.

B. Work to conform to the latest editions of the following (when applicable):
   1. Florida Building Code 2023, Broward County Edition (F.B.C.)
   2. All other applicable city, state and national codes
   3. American Society for Testing and Materials (A.S.T.M.)
   4. Occupational Safety and Health Administration (O.S.H.A.)
   5. Wind Loads – ASCE 7-22 – 170 mph wind speed, Exposure C, Category II

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site, store, and protect products under provisions of Section 01600.

1.7 WARRANTY

A. Provide a five (5) year comprehensive warranty against all defects in materials or workmanship. Defective materials shall be replaced with comparable materials furnished by the manufacturer, at no cost to the owner. Freight, labor and other incidental costs must be covered under the factory warranty.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
   1. Fence systems:
      a. Ameristar Fence and Gate Systems, Tulsa, OK (888) 333-3422.
      b. Allied Tube & Conduit, Harvey, IL (800) 882-5543.
      c. Anchor Fence Division, Master-Halco, Incorporated, Baltimore, MD (800) 229-5615.
      d. Merchant's Metals, Houston, TX (800) 254-0080.
      e. Or approved equal.

2.2 MATERIALS

A. Steel Framing:
   1. Steel pipe Type II: Cold formed electric resistance welded steel pipe complying with ASTM F1043 Group IC having minimum steel yield strength of 50,000 psi (344 MPa). External protective coating F1043 Type B, 0.9 oz/ft² (270 g/m²) minimum hot-dip zinc coating plus a chromate conversion and a clear polymer coating. Internal coating F1043 Type D, 81% nominal zinc pigmented coating minimum 3 mils (0.0076 mm) thick or Type B, minimum 0.9 oz/ft² (275 g/m²) zinc.
   2. Color of chain link framework – Black.
   3. Height: 6'-0" or 4'-0"

B. Chain Link Fabric:
   1. Steel woven wire securely welded or twisted, conforming to requirements for Class II of ASTM A584 or A116, Class 2 coating.
   2. Wire gage: 9 (0.148-inch diameter).
   3. Mesh size: 2 IN.
   4. Selvage treatment:
      a. Top: Knuckled.
      b. Bottom: Knuckled.
   5. Zinc Coating: ASTM A116.
   6. Color of chain link fabric – Black.

2.3 FENCE COMPONENTS

A. End, Corner, and Pull Posts: Minimum sizes and thickness as follows:
   1. 6 Foot to12 Foot Fabric Height:
      a. 4 inch outside diameter pipe, 0.203" wall thickness.

b. 16” X 42” footing

B. Line (Intermediate) Posts: Minimum sizes and weights as follows:
1. 6 Foot to 12 Foot Fabric Height:
a. 3 1/2 inch outside diameter pipe, 0.203” wall thickness.
b. 12” X 36” footing

C. Top Rail: Manufacturer's longest lengths.
1. Typical: 1 5/8 inch outside diameter pipe, 0.110”
2. Couplings: Expansion type, approximately 6 inches long.
3. Attaching Devices: Means of attaching bottom rail securely to each gate, corner, pull, and end post.

D. Fence Fittings (Post and Line Caps, Rail and Brace Ends, Sleeves-Top Rail, Tie Wires and Clips, Tension and Brace Bands, Tension Bars, Truss Rods):
1. ASTM F626.

E. Swing Gate:
1. ASTM F900.
2. Materials as specified for fence framework and fabric.
3. Hardware:
a. Galvanized per ASTM A153.
b. Hinges to permit 180-degree in and out gate opening.
c. Provide mounting brackets and plates for magnetic locks, access control card reader, request to and exit button.
d. All wiring shall be concealed within the fence posts.

2.4 ACCESSORIES

F. All fittings to be hot dipped galvanized. Moveable parts, nuts and bolts to be field coated with liquid zinc touch up after installation.

G. Post caps: ASTM F626 galvanized pressed steel, malleable iron, or aluminum alloy weather tight closure cap for tubular posts. Provide one cap for each post. “C” shaped line post without top rail do not require post caps. When top rail is specified provide line post loop tops to secure top rail.

H. Rail ends: Galvanized pressed steel per ASTM F626, for connection of rails to post using a brace band.

I. Top rail sleeves: 7” (178 mm) galvanized steel sleeve per ASTM F626.

J. Wire ties: 9 gauge (0.148”) (3.76 mm) galvanized steel wire for attachment of fabric to line posts and rails. Pre-formed hog ring ties to be 9 gauge (0.148”) (3.76 mm) galvanized steel for attachment of fabric to tension wire.

K. Brace and tension (stretcher bar) bands: ASTM F626 galvanized 12 gauge (0.105”) (2.67mm) pressed steel by 3/4” (19mm) formed to a minimum 300-degree profile curvature for post attachment. Secure bands using minimum 5/16” (7.94 mm) galvanized carriage bolt and nut.

L. Tension (stretcher) galvanized steel bars: One-piece lengths equal to 2 inches (50 mm) less than full height of fabric with a minimum cross-section of 3/16” x 3/4” (4.76 mm x 19 mm) per ASTM F626. Provide tension (stretcher) bars where chain link fabric is secured to the terminal post.

M. Truss rod assembly: Galvanized steel minimum 5/16” (7.9mm) diameter truss rod with pressed steel tightener, in accordance with ASTM F626.

N. Carriage bolts and nuts: Galvanized of commercial quality.

O. Tension wire: Zinc coated steel tension wire per ASTM F 1664 9 gauge steel core wire, 0.148 (3.76 mm).

2.5 CHAIN LINK SWING GATES

A. Swing gates double leaf and single leaf. Fabricate chain link swing gates in accordance with ASTM F900. Gate frame to be of welded construction. Weld areas to be protected with zinc-rich paint per ASTM A780. The gate frame members are to be spaced no greater than 8'-0" (2.44 m) apart horizontally or vertically. Exterior members to be 3.5" min. OD pipe, interior members when required shall be 1.660" (42.2 mm) min. OD pipe. Chain link fabric to match specification of fence system. Fabric to be stretched tightly and secured to vertical outer frame members using tension bar and tension bands spaced 12" (304.8 mm) on center and tied to the horizontal and interior members 12" (304.8 mm) on center using 9 gauge galvanized steel ties per section 2.04.

B. Size: Opening width shown on plans x height matching the fence.

C. Hinges, hot dip galvanized pressed steel or malleable iron, structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° (3.14 rad)

D. Closer: Provide automatic door closer.

E. Latch, hinges, moveable parts may be field coated with liquid zinc.

F. Gate posts: Hot dipped Galvanized.

G. Contractor shall provide knox lock for fire department access for each gate.

PART 3 - EXECUTION

3.1 CHAIN LINK FRAMEWORK INSTALLATION

A. Install chain link fence system in accordance with ASTM F567 and manufacturer's instructions.

B. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.

C. Do not start fence installation before final grading is complete and finish elevations are established.

D. Place fence with bottom edge of fabric at maximum clearance above grade, as shown on Drawings.

E. Correct minor irregularities in earth to maintain maximum clearance.

F. Provide post braces for each gate, corner, pull and terminal post and first adjacent line post.

G. Space line posts uniformly 8' on center, or less as determined by wind load post selection calculations.

H. Concrete set posts: Dig holes in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral

loads. Set post bottom 36” (914 mm) below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post and slope to direct water away from posts.

I. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.

J. Bracing: Install horizontal brace and truss assembly at mid-height or above for fences 6’ (1829 mm) and over at each fabric connection to the terminal post. The diagonal truss rod is installed at the point where the brace rail is attached to the terminal post and diagonally down to the bottom of the adjacent line post. Place the truss rod in tension by adjusting the turnbuckle.
1. Install bracing assemblies at all end and gate posts, as well as side, corner, and pull posts.
2. Locate compression members at mid-height of fabric.
3. Extend diagonal tension members from compression members to bases of posts.
4. Install so that posts are plumb when under correct tension.

K. Install tension bars full height of fabric.

L. Tension wire: Install tension wires so that it will be located 4” (101.6 m) up from bottom the fabric. If top rail is not specified, install the tension wire so that it will be located 4” (101.6 mm) down from the top of the fabric. Stretch and Install tension wire before installing the chain link fabric and attach it to each post using wire ties.

M. Top rail: Install in lengths of 20’. Connect ends with sleeves forming a rigid connection, allow for expansion and contraction.

N. Touch up any nicks or scratches of the galvanized coating. Installation in accordance with:
1. Manufacturer's instructions.
2. Lines and grades shown on Drawings.
3. In accordance with ASTM F567.
4. In accordance with engineered shop draws prepared by delegated structural engineer.

O. Pull fabric taut and secure to posts and rails.
1. Secure so that fabric remains in tension after pulling force is released.
2. Secure to posts at not over 15 IN OC, and to rails at not over 24 IN OC, and to tension wire at not over 24 IN OC.
3. Use U-shaped wire conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least two (2) full turns.
4. Bend ends of wire to minimize hazards to persons or clothing.

P. Install post top at each post.

Q. Install barbed wire.

3.2 CHAIN LINK GATE INSTALLATION:

A. Swing Gates: Installation of swing gates and gate posts shall be per ASTM F567. Direction of swing shall be as shown on drawings. Gates shall be hung plumb in the closed position with minimal space from grade to bottom of gate leaf. Double gate drop bar receiver shall be set in a minimum concrete footing 6” (152 mm) diameter by 24” (610 mm) deep. Gate leaf holdbacks shall be installed on all double gates and all gate leafs greater than 5’ (1524 mm) in width.
1. All Welded Construction.
2. Provide rigid, weatherproof joints.
3. Assure right, non-sagging, non-twisting gate.
4. Coat welds with rust preventive zinc coating, color to match pipe.

B. Install post and plate to mount mag lock, request to exit button, and access control card reader for each gate. Contractor shall install all conduit and junction boxes to all the Owner to install the low voltage wiring and the devices.

3.3 SITE CLEAN UP

A. Clean up area adjacent to fence line from debris and unused material created by fence installation.

END OF SECTION 02444

SECTION 02500 – ASPHALT PAVING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work of this section includes, but is not limited to:
   1. Temporary Paving
   2. Permanent Paving
   3. Pavement Marking and Striping

B. Related Work:
   1. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, and Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Division 2 Section "Earthwork" for aggregate sub-base and base courses.
   3. Division 2 Section "Concrete Pavement Curb and Walkways"

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplements.

B. Certification
   1. The Sub-Contractor responsible for paving shall be an established company with a minimum of 10 years of experience in paving and shall be certified by the Florida Department of Transportation for performing pavement operations on FDOT projects.

C. Rock and Final As-builts
   1. The Contractor responsible for paving shall submit as-builts for the sub-base and base course material prior to paving. The as-builts shall contain elevations showing the relationship of the engineer's design elevation to that of the constructed base courses. As-builts shall be prepared by a Professional Land Surveyor and shall be signed and sealed. The number of copies shall be determined. The accuracy of the prepared elevations shall be within 0.5 inch of the design grades. The Engineer has final approval of said as-builts and may required additional work be done to the base courses in order to more closely conform to the design plans. As-builts shall be submitted 10 days prior to the scheduled paving operation.

1.3 SUBMITTALS

A. Certificates:
   1. Submit certification from bituminous and aggregate suppliers attesting that materials conform to the Controlling Agency Specifications.
   2. Copy of sub-contractor's FDOT certification

B. Product Data:
   1. For each product specified, include technical data and tested physical and performance properties.

C. Material Certificates:
   1. Certificates signed by manufacturer certifying that each material complies with requirements.

1.4 JOB CONDITIONS

A. Control of Traffic:
   1. Take measures to control traffic during repaving operations. Do not allow traffic on repaved areas until authorized by the Engineer.

2. Employ traffic control measures necessary to maintain and to protect traffic, to protect the work in progress, to protect adjacent property from excess dust resulting from the construction area and to maintain traffic through, around, or adjacent to the construction area. The work shall include the furnishing and maintaining of all traffic control devices, flaggers, construction of temporary structures when required, labor, equipment and materials to keep the traveled road smooth and the furnishing and application of dust palliatives.

B. Restore existing paving outside the limits of the work that is damaged by the contractor's operations to its original condition at the expense of the Contractor.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.
B. Store pavement-marking materials in a clean, dry, protected location and within temperature range required by manufacturer. Protect stored materials from direct sunlight.

PART 2 - PRODUCTS

2.1 FLEXIBLE PAVEMENT MATERIALS, AGGREGATES, AND PAVEMENT MARKING PAINT

A. Bituminous Treatments, surface courses and concrete pavements shall conform to Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition. Thickness shall be a minimum of two (2) inches applied in two lifts. First lift to be 3/4" Type S1. Second lift to be 3/4" Type S1, unless otherwise noted on plans.
B. Refer to Florida Department of Transportation Standard Specifications, Latest Edition. All bituminous materials, aggregates, and pavement marking paint used in paving, resurfacing, and pavement marking and striping are designated in these specifications and shall conform to the applicable portions of the State specifications.

2.2 BITUMINOUS OVERLAY

A. Where indicated on the drawings, standard details, or directed by the engineer, place a bituminous overlay.
B. Thickness shall be a minimum of One (1) inch applied in one lift of Type S1 asphalt, unless otherwise noted on plans.

PART 3 - EXECUTION

3.1 TEMPORARY PAVING

A. Place temporary paving immediately upon completion of trench back-filling. Unpaved trenches shall not remain unpaved longer than one working day after back-filling.

B. Shape and compact subgrade material, then place and compact crushed stone base course to the required thickness.

C. Place temporary paving material. Compact to required minimum thickness with trench roller having minimum 300 pounds per inch-width of compaction roll.

D. Continuously maintain temporary paving to the satisfaction of the Engineer and the state and local road departments.

E. Remove and dispose of temporary pavement prior to the placement of permanent pavement.

3.2 PERMANENT PAVING

A. Excavate to the lines and grades on plans to receive permanent pavement, including the disposal of surplus excavated material. Remove all muck and organic materials.

B. Remove temporary paving material. Construct permanent base and surface courses to the required compacted thickness shown on the plans in accordance with Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

C. Trim existing paving to remove damaged areas. Cut straight joint lines and right angle offsets.

D. Maintain permanent paving to the satisfaction of the Engineer and the local and state road departments throughout the contract maintenance period.

E. Utilize standard rolling procedure, comply with minimum equipment standards and coverage requirements as outlined in Florida Department of Transportation Standard Specifications for Road and Bridge Construction Section 330.

3.3 BITUMINOUS OVERLAY

A. Where indicated on the drawings, standard details, or directed by the engineer, place a bituminous overlay.
B. Construct in accordance with Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

3.4 CONCRETE CURB AND SIDEWALK REPAIRS

A. Replace curbs and sidewalks damaged by construction to match existing.

B. Reconstruct curbs and sidewalks to the first expansion joint on either side of the damaged portion. Install preformed expansion joint material.

C. Sidewalks shall be new construction for the full width of the existing slabs.

D. Sidewalks and curbs materials and construction methods shall be in accordance with specification section 02526 and Sections 522 and 520 of the referenced Florida Department of Transportation Specifications.

3.5 PAVEMENT MARKING AND STRIPING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Engineer.

B. Allow paving to cure as directed by the Engineer before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

E. Contractor shall review plans to distinguish which striping shall be latex paint and which shall be thermoplastic.

END OF SECTION

SECTION 02511 – MAINTENANCE OF TRAFFIC

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work of this section includes, but is not limited to:
   1. Maintenance of Traffic in public right of ways and on construction site.

B. Related Work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, and Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Division 2 Section “Earthwork” for aggregate sub-base and base courses.
   3. Division 2 Section “Concrete Pavement Curb and Walkways”
   4. Division 2 Section “Asphalt Paving”

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplements.

B. Certification:
   1. The Sub-Contractor responsible for maintenance of traffic shall be an established company with a minimum of 10 years of experience in paving and shall be certified by the Florida Department of Transportation for performing operations on FDOT projects.

1.3 SUBMITTALS

A. Certificates:
   1. Copy of sub-contractor’s FDOT certification

1.4 JOB CONDITIONS

A. Control of Traffic:
   1. Take measures to control traffic during repaving operations. Do not allow traffic on repaved areas until authorized by the Engineer.
   2. Employ traffic control measures necessary to maintain and to protect traffic, to protect the work in progress, to protect adjacent property from excess dust resulting from the construction area and to maintain traffic through, around, or adjacent to the construction area. The work shall include the furnishing and maintaining of all traffic control devices, flaggers, construction of temporary structures when required, labor, equipment and materials to keep the traveled road smooth and the furnishing and application of dust palliatives.

B. The Florida Department of Transportation “Standard Specifications for Road and Bridge Construction” dated 2019 together with “Supplemental Specifications to the 2019 Standard Specifications for Road and Bridge Construction” dated 2019 shall be used where applicable for the

various work, and that where such wording therein refers to the State of Florida and its Department of Transportation and personnel, such wording shall be replaced with the wording which would provide proper terminology; thereby making such "Standard Specifications for Road and Bridge construction" as the "Standard Specifications" for this project. If within a particular section, another section, article or paragraph is referred to, it shall be part of the standard specifications also. The Contractor/Construction Manager shall abide by all local and state laws, regulations and building codes which have jurisdiction in the area.

PART 2 - PRODUCTS

PART 3 – EXECUTION

3.1 MAINTENANCE OF TRAFFIC:

It shall be the sole responsibility of the Contractor/Construction Manager to install and maintain adequate traffic control devices, warning devices and barriers for the purpose of protecting the traveling public, his workmen and the work area in general. Such traffic control shall be maintained for the duration of the project period, including any temporary suspensions of the work. Maintenance of traffic shall be in the accordance with the section 102 of the "Standard Specifications" and the State of Florida, Manual of Traffic Control and Safe Practices for Street and Highway Construction, Maintenance and utility operations. Where required by the agency having jurisdiction over the ROW, a "Maintenance of Traffic" plan shall be approved by that agency and a copy forwarded to the Project Consultant prior to beginning the associated work. All requirements of the jurisdictional agency are to be included in the Contractor's/Construction Manager's GMP, and no extra payment will be made for Maintenance of Traffic.

END OF SECTION 02511

SECTION 02526 - CONCRETE PAVEMENT CURB AND WALKWAYS

PART 1 - GENERAL

1.1 THE REQUIREMENT

A. Concrete pavement, curbs and sidewalk shall be constructed to the lines and grades and dimensions required for a complete installation as shown on the Drawings and specified herein.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplements.
   2. American Society of Concrete Contractors - The Contractors Guide to Quality Concrete Construction, third edition
   3. American Concrete Institute - Field Reference Manual - ACI MNL-15(16) and Specifications for Structural Concrete ACI 301-20

B. Certification:
   1. The Sub-Contractor responsible for concrete curbs and sidewalks shall be an established company with a minimum of 10 years of experience in installation of concrete curbs and sidewalks and shall be certified by the Florida Department of Transportation for performing concrete operations on FDOT projects.

C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Build mockups for colored concrete sidewalks including accessories.
      a. Size: Minimum 100 sq. ft. of typical poured-in-place flooring and base condition for each color and pattern in locations directed by Owner and Architect.
   2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Preinstallation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to colored concrete sidewalk including, but not limited to, the following:
      a. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
      b. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
      c. Review special terrazzo designs and patterns.
      d. Review dust-control procedures.
      e. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions.

1.3 SUBMITTALS

A. Shop drawings for reinforcing, joint material and mix designs shall be submitted for review in accordance with the section entitled "Submittals".

B. Copy of sub-Contractor’s FDOT certification.

C. Colored Concrete sidewalk color samples – min 12” x 12”.

PART 2 - PRODUCTS

2.1 CONCRETE

A. Concrete shall be conforming to the section entitled "Cast-in-place Concrete", unless noted or specified otherwise.

2.2 REINFORCING AND WELDED WIRE FABRIC

A. Joint reinforcing and welded wire fabric shall conform to the section entitled "Concrete Reinforcement'.

2.3 JOINT SEALER

A. Joint filler material in back of the sealants shall be a closed cell polyethylene conforming to the requirements specified hereinafter.

1. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.

2. Joint Filler: Preformed Expansion Joint Filler or Slab Isolation Joint Filler with typical thickness 1/2, 3/4, or 1 inch and height equal to slab thickness with a removable top section for creation of a sealant void.
   a. Materials: Provide a semi-rigid, closed-cell polypropylene foam, preformed joint filler that fully complies with ASTM D8139. NOMAFLEX® by Nomaco, Inc.
   b. Manufacturers: Nomaco, Inc., 501 Innovative Way, Zebulon, NC 27597. Phone (877) 291-1157. Fax (919) 269-7936. Website: https://www.nomaco.com/product/nomaflex/

B. Traffic Rated Joints: (Subject to Vehicular or Pedestrian Traffic) Sealant at traffic joints shall be two-part Silicone-base sealant of self-leveling consistency, meeting the following standards:
   1. Products:
      a. Pecora Corporation; Pecora 322FC Fast Cure Traffic Rated Sealant.
      b. Or approved equal
   2. Weatherability - This sealant's 100% silicone composition is virtually unaffected by UV, Precipitation, ozone, and temperature extremes.
   3. Sealant shall remain flexible under extreme temperature swings (-49° to 300°F).
   4. Fast Curing - Fast cure profile allows quick job site turnaround. Early movement shall not affect sealant performance.
   5. Self-leveling - No tooling required when applied through typical static mixing equipment.
   6. Auto-bonding - Will bond to itself tenaciously without the need for priming.
   7. Minimum Performance as listed below:

ASTM D 412	EB, %	1400
ASTM D 412	TB	50
ASTM C 1135	25M, psi	5
	50M, psi	12
	150M, psi	15
ASTM C 1135	EB, %	>600
ASTM C 719	% Movement	+100/-50
ASTM D 2240	Shore 00	55

PART 3 - EXECUTION

3.1 SUBGRADE CONDITION

A. The finished subgrade shall be maintained in a smooth, compact condition and any areas which are disturbed prior to placing of the concrete shall be restored at the Contractor's expense. The subgrade shall be moist at the time the concrete is placed. Water shall be uniformly applied ahead of the paving operations as directed by the Engineer. If the Contractor does not maintain the subgrade in the required moist condition, a vapor barrier sheet will be required between the subgrade and the concrete.

B. The sub-grade shall be accurately trimmed to the required elevation with a 1/4-inch tolerance. High areas shall be trimmed to proper elevation. Low areas may be filled with suitable material and compacted to the specified density or filled with concrete integrally with the placing of the pavement.

3.2 SLOPES

A. Sidewalks shall not exceed 1:21 slope in the direction of travel and 1:51 cross slope. If multiple directions of travel exist, the maximum slope in all directions shall not exceed 1:51.

B. Sidewalk and ramp slopes shall be conformance with U.S. Department of Justice A.D.A. standards for accessible design, A.D.A. Accessibility guidelines, Florida Building Code-Accessibility and ADAAG.

C. Notification: Contractor shall examine the construction documents and site conditions thoroughly and notify the Architect and Civil Engineer if the site conditions do not allow construction of sidewalks in conformance with these specifications and in conformance with U.S. Department of Justice A.D.A. standards for accessible design, A.D.A. Accessibility guidelines, Florida Accessibility Code, 2023. Do not proceed with construction prior to receiving clarification. Proceeding without stated notification will result in the Contractor being fully responsible for removal and replacement of all non-conforming construction at his cost with no additional time or compensation consideration.

3.3 SETTING FORMS

A. The forms shall be accurately set to line and grade and such that they rest firmly throughout their entire length upon the compacted subgrade surface. Forms shall be joined neatly and tightly and braces to test the pressure of the concrete and the finishing operations. The alignment and grade of all forms shall be approved before and immediately prior to the placing of concrete.

B. Form Materials: Construct forms for this work of either wood or metal. Provide forms that are straight, free from warp or bends, and of sufficient strength, when staked, to resist the pressure of the concrete without deviation from line and grade. For all items constructed on a radius, use flexible forms that provide a continuous curve at specified radii. Forms shall be continuous for lengths not less than 12 feet, unless a change in direction is required. Do not use scraps and salvage material for formwork.

C. Depth of Forms: Ensure that forms have a depth equal to the plan dimensions for the depth of concrete being deposited against them.

D. Chemical release agents shall be applied to the inside surface of all forms. Apply release agents to concrete surface if existing concrete surface is to be used as a form.

3.4 MIXING CONCRETE

A. Concrete shall be mixed in accordance with the section entitled "Cast-in-place Concrete".

3.5 PLACING CONCRETE

A. The concrete shall be distributed on the subgrade to such depth, that, when it is consolidated and finished, the

slab thickness required by the Drawings will be obtained at all points and the surface will at no point be below the grade specified for the finished surface, after application of the allowable tolerance. The concrete shall be deposited on the subgrade in a manner which will require as little rehandling as possible.

B. Fabric reinforcement shall be placed at mid-slab depth, and the fabric shall be maintained at this location during the placing and finishing operations.

C. Concrete shall be thoroughly consolidated against and along the faces of all forms, by means of hand-operated, spud-type vibrators. Vibrators shall not be permitted to come in contact with the subgrade or a side form. Vibration at any one location shall not continue so long as to produce puddling or the accumulation of excessive grout on the surface. In no case shall the vibrator be operated longer than 15 seconds in any one location.

3.6 STRIKING-OFF, CONSOLIDATING AND FINISHING CONCRETE

A. Immediately after the placing, the concrete shall be struck off, consolidated and finished, to produce a finished pavement conforming to the cross section, width and surface sequence of operations shall be as follows: strike-off; vibratory consolidation; screeding; floating; removal of laitance; straight edging; and final surface finish.

B. Screeding: Strike-off the concrete by means of a wood or metal screed, used perpendicular to the forms, to obtain the required grade and remove surplus water and laitance.

3.7 STRAIGHTEDGING AND SURFACE CORRECTIONS

A. After floating has been completed and the excess water removed, but while the concrete is still in a plastic state, the surface of the concrete shall be tested for trueness with an accurate 10-foot straightedge. The straightedge shall be furnished by the Contractor. The straightedge shall be held in successive positions parallel to the road center line, in contact with the surface, and the whole area tested from one side of the slab to the other, as necessary. Any depression shall be immediately filled with freshly mixed concrete and struck-off; consolidated and refinished. High areas shall be cut down and refinished. Straightedge testing and surface correction shall continue until the entire surface appears to conform to the required grade and cross section.

B. Ensure that the surface variations are not more than 1/4 inch under a 10-foot straightedge, or more than 1/8 inch on a 5 foot transverse section. Finish the edge of the sidewalk with an edging tool having a radius of 1/2 inch.

3.8 FINAL FINISH

A. As soon as the water sheen has disappeared from the surface of the pavement and just before the concrete becomes nonplastic, a light broom finish or other finish as called for in the plans, shall be given to the surface.

B. Apply fine finish by an approved hand method to curb cut ramps in lieu of broom finish.

3.9 EDGING

A. After the final finish has been applied, but before the concrete has become nonplastic, the edges of the pavement along each side of the strip being placed, on each side of construction joints and along any structure extending into the pavement, shall be carefully rounded to a 1/2-inch radius except as otherwise indicated. A well-defined and continuous radius shall be produced and a smoother, dense mortar finish obtained. All concrete shall be completely removed from the top of the joint filler.

B. All joints shall be checked with a straightedge before the concrete has become nonplastic and, if one side of the joint is higher then the other or the entire joint is higher or lower then the adjacent slabs, corrections shall be made as necessary.

3.10 JOINTS

A. Construction Joints
   1. Construction joints shall be located as shown on the Drawings.

B. Expansion Joints Around Structures and at 50' linear feet O.C.
   1. Expansion joints shall be formed by placing premolded expansion joint material about all structures and features projecting through, into or against the concrete. Unless otherwise indicated, such joints shall be 1/2 inch in width.
   2. All expansion joints shall receive two part Silicone base sealant.

C. Transverse Expansion Joints
   1. Open type transverse expansion joints shall be provided at all sidewalk returns and at 50 feet intervals and wherever indicated on the Drawings. Open type joints shall be formed by staking a 1/4 inch thick metal bulkhead in place and placing concrete on both sides. After the concrete has set sufficiently to preserve the width and shape of the joint, the bulkhead shall be removed. After the sidewalk has been finished over the joint, the slot shall be opened and edged with a tool having a 1/4 inch radius. Transverse expansion joints shall be cleaned and filled with joint filler strips 1/4 inch thick conforming to the requirements of AASHTO M-1 53.
   2. All transverse expansion joints shall receive two part Silicone base sealant.

D. Scored Joints
   1. Scored joints shall be either formed or sawed at 5- foot intervals and shall extend to a depth of at least one fourth of the sidewalk slab thickness. Scored joints for slabs that are not sidewalks shall be as indicated in the plans. Absolute maximum distance between scored joints on slabs to be 12-feet. Joints shall be placed within 6 hours of concrete placement.

3.11 CURING

A. After the finishing operations have been completed and as soon as the concrete has hardened sufficiently that marring of the surface will not occur, the entire surface and the edges of the newly placed concrete shall be covered and cured with membrane curing compound.

B. Curing compound shall be uniformly applied to the surfaces to be cured, in a single coat, continuous film, at the rate of one gallon to not more than 200-square feet, by a mechanical sprayer.

C. Curing compound shall not be applied during periods of rainfall. Curing compound shall not be applied to the inside faces of joints to be sealed. Should the film become damaged form any cause within the required curing period, the damaged portions shall be repaired immediately with additional compound. Upon removal of side forms the sides of the slabs exposes shall immediately be coated to provide a curing treatment equal to that provided for the surface.

3.12 CURB AND SIDEWALK CONSTRUCTION

A. The concrete curbs and sidewalks shall be constructed on a prepared smooth subgrade of uniform density. Large boulders and other obstructions shall be removed to a minimum depth of 6 inches below the finished subgrade elevation and the space shall be backfilled with sand, base course material or other suitable material which shall be thoroughly compacted by rolling or tamping. The Contractor shall furnish a template and shall thoroughly check the subgrade prior to depositing concrete.

B. Concrete for curbs, and sidewalks shall be formed, mixed, placed and finished in conformance with the requirements of other Sections of this Division 3, except as modified herein. Concrete shall be cured with a clear membrane curing compound which shall be applied at a uniform rate of one gallon per 200 square feet in accordance with the requirements specified herein before under pavement construction.

3.13 CURBS

A. Curbs shall be constructed in uniform sections ten feet in length except where shorter sections are necessary for closures or arcs. The sections shall be separated by sheet metal templates set perpendicular to the face and tip of the curve and not less than 2 inches longer than the depth of the curb. The templates shall be held firmly during the placing of the concrete and shall be allowed to remain in place until the concrete has set sufficiently to hold its shape, but shall be removed while the forms are still in place.

B. After the concrete has sufficiently set for a minimum of 12 hours, the Contractor shall remove the forms and backfill the spaces on each side. The earth shall be compacted in satisfactory manner with out damage to the concrete work. Minor defects shall be filled with a mortar composed of one part Portland cement and two parts fine aggregate.

C. All curbs and curb ramps shall be in accordance with the latest edition of Florida Department of Transportation Roadway and Traffic Design Standards.

3.14 DETECTABLE WARNING

A. At all places in the Right of Way, where a sidewalk or concrete ramp crosses or adjoins a vehicular drive, the Contractor shall provide a detectable warning. Extend full width of sidewalk / ramp and in the direction of travel 36" back from the curb. Detectable warnings shall be constructed by texturing a truncated dome pattern in conformance with U.S. Department of Justice A.D.A. standards for accessible design, A.D.A. Accessibility guidelines, Section 4.29.2. The detectable warning shall also comply with Florida Accessibility Code 2023 and ADAAG.

B. Detectable warnings shall be colored in contrast with the adjacent sidewalk / ramp (light on dark or dark on light).

3.15 FORM REMOVAL / REPAIR OF MINOR DEFECTS

A. Remove the forms within 24 hours after placing the concrete, and then fill minor defects with mortar composed of one part portland cement and two parts fine aggregate. Plastering on the face of the curb or sidewalks will not be allowed.

B. Remove and replace any rejected sidewalk, curb, curb and gutter, or valley gutter without additional compensation.

3.16 REPAIR OF MAJOR DEFECTS

A. Sidewalks, curbs, curb and gutter, or valley gutter not in full conformance with these specifications, the reference standards, or applicable codes shall be removed and replaced without additional compensation or time extension. Reasons for rejection may include, but not limited to, failing to meet construction quality standards, tolerances, or specified appearance and finish.

END OF SECTION 02526

SECTION 02760 - PAVEMENT MARKING AND POST SIGNS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All applicable provisions of the Contract Requirements and Division 1 – General Requirements shall govern the work under this section.

1.2 WORK INCLUDED

A. This Section includes the following:

1. Pavement marking.
2. Protection of painted markings.
3. Aluminum or steel sign panels and posts.
4. Exterior signage indicated on the drawings and specified in this section.

1.3 SUBMITTALS

A. Submit properly identified manufactures product data and technical data prior to starting work for review and acceptance of all components to be used.

B. Submit shop drawings for review, indicating construction details, sizes, elevations, installation requirements, gages, thickness of materials, color and other information necessary to show compliance with the requirements of this section.

C. Submit paint tests, as specified in Section 971 of FDOT Specifications and as applicable to hereinafter specified material.

1.4 QUALITY ASSURANCE

A All signage must comply with the latest edition of the Florida Building Code and all referenced standards included therein as well as all other applicable code ordinances.

B. Work shall be performed in accordance with the Contract Documents in a neat and accurate manner.

C. All equipment shall be of type and design that will readily obtain the required uniformity of application of the pavement markings both as to thickness of coating and as to alignment.

D. Applicable Publications: The following publications of the issue listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

1. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction. (Latest Edition)
2. Manual on Uniform Traffic Control Devices for Streets and Highways published by the U.S. Department of Transportation, Federal Highway Administration, (Latest Edition)

PART 2 – PRODUCTS

2.1 MATERIALS

A. Paint: In accord with requirements as specified in Section 971 of the FDOT Specifications.

1. Paint shall be factory mixed, quick drying and non-bleeding type.
2. Color shall be as per D.O.T. requirements.

3. Striping, arrows, lane markers and stop bars shall be provided with paint containing reflective additive.

B. Thermoplastic paint: In accord with the applicable Technical Specifications (Section 711) of the Florida Department of Transportation and Broward County Standards.

C. Reflectors: In accord with Broward County Minimum Standards.

D. Sign Panels:
1. Aluminum or galvanized steel in accordance with the applicable requirements of Section 700 "Highway Signing" of the FDOT Standard Specifications or Broward County Administrative Code “Minimum Standards”
2. Size, shape and color as indicated on the drawings or as directed by City.

E. Sign Support Posts:
1. Aluminum or Galvanized Steel in accordance with the applicable requirements of Section 700 "Highway Signing" of the FDOT Specifications or Standard Road Details and Specifications (DCPWD).
2. Size, shape and color of posts and mountings as indicated on drawings or as directed by City.

PART 3 – EXECUTION

3.1 INSPECTION

A. Do not proceed with the work in this section until conditions detrimental to the proper and timely completion of the work have been corrected in an acceptable manner.

3.2 SIGN PANELS AND SUPPORT INSTALLATION

A. Secure breakaway signpost assembly to concrete substrate and sign panel to aluminum posts according to FDOT and Broward County recommendations
1. Section 700 "Highway Signing" of FDOT Specifications
2. Manual on Uniform Traffic Control Devices
3. Broward County Administrative Code “Minimum Standards”

B. Approved shop drawings and as indicated on drawings

3.3 PAVEMENT MARKINGS

A. Sweep dust and loose material from the sealed surface.

B. Apply paint striping as indicated on the drawings, with suitable mechanical equipment to produce uniform straight edges.
1. Apply in not less than (2) two coats as per manufacturer's recommended rates of applications.

C. Protect pavement markings until completely dry in accordance with manufacturer’s recommendations.

D. Time of Application: Painting shall be done only during daylight hours and, as far as practical, shall be terminated in time to permit sufficient drying by sunset.

E. Weather Limitations: No paint shall be applied when any moisture is present on the surface to be painted or when the air temperature is below 40 degrees F. Painting shall not be done when winds are sufficient to cause spray dust.

F. Preparation of Surface to be Painted: The surface, which is to be painted shall be cleaned, by compressed air or other effective means, immediately before the start of painting and shall be clean

and dry when the paint is applied. Any vegetation obeginssoil shall be removed from the pavement before striping is begun.

G. Mixing Paint: The paint shall be thoroughly mixed before it is poured into the painting machine and no thinning of the paint in the machine will be allowed at any time. Before the start of each day's work the paint container, the connections and the spray nozzles on the machine shall be thoroughly cleaned with paint thinner or other suitable cleaner.

H. Paint Application: The traffic markings shall be of the specified dimensions with clean, true edges and without sharp breaks in the alignment. A uniform coating of paint shall be obtained, and the finished markings shall contain no light spots or paint skips. Any stripes that do not have a uniform, satisfactory appearance, both day and night, shall be corrected.

I. Rate of Paint Application: The minimum rate of application for paint shall be as follows:
   1. Six-inch solid parking stall stripes: 18.5 gallons per mile.
   2. Any other width stripe or marking: A direct proportion of the above.

J. Required Film Thickness: The minimum wet film thickness for all painted areas shall be 15 mils.

K. Alignment of Stripes: Where a stripe deviates from the correct alignment, as indicated by the string line, by more than one inch in any 20-foot length, it shall be obliterated and the stripe corrected hereinafter as specified in paragraph "Corrective Measures".

3.4 PROTECTION OF PAINTED MARKINGS

A. Protection of Stripes: All newly painted stripes, or other markings, shall be protected until the paint is sufficiently dry to permit vehicles to cross the marking without damage from the tires.

B. Repair of Damaged Areas: Any portions of the stripes damaged by passing traffic or from any other cause shall be repainted.

3.5 DIMENSION AND ALIGNMENT TOLERANCE

A. Dimensions: No marking shall be less than the specified width. No markings shall exceed the specified width by more than 1/2 inch. Alignment tolerances shall be as specified herein.

B. Correction Rates: Any corrections of variation in the width of the alignment of stripes shall not be made abruptly but the stripes shall be returned to the design width at the rate of at least 10 feet for each 1/2 inch of correction.

3.6 CORRECTIVE MEASURES:

A. All painted markings which fail to meet the specifications, including the permissible tolerances and the appearance requirements, or are marred or damaged shall be corrected.
   1. All drip and spattered paint shall be removed. When it is necessary to remove paint, it shall be done by means that will not damage the underlying surface of the pavement. When necessary to correct a deviation that exceeds the permissible tolerance in alignment, that portion of the stripe affected shall be removed and repainted in accordance with these specifications.

B. Corrective Devices: Misalignment, defective surfaces, etc., shall be corrected by chemical agents, or by any other type of mechanical device which will effectively remove the paint without damage to the pavement surface, or prevent the reapplication of markings.

END OF SECTION

SECTION 02826 - ORNAMENTAL METAL FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Decorative powder coated steel fences.
   2. Swing gates.
   3. Sliding gates.

B. Related Sections:

   1. Division 2 Section "Earthwork" for site excavation, fill, and backfill where decorative metal fences and gates are located.
   2. Division 3 Section "Cast-in-Place Concrete" for concrete bases for gate operators, drives, and controls, post concrete fill.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For gates. Include plans, elevations, sections, details, and attachments to other work.
   1. Product Data: Submit product data for fabric, posts, accessories, fittings, and hardware.
   2. Shop Drawings: Include plan layout, grid, spacing of components, accessories, fittings, hardware, anchorage's, and schedule of components.
   3. Signed and Sealed Engineering Drawings and Calculations - Contractor shall provide engineered, signed and sealed shop drawings by a Florida Registered Engineer to comply with ASCE 7-22 and Florida Building Code, Latest Edition. Size and spacing of posts, rails, gates and footings shall comply with engineering supplied by contractor’s engineer, but not less than sizes and spacing specified in the construction documents.
   4. Wiring Diagrams: For power, signal, and control wiring.
   5. Submit drawings showing connections to adjacent construction, range of travel, and all electrical and mechanical connections to the operator. Drawings shall also show the size and location of the concrete mounting pad. Underground electrical runs shall be shown on shop drawings.

C. Installation Instructions: Submit two copies of manufacturer's installation instructions for this specific project.

D. Samples: For each fence material and for each color specified.

   1. Provide Samples 12 inches in length for linear materials.

E. Welding certificates.

F. Maintenance Data: For gate operators to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

B. Installer: A minimum of three years experience installing similar equipment.

C. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.

D. Emergency Access Requirements: Comply with requirements of authorities having jurisdiction for automatic gate operators on gates that must provide emergency access.

1.5 CODES AND REGULATORY REQUIREMENTS

A. Before submitting a proposal, the Contractor shall become familiar with the rules of the governing boards having jurisdiction and shall notify the Owners Representative before submitting a proposal, if in the Contractors opinion, any work or material specified is contrary to such rules. Otherwise, the Contractor is responsible for the approval of all work or material at no extra cost to the Owner, and in case the use of any material specified is not permitted, a substitute shall be approved by the Owners Representative and shall be provided at no extra cost.

B. Work to conform to the latest editions of the following (when applicable):
1. Florida Building Code, Latest Broward County Edition (F.B.C.)
2. National Electric Code (N.E.C.)
3. National Electrical Manufacturers Association (N.E.M.A.)
4. All other applicable city, state and national codes
5. Underwriters' Laboratories Inc. (U.L.), listings
6. American Society for Testing and Materials (A.S.T.M.)
7. Occupational Safety and Health Administration (O.S.H.A.)
8. Wind Loads – ASCE 7-22 – 170 mph wind speed, Exposure C, Category II

1.6 PRODUCT DELIVERY AND STORAGE

A. Store products upright in the original shipping containers, covered, ventilated and protected from all weather conditions.

1.7 WARRANTY

A. Provide a two-year comprehensive warranty against all defects in materials or workmanship. Defective materials shall be replaced with comparable materials furnished by the manufacturer, at no cost to the owner. Freight, labor and other incidental costs must be covered under the factory warranty.

1.8 SAFETY REQUIREMENTS

A. Do not locate any device (key switch, switch, key pad, card reader, etc.), if applicable, in a position where it may be activated by a person reaching through the gate or while touching the gate in any manner.

PART 2 - PRODUCTS

2.1 ALUMINUM

A. Aluminum, General: Provide alloys and tempers with not less than the strength and durability properties of alloy and temper designated in paragraphs below for each aluminum form required.

B. Extrusions: ASTM B 221, Alloy 6063-T5.

C. Tubing: ASTM B 429, Alloy 6063-T6.

D. Plate and Sheet: ASTM B 209, Alloy 6061-T6.

E. Die and Hand Forgings: ASTM B 247, Alloy 6061-T6.

F. Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

2.2 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welding.

1. For aluminum, provide type and alloy as recommended by producer of metal to be welded and as required for strength and compatibility in fabricated items.

B. Concrete: Normal-weight, air-entrained, ready-mix concrete complying with requirements in Division 3 Section "Cast-in-Place Concrete" with a minimum 28-day compressive strength of 4000 psi, 3-inch slump, and 1-inch maximum aggregate size.

C. Non-shrink Grout: Factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with ASTM C 1107 and specifically recommended by manufacturer for exterior applications.

2.3 GROUNDING MATERIALS

A. Grounding Conductors: Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.

1. Material above Finished Grade: Aluminum.
2. Material on or below Finished Grade: Copper.
3. Bonding Jumpers: Braided copper tape, 1 inch wide, woven of No. 30 AWG bare copper wire, terminated with copper ferrules.

B. Grounding Connectors and Grounding Rods: Comply with UL 467.

1. Connectors for Below-Grade Use: Exothermic-welded type.
2. Grounding Rods: Copper-clad steel.

a. Size: 5/8 by 96 inches.

2.4 MATERIAL

A. Aluminum material for fence framework (i.e., tubular pickets, rails and posts) shall conform to the requirements of ASTM B221. The aluminum extrusions for posts and rails shall be Alloy and Temper Designation 6005-T52. The aluminum extrusions for pickets shall be Alloy and Temper Designation 6063-T52.

B. Material for fence pickets shall be 1" square x 0.062" thick extruded tubing. The cross-sectional shape of the rails shall conform to the manufacturer's ForeRunner™ design with outside cross-section dimensions of 1.75" square. The top wall and internal web of the rail shall be 0.070" thick; the sidewalls shall be 0.070" thick for superior vertical load strength. Picket holes in the ForeRunner rail shall be spaced 4.715" o.c., except for Invincible style 6' long, which shall be, spaced 4.98" o.c. Picket retaining rods shall be 0.125" diameter galvanized steel. Fence posts and gate posts shall meet the minimum size requirements of Table 1. High quality PVC grommets shall be supplied to seal all picket-to-rail intersections.

C. All fasteners shall be stainless steel. Bracket to rail attachments shall be made using specially designed one-way tamperproof security bolts with inverted "t-nuts". Bracket to post connections shall be made using self-drilling hex-head screws.

D. Aluminum castings shall be used for all rings, post caps, finials, and miscellaneous adornments.

2.5 FABRICATION

A. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.

B. The rail inner slide shall be fully inserted into the rail outer channel to form the raceway for the internal retaining rod. Grommets shall be inserted into the pre-punched holes in the rails, and pickets shall be inserted through the grommets so that pre-drilled picket holes align with the internal raceway of the two-part ForeRunner rails. (Note: This can best be accomplished by using an alignment template). Retaining rods shall be inserted into each ForeRunner rail so that they pass through the pre-drilled holes in each picket, thus completing the panel assembly.

C. Completed panels shall be capable of supporting a 300 lb. load (applied at midspan) without permanent deformation. Panels shall be biasable to a 25% change in grade.

D. Swing Gates shall be fabricated using 1.75" sq. reinforced ForeRunner rail material, 2" sq. x .250" gate ends, and 1" sq. x .125" pickets. All rail and upright intersections shall be joined by welding. All picket and rail intersections shall be joined by welding.

E. 6' wide or larger Aluminum Frames and Bracing: Fabricate members from square tubing.
   1. Frame Members: Extruded-aluminum tubes 2-1/2 by 2-1/2 inches with 0.154-inch wall thickness.
   2. Bracing Members: Extruded-aluminum tubes 2-1/2 by 2-1/2 inches with 0.154-inch wall thickness.

F. Frame Corner Construction:
   1. Welded frame and 5/16-inch- diameter, adjustable truss rods for panels 4 feet wide or wider.

G. Additional Rails: Provide as indicated, complying with requirements for fence rails.

H. Infill: Comply with requirements for adjacent fence.

I. Picket Size, Configuration, and Spacing: Comply with requirements for adjacent fence.

J. Hardware: Latches permitting operation from both sides of gate, locking devices, hinges, hardware items and accessories, and stops fabricated from mill-finished, Grade 319 aluminum-alloy casting with stainless-steel fasteners. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.
   1. Contractor to Supply Padlocks - Schlage Primus series.
   2. Contractor shall provide Knox Box for fire department access.

K. Finish exposed welds to comply with NOMMA Guideline 1, Finish #2 - completely sanded joint, some undercutting and pinholes okay.

L. Aluminum Finish: Powder Coated.

2.6 ALUMINUM FINISHES

A. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 2 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
   1. Color and Gloss: Powder Coated, Color – Black, field verified.

Table 1 – Coating Performance Requirements

Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 3,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822 D2244, D523 (60˚ Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspection: Prior to installing improvements of this section carefully inspect installed work of other trades and verify that all such work is complete to point where installation may properly begin.

B. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, construction layout, and other conditions affecting performance of the Work.

C. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

E. The fencing and accessories shall be installed in strict accordance with plans and specifications in a workmanlike manner.

F. Discrepancies:
   1. In the event of discrepancies, immediately notify the Architect.

G. Do not proceed with installation in areas of discrepancies until all such discrepancies have been fully resolved.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.
   1. Construction layout and field engineering are specified in Division 1 Section "Execution Requirements."

3.3 DECORATIVE FENCE INSTALLATION

A. Install fences according to manufacturer's written instructions.

B. Install fences by setting posts as indicated and fastening rails

C. Post Excavation: Drill or hand-excavate holes for posts in firm, undisturbed soil. Excavate holes to a diameter and depth of not less than that show on engineered shop drawings.

D. Post Setting: Set posts in concrete at 6’-0” o.c. spacing into firm, undisturbed soil.
   1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
   2. Concrete Fill: Place concrete around posts and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
      a. Exposed Concrete: Extend 2 inches above grade. Finish and slope top surface to drain water away from post.
      b. Concealed Concrete: Top 2 inches below grade to allow covering with surface material. Slope top surface of concrete to drain water away from post.

E. Posts Set in Concrete: Extend post to within 6 inches of specified excavation depth, but not closer than 3 inches to bottom of concrete.

F. Space posts uniformly at 6 feet o.c.

3.4 GROUNDING AND BONDING

A. Fence Grounding: Install at maximum intervals of 1500 feet except as follows:
   1. Fences within 100 Feet of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet.
   2. Gates and Other Fence Openings: Ground fence on each side of opening.

B. Bond metal gates to gate posts.
   1. Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches below finished grade.
   2. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of crossing and at a maximum distance of 150 feet on each side of crossing.

C. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at the grounding location.

D. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.

E. Connections: Make connections so the possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
   1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
   2. Make connections with clean, bare metal at points of contact.
   3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
   4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
   5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

3.5 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware, and other moving parts.

3.6 TRAINING AND DOCUMENTATION

A. Procure all the necessary and usual inspections and certificates for all work to be installed. Deliver same to the owner/ end user before final acceptance.

B. Provide three copies of "operations and maintenance", manual for the owner's use. Manuals will identify parts of the equipment for future procurement.

C. Installer must provide extra parts to the owner, as specified.

END OF SECTION 02826

SECTION 02865 – RUNNING TRACK SURFACE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of this contract, including general and supplementary conditions and other division 1 specification sections apply to this section.

1.2 WORK INCLUDED

A. Proper completion of all BSS 200 Synthetic Track Surfacing and related work indicated on the drawings and specified herein. Install an impermeable polyurethane synthetic track system comprised of a base layer of polyurethane bound SBR rubber granules, BEYPUR 200, an impermeable layer (seal coat) of a two-component urethane, and topped with BEYPUR, a spray-applied coating of single-component polyurethane, and EPDM granules.

B. Work includes all labor, materials, tools, equipment, and applicable taxes to perform all work and services for the installation of the surface.

1.3 REFERENCE SPECIFICATIONS AND STANDARDS

A. Codes and standards follow the current guidelines set forth by the International Amateur Athletic Federation (IAAF) and the National Collegiate Athletic Association (NCAA), along with the current material testing guidelines as published by the American Society of Testing and Materials (ASTM).

B. The BSS 200 synthetic track surfacing system shall exhibit the following minimum performance standards (ASTM):

1.	Thickness:	(12-13mm) or as specified
2.	For Rece duction:	35 - 50%
3.	Vertical Deformation:	0.6mm - 2.5mm
4.	Coefficient of Friction:	$\geq$ 0.5 (47 TRRL Scale)
5.	Tensile Strength:	$\geq$ 0.5 Mpa
6.	Elongation:	$\geq$ 40%

1.4 WORKMANSHIP AND QUALITY ASSURANCE

A. The Installer and the Manufacturer must be the same.

B. The Installer must have a minimum of 10 years' experience in the installation of poured-in-place, two-component elastomeric polyurethane synthetic track surfacing.

C. The Installer shall be able to furnish evidence that they have been in business for a period of not less than 3 years, under the present name, and if required, furnish financial statements for each of the past 3 years.

D. The Installer must have installed a minimum of 10 outdoor track facilities in the last 2 years using the exact, IAAF certified, synthetic track surfacing, as specified herein with the contractor bidding this project.

E. The Installer must have a minimum of 10 years of experience with compound two-part polyurethane for athletic surfaces.

F. The Installer is required to provide documentation that shows the selected specified and installed product meets current IAAF Performance Standards for Synthetic Surfaced Athletics Tracks (Outdoor) and is certified in terms of the IAAF certification system as updated to present day.

G. Installer is to provide a list of completed facilities, minimum of 10 which are certified to meet IAAF/NCAA rules & regulations, utilizing the same product as specified.

H. The Installer must offer a minimum of six (6) IAAF Certified Track Systems.

I. All polyurethane components must be manufactured in the United States in an ISO 9001:2008 Certified facility to ensure the highest quality materials.

1.5 SUBMITTALS

A. Standard printed specifications of the synthetic track surfacing system to be installed on this project.

B. An affidavit attesting that the synthetic track surfacing material to be installed meets the requirements defined by the manufacturers currently published specifications and any modifications outlined in those technical specifications.

C. A synthetic track surfacing system sample, 12” x 12”in size, of the same synthetic track surfacing system to be installed on this project.

D. A list of completed facilities, including the installing supervisor, of the exact synthetic track surfacing system.

E. A current IAAF Certificate proving the product to be installed meets the current IAAF Performance Standards for Synthetic Surfaced Athletics Tracks (Outdoor).

1.6 GUARANTEE/WARRANTY OF THE MATERIAL AND WORKMANSHIP

A. Synthetic track surfacing system shall be fully guaranteed against faulty workmanship and material failure for a period of five (5) years from the date of acceptance.

B. Synthetic surfacing material found to be defective as a result of faulty workmanship and/or material failure shall be replaced or repaired at no charge, upon written notification within the guarantee period

C. However, if the contractor fails to comply with the requirements of the above guarantee within a reasonable time after notification is given, the repairs will be made by others at the contractor’s expense.
   1. Any unsafe conditions that arise shall be secured and maintained by the installer until all required repairs or replacements have been completed.
   2. All resurfacing will conform in kind and quality to the specifications set forth in the plans and specifications and will be free of defects in workmanship and material.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Primers: Primers must be polyurethane-based, specifically formulated to be compatible with the paved SBR base and track surfacing material.

B. Black SBR Granules: The rubber granules for the base mat shall be recycled SBR rubber, processed and chopped to 1-3mm size, containing less than 1% dust.

C. EPDM Granules: The rubber granules for the BEYPUR structural spray wearing coats shall be EPDM, synthetic rubber containing a minimum 20% EPDM resin, with a specific gravity of 1.5 $\pm$ 0.1 g/cm3. The EPDM rubber shall be the same color as chosen by the owner for the track surface.

D. Polyurethane Binder: Binder for the black mat shall be BEYPUR, an MDI-based single-component, polyurethane binding agent. The binder shall not have a free TDI monomer level above 0.2% and must be solvent free. The binder must be specially formulated for compatibility with SBR rubber crumb.

E. Structural Spray Coating: The spray coating shall be BEYPUR, an MDI-based single-component, moisture cured, 100% solids, pigmented polyurethane, specifically formulated for compatibility with EPDM granules. The coating shall be the color specified by the owner. Pigment intergraded in the field shall not be allowed.

F. Seal Coat: BEYPUR 200, the two-component polyurethane resin for this application, hall be pigmented to match the color of the wear coat. The material shall be applied by a squeegee to ensure that the black mat is sealed.

G. Line Marking Paint: All line and event markings shall be applied by experienced personnel the manufacturers recommended pigmented paint compatible with the synthetic track surfacing.

PART 3 - EXECUTION

3.1 BASE REQUIREMENTS

A. The base shall be angular stone, leveled, and compacted at a minimum depth of 6”.

3.2 SUBBASE INSTALLATION

A. The Synthetic Track Surfacing System shall be laid on an approved subbase. The General Contractor shall provide compaction test results of 95% or greater for the installed subbase and asphalt surface.

B. The asphalt substrate track surface shall not vary from planned cross slope by more than + .2%, with a maximum lateral slope outside to inside of 1% for NCAA or IAAF facilities (1% to 2% for NFHS), and a maximum slope of 0.1% in any running direction. The finished asphalt shall not vary under a 10' straight edge more than 1/8”.

C. It should be the responsibility of the asphalt-paving contractor to flood the surface immediately after the asphalt is capable of handling traffic, but within 24 hours. If, after 20 minutes of drying time, there are birdbaths evident, it shall be the responsibility of the architect, in conjunction with the surfacing contractor to determine the method of correction. No cold tar patching, skin patching or sand mix patching will be acceptable.

D. Any oil spills (hydraulic, diesel, motor oil, etc.) must be completely removed, either by chipping out or removing and replacing with new, keyed in asphalt. The minimum depth of any asphalt replacement shall be one inch. The curing time for the asphalt base is 28 days. It shall be the responsibility of the surfacing

contractor to determine if the asphalt substrate has cured sufficiently prior to the application of polyurethane surfacing system.

E. It shall be the responsibility of the general contractor to determine if the asphalt substrate meets all design specifications, i.e. cross slopes, planarity and specific project criteria. After all the above conditions are met, the synthetic surfacing contractor must, in writing, accept the planarity of the asphalt receiving base, before work can commence.

3.3 THICKNESS

A. The thickness of the BSS 200 Synthetic Track Surfacing System shall be 13 mm.

3.4 EQUIPMENT

A. The BSS 200 Synthetic Track Surfacing System components shall be processed and installed by specially designed machinery and equipment. A mechanically operated paver with variable regulated speed and thermostatically controlled screed shall be used in the installation of the base mat. The wearing course shall be installed using automatic electronic portioning, which provides continuous mixing and feeding for accurate, quality-controlled installation.

B. No hand mixing is allowed.

3.5 BASE COURSE INSTALLATION

A. The SBR granules and BEYPUR shall be mixed together on site to regulate the ratio/quantity of SBR, not to exceed 82% by weight in the base mat portion of the system. The BEYPUR shall be mixed with the SBR rubber so that a minimum of 20%, by weight, exists in the final mixture. This mixture is then mechanically installed using the paver.

3.6 SEAL COAT INSTALALTION

A. The two BEYPUR 200 components are mixed at the prescribed ratio homogeneously with a suitable mixing device. The coating is squeegee applied to the base mat, making it impermeable.

3.7 WEARING COURSE INSTALLATION

A. The 0.5 to 1.5mm EPDM granules shall be mixed with BEYPUR, the single-component structural spray coating. The structural spray shall be made in two uniform applications.

3.8 SITE CONDITIONS

A. Installation shall not take place if adjacent or concurrent construction generates excessive dust, abrasives or any other by-product that, in the opinion of the installer, would be harmful to the track material, until completion of such works.

B. Apply Synthetic Track Surfacing in dry weather when pavement and atmospheric temperatures are fifty (50) degrees Fahrenheit or above and are anticipated to remain above fifty (50) degrees Fahrenheit for twenty-four (24) hours after completing application.

C. The maximum temperature cannot exceed 105 degrees at any point during a 24-hour period.

D. Rain cannot be falling. If there is a threat of rain, work shall cease until dry conditions can be re-established on the track pavement. Work is to proceed only when adequate curing can be guaranteed by the manufacturer.

3.9 LINE STRIPING AND EVENT MARKINGS

A. Line striping and event markings shall be laid out in accordance with current IAAF, NFSHSA and NCAA rules.

END OF SECTION

SECTION 02886 – PRE-ENGINEERED SHADE STRUCTURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General conditions and division 1 Specification Sections apply to this section.

1.2 SUMMARY

A. The shade structure contractor shall be responsible for the design, engineering, fabrication, supply and installation of the work specified here in. The intent of this specification is to have only one single contractor be responsible for all the above functions.

1.3 CODE AND REGULATORY REQUIREMENTS

A. Engineered Shop Drawings Shade Structure Construction to conform to the latest editions of the following:
   1. Florida Building Code, (F.B.C.) 2023 - HVHZ with latest revisions.
   2. All other applicable city, state and national codes
   3. American Society for Testing and Materials (A.S.T.M.)
   4. Occupational Safety and Health Administration (O.S.H.A.)
   5. Wind Loads – ASCE 7-22 – 170 mph wind speed, Exposure C, Category II

B. American Welding Society: Structural Welding Code AWS D1.1-AWS Structural Welding Code-Steel.

C. Engineered Shop Drawings: For the following, showing compliance with building code in effect for Project:
   1. Prefabricated engineered shade system shall be designed by a State of Florida registered professional engineer (delegated engineer) and fabricated in accordance with the Florida Building Code. Such shop drawings shall be submitted to the building official for review and approval. The shop drawings shall meet the following requirements:
      a. All shop drawings shall be in conformity with the architect or engineer of record plans unless prior written approval is obtained from the architect or engineer of record.
      b. A size 8½ -inches by 11-inches cut sheets showing individual member design shall also be furnished to the architect or engineer of record.
      c. The size and location of all structural members shall be shown on the shop drawings.
      d. Shade shop drawings shall indicate the support and minimum bearing of the shade structural system, the permanent cross/lateral bracing, bracing to transfer member buckling forces to the structure and all bracing and anchorage required to resist uplift and lateral forces.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Engineered Shop Drawings: Show the following:
   1. Plans, sections, elevations, dimensions, clearances, foundations, etc.
   2. Installation details.
   3. Fabric Colors and pattern.
   4. Accessories.

C. Samples for Initial Selection: For each material indicated – Min. (2) 1' x 1'.

D. Material Test Reports: For shade fabric, signed by manufacturers.
   1. Flammability test results

E. Material Certificates: For each product, signed by manufacturers.

F. Field quality-control test reports.

G. Operations and Maintenance Data.

H. Warranty: Special warranty specified in this Section.

I. Installer Qualifications
   1. The installation of Shade Structures shall be provided by a firm experienced in this type of work.

J. Provide proof of all quality assurance items including:
   1. Proof of general liability, professional liability, and umbrella insurance as per section 1.5C.
   2. Proof of a minimum of $6,000,000 aggregate bonding capacity as per Section 1.5D.
   3. Proof of a Corporate Safety Program along with an injury and Illness Prevention Program.
   4. Proof of an Annual Maintenance Inspection Program.
   5. Proof of a Corporate Quality Control Manual as per Section 1.5F

1.5 QUALITY ASSURANCE

A. A single shade contractor shall design, engineer, manufacture, and erect the shade structure(s).

B. All bidders shall have at least 15 years' experience in the design, engineering, manufacturing, and installation of shade structures.

C. All bidders shall engineer to FBC 2023 requirements with similar scope.

D. All bidders shall be able to provide proof of a minimum of $1,000,000 general/public liability insurance, $3,000,000 professional liability (PL) insurance, and an additional $5,000,000 umbrella/excess liability insurance.

E. All bidders shall be licensed and bonded with a minimum bonding capacity of $6,000,000.

F. The shade structure contractor shall have a Corporate Quality Control program and manual describing their complete quality assurance program.

G. All bidders must have an in-house warranty and service department to assist in repairs and service calls.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for the shade structure(s) shown on the project drawings in relation to the property survey and existing structures, and verify locations by field measurements prior to construction for the shade structures.

B. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit system installation to be performed according to manufacturers' written instructions and warranty requirements.

C. Products shall be stored out of site (as much as possible) and secured the same to prevent damage.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of playground shade system that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Deterioration of shade structure and other materials beyond normal weathering.
      b. Rips in shade fabric or stitch separation.
      c. Mechanical failure.
   2. Warranty Period:
      a. Provide a non-prorated warranty from the manufacturer for a period of ten (10) years on fabric including stitching and twenty (20) years on the structural integrity of the steel, from date of substantial completion.
   3. The Contractor shall provide a one (1) year warranty on all labor and materials from date of substantial completion.
   4. When defective material or workmanship is discovered which requires repair or replacement, all such repair work or replacement work shall be done by the CONTRACTOR at its own expense after written notification is given of such required repairs. However, if the CONTRACTOR fails to comply with the requirements of the above guarantee within (5) working days after notification is given, the OWNER shall proceed to have the repairs made by others at the CONTRACTOR'S expense.
      a. Any unsafe conditions that arise shall be secured and maintained by the installer until all required repairs or replacements have been completed.
      b. All repairs shall conform in kind and quality to the specifications set forth in the plans and specifications and shall be free of defects in workmanship and material.

PART 2 – PRODUCTS

2.1 GENERAL

A. Scope

   1. Refer to Contract Documents for shade size, location, etc.

B. Manufacturer

   The proposed shade structure(s) shall be modular and prefabricated, and include the structural steel frame, fabric roof, steel cables and all fasteners. To be manufactured by,
   1. SRP Shade (Superior Shade)
      1050 Columbia Dr.
      Carrollton, GA 30117
      (866) 959-8004
   2. Shade Systems, Inc.
      4150 SW 19th Street
      Ocala, FL 34474
      (352) 237-0135
   3. Or Approved Equal: Standard for approved equal. Ten (10) days prior approval required for substitution of product design, materials and features specified above. Submittals must include plans, drawings, cut sheets, material data sheets, testing results and samples. Bids failing to meet this requirement will be deemed non-responsive.

C. Contractor to provide concrete slab, post foundations, and engineered shop drawings for shade structures. Coordinate electrical hook-up with electrical drawings and owner's equipment.
   1. Top of slab shall be flush with top of adjacent finish surfaces.

2. Structures shall be engineered to meet or exceed the requirements of Florida Building Code (FBC), and the following standard specifications:
3. Wind Speed (Frame only): 170 M.P.H.
4. Wind Speed (Frame w/canopy): 115 M.P.H.
5. Live Load: -/+ 00 psf

D. Materials Fabric Specifications Manufactured as ALNET ExtraBlock
1. The fabric knit is to be made using Monofilament and tape HDPE yarns.
2. UV shade fabric is made of UV stabilized materials.
3. The high-density polyethylene material shall be manufactured with tensioned fabric structures in mind.
4. Shade fabric has a weight Ave. of 9.6oz. sq. yd.
5. Material to be Rachel-knitted to ensure material will not unravel if cut.
6. Burst Strength of 363 lb. (ASTM 3786)
7. Cloth meets fire resistance tests as follows:
   a. Alnet Extra Block: California State fire Marshall Reg. #F-93501
b. Others: NFPA 701-99 (Test Method 2). ASTM E-84
8. Fabric Properties:
   a. Tear Tests (lbs/ft): WARP 33 and WEFT 36 (ASTM D2261)
   b. Burst Test (lbs ft): 363 lbs. (ASTM D3787)
   c. Fabric Weight (oz/sqFT) Average: 1.02 to 1.07
   d. Roll Length 150’
   e. Roll Size: 63” x 16.5”
   f. Weight: 120 lbs.
   g. Life Expectancy: 10 Years
   h. Fading: Minimum fading after 6 years (Note: 3 years for Red and Yellow)
   i. Minimum Temperature: -77 degrees F
   j. Maximum Temperature: 167 degrees F

E. Thread
1. Shall be 100% expanded PTFE fiber which carries a 10-year warranty that is high strength and low shrinkage.
2. Shall have a wide temperature and humidity range.
3. Abrasion resistant and UV radiation immunity.
4. Shall be unaffected by non-hydrocarbon based cleaning agents, acid rain, mildew, rot, chlorine, saltwater, and pollution.
5. Lockstitch thread – 1200 Denier or equal.
6. Chain stitch thread – 2400 denier or equal

F. Steel Tubing
1. All fabricated steel must be in accordance with approved shop drawings and calculations.
2. All steel is cleaned, degreased or etched to ensure proper adhesion of powder-coat in accordance with manufactures specifications.
3. All Steel used on this project needs to be new and accompanied by the mill certificates if requested. Structural steel tubing up to 5”-7 gauge shall be galvanized per Allied Steel FLO-COAT specifications. Schedule 49 black pipe fabrications shall be sandblasted and primed as described below.
4. All non-hollow structural shapes comply with ASTM A-36, unless otherwise noted.
5. All hollow structural steel shapes shall be cold formed HSS ASTM A-53 grade C, unless otherwise noted.
6. Plate products shall comply with ASTM A-36.

G. Powder Coating and Priming
1. All steel (galvanized and non-galvanized) must be coated with rust inhibiting primer prior to applying the powder coat. Primer shall be Marine Grade Cardinal Industrial Finishes Corp. E396 – GR1372 epoxy powder coating semi-gloss smooth zinc rich primer.

2. All non-galvanized steel shall be sandblasted and primed prior to powder coating using brown fused aluminum oxide grit and the aforementioned primer.
3. All steel parts shall be coated for rust protection and finished with a minimum 3.5 mil thick UV-inhibited weather resistant powder coating.
4. Power used in powder-coat process shall have the following characteristics:
    a. N.3.1 | Specific Gravity | 1.68+/-0.05
    b. N.3.2 | Theoretical Coverage | 114+/-4 ft. 2/lb/mil
    c. N.3.3 | Mass Loss During Cure | <1%
    d. N.3.4 | Maximum Storage Temperature | 75 degrees F
5. Powder-coating shall meet the following tests:
    a. ASTM | Gloss at 60 | 85 to 95
    b. HOI TM 10.219 | PCI Powder Smoothness | 7
    c. ASTM D2454-91 |Over-Bake Resistance Time | 200%
    d. ASTM D3363-92A | Pencil Hardness | H-2H
    e. ASTM D2794-93 | Dir/Rev Impact, Gardner | 140/140 in./lbs
    f. ASTM D3359-95B | Adhesion, Cross Hatch | 5B PASS
    g. ASTM D522-93A | Flexibility Mandrel | ¼" Diameter, No Fracture
    h. ASTM B117-95 | Salt Spray | 1000 Hours
    i. UL Dtov2 | Organic Coating Steel Enclosures, Elect Eq. | Recognized
6. Application Criteria:
    a. 5.1 | Electrostatic Spray Cold | Substrate: 0.032 in. CRS
    b. N.5.2 | Cure Schedule | 10 Minutes at 400 degrees F
    c. N.5.3 | Pretreatment | Bonderite 1000
    d. N.5.4 | Film Thickness | 3.5 Mils

H. Welding
1. All shop welds shall be executed in accordance with the latest edition of the American Welding Society Specifications.
2. Welding procedures shall comply in accordance with the AWS D1.1-AWS Structural Welding Code-Steel.
3. All welds to be performed by a certified welder. All welds shall be continuous where length is not given unless otherwise shown or noted on drawings.
4. All welds shall develop the full strength of the weaker member. All welds shall be made using E70xx.035 wire.
5. Shop connections shall be welded unless noted otherwise. Field connections shall be indicated on the drawings. Field welded connections are not acceptable.
6. All filet welds shall be a minimum of ¼" unless otherwise noted.
7. All steel shall be welded shut at terminations to prevent internal leakage.
8. Internal weld sleeving is not acceptable.
9. On-site welding is not acceptable.

I. Sewing
1. On-site sewing of a fabric will not be accepted
2. All corners shall be reinforced with Kevlar® extra non-tear cloth and strap to distribute the load.
3. The perimeters that contain the cables shall be double lock stitched.

J. Installation Hardware
1. Bolt and fastening hardware shall be determined based on calculated engineering loads.
2. All bolts shall comply with SAE-J429(Grade 8) or ASTM A325 (Grade BD). All nuts shall comply with the ASTM F-594, alloy group 1 or 2.
3. Upon request, Stainless Steel hardware shall comply with ASTMA-304.
4. ¼" galvanized wire rope shall be 7x19 strand with a breaking strength of 7,000 lbs. for shades generally under 575 sq. ft. unless requested larger by the customer. For shades over 575 sq. ft., cable shall be 5/16" with a breaking strength of 9,800 lbs. Upon request, ¼" Stainless Steel wire rope shall be 7x19 strand with a breaking strength of 6,400 lbs. 5/16" Stainless steel wire rope shall be 7/19strand with a breaking strength of 9,000 lbs.
5. All fittings required for proper securing of the cable are hot dipped galvanized.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Installations of shade structure(s) shall be performed by an installer who shall follow the manufacturer's instructions for assembly, installation, and erection, per approved drawings.

B. Concrete
   1. Concrete work shall be executed in accordance with the latest edition of American Concrete Building Code ACI 318 unless specified by the governing municipality.
   2. Concrete specifications shall comply in accordance with, and detailed as per plans as follows:
      a. 28 days Strength F'c = 3500 psi
      b. Aggregate: HR
      c. Slump: 3-5
      d. Portland Cement shall conform to C-150
      e. Aggregate shall conform to ASTM C-33
   3. All reinforcement shall conform to ASTM A-615 grade 60
   4. Reinforcing steel shall be detailed, fabricated and placed in accordance with the latest ACI Detailing Manual and Manual of Standard Practice.
   5. Whenever daily ambient temperatures are below 80 degrees Fahrenheit, the contractor may have mix accelerators and hot water added at the batch plant. (see table 1)
   6. TABLE 1

      Temperature Range % Accelerator Type Accelerator

      75-80 degrees 1% High Early (non calcium)

      70-75 degrees 2% High Early (non calcium)

      Below 70 degrees 3% High Early (non calcium)

C. Footings
   1. All anchor bolts set in new concrete shall be ASTM A-307, or ASTM F-1554 if specified by engineer.
   2. All anchor bolts shall be zinc plated unless specified otherwise.
   3. Footing shall be placed in accordance with and conform to engineered specifications and drawings.

3.2 PROTECTION

A. Protection - Contractor shall be responsible for the protection of the surfacing and playground during the installation process. Contractor shall be responsible for the protection of the shade system after completion of the installation

END OF SECTION

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
   1. Footings.
   2. Foundation walls.
   3. Slabs-on-grade.
   4. Suspended slabs.
   5. Concrete toppings.
   6. Building frame members.
   7. Building walls.

B. Related Sections include the following:
   1. Division 2 Section "Earthwork"
   2. Division 2 Section "Concrete Pavement Curbs and Walkways"

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
   1. Indicate amounts of mixing water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
   1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.

E. Material Certificates: For each of the following, signed by manufacturers:
   1. Cementitious materials.
   2. Admixtures.
   3. Form materials and form-release agents.
   4. Steel reinforcement and accessories.

5. Fiber reinforcement.
6. Curing compounds.
7. Floor and slab treatments.
8. Bonding agents.
9. Adhesives.
10. Vapor retarders.
11. Semirigid joint filler.
12. Joint-filler strips.
13. Repair materials.

F. Field quality-control test and inspection reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field-Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
1. ACI 301-16, "Specification for Structural Concrete," Sections 1 through 5 and Section 7, "Lightweight Concrete."
2. ACI 117-10, "Specifications for Tolerances for Concrete Construction and Materials."

F. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

G. Mockups: Cast concrete slab-on-grade panels to demonstrate integral color, typical joints, surface finish, texture, tolerances, and standard of workmanship.
1. Build panel approximately 10 sq. ft. for column and beam minimum 60 days prior to actual pour.
2. Include both integral colors (if any), joints, and sealers representing actual installation.
3. Build mockups of typical exterior wall of cast-in-place architectural concrete as shown on Drawings.
4. Demonstrate curing, cleaning, and protecting of cast-in-place architectural concrete, finishes, and contraction joints, as applicable.

5. In presence of Architect, damage part of the exposed-face surface for each finish, color, and texture, and demonstrate materials and techniques proposed for repair of tie holes and surface blemishes to match adjacent undamaged surfaces.
6. Obtain Architect's approval of mockups before casting architectural concrete.

H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
   a. Contractor's/Construction Manager's superintendent.
   b. Independent testing agency responsible for concrete design mixtures.
   c. Ready-mix concrete manufacturer.
   d. Concrete subcontractor.
   e. City's Representative
   f. Minutes of the meeting shall be recorded, typed, and distributed by the Contractor to all concerned parties, including but not limited to the Owner's representative and the Architect within five days of the meeting.
2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, concrete repair procedures, and concrete protection.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include but are not limited to, manufacturers specified.

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
   a. Structural 1, B-B or better; mill oiled, and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

D. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.

E. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support the weight of plastic concrete and other superimposed loads.

F. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

G. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

H. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
   1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

I. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
   1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
   2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
   3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

B. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60, deformed bars, assembled with clips.

C. Plain-Steel Wire: ASTM A 82, galvanized.

D. Deformed-Steel Wire: ASTM A 496.

E. Stainless-Steel Reinforcing Bars: ASTM A 955/A 955M, Grade 60, Type 316L, deformed.

2.4 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut bars true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
   1. Where legs of wire bar supports contact forms, use gray, all-plastic bar supports or CRSI Class 2 stainless-steel bar supports.

2.5 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
   1. Portland Cement: ASTM C 150, Type I, gray.

B. Normal-Weight Aggregates: ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
   1. Maximum Coarse-Aggregate Size: 3/4-inch nominal.
   2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Lightweight Aggregate: ASTM C 330, 3/4-inch nominal maximum aggregate size.

D. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.
   1. Do Not use Air-Entraining Admixture in concrete scheduled to receive polished finish.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
   1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
   2. Retarding Admixture: ASTM C 494/C 494M, Type B.
   3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
   4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
   5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
   6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

C. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.
   1. Available Products:
      a. Cortec Corporation; MCI 2005NS.
      b. Grace Construction Products, W. R. Grace & Co.; DCI-S.
      c. Master Builders, Inc.; Rheocrete 222+.
      d. Sika Corporation; FerroGard-901.
      e. Or Approved Equal

D. Shrinkage Reducing and Compensating Admixture: ASTM C 878 or Modified ASTM C157
   1. Available Products:
      a. Euclid Chemical; Conex.
      b. Or Approved Equal

2.7 VAPOR RETARDERS

A. Plastic Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
   1. Available Products:
      a. Stego; Stego Wrap Vapor Barrier 15 mil
      b. Fortifiber Corporation; Moistop Ultra 15.
      c. Raven Industries Inc.; Vapor Block 15.
      d. Reef Industries, Inc.; Griffolyn Type-105.

e. ISI Building Products; Viper Vaporcheck II 15 mil
f. Or Approved Equal

2.8 CURING MATERIALS

A. Curing Compound:
1. Kurez RC-100 removable curing compound by Euclid Chemical.
2. Kurez DR VOX dissipating curing compound by Euclid Chemical.

B. Or wet curing for a minimum of 14 days and a maximum of 28 days using the following materials.
1. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
2. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
3. Water: Potable.

2.9 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 8139, semi-rigid, Preformed Expansion Joint Filler or Slab Isolation Joint Filler with typical thickness 1/2, 3/4, or 1 inch and height equal to slab thickness with a removable top section for creation of a sealant void.
1. Materials: Provide a semi-rigid, closed-cell polypropylene foam, preformed joint filler that fully complies with ASTM D8139. NOMAFLEX® by Nomaco, Inc.
a. Manufacturers: Nomaco, Inc., 501 Innovative Way, Zebulon, NC 27597. Phone (877) 291-1157. Fax (919) 269-7936. Website: https://www.nomaco.com/product/nomaflex/
b. “Deck-O-Foam” by W.R. Meadows
2. Or Approved Equal

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
1. Types I and II, non-load bearing, IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

D. Reglets: Fabricate reglets of not less than 0.0217-inch- thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

E. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.10 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

2.11 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
   1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

C. Admixtures: Use admixtures according to manufacturer's written instructions.
   1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
   2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
   3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
   4. Use corrosion-inhibiting admixture in concrete mixtures.
   5. Use shrinkage reducing and compensating admixture in concrete mixtures for parking deck topping slab and drain area.

2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Footings: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 4000 psi at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.50.
   3. Slump Limit: 5 inches, plus or minus 1 inch.
   4. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.

B. Foundation Walls: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 4000 psi at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.40.
   3. Slump Limit: 5 inches, plus or minus 1 inch.
   4. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.

C. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 4000 psi at 28 days.
   2. Minimum Cementitious Materials Content: 540 lb/cu. yd.
   3. Maximum Water-Cementitious Materials Ratio: 0.40.
   4. Slump Limit: 4 inches, plus or minus 1 inch.
   5. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
   6. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.
   7. Air Content: Do not allow air content of polished finish floors to exceed 1 percent.

8. Steel-Fiber Reinforcement: Add to concrete mixture, according to manufacturer's written instructions, at a rate of 50 lb/cu. yd.
9. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.5 lb/cu. yd.

D. Building Frame Members: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.40.
3. Slump Limit: 5 inches, plus or minus 1 inch.
4. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.

E. Building Walls: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.40.
3. Slump Limit: 5 inches, plus or minus 1 inch.
4. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
5. Air Content: Do not allow air content of polished finish wall panels to exceed 1 percent.

2.13 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.14 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116 and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
1. Class A, 1/8 inch for smooth-formed finished surfaces.
2. Class B, 1/4 inch for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
1. Install keyways, reglets, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
   2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
   3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
   1. Leave formwork and shores for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
   1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 VAPOR RETARDERS

A. Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
   1. Lap joints 6 inches and seal with manufacturer's recommended tape.

3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
   1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
   1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
   2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
   3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
   4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
   5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
   6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
   7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
   1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
3. Contraction Joints shall be placed within 6 hours of placing concrete.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Division 7 Section "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
   1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
   2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
   3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:
   1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
   2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.9 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
   1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
   1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
   1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.10 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Finish concrete slabs shall have a minimum Floor Flatness rating of at least 50.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
   1. Apply float finish to surfaces indicated and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.
   1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.

E. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
   1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.11 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

3.12 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
   1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
      a. Water.
      b. Continuous water-fog spray.
      c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
   2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
      a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.

b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.

3.13 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

D. See section 07900 - Joint Sealers for expansion joints.

3.14 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.15 FIELD QUALITY CONTROL

A. Testing and Inspecting: Contractor/Construction Manager will engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

B. Inspections:
1. Steel reinforcement placement.
2. Headed bolts and studs.
3. Verification of use of required design mixture.
4. Concrete placement, including conveying and depositing.
5. Curing procedures and maintenance of curing temperature.
6. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
6. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
7. Compression Test Specimens: ASTM C 31/C 31M.

a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.

8. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
   a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
   b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor/Construction Manager shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
10. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
11. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor/Construction Manager within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7-day and 28-day tests.
12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
13. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
14. Additional testing and inspecting, at Contractor's/Construction Manager's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
15. Correct deficiencies in the Work that test reports and inspections indicate does not comply with the Construction Documents.

END OF SECTION

SECTION 04200 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes unit masonry assemblies consisting of the following:
   1. Concrete masonry units (CMUs).
   2. Mortar and grout.
   3. Reinforcing steel.
   4. Masonry joint reinforcement.
   5. Ties and anchors.
   6. Miscellaneous masonry accessories.

B. Related Sections include the following:
   1. Division 7 Section "Joint Sealers" for sealing control and expansion joints in unit masonry.

C. Products furnished, but not installed, under this Section include the following:
   1. Dovetail slots for masonry anchors, installed under Division 3 Section "Cast-in-Place Concrete."

1.3 DEFINITIONS

A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For the following:
   1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
   2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement.

C. Material Certificates: Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. Provide for each type and size of the following:
   1. Masonry units.
      a. Include material test reports substantiating compliance with requirements.
      b. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
   2. Cementitious materials. Include brand, type, and name of manufacturer.
   3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
   4. Grout mixes. Include description of type and proportions of ingredients.
   5. Reinforcing bars.
   6. Joint reinforcement.
   7. Anchors, ties, and metal accessories.

D. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
   1. Include test reports, per ASTM C 780, for mortar mixes required to comply with property specification.

2. Include test reports, per ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1093 for testing indicated, as documented according to ASTM E 548.

B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.

D. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.7 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
   1. Extend cover a minimum of 36 inches down both sides and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
   1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
   2. Protect sills, ledges, and projections from mortar droppings.

3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include but are not limited to, manufacturers specified.

2.2 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

2.3 CONCRETE MASONRY UNITS (CMUs)

A. Shapes: Provide shapes indicated and as follows:
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
2. Provide square-edged units for outside corners, unless otherwise indicated.

B. Concrete Masonry Units: ASTM C 90.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2000 psi, unless otherwise noted on structural drawings.
2. Weight Classification: Normal weight, unless otherwise indicated.
3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
4. Faces to Receive Plaster: Where units are indicated to receive a direct application of plaster, provide textured-face units made with gap-graded aggregates.

2.4 CONCRETE AND MASONRY LINTELS

A. General: Provide either concrete or masonry lintels, at Contractor’s/Construction Manager’s option, complying with the requirements below.

B. Concrete Lintels: Precast units made from concrete matching concrete masonry units in color, texture, and compressive strength and with reinforcing bars indicated or required to support loads indicated. Cure precast lintels by same method used for concrete masonry units.

C. Concrete Lintels: Precast or formed-in-place concrete lintels complying with requirements in Division 3 Section "Cast-in-Place Concrete."

D. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.5 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Masonry Cement: ASTM C 91.
   1. Available Products:
      a. Lafarge North America Inc.; Florida Super Masonry.
      b. Lehigh Cement Company; Lehigh Masonry Cement.
      c. National Cement Company, Inc.; Coosa Masonry Cement.

C. Mortar Cement: ASTM C 1329.
   1. Available Products:
      a. Lafarge North America Inc.; Lafarge Mortar Cement.

D. Aggregate for Mortar: ASTM C 144.
   1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
   2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

E. Aggregate for Grout: ASTM C 404.

F. Water: Potable.

2.6 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.

B. Masonry Joint Reinforcement, General: ASTM A 951.
   1. Interior Walls: Hot dip galvanized, carbon steel.
   2. Exterior Walls: Hot dip galvanized, carbon steel.
   3. Wire Size for Side Rods: W2.8 or 0.188-inch diameter.
   4. Wire Size for Cross Rods: W2.8 or 0.188-inch diameter.
   5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
   6. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.

C. Masonry Joint Reinforcement for Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.

2.7 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in subsequent paragraphs that are made from materials that comply with eight subparagraphs below, unless otherwise indicated.

B. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene or PVC.

B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with loops for holding reinforcing bars in center of cells. Units are formed from 0.142-inch steel wire, hot-dip galvanized after fabrication. Provide units with either two loops or four loops as needed for number of bars indicated.
   1. Available Products:
      a. Heckmann Building Products Inc.; No. 376 Rebar Positioner.
      b. Hohmann & Barnard, Inc.; RB or #RB-Twin Rebar Positioner.
      c. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.

2.9 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
   1. Available Manufacturers:
      a. Diedrich Technologies, Inc.
      b. EaCo Chem, Inc.
      c. ProSoCo, Inc.

2.10 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
   1. Do not use calcium chloride in mortar or grout.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide the required compressive strength of masonry.
   1. For masonry below grade or in contact with earth, use Type M.
   2. For reinforced masonry, use Type M.
   3. For mortar parge coats, use Type M.
   4. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type M.

D. Grout for Unit Masonry: Comply with ASTM C 476.
   1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
   2. Provide grout with a slump of 9 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
   1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
   2. Verify that foundations are within tolerances specified.
   3. Verify that reinforcing dowels are properly placed.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.

B. Build chases and recesses to accommodate items specified in this and other Sections.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.

D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

E. Comply with construction tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:
   1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
   2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
   3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.

3.3 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4-inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

F. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.

G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.

H. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.
   1. Install compressible filler in joint between top of partition and underside of structure above.
   2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors 48 inches o.c., unless otherwise indicated.
   3. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
   4. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with UL assembly specified on drawings.

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units as follows:
   1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
   2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
   3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
   4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.

D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated.

3.5 MASONRY JOINT REINFORCEMENT

A. General: Install the entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
   1. Space reinforcement not more than 16 inches o.c.
   2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
   3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings.
      a. Reinforcement above is in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.6 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry as follows:
   1. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.

C. Provide expansion joints by inserting a compressible filler of width required for installing sealant and backer rod specified in Division 7 Section "Joint Sealers," but not less than 1/2”.

3.7 LINTELS

A. Provide concrete or masonry lintels where shown and where openings of more than 12 inches for brick-size units and 24 inches for block-size units are shown without structural steel or other supporting lintels.

B. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.8 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

A. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.

B. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:
   1. Use specified weep/vent products to form weep holes.
   2. Space weep holes 24 inches o.c., unless otherwise indicated.

3.9 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
   1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
   2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
   1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
   2. Limit height of vertical grout pours to not more than 96 inches.

3.10 FIELD QUALITY CONTROL

A. Inspectors: City will engage qualified independent inspectors to perform inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
   1. Place grout only after inspectors have verified compliance of grout spaces and grades, sizes, and locations of reinforcement.

B. Testing Agency: City will engage a qualified independent testing and inspecting agency to perform field tests and inspections indicated below and prepare test reports:
   1. Payment for these services will be made from Testing and Inspecting Allowance.
   2. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.

C. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.

D. Concrete Masonry Unit Test: For each type of unit provided, per ASTM C 140.

E. Grout Test (Compressive Strength): For each mix provided, per ASTM C 1019.

3.11 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
   1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
   3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
   4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
   5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
   6. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.12 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Masonry Waste: Remove all masonry waste and legally dispose of off Owner's property. Recycling is required under section 01524 “Construction Waste Management”.

END OF SECTION

SECTION 05120 - STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY:

A. Extent of structural steel work is shown on drawings, including schedules, notes and details to show size and location of members, typical connections, and type of steel required.

B. Structural steel is that work defined in American Institute of Steel Construction (AISC) "Code of Standard Practice" and as otherwise shown on drawings.

C. Miscellaneous Metal Fabrications are specified elsewhere in Division 5.

D. Refer to Division 3 for anchor bolt installation in concrete; Division 4 for masonry.

E. Paint application for structural steel frames is specified in Division 9.

F. Source Quality Control: Materials and fabrication procedures are subject to inspection and tests in mill, shop, and field, conducted by a qualified inspection agency. Such inspections and tests will not relieve Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements.
   1. Promptly remove and replace materials or fabricated components which do not comply.

G. Design of Members and Connections: Details shown are typical; similar details apply to similar conditions, unless otherwise indicated. Verify dimensions at site whenever possible without causing delay in the work.
   1. Promptly notify Architect whenever design of members and connections for any portion of structure are not clearly indicated.

H. **All structural steel exposed to exterior environmental conditions shall be hot dipped galvanized.**

I. All Exposed steel visible within 30 feet shall be designed and fabricated to comply with ANSI/AISC 303-16 An American National Standard Code of Standard Practice for Steel Buildings and Bridges June 15, 2016 - SECTION 10. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL - **AESS 4: Showcase elements with special surface and edge treatment beyond fabrication.**

1.3 SUBMITTALS:

A. Product Data: Submit producer's or manufacturer's specifications and installation instructions for following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).

B. Shop Drawings: Submit shop drawings prepared under supervision of a registered professional engineer, including complete details and schedules for fabrication and assembly of structural steel members, procedures and diagrams.

C. Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by standard AWS A2.1 and A2.4 symbols, and show size, length, and type of each weld.
   1. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed as work of others sections.

D. Test Reports: Submit copies of reports of tests conducted on shop and field bolted and welded connections. Include data on type(s) of tests conducted and test results.

1.4 QUALITY ASSURANCE:

A. Codes and Standards: Comply with provisions of following, except as otherwise indicated:
   1. ANSI/AISC 303-16 - An American National Standard Code of Standard Practice for Steel Buildings and Bridges, June 15, 2016
   2. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", including "Commentary" and Supplements thereto as issued.
   3. AISC "Specifications for Architecturally Exposed Structural Steel".
   4. AISC "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
   5. American Welding Society (AWS) D1.1 "Structural Welding Code - Steel".
   6. ASTM A 6 "General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use".
   7. ASTM A123 / A123M - 12 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
   8. ASTM A153 / A153M - 09 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   9. ASTM B695 - 04 (2009) Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.

B. Qualifications for Structural Steel Fabrication: Structural Steel frames to be fabricated off site by a steel fabricator with a minimum of 10 years Broward County experience and an AISC category II rating or better. Steel fabricators must indicate with letter on transmittal that he has reviewed the full set of drawings: mechanical, electrical, structural, etc. Include letters, resume and past projects with bid proposal.

C. Qualifications for Welding Work: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".

D. Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests.
   1. If recertification of welders is required, retesting will be Contractor's responsibility.

1.5 MOCKUP

A. A mock-up shall be required for all exposed steel within 30 feet of view and designated as AESS 4.

B. Mockup shall be submitted, reviewed, and approved prior to steel fabrication.

1.6 DELIVERY, STORAGE AND HANDLING:

A. Deliver materials to site at such intervals to ensure uninterrupted progress of work.

B. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time to not to delay work.

C. Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.

D. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. Metal Surfaces, General: For fabrication of work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, rust and scale seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding, or by welding and grinding, prior to cleaning, treating and application of surface finishes.

B. Structural Steel Shapes, Plates and Bars: ASTM A 36.

C. Cold-Formed Steel Tubing: ASTM A 500, Grade B.

D. Steel Pipe: ASTM A 53, Type E or S, Grade B; or ASTM A 501.
1. Finish: Black, except where indicated to be galvanized.

E. Headed Stud-Type Shear Connectors: ASTM A 108, Grade 1015 or 1020, cold finished carbon steel; with dimensions complying with AISC Specifications.

F. Anchor Bolts: ASTM A 307, non-headed type unless otherwise indicated.

G. Unfinished Threaded Fasteners: ASTM A 307, Grade A, regular low- carbon steel bolts and nuts.
1. Provide hexagonal heads and nuts for all connections.

H. High-Strength Threaded Fasteners: Heavy hexagon structural bolts, heavy hexagon nuts, and hardened washers, as follows:
1. Quenched and tempered medium-carbon steel bolts, nuts and washers, complying with ASTM A 325.
2. Direct tension indicator washers may be used at Contractor's option.

I. Electrodes for Welding: Comply with AWS Code.

J. Non-metallic Shrinkage-Resistant Grout: Pre-mixed, non-metallic, non-corrosive, non-staining product containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water reducing agents, complying with CE-CRD-C621.
1. Products: Subject to compliance with requirements, provide one of the following:
   a. Euco N.S. - Euclid Chemical Co.
   b. Crystex - L&M Construction Chemicals
   c. Masterflow 713 - Master Builders
   d. Five Star Grout - U.S. Grout Corp.
   e. Upcon - Upco Chem. Div., USM Corp.
   f. Propak - Protex Industries, Inc.
   g. Set Non-Shrink - Set Products, Inc.

2.2 FABRICATION:

A. Shop Fabrication and Assembly: Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings. Provide camber in structural members where indicated.

B. Properly mark and match-mark materials for field assembly.

C. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.

D. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.

E. Connections: Weld or bolt shop connections, as indicated.

F. Bolt field connections, except where welded connections or other connections are indicated.
   1. Provide high-strength threaded fasteners for all bolted connections, except where unfinished bolts are indicated.

G. High-Strength Bolted Construction: Install high-strength threaded fasteners in accordance with AISC "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" (RCRBSJ).

H. Welded Construction: Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.

I. Steel Wall Framing: Select members which are true and straight for fabrication of steel wall framing. Straighten as required to provide uniform, square and true members in completed wall framing.

J. Build up welded door frames attached to structural steel framing. Weld exposed joints continuously and grind smooth. Plug weld steel bar stops to frames, except where shown removable. Secure removable stops to frames with countersunk, cross-recessed head machine screws, uniformly spaced not more than 10" o.c., unless otherwise indicated.

K. Holes for Other Work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.

L. Provide threaded nuts welded to framing, and other specialty items as indicated to receive other work.

M. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

N. All Exposed steel visible within 30 feet shall be designed and fabricated to comply with ANSI/AISC 303-16 An American National Standard Code of Standard Practice for Steel Buildings and Bridges June 15, 2016 - SECTION 10. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL - **AESS 4: Showcase elements with special surface and edge treatment beyond fabrication.**
   1. Showcase elements in AESS 4 are those for which the designer intends that the form is the only feature showing in an element. All welds are ground and filled, edges are ground square and true. All surfaces are filled and sanded to a smoothness that doesn't catch on a cloth or glove. Tolerances of fabricated forms are more stringent - generally half of standard tolerance. AESS 4 involves the use of a mock-up and acceptance is based upon the approved conditions of the mock-up.
      a. HSS seams are treated so they are not apparent.
      b. In addition to a contoured and blended appearance, welded transitions between members also are contoured and blended.

c. The steel surface imperfections are filled and sanded.
d. Weld show-through on the back side of a welded element can be minimized by hand grinding the back side surface. The degree of weld-through is a function of weld size and material.

2. The permissible tolerances for member depth, width, out of square, and camber and sweep shall be as specified in ASTM A6/A6M and ASTM A500/A500M. The following exceptions apply:
   a. For Categories AESS 3 and 4, the matching of abutting cross sections shall be required.
   b. For Categories AESS 2, 3 and 4, the as-fabricated straightness tolerance shall be one-half of that specified in ASTM A6/A6M and ASTM A500/A500M.
3. The tolerance on overall profile dimensions of welded built-up members shall meet the requirements in AWS D1.1/D1.1M. For Categories AESS 2, 3 and 4, the as-fabricated straightness tolerance for the member as a whole shall be one-half of that specified in AWS D1.1/D1.1M.
4. For Categories AESS 3 and 4, copes, miters and cuts in surfaces exposed to view shall have a gap that is uniform within 1/8 in. (3 mm), if shown to be an open joint. If instead the joint is shown to be in contact, the contact shall be uniform within 1/16 in. (2 mm).
5. For Categories AESS 1, 2 and 3, the surface condition of steel given in ASTM A6/A6M shall be acceptable. For Category AESS 4, surface imperfections shall be filled and sanded to meet the acceptance criteria established with the mock-up required.
6. For Categories AESS 1, 2 and 3, welds shall meet AWS D1.1/D1.1M requirements, except that weld spatter exposed to view, if any, shall be removed. For Category AESS 4, welds shall be contoured and blended, and spatter exposed to view, if any, shall be removed.
7. For Categories AESS 1 and 2, weld projection up to 1/16 in. (2 mm) is acceptable for butt and plug welded joints. For Categories AESS 3 and 4, welds shall be ground smooth/filled.
8. For Categories AESS 1, 2 and 3, weld show-through shall be acceptable as produced. For Category AESS 4, the fabricator shall minimize the weld show-through.
9. AESS shall be prepared to meet the requirement of SSPC-SP 6. Prior to blast cleaning:
   a. Grease or oil, if any is present, shall be removed by solvent cleaning to meet the requirements of SSPC-SP 1.
   b. Weld spatter, slivers and similar surface discontinuities shall be removed.
   c. Sharp corners resulting from shearing, flame cutting or grinding shall be eased.
   d. For Categories AESS 1 and 2, seams of hollow structural sections shall be acceptable as produced. For Category AESS 3, seams shall be oriented as specified in the contract documents. For Category AESS 4, seams shall be treated so they are not apparent.

2.3 GALVANIZING:

A. All structural steel shall be hot dipped galvanized – G90 or better.

B. Prepare structural component surfaces in accordance with SPC SP 3.

C. Galvanizing for Structural Steel Members: ASTM A123 / A123M - 12; minimum 2.0 oz/sq ft coating thickness; hot dipped galvanized after fabrication.

D. Galvanizing for Fasteners, Connectors, and Anchors:
   1. Hot-Dipped Galvanizing: ASTM A153 / A153M - 09.
   2. Mechanical Galvanizing: ASTM B695 – 04 (2009); Class 50 minimum.

E. All structural steel deck shall be hot dipped galvanized – G90 or better.

F. Touch up galvanized coating where field welding is required.

G. Exposed Structural Steel: See section 09900 for specific information in reference to protective finish for all exposed hot dipped galvanized coated steel.

PART 3 - EXECUTION

3.1 ERECTION:

A. Surveys: Employ a registered professional engineer or land surveyor for accurate erection of structural steel. Check elevations of concrete and masonry bearing surfaces, and locations of anchor bolts and similar devices, before erection work proceeds, and report discrepancies to Design-Build Criteria Professional. Do not proceed with erection until corrections have been made, or until compensating adjustments to structural steel work have been agreed upon with Design-Build Criteria Professional.

B. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.

C. Temporary Planking: Provide temporary planking and working platforms as necessary to effectively complete work.

D. Setting Bases and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of base and bearing plates.

E. Set loose and attached base plates and bearing plates for structural members on wedges or other adjusting devices.

F. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

G. Pack grout solidly between bearing surfaces and bases or plates to ensure that no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.
   1. For proprietary grout materials, comply with manufacturer's instructions.

H. Field Assembly: Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Level and plumb individual members of structure within specified AISC tolerances.

I. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.

J. Splice members only where indicated and accepted on shop drawings.

K. Erection Bolts: On exposed welded construction, remove erection bolts, fill holes with plug welds and grind smooth at exposed surfaces.

L. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

M. Do not enlarge unfair holes in members by burning or by use of drift pins, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.

N. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be permitted only on secondary members which are not under stress, as acceptable to Architect. Finish gas-cut sections equal to a sheared appearance when permitted.

O. Touch-Up Galvanic Coating: Immediately after erection, clean field welds, bolted connections, and abraded areas. Apply liquid galvanic coating to exposed areas.

P. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

Q. AESS Erection
1. The erector shall use special care in unloading, handling and erecting AESS to avoid marking or distorting the AESS. The erector shall plan and execute all operations in such a manner that allows the architectural appearance of the structure to be maintained:
   a. Slings shall be nylon-type or chains or wire rope with softeners.
   b. Care shall be taken to minimize damage to any shop paint or coating.
   c. When temporary braces or fixtures are required to facilitate erection, care shall be taken to avoid any blemishes, holes or unsightly surfaces resulting from the use or removal of such temporary elements.
   d. Tack welds not incorporated into final welds shall be ground smooth.
   e. All backing and runoff tabs shall be removed and the welds ground smooth.
   f. All bolt heads in connections shall be on the same side, as specified, and consistent from one connection to another.
   g. <u>For Category AESS 4, open holes shall be filled with weld metal or body filler and smoothed by grinding or filling to the standards applicable to the shop fabrication of the materials.</u>

3.2 QUALITY CONTROL:

A. Contractor/Construction Manager shall engage and pay for an independent testing and inspection agency to inspect high-strength bolted connections and welded connections and to perform tests and prepare test reports.

B. Testing agency shall conduct and interpret tests and state in each report whether test specimens comply with requirements, and specifically state any deviations there from.

C. Provide access for testing agency to places where structural steel work is being fabricated or produced so that required inspection and testing can be accomplished.

D. Testing agency may inspect structural steel at plant before shipment; however, Architect reserves right, at any time before final acceptance, to reject material not complying with specified requirements.

E. Correct deficiencies in structural steel work which inspections and laboratory test reports have indicated to be not in compliance with requirements. Perform additional tests, at Contractor's/Construction Manager's expense, as may be necessary to reconfirm any non-compliance of original work, and as may be necessary to show compliance of corrected work.

F. Field Bolted Connections: Inspect in accordance with AISC specifications.

G. Field Welding: Inspect and test during erection of structural steel as follows:
1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
2. Perform visual inspection of all welds.

END OF SECTION

SECTION 05400 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Interior non-load-bearing wall framing.
   2. Ceiling joist framing.

B. Related Sections include the following:
   1. Division 9 Section "Cement Board" for interior non-load bearing, metal-stud framing and ceiling-suspension assemblies.

1.3 SUBMITTALS

A. Product Data: For each type of cold-formed metal framing product and accessory indicated.

B. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

C. Research/Evaluation Reports: For cold-formed metal framing.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated.

B. Fire-Test-Response Characteristics: Where indicated, provide cold-formed metal framing identical to that of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.

C. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing - General Provisions."

   1. Comply with AISI's "Standard for Cold-Formed Steel Framing - Header Design."

D. ASTM A1004/A1004M, Standard Practice for Establishing Conformance to the Minimum Expected Corrosion Characteristics of Metallic, Painted-Metallic, and Nonmetallic-Coated Steel Sheet.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering cold-formed metal framing that may be incorporated into the Work include, but are not limited to, the following:
   1. ClarkDietrich Metal Framing
   2. SCAFCO Corporation.
   3. United Metal Products, Inc.

2.2 MATERIALS

A. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:
   1. Grade: ST50H.
   2. Coating: ClarkDietrich DiamondPlus Coating.

B. Steel Sheet for Drift Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
   1. Grade: As required by structural performance.
   2. Coating: ClarkDietrich DiamondPlus Coating.

2.3 INTERIOR NON-LOAD-BEARING WALL FRAMING

A. Steel Studs: Manufacturer’s standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
   1. Basis-of-Design Product: ClarkDietrich Building Systems (ProSTUD20 with DiamondPlus Coating).
   2. Minimum Base-Metal Thickness: 19 mil (20 gage) minimum, unless noted otherwise.
   3. Flange Width: 1-1/4 inches.
   4. Coating: DiamondPlus Coating.

B. Steel Track: Manufacturer’s standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:
   1. Basis-of-Design Product: ClarkDietrich Building Systems (ProTrac20 with DiamondPlus Coating)
   2. Minimum Base-Metal Thickness: 19 mil (20 gage) minimum, unless noted otherwise.
   3. Flange Width: 1-1/4 inches.
   4. Coating: DiamondPlus Coating.

C. Deflection Track and Firestop Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thicknesses not less than indicated for studs and in width to accommodate depth of studs.
   1. Basis-of-Design Product: ClarkDietrich Building Systems; BlazeFrame Deflection Track.

D. Slotted Deflection Track: Manufacturer’s single, deep-leg, U-shaped steel track; punched with vertical slots in both legs. Studs should be positively attached to deep-leg track using vertical slots while allowing free vertical movement. Legs designed to support horizontal and lateral loads and transfer them to the primary structure, as follows:
   1. Basis-of-Design Product: ClarkDietrich Building Systems; BlazeFrame DSL Slotted Deflection Track.
   2. Standard Vertical Slot in Leg: 2-1/2 inches.
   3. Minimum Yield Strength and Thickness: 50 ksi; 0.0677 inch.
   4. Coating: ClarkDietrich DiamondPlus Coating.

E. Drift Clips: Manufacturer’s standard bypass or head clips, capable of isolating wall stud from upward and downward vertical displacement and lateral drift of primary structure.

2.4 CEILING JOIST FRAMING

A. Steel Ceiling Joists: Manufacturer's standard C-shaped steel sections, of web depths indicated, punched with enlarged service holes, with stiffened flanges, and as follows:
   1. Basis-of-Design Product: ClarkDietrich Building Systems (ProSTUD20 with DiamondPlus Coating).
   2. Minimum Base-Metal Thickness: 19 mil (20 gage) minimum, unless noted otherwise.
   3. Flange Width: 1-1/4 inches.
   4. Coating: DiamondPlus Coating.

2.5 FRAMING ACCESSORIES

A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.

B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
   1. Supplementary framing.
   2. Bracing, bridging, and solid blocking.
   3. Web stiffeners.
   4. Anchor clips.
   5. End clips.
   6. Foundation clips.
   7. Backer plates.

2.6 ANCHORS, CLIPS, AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.

B. Anchor Bolts: ASTM F 1554, Grade 55, threaded carbon-steel headless, hooked bolts, and carbon-steel nuts; and flat, hardened-steel washers; zinc coated by hot-dip process according to ASTM A 153/A 153M, Class C.

C. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

D. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.

E. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping steel drill screws.
   1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

2.7 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: SSPC-Paint 20 or DOD-P-21035.

B. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107, with fluid consistency and 30-minute working time.

C. Shims: Load bearing, high-density multimonomer plastic, nonleaching.

D. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.8 FABRICATION

A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
   1. Fabricate framing assemblies using jigs or templates.
   2. Cut framing members by sawing or shearing; do not torch cut.
   3. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
      a. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.
   4. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to Shop Drawings.

B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
   1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
   2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Install load bearing shims or grout between the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations to ensure a uniform bearing surface on supporting concrete or masonry construction.

B. Install sealer gaskets to isolate the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations.

3.3 INSTALLATION, GENERAL

A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed metal framing according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions" and to manufacturer's written instructions unless more stringent requirements are indicated.

C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.
   1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.

D. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened.
   1. Cut framing members by sawing or shearing; do not torch cut.
   2. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
      a. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.

E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.

F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

G. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.

H. Fasten hole reinforcing plate over web penetrations that exceed the size of manufacturer's standard punched openings.

I. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
   1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 INTERIOR NON-LOAD-BEARING WALL INSTALLATION

A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.

B. Fasten both flanges of studs to top and bottom track, unless otherwise indicated. Space studs as follows:

1. Stud Spacing: 16 inches on center, maximum.

C. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements.

D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.
1. Install double deep-leg deflection tracks and anchor outer track to building structure.
2. Connect drift clips to cold formed metal framing and anchor to building structure.

E. Install horizontal bridging in wall studs, spaced in rows indicated on Shop Drawings but not more than 48 inches apart. Fasten at each stud intersection.
1. Bridging: Cold-rolled steel channel welded or mechanically fastened to webs of punched studs.
2. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
3. Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.

F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, fasteners, and stud girts, to provide a complete and stable wall-framing system.

3.5 JOIST INSTALLATION

A. Install perimeter joist track sized to match joists. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacings indicated on Shop Drawings.

B. Install joists bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten joists to both flanges of joist track.
1. Install joists over supporting frame with a minimum end bearing of 1-1/2 inches.
2. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections as indicated on Shop Drawings.

C. Space joists not more than 2 inches from abutting walls, and as follows:
1. Joist Spacing: 16 inches on center, maximum.

D. Frame openings with built-up joist headers consisting of joist and joist track, nesting joists, or another combination of connected joists if indicated.

E. Install joist reinforcement at interior supports with single, short length of joist section located directly over interior support, with lapped joists of equal length to joist reinforcement, or as indicated.
1. Install web stiffeners to transfer axial loads of walls above.

F. Install bridging at intervals 8’-0” o.c. Fasten bridging at each joist intersection as follows:
1. Bridging: Combination of flat, taut, steel sheet straps of 1 ½” width and 16 gage thickness and joist-track solid blocking of width and thickness indicated. Fasten flat straps to bottom flange of joists and secure solid blocking to joist webs.

G. Secure joists to load-bearing interior walls to prevent lateral movement of bottom flange.

H. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold-down angles, anchors, and fasteners, to provide a complete and stable joist-framing assembly.

3.6 FIELD QUALITY CONTROL

A. Testing: City will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Field and shop welds will be subject to testing and inspecting.

C. Testing agency will report test results promptly and in writing to Contractor/Construction Manager and Architect.

D. Remove and replace work where test results indicate that it does not comply with specified requirements.

E. Additional testing and inspecting, at Contractor’s/Construction Manager's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.7 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer, ensure that cold-formed metal framing is without damage or deterioration at the time of Final Completion.

END OF SECTION

SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Definition: Metal fabrications include items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere.

B. Extent of metal fabrications is indicated on drawings and schedules.

C. Types of work in this section include metal fabrications for:
1. Rough hardware
2. Loose bearing and leveling plates
3. Loose steel lintels
4. Miscellaneous framing and supports
5. Miscellaneous steel trim
6. Shelf angles
7. Steel pipe railings

D. Structural steel is specified in another section within Division 5.
Paint application for structural steel frames is specified in Division 9.

1.3 SYSTEM PERFORMANCES

A. Structural Performances: Provide assemblies which, when installed, comply with the following minimum requirements for structural performance, unless otherwise indicated.

B. All Assemblies shall comply with the Florida Building Code 2023 and ASCE 7-22.
1. Handrails and Toprails: Capable of withstanding the following loads applied as indicated when tested per ASTM E 935.
   a. Concentrated loads of 200 lbs. applied at any point in any direction.
   b. Uniform load of 50 lbs per linear ft. applied simultaneously in both vertical and horizontal directions.
2. Guards: Intermediate rails, balusters and panel fillers capable of withstanding a uniform load of 25 lb. per sq. ft. of gross area of guard, including any open areas, of which they are a part.

1.4 QUALITY ASSURANCE

A. Shop Assembly: Pre-assemble items in shop to the greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout.

B. Shop Drawings: Submit Engineered shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections, and structural calculations. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others. Shop drawings must be signed and sealed by a State of Florida registered engineer. Engineering shall comply the Florida Building Code 2023 and ASCE 7-22.

C. Samples: Submit 2 sets of representative samples of materials and finished products as may be requested by Architect.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Ferrous Metals:
1. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
2. Steel Plates, Shapes and Bars: ASTM A 36
3. Steel Bar Grating: ASTM A 569 or ASTM A 36
4. Steel Tubing: Cold-formed, ASTM A 500; or hot-rolled, ASTM A 501
5. Structural Steel Sheet: Hot-rolled, ASTM A 570; or cold-rolled ASTM A 611, Class 1; of grade required for design loading.
6. Galvanized Structural Steel Sheet: ASTM A 446, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.
7. Steel Pipe: ASTM A 53; Type and grade (if applicable) as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (schedule 40), unless otherwise indicated.
8. Gray Iron Castings: ASTM A 48, Class 30
9. Malleable Iron Castings: ASTM A 47, grade as selected by fabricator.
10. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
11. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers and shims as required, hot-dip galvanized, ASTM A 153.

B. Aluminum Metals:
1. Aluminum Bar Gratings: ASTM B 221, alloy 6061-T6 or 6063-T6 for bearing bars, alloy 6061-T1 for cross bars
   a. Aluminum Rivets: ASTM B 316, alloy 6053-T4 or 6061-T6
2. Expanded Aluminum Grating: ASTM B 209, alloy 5052-H32
3. Fasteners for Aluminum Gratings: Use fasteners made of same basic metal as fastened metal except use galvanized fasteners complying with ASTM A 153 for exterior aluminum units, unless otherwise indicated. Do not use metals which are corrosive or incompatible with metals joined.

C. Grout:
1. Metallic Non-Shrink Grout: Pre-mixed, factory-packaged, ferrous aggregate grout complying with CE CRD-C588, Type M.

2. Non-Shrink Non-Metallic Grout: Pre-mixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with CE CRD-C621. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section.

D. Fasteners:

1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
2. Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A
3. Lag Bolts: Square head type, FS FF-B-561
4. Machine Screws: Cadmium plated steel, FS FF-S-92
5. Wood Screws: Flat head carbon steel, FS FF-S-111
6. Plain Washers: Round, carbon steel, FS FF-W-92
7. Masonry Anchorage Devices: Expansion shields, FS FF-S-325
8. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as required.
9. Lock Washers: Helical spring type carbon steel, FS FF-W-84

E. Paint:
1. Shop Primer for Ferrous Metal: Manufacturer's or Fabricator's standard, fast-curing, lead-free, "universal" primer; selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated and for capability to provide a sound foundation for field-applied topcoats despite prolonged exposure; complying with performance requirements of FS TT-P-645.
2. Manufacturer: Carboline Carbo Zinc 11 HS Inorganic Zinc Primer

F. Concrete Fill:
1. Concrete Materials and Properties: Comply with requirements of Division-3 section "Concrete Work" for normal weight, ready-mix concrete with minimum 28-day compressive strength of 3500 psi, 440 lbs. cement per cu. ft. minimum and W/C ratio of 0.65 maximum, unless higher strengths indicated.
2. Non-Slip aggregate Finish: Factory-graded, packaged material containing fused aluminum oxide grits or crushed emery as abrasive aggregate; rust-proof and non-glazing; unaffected by freezing, moisture or cleaning materials.

2.2 FABRICATION, GENERAL

A. Workmanship: Use materials of size and thickness indicated, or if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.

B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent- metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

C. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.

D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts.

E. Provide for anchorage of type indicated, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.

F. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.

G. Galvanizing: Provide a zinc coating for those items indicated or specified to be galvanized, as follows:
   1. ASTM A 153 for galvanizing iron and steel hardware.
   2. ASTM A 123 for galvanized rolled, pressed and forged steel shapes, plates, bars and strips 1/8" thick and heavier.
   3. ASTM A 386 for galvanizing assembled steel products.

H. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.

I. Shop Painting:
   1. Apply shop primer to surfaces of metal fabrications except those which are galvanized or as indicated to be embedded in concrete or masonry, unless otherwise indicated, and in compliance with requirements of SSPC-PA1 "Paint Application Specification No. 1" for shop painting.
   2. Surface Preparation: Prepare ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
      a. Exteriors (SSPC Zone 1B): SSPC-SP6 "Commercial Blast Cleaning".
      b. Interiors (SSPC Zone 1A): SSPC-SP3 "Power Tool Cleaning:
   3. Manufacturer: Carboline Carbo Zinc 11 HS Inorganic Zinc Primer

2.3 ROUGH HARDWARE

A. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items as specified in Division-6 sections.

B. Fabricate items to sizes, shapes and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

2.4 LOOSE BEARING AND LEVELING PLATES

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required. Galvanize after fabrication.

2.5 MISCELLANEOUS FRAMING AND SUPPORTS

A. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work.

B. Fabricate miscellaneous units to sizes, shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise indicated, fabricated from structural steel shapes, plates and steel bars of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.

C. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.

1. Except as otherwise indicated, space anchors 24" o.c. and provide minimum anchor units of 1-1/4" x 1/4" x 8" steel straps.

D. Galvanize exterior miscellaneous frames and supports where indicated on drawings. Provide shop applied primer at all other locations.

2.6 MISCELLANEOUS STEEL TRIM

A. Provide shapes and sizes indicated for profiles shown. Unless otherwise indicated, fabricate units from structural steel shapes, plates and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings and anchorages as required for coordination of assembly and installation with other work.

B. Galvanize exterior miscellaneous steel trim where indicated on drawings. Provide shop applied primer at all other locations.

2.7 BAR GRATING LOUVERS

A. Galvanized steel bar grating louvers shall be cut to span between steel roof beams and connected to steel angle welded to steel beams at both ends and to the inside of the bar grating.

2.8 SHELF ANGLES

A. Provide structural steel shelf angles of sizes indicated for attachment to concrete framing. Provide slotted holes to receive 3/4" bolts, spaced not more than 6" from ends and not more than 24" o.c., unless otherwise indicated.

B. Furnish wedge-type concrete inserts, complete with fasteners, for attachment of shelf angles to cast-in-place concrete.

2.9 STEEL PIPE RAILINGS AND HANDRAILS

A. Fabricate steel pipe railings and handrails to design, dimensions, and details, if applicable. Provide railings and handrails members formed of pipe of sizes and wall thickness indicated, but not less than that required to support design loading.

B. Interconnect railing and handrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.
   1. At tee and cross intersections provide coped joints.
   2. At bends interconnect pipe by means of prefabricated elbow fittings or flush radius bends, as applicable, of radii indicated.
   3. At elbow bends provide mitered joints.
   4. Form bends by use of prefabricated elbow fittings and radius bends or by bending pipe, at fabricator's option.

C. Form simple and compound curves by bending pipe to jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross-section of pipe throughout entire bend without buckling, twisting or otherwise deforming exposed surfaces of pipe.

D. Provide wall returns at ends of wall-mounted handrails, except where otherwise indicated.

E. Close exposed ends of pipe by welding 3/16" thick steel plate in place or by use of prefabricated fittings.

F. Toe Boards: Where indicated, provide toe boards at railings around openings and at the edge of open-sided floors and platforms. Fabricate to dimensions and details indicated, or if not indicated, use a 4: high x 1/8" plate welded to, and centered between, each railing post.

G. Brackets, Flanges, Fittings and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings and anchors for interconnections of pipe and attachment of railings and handrails to other work. Furnish inserts and other anchorage devices for connecting railing and handrails to concrete or masonry work.
   1. For railing posts set in concrete provide sleeves of galvanized steel pipe not less than 6" long and with an inside diameter not less then 1/2" greater than the outside diameter of pipe. Provide steel plate closure welded to bottom of sleeve and of width and length not less than 1" greater than outside diameter of sleeve.
   2. Provide friction fit, removable covers designed to keep sleeves clean and hold top edge of sleeve 1/2" below finished-surface of concrete.

2.10 CAST TREADS AND THRESHOLDS

A. Fabricate units of material, sizes and configurations indicated. If not indicated, provide cast-iron units with integral abrasive finish. Furnish in lengths as required to accurately fit each opening or conditions.
   1. Stair nosings the base shall consist of heat treated extruded aluminum alloy 6063-T6. The abrasive filler shall consist of a mixture of aluminum oxide and silicon carbide granules in an epoxy matrix locked into the extruded channels of the base. The abrasive ribs shall project a minimum of 1/16 inch above the extruded channels. Nosings shall terminate not more than 3" from ends of steps for poured concrete stairs; for concrete filled steel pan stairs, nosings shall be full length of steps less 1/8" clearance.
   2. Color shall be as selected by the architect.

B. Manufacturer: Subject to compliance with requirements, provide cast treads and thresholds of one of the following:
   1. American Safety Tread Co. Type No. BF411D
      Helena, Alabama 35080.Telephone 1-800-245-4881.
      Amstep Products Type No. 200-241 A/AP
      190 Century Drive Bristol, Connecticut 06010. Telephone 800-457-0869
      Safe-T-Metal Co., Inc.
      P. O. Box 1182, Syracuse, NY 13201. Telephone (800) 886-7238

C. Provide anchors for embedding units in concrete, either integral or applied to units, as standard with the manufacturer.

D. Drill for mechanical anchors with countersunk holes located not more than 4" from ends and not more than 12" o.c., evenly spaced between ends, unless otherwise indicated. Provide closer spacing if recommended by the manufacturer.

E. Apply black asphaltic coating to concealed bottoms, sides, and edges of cast-iron units set into concrete.

F. Provide a plain surface texture, except where fluted or cross- hatched surfaces are indicated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.

B. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.2 INSTALLATION

A. General:
1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including, threaded fasteners for concrete and masonry inserts, toggle bolts, through- bolts, lag bolts, wood screws and other connectors as required.
2. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plus, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete masonry or similar construction.
3. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
4. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.
5. Setting Loose Plates: Clean concrete and masonry bearing surfaces of any bond-reducing materials and roughen to improve bond to surfaces. Clean the bottom surface of bearing plates.
6. Set Loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut-off flush with the edge of the bearing plate before packing with grout. Use metallic non-shrink grout in concealed locations where not exposed to moisture; use non-metallic non-shrink grout in exposed locations, unless otherwise indicated.
7. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

B. Steel Pipe Railings and Handrails:
1. Adjust railing prior to anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated, or if not indicated, as required by design loading. Plumb posts in each direction. Secure posts and railing ends to building construction as follows:
    a. Anchor posts in concrete by means of pipe sleeves preset and anchored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with non-shrink, non-metallic grout, mixed and placed to comply with grout manufacturer's directions.
    b. Anchor posts to steel with steel oval flanges, angle type or floor type as required by conditions, welded to posts and bolted to steel supporting members.
    c. Anchor rail ends into concrete and masonry with steel round flanges welded to rail ends and anchored into wall construction with lead expansion shields and bolts.
    d. Anchor rail ends to steel with steel oval or round flanges welded to rail ends and bolted to structural steel members, unless otherwise indicated.
2. Secure handrails to wall with wall brackets and end fittings. Provide bracket with not less than 1-1/2" clearance from inside face of handrail and finished wall surface. Locate brackets as indicated, or if not indicated, at spacing required for design loading. Secure wall brackets and wall return fittings to building construction as follows:

a. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
b. For concrete and solid masonry anchorage, use drilled-in expansion shield and either concealed hanger bolt or exposed lag bolt, as applicable.
c. For hollow masonry anchorage, use toggle bolts having square heads.
d. For stud partitions use lag bolts set into wood backing between studs. Coordinate with stud installations for accurate location of backing members.

3. Expansion Joints: Provide expansion joints at locations indicated, or if not indicated, at intervals not to exceed 40 feet. Provide slip joint with internal sleeve extending 2" beyond joint on either side; fasten internal sleeve securely to one side; locate joint within 6" of posts.
4. Cast Treads and Thresholds: Install cast treads and thresholds with anchorage system indicated to comply with manufacturer's recommendations. Seal units exposed to exterior mastic to provide a watertight installation.

3.3 ADJUST AND CLEAN

A. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting.

B. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

C. Touch-Up Painting: Cleaning and touch-up painting of field welds, bolted connections and abraded areas of the shop paint on miscellaneous metal is specified in Division 9 of these specifications.

D. For Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Florida Building Code, Latest Edition, "Wood" Chapter 2314 to 2330 – High Velocity Hurricane Zone requirements apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Wood blocking, cants, and nailers.

1.3 DEFINITIONS

A. Exposed Framing: Framing not concealed by other construction.

B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
   1. NLGA: National Lumber Grades Authority.
   2. SPIB: The Southern Pine Inspection Bureau.
   3. WCLIB: West Coast Lumber Inspection Bureau.
   4. WWPA: Western Wood Products Association.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
   1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
   2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
   3. For fire-retardant treatments specified to be High-Temperature (HT) type, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.
   4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
   5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
   6. For building wrap, include data on air-/moisture-infiltration protection based on testing according to referenced standards.

B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

1.5 QUALITY ASSURANCE

A. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.

B. Forest Certification: For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria":
   1. Miscellaneous lumber.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece and provide certificates of grade compliance issued by grading agency.
   3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
   4. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA C2, except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
   1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
   2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
   1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece and provide certificates of treatment compliance issued by inspection agency.

D. Application: Treat all rough carpentry, unless otherwise indicated.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood).
   1. Use Exterior type for exterior locations and where indicated.
   2. Use Interior Type A, High Temperature (HT) for enclosed roof framing, framing in attic spaces, and where indicated.

3. Use Interior Type A, unless otherwise indicated.

B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
   1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece and provide certificates of treatment compliance issued by inspection agency.

C. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.

D. Application: Treat all rough carpentry, unless otherwise indicated.
   1. Framing for raised platforms.
   2. Concealed blocking.
   3. Framing for non-load-bearing partitions, if indicated on drawings.
   4. Framing for non-load-bearing exterior walls if indicated on drawings.
   5. Roof construction, if indicated on drawings.
   6. Plywood backing panels, if indicated on drawings.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
   1. Blocking.
   2. Nailers.
   3. Fire blocking
   4. Rooftop equipment bases and support curbs.
   5. Cants.
   6. Furring.
   7. Grounds.
   8. Utility shelving.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content of any species.

C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.5 SHEATHING

A. Plywood Sheathing: Exterior, Structural I sheathing.
   1. Span Rating: Not less than 32/16.
   2. Nominal Thickness: Not less than 19/32 inch for roof sheathing and 3/4” for sub-floor.

2.6 PLYWOOD BACKING PANELS

A. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2-inch nominal thickness.

2.7 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or Type 304 stainless steel.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Lag Bolts: ASME B18.2.1.

F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

2.8 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

B. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
1. Use adhesives that have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chloropyrifos as its active ingredient.

D. Adhesives for Field Gluing Panels to Framing: Formulation complying with APA AFG-01 or ASTM D 3498 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.
1. Use adhesives that have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.

D. Do not splice structural members between supports, unless otherwise indicated.

E. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
   1. Use inorganic boron for items that are continuously protected from liquid water.
   2. Use copper naphthenate for items not continuously protected from liquid water.

G. Securely attach rough carpentry work and sheathing to substrate by anchoring and fastening as indicated on drawings and complying with the following:
   1. NES NER-272 for power-driven fasteners.
   2. Table 2324.1, "Fastening Schedule," in FBC's Florida Building Code, Latest Edition, High Velocity Hurricane Zone.

H. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

I. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.
   1. Comply with indicated fastener patterns where applicable. Before fastening, mark fastener locations, using a template made of sheet metal, plastic, or cardboard.
   2. Use finishing nails, unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

J. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

3.2 WOOD BLOCKING AND NAILER INSTALLATION

A. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.3 PROTECTION

A. Protect rough carpentry from the weather.

END OF SECTION

SECTION 07200 – INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. Extent of insulation work is shown on drawings and indicated by provisions of this section.

B. Applications of insulation specified in this section include the following:
   1. Board-type roof insulation
   2. Foil faced rigid building insulation.
   3. Sound attenuation insulation.
   4. Fire rated assembly insulation.
   5. Masonry Wall Insulation

1.3 QUALITY ASSURANCE:

A. Thermal Resistivity: Where thermal resistivity properties of insulation materials are designated by r-values they represent the rate of heat flow through a homogenous material exactly 1" thick, measured by test method included in referenced material standard or otherwise indicated. They are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

B. Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.
   1. Surface Burning Characteristics: ASTM E 84.
   2. Fire Resistance Ratings: ASTM E 119.
   3. Combustion Characteristics: ASTM E 136.

1.4 SUBMITTALS:

A. Product Data: Submit manufacturer's product literature and installation instructions for each type of insulation and vapor retarder material required.

B. Shop Drawings: Submit shop drawings for roof insulation. Including but not limited to plans, elevations, sections, details, and attachments to other work. Include R-value.

1.5 DELIVERY, STORAGE, AND HANDLING:

A. General Protection: Protect insulation from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, provide products of one of the following: (or Approved Equal)
   1. Manufacturers of Polyisocyanurate Board Insulation:

a. GAF
b. Dow Chemical Company.
c. Rmax, Inc.

2. Manufacturers of Foil-Faced, Polyisocyanurate Board Insulation:
   a. Dow Chemical Company.
   b. Rmax, Inc.
3. Manufacturers of Slag-Wool-Fiber/Rock-Wool-Fiber Blanket Insulation
   a. Fibrex Insulations Inc.
   b. Owens Corning.
   c. Thermafiber.
4. Manufacturers of Foamed-in-Place Masonry Wall Insulation
   a. Tailored Chemical Products / Core-Fill 500
   b. cfiFOAM, Inc / Core Foam
5. Insulation Adhesives:
   a. Sonneborn Building Products.
   b. GEMCO.
6. Vapor Retarder:
   a. Fortifiber.
   b. Alumiseal.
7. Vapor Retarder Tape:
   a. Avery Dennison Specialty Tape.

2.2 INSULATING MATERIALS:

A. General: Provide insulating materials which comply with requirements indicated for materials, compliance with referenced standards, and other characteristics. No asbestos containing materials are to be provided.

B. Polyisocyanurate Board Insulation (For exterior and roof insulation applications only): Rigid, cellular thermal insulation with glass-fiber-reinforced polyisocyanurate closed-cell foam core and inorganic facing laminated to both sides; Minimum R-value of 19 at 4” thickness; and as follows:
   1. Density: 2.0 pounds per cubic foot minimum.
   2. Surface Burning Characteristics: Maximum values for flame spread and smoke developed of 60 and 160, respectively.
   3. Compressive strength: 20 pounds per square inch minimum.
   4. Water Vapor Transmission: 1.5 perm maximum.
   5. Water Absorption: 1% volume maximum.
   6. Dimensional stability: 2 percent maximum linear change when conditioned at 158 F (70 C) and 98 percent relative humidity for seven days.
   7. Curing time: 24 hours minimum, plus an additional 24 hours minimum per inch (25 mm) of thickness, at a minimum of 60 F (16 C) before shipment from the manufacturer.
   8. Maximum Board size: 4-foot by 8-foot (1.2-m by 2.4-m) maximum board size for loose-laid and mechanically attached insulation boards, 4-foot by 4-foot (1.2-m by 1.2-m) maximum board size for insulation boards adhered to a substrate.
   9. Board thickness: 4 inches maximum; when thicker total thicknesses are necessary, provide insulation boards in multiple layers to achieve the desired total thickness. When multiple insulation layers are used, the insulation board's joints in the top layer should be staggered vertically and offset from the joints in the underlaying layer(s).

C. Foil-Faced, Polyisocyanurate Board Insulation:
   1. ASTM C 1289, Type I, Class 1, with maximum flame-spread and smoke-developed indexes of 25 and 450, respectively, on thicknesses up to 4 inches.

D. Slag-Wool-Fiber/Rock-Wool-Fiber Blanket Insulation:

1. ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

E. Foam-in-Place Masonry Wall Insulation
1. Maximum flame-spread and smoke development indexes of 0 and 5 respectively; noncombustible, Class A; R-value of 4.91/inch @ 32 degrees per ASTM C-177

2.3 AUXILIARY INSULATING MATERIALS:

A. Adhesive for Bonding Insulation: Type recommended by insulation manufacturer, and complying with requirements for fire performance characteristics.

B. Mastic Sealer: Type recommended by insulation manufacturer for bonding edge joints between units and filling voids in work.

PART 3 - EXECUTION

3.1 INSPECTION AND PREPARATION:

A. Require Installer to examine substrates and conditions under which insulation work is to be performed. A satisfactory substrate is one that complies with requirements of the section in which substrate and related work is specified. Obtain Installer's written report listing conditions detrimental to performance of work in this section. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL:

A. Comply with manufacturer's instructions for particular conditions of installation in each case. If printed instructions are not available or do not apply to project conditions, consult the manufacturer’s technical representative for specific recommendations before proceeding with work.

B. Extend insulation full thickness as shown over the entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections, which interfere with placement.

C. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

D. Slope insulation around roof drains.

3.3 INSTALLATION OF GENERAL BUILDING INSULATION:

A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between closed-cell (non-breathing) insulation units by applying mastic or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with mastic or sealant.

C. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for fire stopping.
1. Tape joints and ruptures in vapor retarder and seal each continuous area of insulation to surrounding construction to ensure air-tight installation.

2. Pressure sensitive joint sealing tape should be used to cover all insulation joints. Pins, clips and any punctures or tears in the facing should be covered with vaporsealing, pressure sensitive patches to maintain the integrity of the vapor retarder. Follow tape manufacturer's application recommendations and instructions.

3.4 INSTALLATION OF THERMAL INSULATION ON ROOF

A. Install board insulation on wood substrates by mechanically attached, as follows:
   1. Fasten insulation to wood substrates according to manufacturer's written instructions.
   2. Extend insulation horizontally to maintain a thermally sealed envelope.

3.5 INSTALLATION OF THERMAL INSULATION ON WALLS

A. Install board insulation on concrete and block substrates by adhesively attached, spindle-type insulation anchors as follows:
   1. Fasten insulation anchors to concrete substrates with insulation anchor adhesive according to anchor manufacturer's written instructions. Space anchors according to insulation manufacturer's written instructions for insulation type, thickness, and application indicated.
   2. Extend insulation vertically to the underside of the roof deck or floor slab above to maintain a thermally sealed envelope.

3.6 INSTALLATION OF SOUND ATTENUATION INSULATION

A. IN CEILINGS:
   1. Install 3-inch thick, unfaced glass or slag-wool-fiber/rock-wool fiber blanket insulation over suspended ceilings at partitions in a width that extends insulation 48 inches on either side of partition.
   2. Install 3-inch thick, unfaced glass or slag-wool-fiber/rock-wool fiber blanket insulation over suspended ceilings in rooms designated as acoustically treated room – see door schedule for all rooms with acoustically rated doors.

B. IN WALLS:
   1. Install 3-inch thick, unfaced glass or slag-wool-fiber/rock-wool fiber blanket insulation in all cavity and plumbing chase walls full height of the wall.

3.7 INSTALLATION OF FOAM-IN-PLACE MASONRY WALL INSULATION

1. Fill all open cells and voids in hollow concrete masonry walls where shown on drawings. The foam insulation shall be pressure injected through a series of 5/8" to 7/8" holes drilled into every vertical column of block cells (every 8" on center) beginning at an approximate height of four (4) feet from finished floor level. Repeat this procedure at an approximate height of ten (10) feet above the first horizontal row of holes (or as needed) until the void is completely filled. Patch holes with mortar and score to resemble existing surface.

3.8 PROTECTION:

A. General: Protect installed insulation and vapor retarders from harmful weather exposures and from possible physical abuses, where possible by non-delayed installation of concealing work or, where that is not possible, by temporary covering or enclosure.

B. All insulation products should not be exposed to weather during shipping, storage or installation.

END OF SECTION

SECTION 07214 - FOAM PLASTIC MASONRY WALL INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. Applications of insulation specified in this section include the following:
   1. Foam plastic thermal insulation
      a. Nitrogen-based, non-toxic amino-plast resin, foaming catalyst and air.

1.2 QUALITY ASSURANCE:

A. Insulation shall be installed as per manufacture's recommendations.

B. The firm performing work on this project shall have at least five consecutive years of documented experience with the installation of foam plastic masonry wall insulation.

C. Foam plastic insulation resin must come from the manufacturer pre-mixed to insure consistency.

PART 2 - PRODUCT

2.1 MANUFACTURER:

A. Tailored Chemical Products, Inc. (CORE-FILL 500 Insulation) – Basis of Design
   1. 700 12th Street Drive NW
      Hickory, NC 28601
      Telephone: (704) 332-6512 | 800.627.1687

      Local Representative: Tailored Foam of Florida, Inc.
      3900 St Johns Pkwy, Sanford, FL 32771
      Telephone: (407) 332-0333 Fax: (407) 830-9174

2.2 INSTALLATION:

A. Insulation is to be installed after all masonry and structural concrete work is in place. A 7/8" hole is to be drilled in each vertical column of block cells 4' +/- above the floor level. The foam is to be pressure injected into the cells at 120 - 160 P.S.I. This procedure is repeated every 10' +/- (i.e. 14', 24', 34',…) of wall height until the void is completely full. The installer shall then patch their holes with mortar and score to resemble existing surface in areas where masonry is to be left exposed.

2.3 QUALITY CONTROL:

A. Contractor shall provide Architect with four (4) thermal image tests for masonry wall insulation at locations field specified by the Architect. Any irregularities or voids in the insulation must be corrected and the area retested.

END OF SECTION 07214

SECTION 07270 – CLOSED-CELL POLYURETHANE FOAM INSULATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This section includes the following:
   1. Closed-cell, medium-density spray polyurethane foam insulation located above and below conditioned spaces adjacent to non-conditioned roof / floor.

B. Related Work in other Sections includes the following:
   1. Section 01400 - Quality Requirements; coordination with Owner's independent testing and inspection agency.
   2. Section 01500 - Temporary Facilities and Controls; requirement to schedule work to prevent sunlight and weather exposure of materials beyond limits established by manufacturer; requirement to protect materials from damage after installation and prior to installation of enclosing work.
   3. Section 03300 - Cast-In-Place Concrete; requirement that backup concrete be smooth without protrusions.

1.2 PERFORMANCE REQUIREMENTS

A. Material Performance:
   1. Density (ASTM D 1622): 2.1 lb/ft3 (34 Kg/m3).
   2. Thermal Resistance (ÅSTM C 518):
      a. R-7.4 (sf.h degree F/BTU) Aged R value at 1 inch 180 days at 76 degrees F (23 degrees C)
   3. Water Vapor Permeance at 1.5 inches (ÅSTM E 96-05): 0.79 perms (is a vapor barrier per IBC Section 202 definitions at 1.2 inches)
   4. Air Permeance at 75 Pa at 1 inch (ÅSTM E 2178-03): 0.001 L/sm2
   5. Compressive Strength (ÅSTM D 1621): 20.6 psi (142 kPa).
   6. Tensile Strength (ASTM D 1623): 45.4 psi (313 kPa)
   7. Off Gassing Test (VOC Emissions) (CGSB 51.23-92): Pass (no toxic vapor).
   8. Surface Burning Characteristics (ÅSTM E 84) 4 inches: Class I. Flame Spread Index 20, Smoke Developed Index 400.
   9. Closed Cell Content (ASTM D 2856) : >92 percent.
   10. Water Absorption Percent by Volume (ÅSTM D 2842): 0.3 percent.
   11. Recycled Content: 14.6 percent (pre- and post-consumer).

B. Assembly Performance:
   1. Air Leakage of Air Barrier Assembly (static loading to 600 Pa and gust loading to 1,200 PA) Complies with ABAA requirements (ASTM E 2357-05): <0.0022L/sm2
   2. Assembly shall be capable of withstanding combined design wind, fan and stack pressures, both positive and negative on the envelope without damage or displacement and shall transfer the load to the structure.
   3. Assembly insulation material shall not displace adjacent materials in the assembly under full load.
   4. Assembly shall be joined in an airtight and flexible manner to the insulation material of adjacent assemblies, allowing for the relative movement of assemblies due to thermal and moisture variations and creep.

C. Adjacent Materials: Install closed-cell spray polyurethane foam insulation at the following locations:
   1. Conditioned Second Floor over unconditioned canopy space.
   2. Parking deck over conditioned space.

1.3 SUBMITTALS

A. Submittals: Submit in accordance with Division 01 requirements.

B. Quality Assurance Program: Submit evidence of current contractor accreditation and installer certification under the Air Barrier Association of America's (ABAA) Quality Assurance Program. Submit accreditation number of the contractor and certification numbers of the installers.

C. Product Data: Submit manufacturer's product data, manufacturer's instructions for evaluating, preparing, and treating substrate, temperature and other limitations of installation conditions, technical data, and tested physical and performance properties.
   1. Include VOC content of each material, and applicable LEED limit.
   2. Include statement that materials are compatible with adjacent materials proposed for use.
   3. Include recommended values for field adhesion test on each substrate.
   4. Include recycled content.

D. LEED Submittals:
   1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.
   2. Product Data for Credit MR 5: For regional materials.
   3. Include statement indicating costs for each product having recycled content and regional materials.

E. Samples: Submit clearly labeled samples, 3-inch by 4-inch minimum size of each material specified.

F. Compatibility: Submit letter from manufacturer stating that materials proposed for use are permanently chemically compatible and adhesively compatible with adjacent materials proposed for use. Submit letter from manufacturer stating that cleaning materials used during installation are chemically compatible with adjacent materials proposed for use.

G. Insulation Subcontractor Qualifications: Subcontractor shall be accredited at time of bidding and during the complete installation period by the Air Barrier Association of America (ABAA) whose installers are certified in accordance with the site Quality Assurance Program used by ABAA.
   1. Closed-cell, medium density sprayed polyurethane foam insulation installers shall be certified by BPQI (Building Performance Quality Institute) for the ABAA Quality Assurance Program in accordance with the requirements outlined in the QAP program used by ABAA. Installers shall have their photo-identification air barrier certification cards in their possession and available on the project site, for inspection upon request.

H. Manufacturer: Obtain primary ABAA listed materials from a single ABAA Licensed manufacturer regularly engaged in manufacturing specified closed-cell, medium density sprayed polyurethane foam. Obtain secondary materials from a source acceptable to the primary materials manufacturer.

I. VOC Regulations: Provide products which comply with applicable regulations controlling the use of volatile organic compounds.

J. Preconstruction Meeting: Convene a minimum of two weeks prior to commencing Work of this Section. Agenda shall include, at a minimum, sequence of construction, coordination with substrate preparation, insulation materials approved for use, compatibility of materials, coordination with installation of adjacent and covering materials, and details of construction and chemical/fire safety plans. Attendance is required by representatives of related trades including covering materials, substrate materials and adjacent materials.

K. Field Quality Assurance: Implement the site Quality Assurance Program requirements used by ABAA. Cooperate with ABAA inspectors and any independent testing and inspection agencies engaged by the Owner. Do not cover the insulation assembly until it has been inspected, tested and accepted.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original packages with unbroken seals, labeled with manufacturer's name, product, date of manufacture, and directions for storage.

B. Store materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by the insulation spray foam manufacturer. Protect stored materials from direct sunlight.

C. Handle materials in accordance with manufacturer’s recommendations.

1.5 PROJECT CONDITIONS

A. Temperature: Install closed-cell, medium density spray polyurethane foam insulation within range of ambient and substrate temperatures recommended by insulation manufacturer. Do not apply insulation to a damp or wet substrate.

B. Field Conditions: Do not install insulation in snow, rain, fog, or mist. Do not install insulation when the temperature of substrate surfaces and surrounding air temperatures are below those recommended by the manufacturer.

C. Sequencing: Do not install insulation material before the roof assembly has been sufficiently installed to prevent a buildup of water in the interior of the building.

D. Compatibility: Do not allow closed-cell, medium density spray polyurethane foam to come in contact with chemically incompatible materials.

E. Ultra-violet exposure: Do not expose the insulation material to sunlight longer than as recommended by the manufacturer (if applicable).

1.6 WARRANTY

A. Manufacturer’s Material Warranty: Provide manufacturer’s standard product warranty, for a minimum 3 years from the date of Substantial Completion.

B. Subcontractor (approved by ABAA and manufacturer) Installation Warranty: Provide a 2-year installation warranty from date of Substantial Completion, including all components of the insulation assembly, against failures including loss of air tight seal, loss of watertight seal, loss of attachment, loss of cohesion and failure to cure properly.

PART 2 - PRODUCTS

2.1 SPRAY FOAM INSULATION MANUFACTURERS

1. Demilec (USA) LLC – Heat Loc Soy 200 (basis of design)
2. Or approved equal

2.2 SPRAY FOAM INSULATION MATERIALS

A. Medium Density Closed Cell Spray Polyurethane Foam Insulation:

1. Insulation system shall not require the priming of substrates nor the application of sealing tape at wallboard seams and other wall penetrations.
2. Spray Applied Rigid Polyurethane Closed Cell Foam Insulation System:
   a. Product: HEATLOK SOY 200 Manufactured by DEMILEC (USA) LLC, Arlington, TX, or approved equal.
   b. Product Approval:
      1) International Code Council Evaluation Services Report #3210
      2) Approved for non-structural walls in building types I, II, III, IV, and V construction under IBC and dwellings for IRC.
      3) Approved for exterior walls in building types I, II, III, and IV construction.
      4) Passed AC 377 Appendix X compliant NFPA 286.
3. Application Rate: Up to 2 inches in a single pass, to the total thickness required for the project.
4. Physical Properties:
   a. Nominal Density (ASTM D1622): 2.1 lb/cu.ft.
   b. Compressive Strength, 3-inch thickness (ASTM D1621): 20 psi.
   c. Closed-Cell Content (ASTM D1940): Greater than 90 percent.
   d. R-Value (ASTM C1029 180-day aged): 7.4 per inch.
   e. Water Absorption (ASTM D2842): 0.3 (gm/cc).
   f. Water Vapor Transmission (ASTM E96): 0.79 perms at 1.5 inches.
   g. Air Infiltration (ASTM E283): 75 Pa 0.001 L/S/m^2 (1.57 psf) (less than 0.001 cfm/ft^2); 300 Pa 0.001 L/S/m^2 (6.24 psf) (less than 0.001 cfm/ft^2).
   h. Air Permeance (ASTM E2178): 75 Pa 0.000055 L/S.m^2.Pa 0.000117 ft^3/min.mw.Pa; 300 Pa 0.000024 L/./m^2.Pa 0.000051 ft^3/min.mw.Pa.
   i. Recycled Content: 14.6 percent (pre- and post-consumer).
5. AABA Performance Values:
   a. Dimensional Stability (ASTM D2126): Maximum -4% at -4°F, 8% at 176°F and 15% at 158°F.
   b. Water Absorption (ASTM D2842): Maximum 4%.
   c. Open-cell content (ASTM D6226): Maximum 10%.
   d. Pull-adhesion (ASTM D4541): Minimum 16 psi.
   e. Crack Bridging (ASTM C1305): Pass at -15ºF.
   f. Fungi Resistance (ASTM C1338): No growth.
   g. Flame Spread Characteristics (ASTM E84): Maximum $\leq$25.
   h. Smoke Developed Characteristics (ASTM E84): Maximum $\leq$450.

2.3 ACCESSORY PRODUCTS

A. Water Based Fire Protection:
1. Product: BLAZELOK TB 200 with BLAZELOK TB 200 Primer, Distributed by DEMILEC (USA) LLC, Manufactured by TPR2 or Approved Equal.
2. Application: Install primer first, then intumescent coating. Follow manufacturer's application recommendations.
3. Physical Properties:
   a. BLAZELOK TB 200 Primer:
      1) Approval: Comply with the 2009 IBC 2603.9 and 803.2; and the NFPA 101 paragraph 10.2.3.7.2 for use without a prescriptive thermal barrier.
      2) Surface Burning Characteristics (ÅSTM E 84): Class I. Flame Spread Index 0; Smoke Developed Index 20.
      3) Expands up to 2000 percent.
      4) Flash Point: None
      5) Volatility/VOC: 0
      6) Non-toxic, drain safe, water based, non-fuming.
      7) Color: Gray
   b. BLAZELOK TB 200:

1) Approval: Complies with the 2009 IBC 2603.9 and 803.2; 2009 IRC 302.9.4 and 316.6; 2006 IRC 314.6 and 315.4 and the NFPA 101 paragraph 10.2.3.7.2 for use without a prescriptive thermal barrier.
2) Surface Burning Characteristics (ÅSTM E 84): Class I. Flame Spread Index 5, Smoke Developed Index 20.
3) Expands up to 2000 percent.
4) Flash Point: None
5) Volatility/VOC: < 50 g/L
6) Non-toxic, drain safe, water based, non-fuming.
7) Color: Dull Flat white.
    a) Do not add tint.
    b) Wait a minimum of 24 hours prior to top coating with quality latex paint. Verify dryness with moisture meter.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions under which the insulation assembly will be installed, with Installer present, for compliance with requirements.
    1. Verify that surfaces and conditions are suitable prior to commencing work of this section. Do not proceed with installation until unsatisfactory conditions have been corrected.
    2. Ensure that the following conditions are met:
        a. Surfaces are sound, dry, even, and free of oil, grease, dirt, excess mortar or other contaminants.
        b. Concrete surfaces are cured and dry, smooth without large voids or sharp protrusions.
    3. Verify substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263 and take suitable measures until substrate passes moisture test.
    4. Verify sealants are compatible with membrane proposed for use. Perform field peel-adhesion test on materials to which sealants are adhered.
    5. Notify Architect in writing of anticipated problems using closed-cell, medium density spray polyurethane foam over substrate prior to proceeding.

3.2 SURFACE PREPARATION

A. Clean, prepare, and treat substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for insulation application.
    1. Ensure that penetrating work by other trades is in place and complete.
    2. Prepare surfaces by brushing, scrubbing, scraping, grinding or compressed air to remove loose mortar, dust, oil, grease, oxidation, mill scale and other contaminants which will affect adhesion of the closed-cell, medium density spray polyurethane foam.
    3. Where there are release agents or other non-compatible coatings, wipe down metal surfaces to remove these release agents or other non-compatible coatings, using clean sponges or rags soaked in a solvent compatible with the spray polyurethane foam.
    4. Ensure metal ceiling anchors are in place.

B. Protection from Spray Applied Materials:
    1. Mask and cover adjacent areas to protect from overspray.
    2. Ensure any required foam stop or back up material are in place to prevent over spray and achieve complete seal.

3. Seal off existing ventilation equipment. Install temporary ducting and fans to ensure exhaust fumes. Provide for make-up air.
4. Erect barriers, isolate area and post warning signs to advise non-protected personnel to avoid the spray area.

3.3 INSTALLATION

A. Spray Polyurethane Foam Installation: Install materials in accordance with manufacturer's recommendations, ULC S 705.2 and the following:
1. Installer shall use proper personal protective equipment (PPE) during the installation of material in accordance with US Government regulation 29 CFR 1910.134.
2. Warning signs shall be displayed and non-protected personnel shall be kept from the spray area in accordance with ULC S705.2.
3. Equipment used to spray polyurethane foam shall comply with ULC S 705.2 and the manufacturer's recommendations for the specific type of application. Record equipment settings on the Daily Work Record as required by the ULC S 705.2 installation standard. Each proportioner unit shall supply only one spray gun.
4. Apply only when surfaces and environmental conditions are within limits prescribed by the material manufacturer or the ULC S 705.2 Installation standard.
5. Apply in consecutive passes as recommended by manufacturer to thickness as indicated on drawings. Passes shall be not less than 1/2 inch (12 mm) and not greater than 3 inches (75 mm). An additional pass shall only be done after the first pass has had time to cool down.
6. Install within manufacturer's tolerances, but not more than minus 1/4 inch (6 mm).
7. Do not install spray polyurethane foam within 3 inches (75 mm) of heat emitting devices such as light fixtures and chimneys.
8. Finished surface of foam insulation to be free of voids and embedded foreign objects.
9. Remove masking materials and over spray from adjacent areas immediately after foam surface has hardened. Ensure cleaning methods do not damage work performed by other sections.
10. Trim, as required, any excess thickness that would interfere with the application of cladding/covering system by other trades.
11. Clean and restore surfaces soiled or damaged by work of the section. Consult with section of work soiled before cleaning to ensure methods used will not damage the work.
12. Complete connections to other components and repair any gaps, holes or other damage using material, which conforms to ULC S 710.1 (single component) or ULC S 711.1 (two components) and installed in accordance with ULC S 710.2 or ULC S 711.2 as applicable.

B. Application without a Thermal or Ignition Barrier (exposed foam) over occupied spaces (workshops):
1. Minimum 3" thickness in floors and ceilings with all foam surfaces covered with 4 dry mils (0.10 mm) 7 wet mils (0.18 mm) of Blazelok TB 200 primer then covered with 8 dry mils (0.20 mm) 14 wet mils (0.36 mm) of Blazelok TB 200 intumescent coating.

C. Attics and Crawlspaces: Passed AC 377 Appendix X compliant NFPA 286. (below second floor slab over unconditioned first floor spaces):
1. Minimum 3" thickness on the underside of the second floor slab and over the joists in attic floors within ceiling cavity with no intumescent coating.
2. HEATLOK SOY 200 may be left exposed without an intumescent coating in accordance with ÅSTM E 970.

3.4 FIELD QUALITY CONTROL

A. Owner's Inspection and Testing: Cooperate with Owner's testing agency. Allow access to work areas and staging. Notify Owner's testing agency in writing of schedule for Work of this Section to allow sufficient time for testing and inspection. Do not cover Work of this Section until testing and inspection is accepted.

3.5 PROTECTING AND CLEANING

A. Protect insulation materials from damage during installation and the remainder of the construction period, according to manufacturer's written instructions.
   1. Coordinate with installation of materials which cover the insulation assemblies, to ensure exposure period does not exceed that recommended by the manufacturer.

B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction and acceptable to the primary material manufacturer.

C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 07270

SECTION 07541 - ETHYLENE INTERPOLYMER (KEE) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Direct Adhered KEE membrane roofing system.
   2. Coverboard.

B. Related Sections:
   1. Division 6 Section "Rough Carpentry" for wood nailers, curbs, and blocking.
   2. Division 7 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.
   3. Division 7 Section "Joint Sealers" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

A. Roofing Terminology: See ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.4 PERFORMANCE REQUIREMENTS

A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.

C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE 7-22. Comply with the requirements of the Florida Building Code, latest edition, and subsequent revisions “High Velocity Hurricane Zone”.
   1. Common Design Parameters:
      a. Basic Wind Speed: 170 MPH
      b. Ground Exposure: C
      c. Building Risk Category: II
      d. Enclosed Building

   2. Specific Building Design Parameters and Pressures:
      a. See structural drawing sheets.

D. Energy Performance:
   1. Provide roofing system with initial Solar Reflectance Index not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.
   2. Provide roofing system that is listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
   1. Base flashings and membrane terminations.
   2. Roof plan showing orientation of roof deck and orientation of membrane roofing and fastening spacings and patterns for mechanically fastened membrane roofing.
   3. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
   4. Manufacturer’s details or manufacturer approved dimensioned shop drawings not found in Architectural Drawing and other information that may affect the suitability and installation of the Roofing System.
   5. Complete list of accessories or materials not manufactured or expressly authorized for use by Roof System Manufacturer and labeled as such.
   6. Sealed submittal by Professional Engineer, licensed in the State of Florida, stating that roofing assembly will conform to Florida Building Code Wind Requirements.
      a. Submit plans for each roof zone with corresponding calculations that show wind pressures and fastener quantity, size, type, and spacing for each roof zone.

C. Samples for Verification: For the following products:
   1. Single Ply Roofing membrane.
   2. Metal termination bars.
   3. Six roof cover fasteners of each type, length, and finish.

D. Qualification Data:
   1. A list of ten (10) roofing projects completed with a similar product within the last five (5) years. List shall include names of project representatives and respective telephone numbers. This list shall contain projects which required the same level of size and complexity. These ten (10) projects shall have been contracted and installed by the company bidding the job.
   2. At least five (5) of these projects must have been in excess of 50,000 square feet and must be at least two (2) years old.
   3. Qualifications of field supervision personnel proposed for this project.

E. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
   1. Submit evidence of compliance with performance requirements.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.

G. Research/Evaluation Reports: For components of membrane roofing system, from Miami Dade County.

H. Field quality-control reports.

I. Maintenance Data: For roofing system to include in maintenance manuals.

J. Warranties: Sample of special warranties.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer approved for membrane roofing system identical to that used for this Project.

B. Roofing contractor shall be authorized by the roof membrane manufacturer to install the Roof System.

C. The membrane manufacturer's Technical Representative shall be available to make recommendations necessary to insure compliance. The Technical Representative shall be responsible for recommending any specification alternatives due to unforeseen job conditions
   1. Membrane manufacture must offer technical assistance for pre-job conference and initial job start-up.

D. It will be the responsibility of the roofing contractor to initiate a Quality Control Program to govern all aspects of the installation of the new Roofing System.

E. Installer Qualifications:
   1. A qualified firm, with minimum 10 years experience, that is approved, authorized, or licensed by membrane roofing system manufacturer to install the roof system in strict accordance with the approved Specifications and Drawings as amended and approved by membrane manufacturer's Technical Service Department to meet job and environmental conditions.
      a. Roofing contractor and key supervisory personnel shall have received sufficient training by membrane manufacturer.
      b. Contractors key supervisory personal shall have not less than three years experience in the installation of like products and be present at all times during roof installation.

F. Source Limitations: Obtain components including roof insulation, fasteners, and flashings for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.

G. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.

H. Fire-Resistance Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

I. Preinstallation Roofing Conference: Conduct conference at Project site.
   1. Prior to installation of materials, a pre-roofing conference shall be held with the authorized roofing contractor, Manufacturer's representative and owner/owner's representative(s) to discuss the specified roofing system, its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.
   2. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.
   3. Meet with Owner, Architect, Owner's insurer, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
   4. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
   5. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

6. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
7. Review structural loading limitations of roof deck during and after roofing.
8. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
9. Review governing regulations and requirements for insurance and certificates if applicable.
10. Review temporary protection requirements for roofing system during and after installation.
11. Review roof observation and repair procedures after roofing installation.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
   1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

E. Deliver all materials to the job site in sufficient quantity to allow for continuity of work.

F. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.

G. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. (The polyethylene wrappers on the rolls do not provide adequate moisture protection during roof top storage.)

H. Barrier board shall be stored on pallets, fully protected from moisture with tarpaulins. (Manufacturer's packaging is not considered adequate protection from moisture.)

I. Adhesives and sealants shall be safely stored between 50° F and 80°F.

J. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's Material Safety Data Sheets.

K. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

1.8 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

B. Safety
   1. Take all necessary precautions regarding worker health and safety when using solvents and adhesives.
   2. Store flammable liquid and materials away from open sparks, flames and extreme heat.
   3. Take necessary precautions when using solvents and adhesives near fresh air intakes.
   4. Comply with all OSHA requirements for construction.
   5. Daily site cleanup shall be performed to minimize debris and hazardous congestion.

C. Protection
   1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
   2. Provide proper protection on newly completed roofing.
   3. Protect building walls, rooftop units, windows and other components during installation.
   4. Provide continued HVAC and environmental comfort for occupants during mechanical equipment removal and reinstallation and reroofing.

1.9 WARRANTY

A. Special Roofing Manufacturer's Warranty: Manufacturer’s standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period.
   1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, substrate board, roofing accessories, and other components of membrane roofing system.
   2. Manufacturer’s representative shall provide annual inspections to maintain the warranty at no additional cost to the owner.
   3. Warranty Period: 20 years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, and walkway products, for the following warranty period:
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL

A. Whenever a particular make of material, trade name and/or manufacturer's name is specified herein, it shall be regarded as being indicative of the minimum standard of quality required. A bidder who proposes to quote on the basis of an alternate material and/or system will only be considered if the proposed alternate is documented by the Owner and Architect as being equivalent or superior in quality to the specified system.

2.2 KEE MEMBRANE ROOFING

A. KEE Sheet: ASTM D 6754, fabric reinforced
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Seaman Corporation
      b. Tremco, Inc.
      c. Or Approved Equal

2. Roofing Membrane (Basis of Design):
   a. A nominal 50 mils thick Ketone Ethylene Ester (KEE) alloy, reinforced with knitted polyester fabric as manufactured by Seaman Corporation, under the trade name FiberTite conforming to ASTM D 6754.
   b. Membrane may be either rolls or factory welded custom Panel Rolls in order to reduce the amount of field welding. Panel width and length to vary according to the lay out of the membrane on the roof.

3. Pre-approved Products:
   a. Seaman Corp, FiberTite 50 mil XT
   b. Tremco, TremPly 50 Mil Membrane

4. Thickness: 50 mils nominal, 46 mils minimum

5. Exposed Face Color: Off-White; or Manufacturer's Standard Energy Star Rated color

2.3 AUXILIARY MEMBRANE ROOFING MATERIALS

A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.

B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as KEE sheet membrane.

C. Laminated Metal Flashing: Metal flashing shall be manufacturers standard clad metal.
   1. Aluminum, ASTM B 209, alloy 3003, temper H14, mill finish; 0.040" thick
   2. Cleat: Aluminum, ASTM B 209, alloy 3003, temper H14, mill finish; 0.050" thick
   3. Color to match membrane.

D. Sealants, Mastics and Solvents: As supplied or approved by membrane manufacturer.
   1. All adhesives, sealants, mastics and solvents shall be listed on the membrane manufacturer Material Submittal Form.

E. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

F. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick, prepunched.

G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.
   1. Single ply membrane fastener and membrane plate shall be as listed on the current membrane manufacturer approved fastener list as well as the Miami-Dade NOA for this project.
      a. Fasteners to meet the pullout values determined by pullout testing.
      b. Minimum Fastener Embedment into structural concrete: 1-1/2"
      c. Minimum Fastener Length: Sufficient Length Required for embedment

H. Wood Nailers: Wood shall be #1 or better southern yellow pine, kiln dried, womanized and conforming to Federal Specification TT-550, TT-W-517 and American Wood Preservers Institute Standard LP-2
   1. Creosote or asphalted type preservatives are not acceptable.

I. Expansion Joints: Constructed from laminated metal flashing per manufacturer's details or approved shop drawings.

J. Overnight Seal: Contractor must maintain a watertight seal during any interruption of roof construction or at the end of each day. Temporary water cut-offs are to be detailed by the contractor and approved by the membrane manufacturer Technical Service Department.

K. Miscellaneous Accessories: Provide preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

L. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

M. Provide additional membrane for lightning protection cables and mastic for terminal anchors.

2.4 COVER BOARDS

A. Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch thick.
   1. Products: Subject to compliance with requirements, provide the following:
      a. USG; Securock
      b. Georgia-Pacific Corporation; Dens Deck Prime.
      c. Or Approved Equal

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
   1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
   2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation. Replace all damaged and/or rotten wood.
   3. Verify surface plane flatness.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. The roofing contractor shall be responsible for verifying that the deck condition, nailers, blocking and substrate condition is suitable for the specified installation of the mechanically attached Roofing System.

D. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, unevenness, corrosion or any other defect, which would prevent the proper execution and quality application of the mechanically attached Roofing System as specified. Notify Owners Representative immediately of any deficiencies.

E. Do not proceed with any part of the application until all defects and preparation work have been corrected and completed.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 INSTALLATION OF WOOD NAILERS AND PERIMETER FIXING

A. New nailers shall be installed and anchored in such a manner to resist a force of 600 lb. per square foot.

3.4 INSTALLATION OF COVER BOARDS

A. Mechanically fasten cover board over area to receive roofing and install according to roofing system manufacturer's written instructions in accordance with Engineered Shop Drawings and NOA.

B. Ensure that all fasteners are concealed within the metal deck flutes. Remove all accidentally visible fasteners and patch the deck to Architects satisfaction.

3.5 FULLY ADHERED MEMBRANE ROOFING INSTALLATION

A. The job Foreman and/or Supervisor will be responsible for the daily execution of the Q.C. program, which will include, but is not limited to, the inspection of all heat welding incorporated within the membrane manufacturer System.
   1. If inconsistencies in the quality of the welds are found, all work shall cease until corrective actions are taken to ensure the continuity of the welds.

B. Follow all standard membrane manufacturer Installation Specifications.
   1. Un-roll approximately 30 feet of the membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (approx. 30') of substrate. (Do not utilize the “butterfly method”).
   2. Apply a 100% continuous coat of adhesive to the substrate
   3. The amount substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity and available manpower.
   4. To ensure proper application and curing of the adhesive, the outside air temperature shall be above 40°F and rising.
   5. Adhesive may be applied by spraying and “back” rolling or just rolling. (Do not “dump” adhesive or pour from the cans)
   6. Roller applied adhesive shall utilize a solvent resistant 3/8-inch nap roller.
   7. Spray applied adhesive must also be rolled out by roller to ensure a smooth, even 100% coverage of the substrate with no voids, skips, globs, puddles or similar irregularities.
   8. Allow the solvents in the adhesive to slightly dissipate/cure only to the point that the adhesive is “sticky” but still “wet” Do not allow adhesive to "dry”.
   9. Adhesives shall not be installed over moist or wet substrates.

10. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
11. Repeat the process for the remaining un-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3 inches, ensuring proper shingling of the membrane to shed water along the laps.
12. No adhesive shall be applied to the lap "seam" areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch.
13. Do not use bad or marginal adhesives. Contact the manufacturer if the quality of the adhesive is suspect.

C. All field seams exceeding 10' in length shall be welded with an approved automatic welder.

D. Fully Adhere membrane roofing over area to receive roofing and install according to roofing system manufacturer's written instructions in accordance with Engineered Shop Drawings and NOA.

E. Start installation of membrane roofing in presence of roofing system manufacturer's technical personnel.

F. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

G. Mechanically fasten or adhere membrane roofing securely at terminations, penetrations, and perimeter of roofing.

H. Apply membrane roofing with side laps shingled with slope of roof deck where possible.

I. Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.
1. Test lap edges with probe to verify seam weld continuity.
2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.

J. Spread sealant bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.6 FLASHING

A. Flash all curbs, penetrations and protrusions in strict accordance with approved membrane manufacturer Details and Approved Drawings.

B. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.

C. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.

D. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

E. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

F. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

G. Install metal flashing in strict accordance with approved membrane manufacturer Details, Approved Drawings.

H. Flash all roof drains in strict accordance with membrane manufacturer roof drain details.

3.7 PITCH PANS

A. No Pitch pans allowed.

3.8 SEALANT

A. Apply approved sealant to all surface mounted reglet and where called for in approved Details. Apply a bead of sealant large enough to fill the void entirely. Tool the sealant to shed water, following manufacturer's instructions and installation guides. Use primer when recommended by the manufacturer.

3.9 TEMPORARY SEALS

A. At the end of each working day or at the sign of rain, install temporary watertight seal where the exposed edge of the completed new roofing terminates at the uncovered deck or old, existing roof surface.

B. Prior to the commencement of work, remove all temporary seals if they will cause a water dam and any exposed roof cement, if used. Do not track roof cement onto the finished roof.

3.10 LIGHTNING PROTECTION

A. The installation of lightning protection must be coordinated with the authorized membrane roofing contractor, certified lightning contractor and the building owner.

B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of pre-approved flashing details.

C. Cables and air terminals may be attached to the membrane using base plates and an approved construction adhesive or by welding intermittent strips of roof membrane over the base plates and cables to the FiberTite roofing. Contact roof membrane manufacturer for specific adhesive recommendations.

3.11 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections:
   1. Final moisture survey

B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation in progress and on completion.

C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.

D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

E. The job Foreman and/or Supervisor shall initiate daily inspections of all completed work, which shall include, but is not limited to, to the probing of all field welding with manufacturer approved instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
   1. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict conformance with the most current membrane manufacturer's Specifications and Details.
   2. Excessive patching will not be accepted at the time of final inspection.

3.12 PROTECTING AND CLEANING

A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Remove all debris and excess material from the roof area. Pick up all loose fasteners and sheet metal scraps.

D. Insure the water tightness of the entire system for warranty inspection.

E. Protect all roof surfaces subject to damage from other trades.

3.13 ROOFING MANUFACTURER'S WARRANTY

A. Interim and Final inspection shall be performed by the membrane manufacturer's Technical Representative for approval and acceptance of installation.

   1. Contractor shall request in writing to the membrane manufacturer for interim and final inspections with sufficient notice prior to the requested date of inspection. Any special information regarding access to the roof shall be included on the request.

   2. Copy of manufacturer's Technical Representative Field Inspection reports shall be forwarded to the Architect or Owners representative by the Contractor.

   3. The manufacturer shall issue warranty after satisfactory inspection by a membrane manufacturer's Technical Representative and payment of materials and Warranty Fee.

3.14 ROOFING INSTALLER'S WARRANTY

A. WHEREAS <**Insert name**> of <**Insert address**>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
   1. Owner: <**Insert name of Owner**>.
   2. Address: <**Insert address**>.
   3. Building Name/Type: <**Insert information**>.
   4. Address: <**Insert address**>.
   5. Area of Work: <**Insert information**>.
   6. Acceptance Date: <**Insert date**>.

7. Warranty Period: <**Insert time**>.
8. Expiration Date: <**Insert date**>.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
   a. Lightning;
   b. Fire;
   c. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
   d. Faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
   e. Vapor condensation on bottom of roofing; and
   f. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.

3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.

4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.

6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.

7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the

Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this <**Insert day**> day of <**Insert month**>, <**Insert year**>.
   1. Authorized Signature: <**Insert signature**>.
   2. Name: <**Insert name**>.
   3. Title: <Insert title>.

ROOFING MEMBRANE PROPERTIES SCHEDULE

Table 1: Physical Properties of FiberTite Membrane

MATERIAL PROPERTY	TEST METHOD(S)	PRODUCT DATA FiberTite-XT
Fabric – Type	ASTM D-751	Polyester
- Weight	(oz.)	6.5
Thickness (nominal)	ASTM D-75 (inches)	0.050
Breaking Strength	ASTM D-751 Grab (lbs.)	550 x 500
Tensile Strength	ASTM D-882 (psi.)	9500
Elongation	ASTM D-751 (%)	20 x 30
Seam Strength	ASTM D-751 Grab (%)	100
Tear Strength	ASTM D-751 (lbs.)	125
Puncture Resistance	Fed. Std. 101B / (lbs.)	300
Dynamic Puncture	ASTM D-5635 (J)	23
	(ft. – lbf)	16.96
Static Puncture	ASTM D-5602 (33 lbf)	Pass
Water Vapor Transmission	ASTM E-96 Proc. A (gm/m2/24hrs)	1.3
Water Absorption	ASTM D-471 (%) one side exposure	5.0
Dimensional Stability	ASTM D-1204 (%)	0.5
Low Temperature Flexibility	ASTM D-2136 (F)	-40
Shore "A" Hardness	ASTM D-2240	80
Hydrostatic Resistance	ASTM D-751 A (psi)	500
Accelerated Weathering	ASTM G155 Xenon Arc	10,000 hrs.
	Cracking or Crazing	none
	ASTM G 154 QUV	
	Cracking or Crazing	none
Coating Adhesion	ASTM D-751	cannot peel
Fungi Resistance	ASTM G 21, 28 days	no growth
Oil and Hydrocarbon Resistance	MIL-C-20696C	
	Swelling, Cracking or Leaking	none

END OF SECTION

SECTION 07620 - FLASHING AND SHEET METAL WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of each type of flashing and sheet metal work is indicated on drawings and by provisions of this section.

B. Types of work specified in this section include the following:
   1. Metal counter flashing
   2. Metal reglet/flashing system
   3. Miscellaneous sheet metal accessories.

C. Roofing accessories which are installed integral with roofing membrane are specified in roofing system sections as roofing work.

1.3 SUBMITTALS

A. Product Data: Flashing, Sheet Metal, Accessories: Submit manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.

B. Samples: Flashing, Sheet Metal, Accessories: Submit 8" square samples of specified sheet materials to be exposed as finished surfaces.

C. Submit 12" long, completely finished units of specified factory-fabricated products exposed as finished work.

D. Shop Drawings:
   1. Engineered shop drawing to be submitted to Architect and building dept. and must meet all Florida Building Code latest edition requirements. Submit water infiltration test and wind uplift test data.
   2. Flashing, Sheet Metal, Accessories: Submit shop drawings showing layout, joining, profiles, and anchorages of fabricated work, including major counter-flashings, trim/fascia units, gutters, downspouts, scuppers and expansion joint systems; layouts at 1/4" scale, details at 3" scale and wind uplift calculations.

1.4 JOB CONDITIONS

A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 - PRODUCTS

2.1 FLASHING AND SHEET METAL MATERIALS

A. Sheet Metal Flashing/Trim: Aluminum, ASTM B 209, alloy 3003, temper H14, mill finish; 0.040" thick.

B. Aluminum Cleats: ASTM B 209, alloy 3003, temper H14, mill finish; 0.050" thick.

C. Extruded Aluminum: Manufacturer's standard extrusions of sizes and profiles indicated, 60063-T52, mill finish; 0.080" minimum thickness for primary legs of extrusions.

D. Fasteners: Stainless Steel.

E. Bituminous Coating: FS TT-C-494 or SSPC - Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.

F. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.

G. Epoxy Seam Sealer: 2-part non-corrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior non-moving joints including riveted joints.

H. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet.

I. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.

2.2 FABRICATED UNITS

A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

B. Seams: Fabricate non-moving seams in sheet metal with flat-lock seams. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.

C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints).

D. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

E. Separation: Provide for separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with mastic sealant or other permanent separation as recommended by manufacturer/fabricator.

PART 3 - EXECUTION

3.1 INSTALLATION REQUIREMENTS

A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently water-tight and weatherproof.

B. Coat substrates of concrete, wood or cement plaster with mastic sealant to effect separation between aluminum and substrate.

C. Bed flanges of work in a thick coat of bituminous roofing cement were required for waterproof performance.

3.2 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.

B. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction, to ensure that work will be without damage or deterioration, other than natural weathering at time of substantial completion.

END OF SECTION

SECTION 07900 - JOINT SEALERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY

A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:
   1. Exterior joints in the following vertical surfaces and horizontal non-traffic surfaces:
      a. Construction joints in cast-in-place concrete.
      b. Control and expansion joints in unit masonry.
      c. Joints between different materials listed above.
      d. Perimeter joints between materials listed above and frames of doors, windows, and louvers.
      e. Control and expansion joints in ceilings and other overhead surfaces.
   2. Exterior joints in the following horizontal traffic surfaces:
      a. Isolation and contraction joints in cast-in-place concrete slabs.
      b. Tile control and expansion joints.
      c. Joints between different materials listed above.
   3. Interior joints in the following vertical surfaces and horizontal non-traffic surfaces:
      a. Control and expansion joints on exposed interior surfaces of exterior walls.
      b. Perimeter joints of exterior openings where indicated.
      c. Tile control and expansion joints.
      d. Vertical joints on exposed surfaces of concrete walls and partitions.
      e. Perimeter joints between interior wall surfaces and frames of doors, windows, louvers, and elevator entrances.
      f. Joints between plumbing fixtures and adjoining walls, floors, and counters.
   4. Interior joints in the following horizontal traffic surfaces:
      a. Isolation joints in cast-in-place concrete slabs.
      b. Control and expansion joints in tile flooring.

1.3 RELATED SECTIONS INCLUDE THE FOLLOWING

A. Division 3 Section "Cast-in-Place Concrete" for joint sealants.

1.4 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates. Extent of each form and type of joint sealer is indicated on drawings.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an Installer who has successfully completed within the last 3 years at least 3 joint sealer applications similar in type and size to that of this project and who will assign mechanics from these earlier applications to this project, of which one will serve as lead mechanic.

B. Single Source Responsibility for Joint Sealer Materials: Obtain joint sealer materials from a single manufacturer for each different product required.

C. Pre-construction Joint Sealer-Substrate Tests: Submit substrate materials representative of actual joint surfaces to be sealed to manufacturer of joint sealer products for laboratory testing of sealants for adhesion to primed and unprimed substrates and for compatibility with secondary seals, if required, as indicated below:
   1. Use test methods standard with manufacturer to determine if priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealers to joint substrates under environmental conditions that will exist during actual installation.
   2. Testing will not be required when joint sealer manufacturer is able to submit joint preparation data required above which is acceptable to Architect and is based on previous testing of current sealant products for adhesion to, and compatibility with joint substrates matching those submitted.

1.6 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each joint sealer product required, including instructions for joint preparation and joint sealer application.

B. Samples for Initial Selection Purposes: Submit manufacturer's standard bead samples consisting of strips of actual products showing full range of colors available, for each product exposed to view.

C. Samples for Verification Purposes: Submit samples of each type and color of joint sealer required. Install joint sealer samples in 1/2" wide joints formed between two 6" long strips of material matching the appearance of exposed surfaces adjacent to joint sealers in the work.

D. Test Reports: Submit the following test reports:
   1. Preconstruction joint sealer-substrate test results including recommendations of joint sealer manufacturer for joint preparation and application of joint sealers applicable to project conditions.
   2. Certified test reports for elastomeric sealants evidencing compliance with requirements specified based on comprehensive testing of current product formulations within a 24-month period preceding date of submission of test reports to Architect. Include test results for aged performances including hardness, stain resistance, adhesion and cohesion under cyclic movement, low-temperature flexibility, modulus of elasticity at 100% strain, effects of heat aging, and effects of accelerated weathering.
   3. Certified test reports for joint sealers of type indicated below evidencing compliance with specified requirements:
      a. Foam-type filler-sealants
      b. Gaskets
      c. Pre-Compressed, Impregnated Foam Seal

E. Certificates: Submit certificates from manufacturers of joint sealers attesting that their products comply with specification requirements and are suitable for the use indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time and mixing instructions for multi-component materials.

B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.8 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with the installation of joint sealers under the following conditions:
   1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturers.
   2. When joint substrates are wet due to rain, condensation or other causes.

B. Joint Width Conditions: Do not proceed with installation of joint sealers when joint widths are less than allowed by joint sealer manufacturer for application indicated.

1.9 WARRANTY

A. Special Installer's Warranty: Installer’s standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Three years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer’s standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Ten years from date of Substantial Completion.

C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
   1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
   2. Disintegration of joint substrates from natural causes exceeding design specifications.
   3. Mechanical damage caused by individuals, tools, or other outside agents.
   4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with, and will adhere to, one another and with joint substrates under conditions of service and application, as demonstrated by testing and field experience.

B. Exterior Single-Component Urethane-Base Sealant:
   1. Products:
      a. Dymonic 100: ASTM C 920 Type S, Grade NS, Class 50, Use NT, T, M, A, O, I (Basis of Design).
      b. Dymonic FC: ASTM C 920 Type S, Grade NS, Class 35, Use NT, M, A and O
      c. Or Approved Equal
   2. Type and Grade: M (multi component) and NS (nonsag).
   3. Class: 50

4. Federal Specifications TT-S-227 compliant
5. Provide primer and building paint on all exposed joints.

C. Interior Single-Component Acoustical Sealant:
   1. Acoustical Sealant for Exposed and Concealed Joint: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:
   2. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
   3. Products:
      a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
      b. Tremco Corporation; Tremflex 834 Siliconized Interior Latex Sealant
      c. United States Gypsum Co.; SHEETROCK Acoustical Sealant.
      d. Or Approved Equal

D. All sealants shall be delivered to the job site in sealed containers bearing the manufacturer's name, mixed, stored, handled and applied in strict accordance with the manufacturer's detailed printed specifications, recommendations and instructions, copies of which shall be submitted with samples for approval and made available to the Architect at all times on the job site.

E. Manufacturer's label shall indicate the date of manufacture of sealants, or manufacturer shall otherwise attest to the date of manufacture. The period of time lapsed for polysulfide shall be not longer than six (6) months, and three (3) months for polyurethane, from the date of manufacture to the date of usage on the job.

F. Primers, where required, shall be as recommended by the sealant manufacturer.

G. The color of the sealants shall be as selected by the Architect from the manufacturer's standard range of colors. Color for polyuria sealant shall be custom matched to floor polish and dye color.

H. Bond-breakers where required shall be as recommended by the sealant manufacturer in writing to the Architect.

I. Slab Joint filler material in back of the sealants shall be a closed cell polyethylene conforming to the requirements specified hereinafter.

   1. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.

   2. Joint Filler: Preformed Expansion Joint Filler or Slab Isolation Joint Filler with typical thickness 1/2, 3/4, or 1 inch and height equal to slab thickness with a removable top section for creation of a sealant void.
      a. Materials: Provide a semi-rigid, closed-cell polypropylene foam, preformed joint filler that fully complies with ASTM D8139. NOMAFLEX® by Nomaco, Inc.
      b. Manufacturers: Nomaco, Inc., 501 Innovative Way, Zebulon, NC 27597. Phone (877) 291-1157. Fax (919) 269-7936. Website: https://www.nomaco.com/product/nomaflex/

J. Traffic Rated Joints: (Subject to Vehicular or Pedestrian Traffic) Sealant at traffic joints shall be two-part Silicone-base sealant of self-leveling consistency, meeting the following standards:
   1. Products:
      a. Pecora Corporation; Pecora 322FC Fast Cure Traffic Rated Sealant.
      b. Or approved equal
   2. Weatherability - This sealant’s 100% silicone composition is virtually unaffected by UV, Precipitation, ozone, and temperature extremes.
   3. Sealant shall remain flexible under extreme temperature swings (-49° to 300°F).

4. Fast Curing - Fast cure profile allows quick job site turnaround. Early movement shall not affect sealant performance.
5. Self-leveling - No tooling required when applied through typical static mixing equipment.
6. Auto-bonding - Will bond to itself tenaciously without the need for priming.
7. Minimum Performance as listed below:

ASTM D 412	EB, %	1400
ASTM D 412	TB	50
ASTM C 1135	25M, psi	5
	50M, psi	12
	150M, psi	15
ASTM C 1135	EB, %	>600
ASTM C 719	% Movement	+100/-50
ASTM D 2240	Shore 00	55

PART 3 - EXECUTION

3.1 INSPECTION

A. Require Installer to inspect joints indicated to receive joint sealers for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Obtain Installer's written report listing any conditions detrimental to performance of joint sealer work. Do not allow joint sealer work to proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Pre-Installation Meeting: At Contractor's direction, Installer, joint sealer manufacturers' representatives, and other trades whose work affects installation of joint sealers shall meet at project site to review procedures and time schedule proposed for installation of joint sealers which is coordinated with other, related work.

B. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:
   1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer, oil, grease, waterproofing, water repellents, water, surface dirt and frost.
   2. Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, acid washing or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
   3. Remove laitance and form release agents from concrete.
   4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile and other non-porous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

C. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond; do not allow spillage or migration onto adjoining surfaces.

D. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods

required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALERS

A. General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 962 for use of joint sealants as applicable to materials, applications and conditions indicated.

C. Solvent-Release-Curing Sealant Installation Standard: Comply with requirements of ASTM C 804 for use of solvent-release-curing sealants.

D. Latex Sealant Installation Standard: Comply with requirements of ASTM C 790 for use of latex sealants.

E. Acoustical Sealant Application Standard: Comply with recommendations of ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications and conditions indicated.

F. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
   1. Install joint-fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.
      a. Do not leave gaps between ends of joint-fillers.
      b. Do not stretch, twist, puncture or tear joint-fillers.
      c. Remove absorbent joint-fillers which have become wet prior to sealant application and replace with dry material.
   2. Install bond breaker tape between sealants and joint-fillers, compression seals or back of joints where required to prevent third-side adhesion of sealant to back of joint.
   3. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

G. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

H. Tooling of Non-Sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
   1. Concave joint configuration per Figure 6A in ASTM C 962, unless otherwise indicated.
   2. Flush joint configuration per Figure 6B in ASTM C 962, where indicated.
   3. Use masking tape to protect adjacent surfaces of recessed tooled joints.
   4. Recessed joint configuration per Figure 6C in ASTM C 962, of recess depth and at locations indicated.

I. Installation of Pre-Formed Hollow Neoprene Gaskets: Install gaskets, with minimum number of end joints, in joint recesses with edges free of spalls and sides straight and parallel, both within tolerances specified by gasket manufacturer. Apply manufacturer's recommended adhesive to joint substrates immediately prior to installing gaskets. For straight sections provide gaskets in continuous lengths; where changes in direction occur, adhesively splice gasket together to provide watertight joint. Recess gasket below adjoining joint surfaces by 1/8" to 1/4".

J. Installation of Fire-Stopping Sealant: Install sealant, including forming, packing and other accessory materials to fill openings around mechanical and electrical services penetrating floors and walls to provide fire-stops with fire resistance ratings indicated for floor or wall assembly in which penetration occurs.

3.4 PROTECTION AND CLEANING

A. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of substantial completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

B. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

END OF SECTION

SECTION 08110 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Standard steel doors hollow metal doors and frames as indicated on door schedules on drawings.

B. Related Sections include the following:
   1. Division 8 Section "Finish Hardware".

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.3 QUALITY ASSURANCE

A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.

B. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 "Standard for Fire Doors and Windows", and have been tested, listed, and labeled in accordance with ASTM E 152 "Standard Methods of Fire Tests of Door Assemblies" by a nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction.

C. Shop Primer: ASTM - B117; Fed. Spec. TT-F-636.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data substantiating that products comply with requirements.

B. Product Approval: Submit Miami Dade product approval data.

C. Shop Drawings: Submit for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

D. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.

E. Coordinate with manufacturer and installer of electronic access control devices and supply shop drawings illustrating complete installation.

F. Indicate coordination of glazing frames and stops with glass and glazing requirements.

G. Indicate coordination of reinforcement with hardware schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage.

B. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.

C. Store doors and frames at building site under cover. Place units on minimum 4" high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create a humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4" spaces between stacked doors to promote air circulation.

1.6 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design exterior doors, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements indicated.

B. Structural Performance, Exterior Doors: Exterior doors shall withstand the wind loads, the effects of gravity loads, and loads and stresses within limits and under conditions indicated according to ASCE 7-22. Comply with the requirements of the Florida Building Code, Latest Edition, and subsequent revisions “High Velocity Hurricane Zone”.
   1. Wind Load Criteria:
      a. Basic Wind Speed: 170 MPH.
      b. Ground Exposure: C
      c. Building Risk Category: II
      d. Enclosed Building
   2. Design Pressures for Exterior Doors:
      a. As shown on architectural and structural drawings.
   3. Testing Criteria:
      a. ANSI/DASMA-108
      b. ASTM E 330
      c. Provide exterior door systems tested according to
         1) TAS- 100A – Wind Driven Rain
         2) TAS- 201 – Large and Small missile Impact
         3) TAS-202 – Air Leakage, Water Penetration, & Structural Performance
         4) TAS-203 - Cycling
      d. Florida Building Code (FBC) - HVHZ
   4. Deflection Limits: Design exterior doors to withstand design wind load without evidencing permanent deformation or disengagement of door components.

C. Operability under Wind Load: Design exterior doors to remain operable under design wind load, acting inward and outward.

D. Windborne-Debris-Impact-Resistance Performance: Provide impact-resistant exterior doors that pass large missile-impact and cyclic-pressure tests when tested according to Florida Building Code 2023.
   1. Large Missile Test: For exterior doors located within 60 feet of grade.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of Steel door assemblies that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Failure to meet performance requirements.
      b. Faulty operation.
      c. Deterioration of metals, metal finishes, and other materials beyond normal use or weathering.

2. Warranty Period for Steel Doors: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide steel doors and frames by one of the following:
   1. Exterior Doors:
      a. Steel Doors and Frames:
         1) Schlage Lock Company LLC –
            a) Single Door: Miami Dade NOA 23-0821.13 (+/- 170psf) Steelcraft H -Series Flush Inswing Commercial Steel
            b) Single Door: Miami Dade NOA 23-0821.14 (+/- 170psf) Steelcraft H -Series Flush Outswing Commercial Steel
         2) Or Approved Equal.

2.2 MATERIALS

A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.

B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.

C. Supports and Anchors: Fabricate of not less than 18-gage galvanized sheet steel.

D. Inserts, Bolts, and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls, complying with ASTM A 153, Class C or D as applicable.

E. Shop Applied Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.

2.3 FABRICATION GENERAL (All gages noted are U.S. Standard)

A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Comply with SDI-100 requirements.

B. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16-gage inverted steel channels.

C. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot- rolled steel (at fabricator's option).

D. Fabricate all doors, panels and frames from galvanized sheet steel.

E. Exposed Fastener: Not permitted.

F. Finish Hardware Preparation: Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 series specifications for door and frame preparation for hardware.

G. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site.

H. Locate finish hardware as indicated on final shop drawings or, if not indicated, in accordance with "Recommended Locations for Builder's Hardware", published by Door and Hardware Institute.

I. Shop Painting:
   1. Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.
   2. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.
   3. Apply shop coat of baked on, rust inhibitive primer to provide a uniformly finished surface ready to receive finish paint.

2.4 STANDARD STEEL DOORS

A. Provide metal doors of types and styles indicated on drawings or schedules.
   1. Interior Doors: SDI-100, Grade III, extra heavy-duty, Model 2, minimum 0.0598-inch-thick (16-gage) faces.
   2. Exterior Doors: SDI-100, Grade IV, maximum-duty, Model 2, minimum 0.0747-inch-thick (14-gage) faces.

B. Internal Stiffeners: 18-gage cold rolled steel.

C. Sound Deadening: Type standard with the manufacturer. Minimum 4 lb. density.

D. Hardware Reinforcement: Steel
   1. Hinges: 7-gage x 1-1/2 inches x 10 inches
   2. Closers and Holders: 12-gage x 5 inches x 12 inches
   3. Locks: 7-gage x 1-1/4 inches x 3 inches
   4. Push-Pull Plates: 16-gage x 14 inches x 14 inches
   5. Panic Bars: 3 inches x 8 inches and 4 inches x 24 inches. 12-gage
   6. Glazing and Louver Beads: 18-gage

2.5 STANDARD STEEL FRAMES

A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated.
   1. Fabricate frames with mitered and welded corners.
   2. Frames shall be 0.0747-inch-thick (14-gage)

B. Door Silencers: Except on weather-stripped frames, drill stops to receive 3 silencers on strike jambs of single-swing frames and 2 silencers on heads of double-swing frames.

C. Plaster Guards: Provide 26-gage steel plaster guards or mortar boxes, welded to frame, at back of finish hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

D. Removable Mullion: Provide removable mullion for all exterior double doors and all interior double doors accessible to the public.

E. Grout: Fully grout all frames installed in concrete or masonry walls.

F. Hardware Reinforcement:
   1. Hinges: 7-gage x 1-1/2-inch x 10 inches
   2. Closers and Holders: 12-gage x 16 inches

3. Strikes: 12-gage x 1-1/4-inch x 3 inches or 14-gage drawn box.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.

B. Placing Frames: Comply with provisions of ANSI/SDI-A250.11-2012 "Recommended Erection Instructions for Steel Frames", unless otherwise indicated.

C. Except for frames located at in-place concrete or masonry and at drywall installations, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

D. In masonry construction, locate 4 wall anchors per jamb at hinge and strike levels.

E. At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices. Frames shall be fully grouted prior to installation.

F. Install fire-rated frames in accordance with NFPA Std. No. 80.

G. In metal stud partitions, install at least 4 wall anchors per jamb at hinge and strike levels. In open steel stud partitions, place studs in wall anchor notches and wire tie. In closed steel stud partitions, attach wall anchors to studs with tapping screws.

H. Door Installation:
   1. Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.
   2. Place fire-rated doors with clearances as specified in NFPA Standard No. 80.

3.3 ADJUST AND CLEAN

A. Prime coat touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

B. Protection Removal: Immediately prior to final inspection, remove protective plastic wrappings from pre-finished doors.

C. Final Adjustments: Check and re-adjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION

SECTION 08360 – OVERHEAD COILING DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Service doors

B. Related Sections:
   1. Division 9 Section "Painting" for finish painting of factory-primed doors.

1.3 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design overhead coiling doors, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Structural Performance, Exterior Doors: Exterior overhead coiling doors shall withstand the wind loads, the effects of gravity loads, and loads and stresses within limits and under conditions indicated according to ASCE 7-22.
   1. Wind Loads:
      a. Basic Wind Speed: 170 mph
      b. Exposure Category: C

   2. Testing Criteria:
      a. ANSI/DASMA-108
      b. ASTM E 330
      c. Miami-Dade County test protocols PA 201, PA 202 and PA 203
      d. Latest Florida Building Code (FBC)

   3. Deflection Limits: Design overhead coiling doors to withstand design wind load without evidencing permanent deformation or disengagement of door components.

C. Operability under Wind Load: Design overhead coiling doors to remain operable under design wind load, acting inward and outward.

D. Windborne-Debris-Impact-Resistance Performance: Provide impact-resistant overhead coiling doors that pass large missile-impact and cyclic-pressure tests when tested according to Florida Building Code 2023.
   1. Large Missile Test: For overhead coiling doors located within 30 feet of grade.

E. Operation Cycles: Provide overhead-coiling door components and operators capable of operating for not less than the number of cycles indicated for each door. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

1.4 SUBMITTALS

A. Product Data: For each type and size of overhead coiling door and accessory. Include the following:
   1. Construction details, material descriptions, dimensions of individual components, profiles for slats, and finishes.

B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data. Include plans, elevations, sections, details, and attachments to other work.
   1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   2. Wiring Diagrams: For power, signal, and control wiring.

C. Samples for Initial Selection: Manufacturer’s finish charts showing full range of colors and textures available for units with factory-applied finishes.
   1. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
   1. Curtain Slats: 12 inches long
   2. Bottom Bar: 6 inches long with sensor edge.
   3. Guides: 6 inches long.
   4. Brackets: 6 inches square.
   5. Hood: 6 inches square.

E. Delegated-Design Submittal: For overhead coiling doors indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
   1. Summary of forces and loads on walls and jambs.

F. Qualification Data: For qualified Installer.

G. Maintenance Data: For overhead coiling doors to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer’s authorized representative who is trained and approved for both installation and maintenance of units required for this Project.

B. Source Limitations: Obtain overhead coiling doors from single source from single manufacturer.
   1. Obtain operators and controls from overhead coiling door manufacturer.

1.6 WARRANTY

A. Manufacturer’s Warranty: Supply manufacturer’s standard warranty for a period not less than 5 years from date of substantial completion.

PART 2 - PRODUCTS

2.1 DOOR CURTAIN MATERIALS AND CONSTRUCTION

A. Door Curtains: Fabricate overhead coiling-door curtain of interlocking metal slats, designed to withstand wind loading indicated, in a continuous length for width of door without splices. Unless otherwise indicated, provide slats of thickness and mechanical properties recommended by door manufacturer for performance, size, and type of door indicated, and as follows:
   1. Steel Door Curtain Slats: Zinc-coated (galvanized), cold-rolled structural steel sheet; complying with ASTM A 653/A 653M, with G90 zinc coating
   2. 18 ga Galvanized steel
   3. Metal Interior Curtain-Slat Facing: Match metal of exterior curtain-slat face.

B. Endlocks and Windlocks for Service Doors: Malleable-iron casings galvanized after fabrication, secured to curtain slats with galvanized rivets or high-strength nylon. Provide locks on not less than alternate curtain slats for curtain alignment and resistance against lateral movement.

C. Bottom Bar for Service Doors: Consisting of two angles, each not less than 1-1/2 by 1-1/2 by 1/8 inch thick; fabricated from manufacturer's standard hot-dip galvanized steel or stainless steel extrusions to match curtain slats and finish.

D. Astragal for Service Doors: Equip each door bottom bar with a replaceable, adjustable, continuous, compressible gasket of flexible vinyl, rubber, or neoprene as a cushion bumper.

E. Curtain Jamb Guides: Manufacturer’s standard angles or channels and angles of same material and finish as curtain slats unless otherwise indicated, with sufficient depth and strength to retain curtain, to allow curtain to operate smoothly, and to withstand loading. Slot bolt holes for guide adjustment. Provide removable stops on guides to prevent overtravel of curtain, and a continuous bar for holding windlocks.

2.2 HOOD

A. General: Form sheet metal hood to entirely enclose coiled curtain and operating mechanism at opening head. Contour to fit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Form closed ends for surface-mounted hoods and fascia for any portion of between-jamb mounting that projects beyond wall face. Equip hood with intermediate support brackets as required to prevent sagging.
   1. Galvanized Steel: Nominal 0.028-inch- thick, hot-dip galvanized steel sheet with G90 zinc coating, complying with ASTM A 653/A 653M.
   2. Exterior-Mounted Doors: Fabricate hood to act as weather protection and with a perimeter sealant-joint-bead profile for applying joint sealant.

2.3 LOCKING DEVICES

A. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on both left and right jamb sides, operable from coil side.

2.4 CURTAIN ACCESSORIES

A. Weatherseals: Equip each exterior door with weather-stripping gaskets fitted to entire perimeter of door for a weathertight installation, unless otherwise indicated.

1. At door head, use 1/8-inch- thick, replaceable, continuous sheet secured to inside of hood.
2. At door jambs, use replaceable, adjustable, continuous, flexible, 1/8-inch- thick seals of flexible vinyl, rubber, or neoprene.

B. Push/Pull Handles: Equip each push-up-operated or emergency-operated door with lifting handles on each side of door, finished to match door.
1. Provide pull-down straps or pole hooks for doors more than 84 inches high.

2.5 DOOR ACCESSORIES

A. Hardware: Manufacturer's standard, corrosion resistant finish.

B. Fasteners: Stainless steel.

2.6 COUNTERBALANCING MECHANISM

A. General: Counterbalance doors by means of manufacturer's standard mechanism with an adjustable-tension, steel helical torsion spring mounted around a steel shaft and contained in a spring barrel connected to top of curtain with barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.

B. Counterbalance Barrel: Fabricate spring barrel of manufacturer's standard hot-formed, structural-quality, welded or seamless carbon-steel pipe, of sufficient diameter and wall thickness to support rolled-up curtain without distortion of slats and to limit barrel deflection to not more than 0.03 in./ft. of span under full load.

C. Spring Balance: One or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Secure ends of springs to barrel and shaft with cast-steel barrel plugs.

D. Torsion Rod for Counterbalance Shaft: Fabricate of manufacturer's standard cold-rolled steel, sized to hold fixed spring ends and carry torsional load.

E. Brackets: Manufacturer’s standard mounting brackets of either cast iron or cold-rolled steel plate.

2.7 DOOR ASSEMBLY

A. Service Door: Overhead coiling door formed with curtain of interlocking metal slats.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Cornell Iron Works, Inc.
   b. Overhead Door Corporation.
   c. Or approved equal

B. Operation Cycles: Not less than 100,000.
1. Include tamperproof cycle counter.

C. Door Curtain Material: 18-gage Galvanized steel.

D. Jamb Guides: Galvanized steel with exposed finish matching curtain slats. Provide continuous integral wear strips to prevent metal-to-metal contact and to minimize operational noise.

E. Hood: Match curtain material and finish.
   1. Shape: Match Existing
   2. Mounting: Face of wall.

F. Locking Devices: Equip door with slide bolt for padlock.

G. Door Finish:
   1. Factory Prime Finish: Manufacturer’s standard color.
   2. Interior Curtain-Slat Facing: Match finish of exterior curtain-slat face.

2.8 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.9 STEEL AND GALVANIZED-STEEL FINISHES

A. Factory Prime Finish: Manufacturer’s standard primer, compatible with field-applied finish. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates areas and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install overhead coiling doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

B. Install overhead coiling doors, hoods, and operators at the mounting locations indicated for each door.

C. Accessibility: Install overhead coiling doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.

3.3 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Perform installation and startup checks according to manufacturer's written instructions.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.4 ADJUSTING

A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

B. Lubricate bearings and sliding parts as recommended by manufacturer.

C. Adjust seals to provide weathertight fit around entire perimeter.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling doors.

END OF SECTION 08360

SECTION 08520 - ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Aluminum Windows: Impact-resistant aluminum windows, including aluminum extrusions, finish, glass, operating hardware, screens, internal sealants and weather stripping, for high velocity hurricane zone (HVHZ) construction. (Estate, Sentinel)

1.2 RELATED SECTIONS

A. Rough Carpentry.

B. Joint Sealers.

C. Glass Glazing.

1.3 REFERENCES

A. American Architectural Manufacturers Association:
   1. AAMA 701/702: Pile weatherstripping and replaceable weather seals.
   2. AAMA 2603: Organic coatings on aluminum.
   3. AAMA 2605: High-performance organic coatings on aluminum.

B. American Society of Civil Engineers
   1. ASCE 7: Minimum Design Loads for Buildings and other Structures.

C. American Society for Testing and Materials:
   1. ASTM B 221: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   2. ASTM E 283: Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
   3. ASTM E 330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
   4. ASTM E 331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

D. Florida Building Code - Building, 2023 (FBC)

1.4 PERFORMANCE REQUIREMENTS

A. Impact-Resistant Aluminum Window and Door Performance:
   1. Structural Test: ASTM E 330.
   2. Water Infiltration Resistance: ASTM ES47/E 331 and FBC TAS 202.
   3. Air Infiltration Resistance: ASTM E 283.
   4. Windborne Debris Impact Resistance: Pass large missile impact tests; Florida Building Code, FBC TAS 201.
   5. Hurricane Wind Pressure Resistance: After passing large missile impact test, pass cyclic pressure tests following FBC TAS 203.

1.5 SUBMITTALS

A. Shop Drawings: Refer to Administrative Requirements for complete submittal procedures.

Indicate elevations, locations, markings, quantities, material, head jamb and sill conditions, metal thickness, sizes, shapes, dimensions, finishes and wind pressures.

B. Product Data: Provide detailed data on Manufacturers catalog data on each product to be used, including Miami Dade County Product Approval (NOA) and Florida Building Code (FBC) HVHZ Product Approval.

C. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Not less than 10 years of experience in manufacturing impact-resistant aluminum windows and doors.

B. Installer Qualifications: Skilled and experienced in installing manufacturer's units of the types specified.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging in a clean, dry area until ready for installation.

B. Protect exposed metal and glass surfaces to prevent damage to finish.

1.8 WARRANTIES

A. Warranty Period: 10-year limited warranty.
   1. Structural, Hardware and Certain Finishes: 10 years.
   2. Stress Cracks on Glass: 1 year.
   3. Delamination on Laminated Glass Units: 5 years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: CGI Windows and Doors, Inc. Located at: 10100 N. W. 25th St., Miami, FL 33172; Toll Free Tel: 800-442-9042

B. Or approved equal.

C. Requests for substitutions will be considered in accordance with provisions of Section-Product Requirements.

D. Fixed Windows: "Sentinel Collection" Series 130 Fixed Windows by CGI Windows and Doors, Inc.
   1. Fixed Window Types: Rectangular Fixed Windows; for example sizes and related design pressures refer to product approvals for latest results.
   2. Air Infiltration Resistance: Air leakage no more than 0.07 cfm/sqft of glass area at pressure differential of 6.24 psf (air infiltration tests conducted at pressure differential of 1.57 psf may not be used to justify compliance).
   3. Water Infiltration Resistance: No water penetration at a static air pressure differential of 15 percent of positive design pressure with a maximum tested performance of 16.5 psf.
   4. Construction: Heavy extruded aluminum-alloy sections, precision cut and assembled with sealed, mitered, hairline joints.
   5. Member Wall Thicknesses:

a. Rectangular Window Fixed Frames: At least 0.080 inch (2.03 mm)
b. Rectangular Window Vents: At least 0.090 inch (2.29 mm).

6. Frame Depth: Provide 0.50 (12.7 mm) inch flanges at perimeter frames.
   a. Rectangular Fixed Windows Frames: At least 2.075 inches (53 mm)
7. Sightlines:
   a. Rectangular Fixed: Jambs, sill and head - 3.5 inches (89 mm)
8. Corner Construction:
   a. At Rectangular Fixed Window Frames: Assemble with sealed, mitered, hairline joints, made rigid by fastening with No. 10 stainless steel screws.
   b. At Fixed Window Frames: 4 stainless steel corner keys and 4 aluminum corner keys.
9. Glazing Beads:
   a. Designer Fixed: Extruded aluminum 0.75 inch (19 mm) by 0.75 inch (19 mm) x 0.125 inch (3.2 mm) wall thickness square tube glazing stop.
10. Finishes: Uniform at all visible surfaces exterior and interior, vents open or shut.
11. Factory Glazing:
    a. Laminated Impact Resistant Glass Units: 9/16 thick (nominal) consisting of a sacrificial exterior lite, air space and a clear, non-yellowing, non-crazing interlayer sandwiched between two panes of glass.
       1) Laminated Units: Consisting of clear, non-yellowing, non-crazing interlayer sandwiched between two panes of glass.
          a) Outer and Inner Panes of Laminated Units: 1/4 inch.
             1) Type: Tempered.
          b) Tinting in Outer Pane: White.
          c) Tint in Inner Panes: Clear.

2.2 FINISHES

A. AAMA 2605 Kynar Finish: Pretreatment plus 2 coat, 70 percent polyvinylidene fluoride (PVDF) coating, or manufacturer approved equal.
   1. Color: Owner Aproved.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before start of unit installation, check openings for adequacy of pressure preservative treated wood blocking that will receive frames. Check the size, quantity, spacing, clearances, and rigidity of fastenings and their conformance to the specified NOA.

B. Coordinate with Section - Rough Carpentry
   1. 3/4 inch (19 mm) or 1-1/2 inch (38.1 mm) as per specified NOA rectangular or beveled pressure preservative treated South Yellow Pine blocking, set in a full bed of sealant.
   2. Fasten with to structure with drilled concrete fasteners spaced as required in NOA, so that blocking is continuous and is tightly butted to fill corners of each opening.

C. Coordinate with Section – Joint Sealers
   1. Sealant at exterior perimeter of aluminum frames, in deeply grooved stucco or in 1/4 inch (6 mm) gaps where other exterior finish materials terminate next to frames.
   2. Sealant in 1/8 inch (3.2 mm) gap at frame interior perimeters where sills and interior finish materials such as gypsum board and tile terminate next to frames.

D. Perform cutting, fitting, forming, drilling, and grinding of frames, without damage to finish, as needed to fit project conditions and make watertight. Replace components with damage to exposed finishes.

3.2 WINDOW INSTALLATION

A. Install windows following manufacturer's instructions.

B. Attach window frame and shims to perimeter blocking at openings to accommodate construction tolerances and other irregularities. Maintain integrity of air barriers and vapor retarder sheets.

C. Align windows plumb and level, free of warp or twist.

D. Adjust vents to close snugly and put in smooth operating order.

3.3 CLEANING

A. Refer to manufacturer’s instructions for proper cleaning and maintenance of the products.

END OF SECTION

SECTION 08584 – SLIDING WINDOW

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Modular, motorized walk up concession window.

1.3 RELATED SECTIONS

A. Section 07620 – Sheet Metal Flashing and Trim.

B. Section 07920 – Joint Sealants.

C. General Electrical Notes

1.4 REFERENCES

A. ASTM A 240 – Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels.

B. ASTM A 653 – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

C. ASTM B 209 – Aluminum and Aluminum-Alloy Sheet and Plate.

D. ASTM B 221 – Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

E. ASTM C 1036 – Standard Specification for Flat Glass.

F. ASTM C 1048 – Heat-Treated Flat Glass--Kind HS, Kind FT Coated and Uncoated Glass.

G. ASTM E 773 – Accelerated Weathering of Sealed Insulating Glass Units.

H. ASTM E 774 – Classification of the Durability of Sealed Insulating Glass Units.

I. ASTM F 1233 – Security Glazing Materials And Systems.

J. UL 752 – Bullet-Resisting Equipment.

1.5 SUBMITTALS

A. Comply with Section 01330 – Submittal Procedures.

B. Product Data: Submit manufacturer's product data, including materials, components, fabrication, finish, and installation instructions and wiring diagrams.

C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating dimensions, tolerances, materials, fabrication, glazing, fasteners, hardware, finish, electrical wiring diagrams, options, and accessories.

D. Samples: Submit manufacturer's samples of standard finishes.

E. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.

F. Manufacturer's Project References: Submit list of successfully completed security window projects, including project name and location, name of architect, and type and quantity of security windows installed and wiring diagrams.

G. Operation and Maintenance Manual: Submit manufacturer's operation and maintenance manual, including operation, maintenance, adjustment, and cleaning instructions, trouble shooting guide, parts list, and electrical wiring diagrams.

H. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Minimum of 10-years successful experience continuously manufacturing security windows.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.

C. Handling: Protect materials and finish from damage during handling and installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: CGI Windows and Doors, Inc. Located at: 10100 N. W. 25th St., Miami, FL 33172; Toll Free Tel: 800-442-9042

B. Or approved equal.

C. The system for the project shall be unitized pre-assembled and pre-glazed with weather seal designs at all exterior fixed frame to be glass to glass joints with butt caulked silicone weather seal, and glass to perimeter with silicone weather seal.

D. Sliding Windows: "Sentinel Collection" Series 150 Sliding Doors by CGI Windows and Doors, Inc.
1. Fixed Window Types: Rectangular Fixed Windows; for example sizes and related design pressures refer to product approvals for latest results.
2. Air Infiltration Resistance: Air leakage no more than 0.07 cfm/sqft of glass area at pressure differential of 6.24 psf (air infiltration tests conducted at pressure differential of 1.57 psf may not be used to justify compliance).
3. Water Infiltration Resistance: No water penetration at a static air pressure differential of 15 percent of positive design pressure with a maximum tested performance of 16.5 psf.
4. Construction: Heavy extruded aluminum-alloy sections, precision cut and assembled with sealed, mitered, hairline joints.
5. Member Wall Thicknesses:
    a. Rectangular Window Fixed Frames: At least 0.080 inch (2.03 mm).
    b. Rectangular Window Vents: At least 0.090 inch (2.29 mm).
6. Frame Depth: Provide 0.50 (12.7 mm) inch flanges at perimeter frames.
    a. Rectangular Fixed Windows Frames: At least 2.075 inches (53 mm).
7. Sightlines:
    a. Rectangular Fixed: Jambs, sill and head - 3.5 inches (89 mm).
8. Corner Construction:
    a. At Rectangular Fixed Window Frames: Assemble with sealed, mitered, hairline joints, made rigid by fastening with No. 10 stainless steel screws.
    b. At Fixed Window Frames: 4 stainless steel corner keys and 4 aluminum corner keys.
9. Glazing Beads:
    a. Designer Fixed: Extruded aluminum 0.75 inch (19 mm) by 0.75 inch (19 mm) x 0.125 inch (3.2 mm) wall thickness square tube glazing stop.
10. Finishes: Uniform at all visible surfaces exterior and interior, vents open or shut.
11. Factory Glazing:
    a. Laminated Impact Resistant Glass Units: 9/16 thick (nominal) consisting of a sacrificial exterior lite, air space and a clear, non-yellowing, non-crazing interlayer sandwiched between two panes of glass.
        1) Laminated Units: Consisting of clear, non-yellowing, non-crazing interlayer sandwiched between two panes of glass.
            a) Outer and Inner Panes of Laminated Units: 1/4 inch.
                1) Type: Tempered.
            b) Tinting in Outer Pane: White.
            c) Tint in Inner Panes: Clear.

2.2 FABRICATION

A. Assembly: Factory assembled, factory glazed.

2.3 ALUMINUM FINISH

A. AAMA 2605 Kynar Finish: Pretreatment plus 2 coat, 70 percent polyvinylidene fluoride (PVDF) coating, or manufacturer approved equal.
   1. Color: Owner Approved.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive security windows. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Ensure openings to receive security windows are plumb, level, square, accurately aligned, correctly located, and in tolerance.

3.3 INSTALLATION

A. Install security windows in accordance with manufacturer's instructions.

B. Install security windows plumb, level, square, true to line, and without warp or rack.

C. Install security window components weathertight.

D. Anchor security windows securely in place to supports. Use attachment methods permitting adjustment for construction tolerances, irregularities, alignment, and expansion and contraction.

E. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by Architect.

F. Sheet Metal Flashing: Install sheet metal flashing as specified in Section 07620

G. Joint Sealants: Install joint sealants as specified in Section 07900

H. Electrical: Install electrical power as specified on electrical drawings.

I. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

J. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

3.4 ADJUSTING

A. Adjust movable service panels to be weathertight in closed position.

3.5 CLEANING

A. Clean security windows promptly after installation in accordance with manufacturer's instructions.

B. Remove excess joint sealant in accordance with sealant manufacturer's instructions.

C. Do not use harsh cleaning materials or methods that would damage glazing or finish.

3.6 PROTECTION

A. Protect installed security windows to ensure that, except for normal weathering, security windows will be without damage or deterioration at time of substantial completion.

END OF SECTION 08584

SECTION 08710 - FINISH HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. Definition: “Finish Hardware" includes items known commercially as finish hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame.

B. Extent of finish hardware required is indicated on drawings and in schedules.

C. Types of finish hardware required include the following:

1. Hinges
2. Lock cylinders and keys
3. Lock and latch sets
4. Exit devices
5. Closers
6. Weather-stripping for exterior doors
7. Thresholds
8. Pull, Pull, and Kick Plates

D. Silencers included integral with hollow metal frames are specified with door frames elsewhere in Division 8.

E. Metal Doors and Frames are specified elsewhere in Division 8.

F. Installation of finish hardware is specified elsewhere.

1.3 QUALITY ASSURANCE:

A. Manufacturer: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.

B. Supplier: A recognized architectural finish hardware supplier, with warehousing facilities, who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or who employs an experienced architectural hardware consultant who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor.

C. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80 and local building code requirements. Provide only hardware which has been tested and listed by UL or FM for types and sizes of doors required and complies with requirements of door and door frame labels.

D. Where emergency exit devices are required on fire-rated doors (with supplementary marking on doors' UL or FM labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL or FM label on exit devices indicating "Fire Exit Hardware".

E. Inspection: Supplier shall inspect completed installation and notify Architect that all materials furnished have been properly located and installed.

1.4 SUBMITTALS:

A. Product Data: Submit manufacturer's technical product data for each item of hardware in accordance with Division-1 section "Submittals". Include whatever information may be necessary to show compliance with requirements and include instructions for installation and for maintenance of operating parts and finish.

B. Hardware Schedule: Submit final hardware schedule in manner indicated below. Coordinate hardware with doors, frames and related work to ensure proper size, thickness, hand, function and finish of hardware.

C. Final Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

1. Type, style, function, size and finish of each hardware item.
2. Name and manufacturer of each item.
3. Fastenings and other pertinent information.
4. Location of hardware set cross-referenced to indications on drawings both on floor plans and in door and frame schedule.
5. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
6. Mounting locations for hardware.
7. Door and frame sizes and materials.
8. Keying information.

D. Samples: Prior to submittal of the final hardware schedule and prior to final ordering of finish hardware, submit one sample of each type of exposed hardware unit, finished as required, and tagged with full description for coordination with schedule.

E. Samples will be returned to the supplier. Units which are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of operation, be used in the work, within limitations of keying coordination requirements.

F. Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check shop drawings of such other work, to confirm that adequate provisions are made for proper location and installation of hardware.

G. Guarantee: Submit written guarantee for all materials furnished under this section covering defects in materials and workmanship for a period of one year. Period shall begin at date of final Certificate of Acceptance.

1.5 PRODUCT HANDLING:

A. Packaging of hardware is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set

number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

B. Inventory hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

C. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.

D. Provide secure lock-up for hardware delivered to the project, but not yet installed. Control handling and installation of hardware items which are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after installation.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace hardware components that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures.
      b. Failure of operating components.
   2. Warranty Period: Three years from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes do not comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty does not include normal weathering.
   1. Failures on finish include, but not limited to, checking, crazing, peeling, chalking, fading and/or loss of adhesion.

C. Warranty Period: 20 years from date of Substantial Completion.

1.7 MAINTENANCE TOOLS

A. Door Hardware:
   1. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED HARDWARE

A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware is indicated in the Finish Hardware Data Sheet and Hardware Schedule at the end of this section. Products are identified by using hardware designation numbers of the following. See door schedule drawing and hardware schedule.

B. Manufacturer's Product Designations: One or more manufacturers are listed for each hardware type required. An asterisk (*) after a manufacturer's name indicates whose product designation is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide either the product

designated, or, where more than one manufacturer is listed, the comparable product of one of the manufacturers listed which comply with requirements including those specified elsewhere in this section.

1. Butts & Hinges: Stanley of Hager*
2. Interior and Exterior Non-Electrified Locks & Trim: Schlage Cylinder ND series
   a. ANSI / BHMA A156.2 Series 4000, Grade 1
   b. Primus 6-pin small format interchangeable core (SFIC)
   c. Backset: 2 3/4"
   d. Lock Chassis: Tubular construction. Steel with stainless steel cover
   e. Finishes: 626 – satin chromium plated Core
   f. Housing: Interchangeable core
   g. Latch Bolt: 1/2" throw deadlocking latch.
   h. Material:
      1) Levers: zinc base
      2) Roses: stainless steel
      3) Latch face plates and strikes: stainless steel
      4) Lock chassis is steel with stainless steel cover
   i. Levers: 17 Lever – 4 3/4" long handle
   j. Finishes: 626 – satin chromium plated core w/ antimicrobial coating
   k. Mounting: 2 1/8" diameter bore for lock housing. 1" diameter for latch tube
   l. Rose: C – 3" diameter mounting screws concealed
   m. Strike: S3 – 4 7/8" x 11/4" with curved lip.
   n. Door Thickness: 1 3/4"
3. Lockset Functions: See door schedule on drawings
4. Deadlocks & Deadlatches: Schlage Primus core (SFIC)
5. Rim Cylinders: Schlage
6. Door Closers: LCN 4040 XP Series
7. Panic Devices: Von Duprin 9447L-F with exterior lever LP230L, #03 handle, and concealed vertical rods
8. Wall Stops: Glynn Johnson
9. Floor Stops: Glynn Johnson
10. Door Holders: Glynn Johnson
11. Thresholds: Pemko or National per compliance with profiles shown on drawings.
12. Concealed Vertical Rods: with Von Duprin Panic Devices.
13. Push / Pull Rockwood 70C Push Plate, 4”x16” / 111 Pull 1” diameter, 10” CTC
14. Kick Plate – 626, 18ga, .050 x 12” x 30”
15. Weather Stripping: Pemko 775A

C. * See notes on Architectural Door Schedule Sheet

D. All finishes are to be satin stainless steel.

2.2 MATERIALS AND FABRICATION

A. GENERAL:

1. Hand of Door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
2. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI A156 series standard for each type hardware item and with ANSI A156.1 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.

3. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.
4. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaced of other to match hardware finish or, if exposed in surfaces of other work, to match finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.
5. Provide concealed fasteners for hardware units which are exposed when door is closed, except to extent no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work. In such cases, provide sleeves for each thru-bolt or use screw fasteners.
6. Tools and Maintenance Instructions for Maintenance: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of furnished hardware.

2.3 HINGES, BUTTS AND PIVOTS

A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template- produced units.

B. Screws: Furnish Phillips flat-head machine screws for installation of units, except furnish Phillips flat-head wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.

C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

1. Steel Hinges: Steel pins.
2. Non-Ferrous Hinges: Stainless steel pins.
3. Exterior Doors: Non-removable pins.
4. Out-Swing Corridor Doors: Non-removable pins.
5. Interior Doors: Non-rising pins.
6. Tips: Flat button and matching plug, finished to match leaves, except where hospital tip (HT) indicated.
7. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height, and for leaves over 40" in width.

2.4 LOCK CYLINDERS AND KEYING

A. General: Supplier will meet with Owner to finalize keying requirements and obtain final instructions in writing.

B. Equip locks with manufacturer's special 6-pin tumbler permanent core – Primus 6 pin SFIC #29.1 Keyway. Owner will provide final keying.

C. Metals: Construct lock cylinder parts from brass/bronze, stainless steel or nickel silver.

D. Permanently inscribe each key with number or lock that identifies cylinder manufacturer key symbol, and notation "DO NOT DUPLICATE".

E. Key Material: Provide keys of nickel silver only.

F. All locks to be delivered to job with a permanent keyway.

2.5 LOCKSETS AND TRIM

A. Provide cylinders locks to comply with the following criteria:
1. Door Thickness: 1-3/4”
2. Backset: 2-3/4”
3. Latchbolt - 1/2” throw deadlatch, UL listed, self-adjusting faceplate; 3/4” throw fire door deadlatch.
4. Strike - ANSI strike.
5. Lever Handles - Solid zinc diecast levers, I/C core version standard, wrought brass roses, concealed screws, 14 style.
6. Door Preparation - ANSI A115.2, through bolt installation.
7. Interchangeable Core - 6 pin with nickel silver keys.
8. Masterkeyed – Masterkeyed, Grand masterkeyed per Owner’s Standard.
9. Finishes - 626.
10. Certifications - ANSI/BHMA A156.2, Series 4000 Grade 1.
11. Functions:
    a. Enclosed Offices / Concession F-82
    b. Single Use Restrooms F-81
    c. Utility and Storage Rooms F-86
    d. Passage F-75

2.6 DEADBOLTS

A. Provide deadbolts to comply with the following criteria:
1. Series – B500 and B600
2. Door Thickness: 1-3/4”
3. Backset - 2-3/4”
4. Through bolt - Two 1/4” (6.30mm) steel through bolts.
5. Deadbolt - 1” (25mm) Throw, made from high strength stainless steel.
6. Faceplate - 1-1/8” x 2-1/4” (29mm x 57mm) standard; self adjusting for beveled door.
7. Strike - Square corner, 1-1/8” x 2-3/4” (29mm x 70mm), no lip, furnished with dust box and door frame support plate.
8. Interchangeable Core - 6 pin with nickel silver keys.
9. Masterkeyed – Masterkeyed, Grand masterkeyed per Owner’s Standard.
10. Finishes - 626.
11. Certifications - ANSI/BHMA A156.5, Grade 1 and 2
12. Exposed Trim - Solid brass. Cylinder ring and thumbturn shall be pressure die-cast, plated to match finish indicated.
13. Functions:
    a. Classroom: B663P
    b. Single Use Restroom with Occupancy Indicator: B571

2.7 PUSH/PULL UNITS

A. Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installation; through bolted for matched pairs, but not for single units.

2.8 CLOSERS AND DOOR CONTROL DEVICES

A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door exposure to weather and anticipated frequency of use.

1. Where parallel arms are indicated for closers, provide closer unit one size larger than recommended for use with standard arms.

B. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing.

C. Flush Floor Plates: Provide finished metal flush floor plates for floor closers except where threshold are indicated and cover plate is specified to be an integral part of threshold. Finish floor plate to match hardware sets, unless otherwise indicated.

D. Recessed Floor Plates: Provide recessed floor plates where no thresholds are indicated and floor closers are located in an area of resilient flooring, stone flooring or terrazzo. Recess plates to receive an insert of the floor finish material, of the normal thickness as indicated. Provide extended spindle on closer as may be necessary to accommodate thick floor finish inserts.

2.9 DOOR TRIM UNITS

A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, viewers, knockers, mail drops and similar units); either machine screws or self-tapping screw.

B. Fabricate edge trim of stainless steel, not more than 1/2" nor less than 1/16" smaller in length than door dimension.

C. Fabricate protection plates (armor, kick or mop) not more than 1-1/2" less than door width on stop side and not more than 1/2" less than door width on pull side, x the height indicated.

D. Metal Plates: Stainless steel, .050" (U.S. 18 ga.).

2.10 WEATHERSTRIPPING

A. General: Except as otherwise indicated, provide continuous weather-stripping at each edge of every exterior door leaf. Provide type, sizes and profiles shown or scheduled. Provide non-corrosive fasteners as recommended by manufacturer for application indicated.

B. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by manufacturer.

C. Weather-stripping at Jambs and Heads: Provide bumper-type resilient insert and metal retainer strips, surface-applied unless shown as mortised or semi-mortised, of following metal, finish and resilient bumper material:

D. Weather-stripping at Door Bottoms: Provide threshold consisting of contact type resilient insert and metal housing of design and size shown; of following metal, finish, and resilient seal strip.

2.11 THRESHOLDS

A. General: Except as otherwise indicated provide standard metal threshold unit of type, size and profile as shown or scheduled.

2.12 HARDWARE FINISHES

A. Provide matching 26D finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if no latch-lock sets) for color and texture.

B. Provide finishes which match those established by BHMA or, if none established, match the Architect's sample.

C. Provide quality of finish, including thickness of plating or coating, if any, composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for the applicable units of hardware by referenced standards.

D. Provide protective lacquer coating on all exposed hardware finishes of brass, bronze and aluminum, except as otherwise indicated. The suffix "-NL" is used with standard finish designations to indicate "no lacquer".

E. The designations used in schedules and elsewhere to indicate hardware finishes are the industry-recognized standard commercial finishes, except as otherwise noted.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount hardware units at the following heights above finished floor to centerline of item unless otherwise indicated.

1. Hinges: Standard Placement
2. Cylindrical Lockset: 38"
3. Deadlock or Deadlatch: 60"
4. Push Plate: 48"
5. Pull Plate: 42"
6. Panic Bar: 42"
7. Closer: Per manufacturer's template to give maximum degree of opening. Mount closers on room side of door. Provide min. overhead clearance of 80”.
8. Kick Plate: 1/4" from Bottom of door.
9. Stop and Holders:
    a. Wall: On wall where knob or pull hits.
    b. Floor: On floor as far from hinge as conditions permit.
    c. O.H. Door Holder: Per template.
    d. Door Holder: 2" from lead edge of door.

B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of

surface protection with finishing work specified in the Division-9 sections. Do not install surface-mounted items until finishes have been completed on the substrate.

C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

D. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant.

3.2 ADJUST AND CLEAN

A. Adjust and check each operating item or hardware and each door, for proper location and to ensure proper operation, function, and keying of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

D. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

E. Continued Maintenance Service: Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the representative of the latch and lock manufacturer, shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware.

F. Upon completion of project the hardware supplier shall furnish two (2) copies of the factory key bitting schedule directly to the Owner's Representative.

END OF SECTION 08710

SECTION 09200 - LATH AND PLASTER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Types of work include:
   1. Metal furring and lathing.
   2. Portland cement plastering.
   3. Portland cement plaster scratch and leveling coats.
   4. Vinyl control joints - See Detail, Architectural Elevations and Finish Schedule.

1.3 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Where plaster systems with fire-resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories acceptable to authorities having jurisdiction.
B. Provide plaster for fire-resistance rated systems which has same aggregate as specified for similar non-rated work, unless specified aggregate has not been tested by accepted fire testing laboratories.
C. Coordination of Work: Coordinate layout and installation of suspension system components for suspended ceilings with other work supported by, or penetrating through, ceiling.
D. Applicator: Company specializing in application of stuccowork with minimum five (5) years documented experience, with knowledge of ASTM C-926 and ASTM C-1063.
E. Apply cement plaster under provisions of the latest edition of the PCA Plaster (stucco) manual and ASTM C-926-11a, except as modified herein.
F. Single Source Responsibility: Obtain materials and employ materials from a single source for each type of material required for Portland cement plaster to ensure consistency in quality performance and appearance.
G. Standard of Comparison: Materials specified are for clarity of description and as a standard of comparison.
H. Substitutions for specified products: Submit substitution request under provisions of Section 01600, “Product Substitution Procedure”.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer’s product data for cementations materials, lath, metal support components, and accessories.
B. Material Certificates: Submit producer’s certificate for each kind of plaster aggregate indicated evidencing that materials comply with requirements.
C. Suspension systems exposed to wind shall be designed by a Florida Registered Design Professional. Shop drawings shall be submitted in accordance with the design specified.

1.5 PRE-INSTALLATION MEETING

A. Schedule a pre-installation meeting to review the requirements of this specification and existing conditions with Project Consultant and Owner at least seven (7) days prior to commence work. Attending this meeting will be the Contractors Superintendent, the plastering Sub-Contractor’s Superintendent and/or their lead man who will be present during this work, the Project Consultant and the Owner.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer.
B. Store materials inside, under cover and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes. Neatly stack lath flat to prevent deformation.
C. Handle lath to prevent damage to edges, ends or surfaces. Protect metal corner beads and trim from being bent or damaged.
D. Place sand under cover and in a manner to keep it lightly damp and prevent intrusion of foreign materials.

1.7 PROJECT CONDITIONS

A. Environmental Requirements, General: Comply with requirements of referenced plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during, and after application of plaster.
B. Ventilation: Ventilate building spaces as required to remove water, in excess of that required for hydration of plaster. Begin ventilation immediately after plaster is applied and continue until it sets.
C. Protect contiguous work from soiling, spattering moisture deterioration and other harmful effects which might result from plastering.

1.8 MOCK-UP

A. Before installation of plaster Work, fabricate mock-up panels for each type of finish and application required using materials, including lath and support system, indicated for final Work.
B. Install sample panels 4 feet x 4 feet (minimum) x full thickness in location indicated, or if not otherwise indicated, as directed by Project Consultant. Panels may form a part of the finished work if installed under provisions of the design parameters.
C. Demonstrate proposed range of color, texture and installation to be expected in completed Work.
D. Obtain Project Consultant and Owner’s acceptance of panel’s visual quality before start of Work.
E. Retain panel during construction as standard for judging completed Work.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not apply stucco when substrate or ambient air temperature is less than 45 degrees Fahrenheit nor no more than 90 degrees Fahrenheit, with a humidity index of less 75, or up to 95 degrees with a humidity index is in excess of 75.
B. Maintain minimum ambient temperature of 45 degrees Fahrenheit during and after installation of plaster for not less than 48 hours.
C. Protect stucco against uneven and excessive evaporation and from blasts of dry air. Apply and cure stucco as required by climatic and job conditions to prevent rapid dryout. Provide suitable coverings, moist curing, and barriers to deflect direct sunlight and wind, or combination thereof.

1.10 WARRANTY

A. Contractor, Sub-Contractor, each Material Supplier: provide a five (5) year unconditional written Guarantee or Warranty covering all workmanship and materials. Said Guarantee: under provisions of all stipulations and requirements stated in the General Conditions. All such Guarantees: commence at the date of Substantial Completion and/or date of acceptance of project by Owner and must include labor and materials to provide repair or replacement of stucco and all finishes including painting, sealants, signage and other components.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
   1. Manufacturers of Metal Supports:
      a. ClarkDietrich Metal Framing (basis of design)
      b. SCAFCO Corporation.
      c. United Metal Products, Inc.
   2. Manufacturers of Expanded Metal Lath:
      a. Alabama Metal Industries Corporation (AMICO)
   3. Manufacturers of Accessories: Reglets - See Architectural Drawings for ALL information. Details are specific on size, location. See Elevations, etc.
      a. VinylTech (Plastic Components Co.).

2.2 METAL SUPPORTS FOR SUSPENDED AND FURRED CEILINGS

A. General: Size metal ceiling supports to comply with the following, unless otherwise indicated.
   1. Portland Cement Plaster Installation: ANSI A42.3.
B. Wire for Hangers and Ties: ASTM C 641, Class 1 zinc coating, soft temper.
C. Rod Hangers: Mild steel, zinc or cadmium coated.
D. Flat Hangers: Mild steel, zinc or cadmium coated or protected with rust inhibitive paint.
E. Channels: Cold-rolled steel, 0.0598" min. thickness of base metal (uncoated), allowable bending stress of 18,000 psi, protected with rust inhibitive paint or galvanizing complying with ASTM A 525 for G90 coating designation, and as follows:
   1. Carrying Channels: 1-1/2" deep X 7/16" wide flanges, 475 lb. Per 1000' painted, 508 lbs. Per 1000' galvanized.
   2. Furring Channels: ¾" deep X 7/16" wide flanges, 300 lb. Per 1000' galvanized.
   3. Provide galvanized channels for exterior installations.

2.3 STEEL STUDS AND RUNNERS/TRACKS

A. Non-Load (Axial) Bearing Studs and Runners: ASTM C 645 and complying with following requirements for minimum thickness of base metal (uncoated) and other characteristics:
   1. Stud Thickness: As indicated on wall type schedule.
   2. Stud Depth: As indicated on wall type schedule.

2.4 VERTICAL METAL FURRING

A. Z-Furring Members: Manufacturer's standard screw-type zee-shaped furring members formed from zinc-coated (galvanized) steel sheet, 0.0179" min. base (uncoated) metal thickness; complying with ASTM A 525, Coating Designation G 60; designed for mechanical attachment of insulation boards or blankets to monolithic concrete and masonry walls.

2.5 LATH

A. Expanded Metal Lath: Fabricate expanded metal lath from uncoated or zinc-coated (galvanized) steel sheet to produce lath complying with ASTM C 847 for type, configuration and other characteristics indicated below, with uncoated steel sheet painted after fabrication into lath.
   1. Diamond Mesh Lath: Comply with the following requirements:
      a. For Overhead Installation: 3/8-inch rib lath, 3.4 pounds per square yard.
      b. For Vertical Stucco Installation: Diamond Mesh, 3.4 pounds per square yard.
      c. For application with plywood backing: Paper-backed Wire Fabric Lath: FS-UU-B-690a, Type I, Grade D, Style 2, Asphalt Impregnated Paper Factory-bonded to back.

B. Lath Attachment Devices: Devices of material and type required by referenced standards and recommended by lath manufacturer for secure attachment of lath to framing members and of lath to lath.

2.6 PLASTER ACCESSORIES FOR PORTLAND CEMENT PLASTER

A. General: Comply with material provisions of ANSI A42.3; coordinate depth of accessories with thicknesses and number of coats required.
B. Metal Corner Reinforcement: Expanded large mesh diamond mesh lath fabricated from zinc-coated (galvanized) wire, and specially formed to reinforce external corners of portland cement plaster on exterior exposures while allowing full plaster encasement.
C. Casing Beads: Square-edged style, fabricated of high impact PVC with perforated flanges No. 10 casing bead by VinylTech (Plastic Components Co.).
D. Slip Joints: Square edge style fabricated of PVC, No. 20 slip joint by Plastic Components Inc.
E. Corner Joints: No. 511 free moving corner joint fabricated of PVC by Plastic Components Inc.
F. Corner Beads: No. 1 corner bead with perforated flanges fabricated of PVC by Plastic Components Inc.
G. Control Joints: One-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
H. Soffit Vent: No. 549-58 Continuous soffit vent fabricated of PVC by Plastic Components Inc.
I. Beveled Stucco Base: No. 1058 and No.1125 PVC casing beads by Plastic Components Inc.

2.7 PORTLAND CEMENT PLASTER MATERIALS

A. Base Coat Cements: Type as indicated below:
   1. Portland cement, ASTM C 150, Type I or III.
B. Finish Coat Cement: Type as indicated below:
   1. Portland cement, ASTM C 150, Type I, white.
C. Lime: Special hydrated lime for finishing purposes, ASTM C 206, Type S, or special hydrated lime for masonry purposes, ASTM C 207, type S.
D. Sand Aggregate for Base Coats: ASTM C 897.
E. Aggregate for Finish Coats: ASTM C 897 and as indicated below:
F. Manufactured or natural sand, white in color.
G. Fiber for Base Coat: Alkaline-resistant glass fibers, ½" long, free of contaminates, manufactured for use in portland cement plaster.
H. Product: Subject to compliance with requirements, provide Dur-O-Fiber AR Glass manufactured by Dur-O-Wal, Inc.

2.8 MISCELLANEOUS MATERIALS

A. Water for Mixing and Finishing Plaster: Drinkable, free of substances capable of affecting plaster set or of damaging plaster, lath or accessories.
B. Bonding Agent for Portland Cement Plaster: ASTM C 932.
C. Acoustical Sealant: ASTM C 919, non-oxidizing, skinning paintable types for exposed applications; non-drying, non-hardening, non-skinning type for concealed applications.
D. Sound Attenuation Blankets: FS HH-I-521, Type I; semi-rigid mineral fiber blanket without membrane, Class 25 flame spread, thickness as indicated.
E. Lath Fasteners: Galvanized or Stainless Steel pan or wafer head, #10 x 1 1/4" at 6" o.c. max.

2.9 PORTLAND CEMENT PLASTER MIXES AND COMPOSITIONS

A. General: Comply with ASTM C 926 for portland cement plaster base and finish coat mixes as applicable to plaster bases, materials and other requirements indicated.
B. Portland Cement Plaster Base Coat Mixes and Compositions: Proportion materials for respective base coats in parts by volume for cementitious materials and in parts by volume per sum of cementitious materials for aggregates to comply with the following requirements for each method

of application and plaster base indicated. Adjust mix proportions below within limits specified to attain workability.

1. Three-Coat Work Over Metal Lath: Base coats as indicated below:
   a. Scratch Coat: 1 part portland cement, 0-3/4 parts lime, 2-1/2 - 4 parts sand.
   b. Brown Coat: 1 part portland cement, 0-3/4 parts lime, 3-5 parts sand.
2. Two-Coat Work Over Concrete Unit Masonry: Base coats as indicated below:
   a. Base Coats: 1 part portland cement, ¾ - 1-1/2 parts lime, 3 -4 parts sand.
3. Fiber Content: Add fiber to mixes above to comply with fiber manufacturer's directions but not to exceed 2 lbs. Per cu. Ft. of cementitious materials. Reduce aggregate quantities accordingly to maintain workability.

C. Job-Mixed Portland Cement Plaster Finish Coats: Proportion materials for finish coats in parts by volume for cementitious materials and parts by volume per sum of cementitious materials for aggregates to comply with the following requirements:
   1. 1 part portland cement, ¾ - 1-1/2 parts lime, 3 parts sand.

2.10 MIXING

A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION OF LATHING AND FURRING, GENERAL

A. Interior Lathing and Furring Installation Standard: Install lathing and furring materials indicated for gypsum plaster to comply with ASTM C 841.

B. Portland Cement Plaster Lathing and Furring Installation Standard: Install lathing and furring materials indicated for portland cement plaster to comply with ANSI A42.3.

C. Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar work to comply with details indicated or if not otherwise indicated, to comply with applicable published recommendations of gypsum plaster manufacturer, or if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co.

D. Isolation: Where lathing and metal support system abuts building structure horizontally, and where partition/wall work abuts overhead structure, isolate the work from structural movement sufficiently to prevent transfer of loading into the work from the building structure. Install slip or cushion type joints to absorb deflections but maintain lateral support.
   1. Frame both sides of control and expansion joints independently, and do not bridge joints with furring and lathing or accessories.

3.2 INSTALLATION OF CEILING SUSPENSION SYSTEMS

A. Preparation and Coordination: Coordinate installation of ceiling suspension system with installation of overhead structural systems to ensure that inserts and other structural anchorage provisions have been installed to receive ceiling hangers in a manner that will develop their full strength and at spacings required to support ceiling.

B. Hanger Installation: Attach hangers to structure above ceiling to comply with ML/SFA "Specifications for Metal Lathing and Furring" and with referenced standards.
   1. Do not attach hangers to metal desk tabs.

C. Install ceiling suspension system components of sizes and spacings indicated but not in smaller sizes or greater spacings than that required by referenced lathing and furring installation standards.

D. Wire Hangers: Space 8 gauge (0.16" diameter) wire hangers not over 4'-0" o.c. parallel with, and not over 3'-0" perpendicular to, direction of carrying channels, unless otherwise indicated and with 6" of carrying channel ends.

E. Carrying Channels: Space carrying channels not over 3'-0" o.c. with 4'-0" o.c. hanger spacing.

F. Furring Channels to Receive Metal Lath: Space furring channels not over 16” o.c. for 3.4 lb. diamond mesh lath or 24” o.c. for 3.4 flat rib lath.

3.3 INSTALLATION OF STEEL STUD WALL/PARTITION SUPPORT SYSTEMS

A. General: Install components for steel stud wall/partition support systems to comply with directions of steel stud manufacturer for applications indicated and with the following:
   1. For non-load (axial) bearing stud systems, comply with ASTM C 754.
B. Steel Stud Systems to Receive Gypsum Lath: Space studs as follows:
   1. For 3/8” thick gypsum lath; not over 16” o.c.
C. Steel Stud Systems to Receive Metal Lath: Not over 16’ o.c.
D. Extend and attach partition support systems to structure above suspended ceilings, unless otherwise indicated.

3.4 INSTALLATION OF VERTICAL METAL FURRING

A. Metal Furring to Receive Metal Lath: Not over 16” o.c.
B. Z-Furring with Thermal Insulation: Erect thermal insulation vertically and hold in place with Z-furring members spaced 24” o.c. except at external corners, securely attach narrow flanges of furring members to wall with concrete stub nails or power-drive fasteners spaces 24” o.c. At external corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw attach short flange of furring channel to web of attached channel. Start from this furring channel with standard width insulation panel and continue in regular manner. At internal corners, space second member no more than 12” from corner and cut insulation to fit. Until plaster base is installed hold insulation in place with 10” staples fabricated from 18-gauge tie wire and inserted through slot in web of member.

3.5 METAL LATHING

A. Install expanded metal lath for the following applications where plaster base coats are required. Provide appropriate type, configuration and weight of metal lath selected from materials indicated which comply with referenced lathing installation standards.
B. Suspended Ceilings: In exterior conditions; minimum weight of diamond mesh lath, 3.4 lbs. Per sq. yd.
C. Ceramic Tile Setting Beds: Use diamond mesh lath, 3.4 lbs. Per sq. yd.
D. Exterior Sheathed Wall Surfaces: Minimum weight of self-furring diamond mesh lath, 3.4 lbs. Per sq. yd.

3.6 INSTALLATION OF PLASTERING ACCESSORIES

A. General: Comply with referenced lathing and furring installation standards for provision and location of plaster accessories of type indicated. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to plaster bases to hold accessories in place and alignment during plastering.
B. Accessories for Portland Cement Plaster:
   1. Corner Reinforcement: Install at external corners.
   2. Control Joints: Install control joints at locations indicated, or if not indicated, at locations complying with the following criteria and approved by Architect.
      a. Where an expansion or control joint occurs in surface of construction directly behind plaster membrane.
      b. Where portland cement plaster panel sizes or dimensions change. Extend joints full width or height of plaster membrane.
C. Plaster Moldings (Stucco Reglets):
   1. Place asphalt impregnated building paper behind all moldings, vertical, diagonal and horizontal, extending minimum 6” beyond edge of flange in each direction. Install an

additional layer of asphalt impregnated building paper over nailing flange, on top side of all horizontal reglets - including any reglets within 30 degree of horizontal.

2. Install Reglet connector clips at all seams/joints. Apply sealant at all seams/joints at installation. Install according to manufacturer's directions to provide a watertight condition.
3. Use vinyl or cloth tape specifically manufactured for masking vinyl trim prior to plastering.

3.7 STRESS RELIEF

A. Masonry and concrete surfaces:
   1. Provide control joints thru brown and finish coat immediately after the initial set of application on masonry and concrete.
   2. Install control joints in locations indicated on drawings and at spacing not exceeding more than 24 feet in any direction.

B. Over Wire Lath:
   1. Provide control and expansion joints spaced the following:
      a. In any direction not to exceed 12 feet on center.
      b. Limit area to 130 square feet.
      c. The short length to the long length ratio: not to exceed 1 to 2-1/2.
      d. Provide an expansion joint where stucco support on wire lath abuts dissimilar material. Wire lath and supports: do not extend through an expansion and control joints.
      e. Metal lath shall be discontinuous behind control and expansion joint accessories.

3.8 PLASTER APPLICATION, GENERAL

A. Prepare monolithic surfaces for bonded base coats and use bonding compound or agent to comply with requirements of referenced plaster application standards for conditioning of monolithic surfaces.

B. Tolerances: Do not deviate more than 1/8" in 10'-0" from a true plane in finished plaster surfaces, as measured by a 10'-0" straight edge placed at any location on surface.

C. Grout hollow metal frames, bases and similar work occurring in gypsum plastered areas, with base coat plaster material, and prior to lathing where necessary. Except where full grouting is indicated or required for fire-resistance rating, grout 6" lengths at each anchorage.

D. Sequence plaster application with the installation and protection of other work, so that neither will be damaged by the installation of the other.

E. Plaster flush with metal frames and other built-in metal items or accessories which act as a plaster ground, unless otherwise indicated. Where plaster is not terminated at metal by casing beads, cut base coat free from metal before plaster sets and groove finish coat at the junctures with metal.

F. Apply thickness and number of coats of plaster as indicated; or as required by referenced standards.

G. Concealed Plaster: Where plaster application will be concealed above suspended ceilings and similar locations, finish-coat may be omitted; where concealed behind cabinets and similar furnishings and equipment, apply finish-coat; where used as a base for adhesive application of tile and similar finishes, omit finish-coat and coordinate thickness with overall dimension as shown, and comply with tolerances specified.

3.9 PORTLAND CEMENT PLASTER APPLICATION

A. Apply cement plaster under provisions of PCA Plaster (stucco) Manual and ASTM C-926-11a and as herein modified. The desired time of the complete installation of the three (3)-coat stucco is within 48 hours or less.

B. Sequence the work to allow for the continuous application of plaster over all surfaces, and including window and door returns, louvers and other features to provide uniform thickness and finishes.

C. Plaster:

1. Provide Portland cement plaster (stucco), of the composition indicated, to comply with the following requirements:
   a. Dampen masonry and concrete surfaces by fog spraying prior to installation of tight coat and scratch coat. Surface: free of visible water before applying tight or scratch coats. As far as possible, apply each coat in a continuous operation so as to avoid unsightly jointing.
   b. Apply tight coat over concrete surfaces followed immediately with a scratch coat before tight coat becomes dry. Apply the tight coat in a thin coat approximately 1/16 inch thick, with a strong pressure.
   c. Apply tight, scratch, brown, and skim coat by hand trowelling.
   d. Back trowel each coat, applying with heavy pressure to fill voids, eliminate air bubbles, and promote mechanical bond.
   e. When the scratch coat becomes firm, score the entire surface with scarifier tool, by Harrington or Goldlatt before initial set. On vertical surfaces score horizontally. The tool's purpose is to create a score of sufficient width to permit intrusion of the brown coat.
      Note: The use of wire combs or brushes for scoring the scratch coat is not allowed.
   f. Strip all exterior corners.
   g. Finish coat consists of the following:
      1) A skim coat 1/8 inch thick. Apply skim coat by hand troweling.
   h. Over skim coat apply a troweled or sponge textured finish, or a machine sprayed finish where indicated or specified.
   i. Required minimum thickness: With a tolerance of zero to plus 1/8 inch per coat.
   j. Three-coat work on masonry poured concrete and metal lath:

	Vertical Surfaces	Horizontal Surfaces
Scratch coat	1/4 inch	1/4 inch
Brown coat	1/4 inch	1/4 inch
Finish coat	1/4 inch *	1/4 inch *
Total	3/4 inch	3/4 inch

* Plus any raised texture finishes.
Note: On wire lath, the scratch coat shall extend 1/4 inch beyond the lath.

Two-coat work on masonry: (Interior occupied spaces)

	Vertical Surfaces	Horizontal Surfaces
Scratch coat	1/4 inch	1/4 inch
Finish coat	1/4 inch *	1/4 inch *
Total	1/2 inch	1/2 inch

* Plus any raised texture finishes.

   k. Provide 1/4 inch skim coat on masonry. (Interior of Mechanical and Electrical spaces).
   l. Stucco finishes: As indicated on drawings.
   m. Stucco surfaces to be straight-edged, with jambs and angles straight and true.

2. Miscellaneous:
   a. Ensure all surfaces are clean and free of harmful materials before application of stucco.
   b. Apply coating continuously without allowing mix to dry at edges.
   c. Fully stucco all exterior exposed or projecting concrete unless otherwise indicated.

3.10 CURING

A. Provide sufficient moisture to all coats to permit continuous hydration of the cementitous materials.

B. Moisture curing of plaster:
   1. Lightly mist the stucco using a nursery-fogging nozzle or with pressure tank nursery sprayer to maintain lightly damp condition. Do not over wet.
   2. The stucco surfaces: Never saturate or directly spray with jetted water.
   3. Ensure there is no visible water on the surface when plaster is applied.

C. After applying the scratch coat the second coat (brown coat) can be applied after the scratch coat has become firm to the touch. No dampening of scratch coat is required if brown coat is applied within 12 hours. If the second coat is not applied within 12 hours, moist cure the scratch coat for a minimum of 48 hours or until the second coat is applied. Do not saturate the stucco.

D. Apply the finish coat within 4 hours of the application of the brown coat without moisture curing the brown coat or moist cure the brown coat for a minimum of 48 hours, or until the finish coat is applied.

E. Moist cure a minimum of three (3) times a day for three (3) days after applying finish coat. Maintain finished work in a continuously moist condition indicated by surface having uniform “dark gray” color.

3.11 REPAIRING

A. Sounding Surfaces:
   1. Sound out all stucco on masonry and poured concrete by tapping the surface.
   2. Mark all hollow sounding surfaces that indicate a non-bonding of substrate.

B. Cutting and patching:
   1. Cut, patch, point-up, and repair removed plaster as necessary to accommodate other Work and to restore cracks, dents, and imperfections.
   2. Remove plaster to eliminate blisters, buckles, excessive crazing, check cracking, dry out, efflorescence, sweat-out and similar defects, and where bond to substrate has failed, Replace plaster matching adjacent surfaces.

C. Sand smooth-troweled finished lightly to remove trowel marks and arrisses.

3.12 PAINTING

A. Prior to painting plaster, ensure the moisture content of the plaster is less than that recommended by the paint manufacturer and the ph of the plaster is less than 10. Verify the moisture content using an electronic moisture meter and the ph using a ph pencil. Test every 1,000 square feet.

3.13 CLEANING AND PROTECTION

A. Remove temporary protection and enclosure of other Work.

B. Promptly remove plaster from doorframes, windows, and other surfaces, which are not to be plastered.

C. Repair floors, walls and other surfaces, which have been stained, marred, or otherwise damaged during plastering Work.

D. When plastering Work is completed, remove unused materials, containers and equipment, and clean floors of plaster debris.

E. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures plaster work being without damage or deterioration at time of substantial completion.

END OF SECTION

SECTION 09250 - GYPSUM DRYWALL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Types of work include:
   1. Gypsum drywall including screw-type metal support system.
   2. Gypsum drywall applied to metal framing and furring.
   3. Gypsum backing boards for application of other finishes.
   4. Drywall finishing (joint tape-and-compound treatment).

1.3 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Where gypsum drywall systems with fire- resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories acceptable to authorities having jurisdiction.
   1. Provide fire-resistance rated assemblies identical to those indicated by reference to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

B. Single Source Responsibility: Obtain gypsum board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product specifications and installation instructions for each gypsum drywall component, including other data as may be required to show compliance with these specifications.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.
B. Store materials inside under cover and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.
C. Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal corner beads and trim from being bent or damaged.

1.6 PROJECT CONDITIONS

A. Environmental Requirements, General: Comply with requirements of referenced gypsum board application standards and recommendations of gypsum board manufacturer, for environmental conditions before, during and after application of gypsum board.
B. Ventilation: Ventilate building spaces as required to remove water in excess of that required for drying of joint treatment material immediately after its application. Avoid drafts during dry, hot weather to prevent too rapid drying.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
   1. Metal Support Materials:
      a. Allied Structural Industries.
      b. Bostwich Steel Framing Co.
      c. Gold Bond Building Products Div., National Gypsum Co.
      d. Milcor Division; Inryco Inc.
      e. United States Gypsum Co.
   2. Direct Suspension Systems:
      a. Chicago Metallic Corp.
      b. Donn Corporation.
      c. United States Gypsum Co.
   3. Gypsum Board and Related Products:
      a. American Gypsum Co.
      b. Georgia-Pacific Corp.
      c. Gold Bond Building Products Div., National Gypsum Co.
      d. United States Gypsum Co.

2.2 METAL SUPPORT MATERIALS

A. Ceiling Support Materials and Systems:
B. General: Size ceiling support components to comply with ASTM C 754 unless otherwise indicated.
C. Main Runners: Steel channels with rust inhibitive paint finish, hot or cold-rolled.
D. Hanger Wire: ASTM A 641, soft, Class 1 galvanized.
E. Hanger Rods and Flats: Mild steel with zinc or equally rust inhibitive coating for rods and zinc or rust-inhibitive paint finish for flats.
F. Angle-Type Hangers: Not less than 7/8" x 7/8" x 16-gage galvanized steel formed angles, with bolted connections and 5/16" diameter bolts.
G. Hanger Anchorage Devices: Screws, clips, bolts, cast-in-place concrete inserts or other devices applicable to the indicated method of structural anchorage for ceiling hangers and whose suitability for use intended has been proven through standard construction practices or by certified test data. Size devices for 3x calculated load supported except size direct pull-out concrete inserts for 5x calculated loads.
H. Furring Members: ASTM C 645, 0.0179" min. thickness of base metal, hat shaped, for spans of less than 4 feet.
I. Furring Members: ASTM C 645; 0.0179" min. thickness of base metal, C-shaped studs, for spans greater than 4 feet.
J. Furring Anchorages: 16-gage galvanized wire ties, manufacturer's standard wire-type clips, bolts, nails or screws as recommended by furring manufacturer and complying with C 754.
K. Direct Suspension Systems: Manufacturer's standard zinc-coated or painted steel system of furring runners, furring tees, and accessories designed for concealed support of gypsum drywall ceilings; of proper type for use intended.
L. Wall/Partition Support Materials:
   1. Studs: ASTM C 645; 0.0179" min. thickness of base metal unless otherwise indicated.
      a. Depth of Section: 3-5/8", except as otherwise indicated.
      b. Runners: Match studs; type recommended by stud manufacturer for floor and ceiling support of studs, and for vertical abutment of drywall work at other work.
M. Fasteners for Furring Members: Type and size recommended by furring manufacturer for the substrate and application indicated.

2.3 GYPSUM BOARD

A. Gypsum Wallboard: ASTM C 36, of types, edge configuration and thickness indicated below; in maximum lengths available to minimize end-to-end butt joints.

1. Type: Type X, unless otherwise indicated.
2. Type: Type X for fire-resistant rated assemblies and where indicted.
3. Edges: Tapered.
4. Thickness: 5/8", unless otherwise indicated.

B. Gypsum Backing Board for Multi-Layer Applications: ASTM C 442 or, where backing board is not available from manufacturer, gypsum wallboard, ASTM C 36, of type, edge configuration and thickness indicated below; in maximum lengths available to minimize end-to- end joints.
1. Type: Type X, unless otherwise indicated.
2. Type: Type X for fire-resistance rated assemblies and where indicated.
3. Edges: Manufacturer's standard.
4. Thickness: 5/8", unless otherwise indicated.

C. Water-resistant Board: ASTM C 630, with tapered edges and of type and thickness indicated below; in maximum lengths available to minimize end-to-end butt joints.
1. Type: Moisture resistant 'Aquatuff', unless otherwise indicated.
2. Type: Type X for fire-resistant rated assemblies and where indicated.
3. Thickness: 5/8", unless otherwise indicated.

2.4 TRIM ACCESSORIES

A. General: Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of galvanized steel unless otherwise indicated, with either knurled and perforated or expanded flanges for nailing or stapling, and beaded for concealment of flanges in joint compound. Provide corner beads, L-type edge trim-beads, U-type edge trim-beads, special L-kerf-type edge trim-beads, and one-piece control joint beads.
1. Semi-Finishing Type: Manufacturer's standard trim units which are not to be finished with joint compound (non- beaded).
2. Plastic Edge Trim: Manufacturers standard rigid or semi- rigid PVC moldings of the semi-finished type, shaped to provide resilient contact of gypsum board edges with other work; friction-fit, or pressure-sensitive adhesive mounting.

B. H-Molding: Manufacturer's standard extruded aluminum H-molding of height required for board, designed for combination trim and control joint in exterior gypsum board ceiling/soffit work.

2.5 JOINT TREATMENT MATERIALS

A. General: ASTM C 475; type recommended by the manufacturer for the application indicated, except as otherwise indicated.
B. Joint Tape: Paper reinforcing tape.
C. Joint Compound: On interior work provide chemical-hardening-type for bedding and filling, ready-mixed vinyl-type or vinyl-type powder type for topping.
D. Water-resistant Joint Compound: Special water-resistant type for treatment of joints, fastener heads and cut edges of water- resistant backing board.
1. Product: Subject to compliance with requirements, provide Sheetrock Brand W/R Compound; United States Gypsum Co.

2.6 MISCELLANEOUS MATERIALS

A. General: Provide auxiliary materials for gypsum drywall work of the type and grade recommended by the manufacturer of the gypsum board.
B. Laminating Adhesive: Special adhesive or joint compound specifically recommended for laminating gypsum boards.
C. Gypsum Board Screws: Comply with ASTM C 646.
D. Sound Attenuation Blankets: FS HH-I-521, Type I; semi-rigid mineral fiber blanket without membrane, Class 25 flame-spread, thicknesses as indicated.

E. Water-resistant Adhesive: Type I organic adhesive for ceramic tile complying with ANSI A136.1.

PART 3 - EXECUTION

3.1 PREPARATION FOR METAL SUPPORT SYSTEMS

A. Ceiling Anchorages: Coordinate work with structural ceiling work to ensure that inserts and other structural anchorage provisions have been installed to receive ceiling hangers.
   1. Furnish concrete inserts, steel deck hanger clips and similar devices to other trades for installation well in advance of time needed for coordination with other work.

3.2 INSTALLATION OF METAL SUPPORT SYSTEMS

A. General:
   1. Metal Support Installation Standard: Comply with ASTM C 754.
   2. Do not bridge building expansion joints with support system, frame both sides of joints with furring and other support as indicated.
   3. Nail or screw furring members to wood framing as indicated.
   4. Ceiling Support Suspension Systems: Secure hangers to structural support by connecting directly to structure where possible, otherwise connect to inserts, clips or other anchorage devices or fasteners as indicated.
   5. Space main runners 4'-0" o.c. and space hangers 4'-0" o.c. along runners, except as otherwise indicated.
   6. Level main runners to a tolerance of 1/4" in 12'-0", measured both lengthwise on each runner and transversely between parallel runners.
   7. Wire-tie or clip furring members to main runners and to other structural supports as indicated.
   8. Direct-hung Metal Support System: Attach perimeter wall track or angle wherever support system meets vertical surfaces.
   9. Mechanically join support members to each other and butt-cut to fit into wall track.
   10. Space furring member 16" o.c., except as otherwise indicated.
   11. Install auxiliary framing at termination of drywall work, and at openings for light fixtures and similar work, as required for support of both the drywall construction and other work indicated for support thereon.
   12. Wall/Partition Support Systems: Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar work to comply with details indicated or if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer, or if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co.
   13. Isolate stud system from transfer of structural loading to system, both horizontally and vertically. Provide slip or cushioned type joints to attain lateral support and avoid axial loading.
   14. Install runner tracks at floors, ceilings and structural walls and columns where gypsum drywall stud system abuts other work, except as otherwise indicated.
   15. Extend partition stud system through acoustical ceilings and elsewhere as indicated to the structural support and substrate above the ceiling.
   16. Terminate partition stud system at ceilings, except where indicated to be extended to structural support or substrate above.
   17. Space studs 16" o.c., unless otherwise indicated.
   18. Frame door openings to comply with details indicated or if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer, or if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for jack studs) at head and secure to jamb studs.
      a. Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above, unless otherwise indicated.

19. Frame openings other than door openings to comply with details indicated or if not indicated, in same manner as required for door openings; and install framing below sills of openings to match framing required above door heads.
20. Space wall furring members 16" o.c., unless otherwise indicated.

3.3 GENERAL GYPSUM BOARD INSTALLATION REQUIREMENTS

A. Gypsum Board Application and Finishing Standards: ASTM C 840 and GA 216.
B. Install sound attenuation blankets as indicated, prior to gypsum board unless readily installed after board has been installed.
C. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 1'-0" in alternate courses of board.
D. Install ceiling boards in the direction and manner which will minimize the number of end-butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints at least 1'-0".
E. Install wall/partition boards vertically to avoid end-butt joints wherever possible. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs.
F. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.
G. Locate either edge or end joints over supports, except in horizontal applications or where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.
H. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.
I. Form control joints and expansion joints with space between edges of boards, prepared to receive trim accessories.
J. Cover both faces of steel stud partition framing with gypsum board in concealed spaces (above ceilings, etc.), except in chase walls which are braced internally.
    1. Except where concealed application is required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. area, and may be limited to not less than 75% of full coverage.
K. Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4" to 1/2" space and trim edge with J-type semi-finishing edge trim. Seal joints with acoustical sealant.
L. Floating Construction: Where feasible, including where recommended by manufacturer, install gypsum board over wood framing, with "floating" internal corner construction.
M. Where sound-rated drywall work is indicated (STC rating), including double-layer work and work on resilient furring, seal the work at perimeters, control and expansion joints, openings and penetrations with a continuous bead of acoustical sealant including a bead at both faces of partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of beads, and close off sound-flanking paths around or through the work, including sealing of partitions above acoustical ceilings.
N. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

3.4 METHODS OF GYPSUM DRYWALL APPLICATION

A. Single-Layer Application: Install gypsum wallboard.
    1. On ceilings apply gypsum board prior to wall/partition board application to the greatest extent possible.
    2. On partitions/walls apply gypsum board vertically (parallel), unless otherwise indicated, and provide sheet lengths which will minimize end joints.
    3. On partitions/walls 8'-1" or less in height apply gypsum board horizontally (perpendicular); use maximum length sheets possible to minimize end joints.
    4. On Z-furring members apply gypsum board vertically (parallel) with no end joints. Locate edge joints over furring members.

B. Double-Layer Application: Install gypsum backing board for base layer and exposed gypsum board for face layer.
   1. On partitions/walls apply base layer and face layers vertically (parallel) with joints of base layer over supports and face layer joints offset at least 10" with base layer joints.
C. Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:
   1. Fasten with screws.
   2. Fasten to wood supports with single nailing.
D. Double-Layer Fastening Methods: Apply base layer of gypsum board and face layer to base layer as follows:
   1. Fasten both base layers and face layers separately to supports with screws.

3.5 INSTALLATION OF DRYWALL TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges by nailing or stapling in accordance with manufacturer's instructions and recommendations.
B. Install metal corner beads at external corners of drywall work.
C. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where semi-finishing type is indicated. Install L-type trim where work is tightly abutted to other work, and install special kerf-type where other work is kerfed to receive long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).
D. Install plastic edge trim where indicated on wall panels at juncture with ceilings.
E. Install metal control joint (beaded-type) where indicated.

3.6 FINISHING OF DRYWALL

A. General: Apply treatment at gypsum board joints (both directions), flanges of trim accessories, penetrations, fasteners heads, surface defects and elsewhere as required to prepare work for decoration. Pre-fill open joints and rounded or beveled edges, if any, using type of compound recommended by manufacturer.
   1. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.
   2. Apply joint compound in 3 coats (not including pre-fill of openings in base), and sand between last 2 coats and after last coat.
B. Water-resistant Gypsum Backing Board Base for Ceramic Tile: Comply with recommendations of gypsum backing board manufacturer for treatment of joints behind ceramic tile.
C. Regular Gypsum Board Base for Ceramic Tile: In areas to be tiled using organic adhesive, tape joints and apply 4" wide coat of joint compound.
D. Partial Finishing: Omit third coat (if specified) and sanding on concealed drywall work which is indicated for drywall finishing or which requires finishing to achieve fire-resistance rating, sound rating or to act as air or smoke barrier.
E. Refer to sections on painting, coatings and wall-coverings in Division 9 for decorative finishes to be applied to drywall work.

3.7 PROTECTION OF WORK

A. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall work being without damage or deterioration at time of substantial completion.

END OF SECTION

SECTION 09390 - CEMENT BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Types of work include:
   1. Cement board including screw type metal support system.
   2. Cement board applied to metal framing and furring.
   3. Cement board for application of other finishes.

1.3 QUALITY ASSURANCE

A. Fire Resistance Ratings: Where cement board systems with fire- resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories acceptable to authorities having jurisdiction.
   1. Provide fire-resistance rated assemblies identical to those indicated by reference to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

B. Single Source Responsibility: Obtain cement board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of cement boards.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product specifications and installation instructions for each cement drywall component, including other data as may be required to show compliance with these specifications.

1.5 DELIVERY, STORAGE AND HANDLING

A. All materials shall be delivered in their unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the premises.

B. In cold weather and during backer board and tile installation, temperatures within the building shall be maintained within the range of 45 degrees to 100 degrees F. Adequate ventilation shall be provided to carry off excess moisture. Wood framing shall approximate the moisture content it will reach in service by allowing the enclosed building to stand as long as possible prior to the application of the backer board. Do not install board when it is wet.

C. Steel or wood wall framing to receive cement board shall be structurally sound, free from bow, and in general compliance with local building code requirements. Damaged and excessively bowed studs shall be replaced before installation of cement board.

1.6 PROJECT CONDITIONS

A. Environmental Requirements, General: Comply with requirements of referenced cement board application standards and recommendations of cement board manufacturer, for environmental conditions before, during and after application of cement board.

B. Ventilation: Ventilate building spaces as required to remove water in excess of that required for drying of joint treatment material immediately after its application. Avoid drafts during dry, hot weather to prevent too rapid drying.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
   1. Cement Board and Related Products:
      a. United States Gypsum Co.
      b. Durabond Professional Products, DAP, Inc.

2.2 MATERIALS

A. Cement Board: Durock Interior Cement Board, 5/8" thickness, 36" width x (48") (60") (72") length. Durock Exterior Cement Board, 5/8" thickness, 48" width x 96" length.

B. Joint Reinforcement: Durock Interior Tape.

C. Fasteners: Durock Steel screw, 1-1/4" and 1-5/8" for 14 to 20-ga. steel framing; Durock Wood screws, 1-5/8" and 2-1/4" for wood framing. Nails, (1-1/2" hot-dipped galvanized roofing nails.)

D. Framing: Wood and steel framing must comply with local building code and shall be designed (based on stud properties alone) not to exceed L/360 deflection. Steel framing must be 20 ga. or heavier with a corrosion-resistant coating equivalent to G60 hot-dipped galvanized.

E. Adhesive/mortar: Multi-purpose adhesive, ASTM C557-73 (for subfloor attachment). Organic adhesives, Type I - Durabond D-2001 Ceramic Tile mastic (meets ANSI A136.1 type I requirements.) Latex-Portland Cement Mortar - Durabond D-40 or Durock latex fortified mortar (meets ANSI A118.4). Dry-set mortar - Durabond D-50 thin-set mortar (meets ANSI A118.1). Can be mixed with D-L16 additive. Durabond D-30 marble and granite mortar (meets ANSI A118.4).

F. Grout: Epoxy

G. Liquid Applied Floor and Wall Waterproofing / Crack Isolating Membrane: Mapei Mapelastic 400 – Basis of Design

PART 3 - EXECUTION

3.1 WALLS

A. Framing: The wall assembly components shall be sized and constructed to meet local building code performance requirements, and in accordance with framing manufacturer's latest printed specifications.

Space steel framing a maximum of 16" o.c. Adequate diagonal bracing meeting design requirements must be installed flush with the framing members prior to application of Durock Board. The studs of freestanding furred walls must be secured to exterior wall with wall furring brackets or laterally braced with horizontal studs or runners spaced 4" o.c. max.

B. Stucco Backer Board: Pre-cut board to required sizes and make necessary cut-outs. Fit ends and edges closely but not forced together. Install board abutting top of spacer strip. Stagger end joints in successive courses. Fasten boards to steel studs spaced max. 16" o.c. and bottom runners with 1-1/4" Durock Steel Screws spaced 8" o.c. with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Prefill joints with mortar or adhesive and then immediately embed tape and level the joints.

C. Water Proofing / Crack Isolating Membrane: Install liquid waterproofing membrane below all wet floor and wall tiled surfaces, including restrooms, locker rooms, showers, kitchens, balconies, janitor's closets, laboratories, etc.
   1. Provide MAPEI's Mapeband accessories (cove roll and drain flash).
   2. Apply water proofing membrane on for full height of shower walls; For all other wet walls, install membrane a minimum of 72" from the base of the wall as per manufacturer's instructions.
   3. Let waterproofing membrane cure for a minimum required time.
   4. Flood test all areas to ensure leak free installation prior to installing stucco.
   5. Repair or replace waterproofing in areas with leaks prior to installing stucco.

END OF SECTION

SECTION 09510 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification section, apply to work of this section.

1.2 SUMMARY

A. Types of acoustical ceilings specified in this section include the following:
   1. Acoustical panel ceilings, exposed suspension.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

B. Contractor shall submit material selection board with trim, patterns, selected colors, etc.

C. Submit the following samples for verification purposes:
   1. 6" square samples of each acoustical panel type, pattern and color.
   2. Set of 12" long samples of exposed runners and moldings for each color and system type required.
   3. Set of concealed suspension members.

D. Certificates: Submit certificates from manufacturers of acoustical ceiling units and suspension systems attesting that their products comply with specification requirements.

1.4 QUALITY ASSURANCE

A. Fire Performance Characteristics: Provide acoustical ceiling components that are identical to those tested for the following fire performance characteristics, according to ASTM test method indicated, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate marking of applicable testing and inspecting agency.

B. Surface Burning Characteristics: As follows, tested per ASTM E84 (Class A):
   1. Flame Spread: 25 or less.
   2. Smoke Developed: 50 or less.

C. Fire Resistance Ratings: As indicated by reference to design designation in UL "Fire Resistance Directory" for, roof or beam assemblies in which acoustical ceilings function as a fire protective membrane; tested per ASTM E 119. Provide protection materials for lighting fixtures and air ducts to comply with requirements indicated for rated assembly.

D. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other work supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system components, and partition system.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination or other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and stabilizing moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

1.6 PROJECT CONDITIONS

A. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.7 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials described below matching products installed, packaged with protective covering for storage and identified with appropriate labels.

B. Acoustical Ceiling Units: Furnish quantity of full size units equal to 5.0% of amount installed for each ceiling type.

PART 2 - PRODUCTS

2.1 ACOUSTICAL CEILING UNITS, GENERAL

A. Standard for Acoustical Ceiling Units: Provide manufacturer's standard units of configuration indicated which are prepared for mounting method designated and which comply with ASTM E1264 or FS SS-S-118 requirements, including those indicated by reference to type, form, pattern, grade (NRC or NIC as applicable), light reflectance coefficient (LR), edge detail, and joint detail (if any). NRC, CAC and/or AC shall be classified by UL for acoustical performance with UL label on product cartons.

B. Standard for Humidity Resistance: Provide validated performance for high humidity applications. Panels to provide a maximum rating of “0” in reference to their ability to inhibit or retard the growth of mold according to ASTM G21. Provide a minimum 30-year warranty against warping or sagging due to high humidity conditions.

C. Mounting Method for Measuring NRC: No. 7 mechanically mounted on special metal support), FS SS-S-118 or Type E-400 mounting as per ASTM E 795.

D. Colors, Textures and Patterns: Provide products to match appearance characteristics indicated or, if not otherwise indicated, as selected by Contractor from manufacturer's standard colors, surface textures, and patterns available for acoustical ceiling units and exposed metal suspension system members of quality designated.

E. Manufacturer: Provide products specified herein as manufactured by United States Gypsum Corporation or Armstrong Corporation.

2.2 MANUFACTURERS

A. Rockfon, 4849 South Austin Avenue, Chicago, IL 60638. 1-800-323-7164; www.rockfon.com

B. Or approved equal.

2.3 ACOUSTICAL PANELS (As specified below, or equal from Rockfon)

A. Products:
1. Rockfon Brand, Item No. SLT 10300 Angled Tegular Rockfon Alaska (ACT-1)
   a. Size, Nominal: 3/4" Thickness x 24" x 24"
   b. Edge Detail: 15/16" Angled Tegular
   c. Standard Classification per ASTM E1264: Type XX; Pattern G; NRC 0.90; AC 180; LR 0.86; CAC 22; Fire Class A
   d. Mold and Mildew Resistance: No sustenance to microorganisms up to 100% RH
   e. Sag Resistance: Up to 100% RH
   f. Formaldehyde: No Formaldehyde Added (comply with CHPS limits).
   g. Standard Warranty Terms: 30 Year, 104°F, 100% RH Limited Warranty against visible sag and mold growth.
   h. Standard Factory Finish: White.

2.4 METAL SUSPENSION SYSTEMS, GENERAL

A. Standard for Metal Suspension Systems: Provide metal suspension systems of type, structural classification and finish indicated which comply with applicable ASTM C 635 requirements.

B. Finishes and Colors: Provide manufacturer's standard factory- applied finish for type of system indicated. For exposed suspension members and accessories with painted finish, provide color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's full range of standard colors.

C. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.

D. Hanger Wire: Galvanized carbon steel wire, ASTM A 641, soft temper, pre-stretched, class 1 coating, sized so that stress at 3 times hanger design load (ASTM c 635, Table 1, direct hung), will be less than yield stress of wire, but provide not less than 12 gage.

E. Edge Moldings and Trim: Metal or extruded plastic of types and profiles indicated or, if not indicated, provide manufacturer's standard molding for edges and penetrations of ceiling which fits with type of edge detail and suspension system indicated.

2.5 SUSPENSION SYSTEM COMPONENTS (As specified below, or equal from Armstrong)

A. Products:
1. Standard Grid: Rockfon Brand System -1200 15/16" Exposed Tee (all spaces, unless noted otherwise)
   a. Description: 15/16" face dimension, double web, hot-dipped galvanized main runners and cross tees. Faced with galvanized steel cap. Stab style connection between cross tees and main runners. Factory applied baked on enamel finish.
   b. Intermediate Duty Rating per ASTM C635 (*hanger wires spaced on 48" centers*)
   c. Color: White, unless noted otherwise.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordination: Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.
   1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

3.2 INSTALLATION

A. General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire-resistance rating requirements, and CISCA standards applicable to work.

B. Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers not less then 6" from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless, otherwise indicated, leveling to tolerance of 1/8" in 12'-0".

C. Secure wire hangers by looping and wire-tying directly to structures.

D. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum which are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal force by bracing, counter splaying or other equally effective means.

E. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

F. Screw-attach moldings to substrate at intervals not over 16" o.c. and not more than 3" from ends, leveling with ceiling suspension system to tolerance of 1/8" in 12'-0". Miter corners accurately and connect securely.

G. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

H. Install impact clips in areas indicated, and in areas where required by governing regulations or for fire-resistance ratings, space as recommended by panel manufacturer, unless otherwise indicated.

3.3 CLEANING

A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate damage.

END OF SECTION

SECTION 09650 - RESILIENT FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Vinyl composition floor tile.
   2. Resilient base.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.
   1. Product Data: For adhesives including printed statement of VOC content.

B. Shop Drawings: For each type of floor tile. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
   1. Show details of special patterns.

C. Samples for Initial Selection: For each type of floor tile indicated.

D. Qualification Data: For qualified Installer.

E. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.
   1. Engage an installer who employs workers for this Project who are trained or certified by manufacturer for installation techniques required.

B. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
   1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F. Store floor tiles on flat surfaces.

1.6 PROJECT CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive floor tile during the following time periods:
   1. 48 hours before installation.
   2. During installation.
   3. 48 hours after installation.

B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

1.7 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Floor Tile: Furnish 1 box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.
   2. Resilient Base: Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

PART 2 - PRODUCTS

2.1 VINYL COMPOSITION FLOOR TILE (VCT)

A. Products: Subject to compliance with requirements, provide the following:
   1. Armstrong World Industries, Inc.; Imperial Texture Excelon.
   2. Or Approved Equal.

B. Tile Standard: ASTM F 1066, Class 2, through-pattern tile.

C. Wearing Surface: Smooth.

D. Thickness: 0.125 inch.

E. Size: 12 by 12 inches.

F. Colors and Patterns: As indicated on finish schedule.

2.2 RESILIENT BASE

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. VPI Corporation
   2. Armstrong World Industries, Inc.
   3. Burke Mercer Flooring Products; Division of Burke Industries, Inc.
   4. Roppe Corporation, USA

B. Resilient Base Standard: ASTM F 1861.
   1. Material Requirement: Type TS (rubber, vulcanized thermoset).
   2. Manufacturing Method: Group I (solid, homogeneous).
   3. Style: Cove (base with toe).

C. Minimum Thickness: 0.125 inch.

D. Height: 6 inches.

E. Lengths: Coils in manufacturer's standard length.

F. Outside Corners: Job formed.

G. Inside Corners: Job formed.

H. Finish: Satin.

2.3 FLOOR TILE INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit floor tile and substrate conditions indicated.
   1. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
      a. VCT Adhesives: Not more than 50 g/L.

C. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer.

2.4 BASE INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.
   1. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
      a. Cove Base Adhesives: Not more than 50 g/L.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.
   1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
   2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
   3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
   4. Moisture Testing: Perform tests recommended by manufacturer and as follows. Proceed with installation only after substrates pass testing.
      a. Perform an anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
      b. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75% relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient products until they are same temperature as space where they are to be installed.
   1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 RESILIENT FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
   1. Lay tiles square with room axis

C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
   1. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern).

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.

G. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Job-Formed Corners:
1. Outside Corners: Use straight pieces of maximum lengths possible. Form without producing discoloration (whitening) at bends.
2. Inside Corners: Use straight pieces of maximum lengths possible.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of floor tile.

B. Perform the following operations immediately after completing floor tile installation:
1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, visible adhesive, and surface blemishes from floor tile surfaces before applying liquid floor polish.
1. Apply two coats.

E. Cover floor tile until Substantial Completion.

END OF SECTION

SECTION 09670 – RESINOUS FLOORING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section as shown or specified shall be in accordance with the requirements of the Contract Documents.

1.2 WORK INCLUDED

A. Work of this Section includes all labor, materials, equipment and services necessary to complete epoxy flooring incorporating ceramic-coated, colored, inorganic quartz aggregate, waterproofing membrane, and integral base as selected on drawings and/or specified herein.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product Data: Submit manufacturer's technical data application instructions and general recommendations for decorative quartz epoxy flooring and waterproofing membrane specified herein.

C. Samples for initial selection purposes in form of manufacturer's color charts showing range of standard colors available.
   1. Submit 2-1/2" x 4" samples in color and quartz aggregate combination as selected.
   2. Material certificates signed by manufacturer certifying that the decorative quartz epoxy flooring submitted complies with requirements specified herein.
   3. Maintenance Instructions: Submit manufacturer's written instructions for recommended maintenance practices.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer or applicator that has specialized in installing resinous flooring types similar to that required for this Project and who is acceptable to manufacturer of primary materials.

B. Single-Source Responsibility: Obtain epoxy component of flooring materials, including primers, resins, hardening agents, and finish or sealing coats, from a single manufacturer. Obtain ceramic-coated quartz aggregate from primary manufacturer of that product.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original packages and containers with seals unbroken and bearing manufacturer's labels containing brand name and directions for storage and mixing with other components.

B. Store materials to comply with manufacturer's directions to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

1.6 PROJECT CONDITIONS

A. Environmental Conditions: Comply with epoxy resin composition flooring manufacturer's directions for maintenance of ambient and substrate temperature, moisture, humidity, ventilation, and other conditions required to execute and protect work.

B. Lighting: Permanent lighting shall be in place and working before installing decorative quartz epoxy flooring.

1.7 WARRANTY

A. Flooring shall be fully warranted for a minimum of 5 years from substantial completion for any defect or failure, including delamination, pealing, caulking, cracking, fading, discoloring, etc. Warranty shall include material and labor required to repair or replace floor, as necessary.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Dur-A-Flex, Inc, Hybri-Flex EQ (self-leveling broadcast quartz), epoxy/aliphatic urethane topcoat seamless flooring system as manufactured by Dur-A-Flex, Inc. 95 Goodwin St. East Hartford, CT 06108 Tel. 1-800-253-3539, Fax (860) 528-2802.

B. System Materials: Topping:
1. Dur-A-Flex, Inc, Poly-Crete MD resin, hardener and SL aggregate.
2. The broadcast aggregate shall be Dur-A-Flex, Inc. Q28 or Q11 quartz aggregate.
3. Broadcast: Dur-A-Flex, Inc. Dur-A-Glaze #4, epoxy based two-component resin.
4. Grout coat: Dur-A-Flex, Inc Dur-A-Glaze #4, epoxy-based, two-component resin.
5. Top-coat: Dur-A-Flex, Inc. Armor Top aliphatic urethane two-component resin.

C. Patch Materials:
1. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Poly-Crete MD (up to ¼ inch).
2. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Poly-Crete WR.

2.2 PRODUCT REQUIREMENTS:

A. Topping: Poly-Crete SL

1.	Percent Reactive	100%
2.	VOC:	0 g/L
3.	Bond Strength to Concrete ASTM D 4541:	400 psi, substrate fails
4.	Compressive Strength, ASTM D 638	9,000 psi
5.	Tensile Strength, ASTM D 638	2,175 psi
6.	Flexural Strength, ASTM D 790	5,076 psi
7.	Impact Resistance @ 125 mils, MIL D-3134, No visible damage or deterioration	160 inch lbs

B. Broadcast Coat: Dur-A-Glaze #4 Resin

1.	Percent Reactive	100 %
2.	VOC	<4 g/L
3.	Water Absorption, ASTM D 570	0.04%
4.	Tensile Strength, ASTM D 638	4000psi
5.	Coefficient of thermal expansion ASTM D 696	2 x 10-5 in/in/F
6.	Flammability ASTM D-635	Self-Extinguishing

7. Flame Spread/ NFPA 101 ASTM E-84 Class A

C. Topcoat: Armor top
1. VOC 0g/L
2. 60 Degree Gloss ASTM D523 75+/-5
3. Mixed Viscosity, (Brookfield 25oC) 500 cps
4. Tensile strength, ASTM D 638 7,000 psi
5. Abrasion Resistance, ASTM D4060
CS 17 wheel (1,000 g load) 1,000 cycles. Gloss: 4 mg loss with grit. Satin 8 mg loss with grit. Gloss 10 mg loss without grit. Satin 12mg loss without grit.
6. Pot life @ 70 degrees F 50% RH 2 hours
7. Full Chemical resistance 7 days

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where decorative quartz epoxy flooring is to be installed and notify the Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected by the Contractor in conformance with the Contract Documents.

3.2 PREPARATION

A. Substrate: Perform preparation and cleaning procedures according to flooring manufacturer's instructions for particular substrate conditions involved, and as specified. Provide clean, dry, and neutral substrate for flooring application.

B. Concrete Surfaces: Shot-blast, acid etch or power scarify as required to obtain optimum bond of flooring to concrete. Remove sufficient material to provide a sound surface free of laitance, glaze, efflorescence, and any bond-inhibiting curing compounds or form release agents. Remove grease, oil, and other penetrating contaminates. Repair damaged and deteriorated concrete to acceptable condition. Leave surface free of dust, dirt, laitance, and efflorescence.

C. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges.

D. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer’s recommendations.

E. Materials: Mix epoxy resin components when required, and prepare materials according to flooring system manufacturer's instructions.

3.3 APPLICATION

A. General. Apply System in 5 distinct steps:
1. Substrate Preparation; Topping/Overlay application with quartz aggregate broadcast; Resin application with quartz aggregate broadcast; Topcoat application; Second topcoat application.
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.

4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Topping
1. The topping shall be applied as a self-leveling system. The topping shall be applied in one lift with a nominal thickness of 1/8 inch.
2. The topping shall be comprised of three components, a resin, hardener and filler as supplied by the Manufacturer.
3. The hardener shall be added to the resin and thoroughly dispersed by suitably approved mechanical means. SL Aggregate shall then be added to the catalyzed mixture and mixed in a manner to achieve a homogenous blend.
4. The topping shall be applied over horizontal surfaces using ½ inch "v" notched squeegee, trowels or other systems approved by the Manufacturer.
5. Immediately upon placing, the topping shall be degassed with a loop roller.
6. Quartz aggregate shall be broadcast to excess into the wet material at the rate of 0.8 lbs/sf.
7. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

C. Broadcast Coats
1. The broadcast coat resin shall be applied at the rate of 90 sf/gal (Q28) or 50 sf/gal (Q11).
2. The broadcast coat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.
3. Quartz aggregate shall be broadcast into the wet resin at the rate of 0.5 lbs/sf.
4. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.
5. Finish or Sealing Coats:
6. After quartz-filled broadcast coats have cured sufficiently, apply finish coats of type recommended by flooring manufacturer to produce finish matching approved submittal sample and in number of coats and spreading rates recommended by manufacturer.

D. Grout Coat
1. The grout coat shall be squeegee applied with a coverage rate of 90 sf/gal (Q28) or 50 sf/gal (Q11).
2. The grout coat shall be comprised of liquid components, combined at a ratio of 2 parts resin to 1 part hardener by volume and shall be thoroughly blended by mechanical means such as a high speed paddle mixer.
3. The grout coat will be back rolled and cross rolled to provide a uniform texture and finish.

E. Top Coat
1. The topcoat shall be roller applier with a coverage rate of 500 sf/gal.
2. The finished floor will have a nominal thickness of 1/4 inch.

F. Cove Base
1. Apply cove base mix to wall surfaces at locations shown to form cove base height of 6 inches unless otherwise indicated. Follow manufacturer's printed instructions and details including taping, mixing, priming, troweling, sanding, and top-coating of cove base.

3.4 FIELD QUALITY CONTROL

A. The following tests shall be conducted by the applicator:
1. Temperature: Air, substrate temperatures and, if applicable, dew point.
2. Coverage Rates: Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.5 CURING, PROTECTION AND CLEANING:

A. Cure epoxy flooring materials according to manufacturer's directions, taking care to prevent contamination during application stages and before completing curing process.

B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

C. Close application area for a minimum of 24 hours.

END OF SECTION

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Special Conditions and Divisions-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of painting work is indicated on drawings and schedules, and as herein specified. See Finish Schedule Legend.

B. Work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.

C. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

D. “Paint” as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

E. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in “schedules”. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.

F. Following categories of work are not included as part of field-applied finish work:

G. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) toilet enclosures, prefinished partition systems, acoustic materials, architectural woodwork and casework, aluminum windows, and finished mechanical and electrical equipment, including light fixtures, switch gear and distribution cabinets.

H. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceiling in concealed areas and generally inaccessible areas.

I. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting.

J. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts will not require finishing painting.

K. Following categories of work are included under other sections of these specifications:

L. Shop Priming: Shop priming of ferrous metal items is included under various sections for structural steel, metal fabrications, hollow metal work and similar items.

M. Do not paint over and code-required labels, such as Underwriters’ Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.

1.3 QUALITY ASSURANCE

A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

B. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coating system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

C. Standards: All field applied coatings and finishes shall comply with Green Seal Zero VOC or Low VOC standards. Maximum allowable VOC content for finishes is as follows:

1. Interior flat finish: 50 g/l (0.42 lbs/gal)
2. Interior non-flat finish: 150 g/l (1.25 lbs/gal)
3. Exterior flat finish: 100 g/l (0.83 lbs/gal)
4. Exterior non-flat finish: 200 g/l (1.66 lbs/gal)

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use. Acceptable manufacturers shall be Sherwin Williams, Benjamin Moore.

B. Green Label Certification – submit manufacturer's certification information stating compliance with Zero VOC or Low VOC standard for all products, including paints, primers, sealers, block-fillers, stains, etc.

C. Samples: Prior to beginning work, Architect will identify colors for surfaces to be painted. Use representative colors when preparing samples for review. Submit samples for Architect's review of color and texture only. Provide a listing of material and application for each coat of each finish sample. Provide three (3) samples of each color.

D. On actual wall surfaces and other exterior and interior building components, duplicate painted finishes of prepared samples. Provide full-coat finish samples on at least 100 sq. ft. of surface, as directed, until required sheen, color and texture is obtained; simulate finished lighting conditions for review of in-place work.

E. Final acceptance of colors will be from samples applied on the job.

1.5 DELIVERY AND STORAGE

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label and following information:

1. Name or title of material.
2. Fed. Spec. number, if applicable.
3. Manufacturer's stock number and date of manufacturer.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.

8. Color name and number.

B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.

C. Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

1.6 JOB CONDITIONS

A. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F (10 degrees C) and 90 degrees F (32 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F (7 degrees C) and 95 degrees F (35 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

C. Do not apply paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

1.7 EXTRA MATERIAL

A. Provide extra stock of each paint color/finish: An amount sufficient to cover 5% of the total surface area for each color and finish, but not less than one gallon.

1.8 WARRANTY:

A. Provide Five (5) year warranty for exterior waterproofing system from Paint and Coating manufacturer.
B. Provide Five (5) year warranty for all other systems from Paint and Coating manufacturers.

PART 2 - PRODUCTS

STANDARD OF COMPARISON - Materials and methods specified are for the clarity of description and as a standard of comparison and are those of Sherwin Williams.

2.1 REQUIREMENTS

A. Paint Manufacturer: Subject to compliance with requirements, provide the following:

1. Exterior - Sherwin Williams 'Loxon' XP waterproof coating – Flat, satin, gloss
2. Exterior Primer - Sherwin Williams 'Loxon' – heavy duty primer / sealer
3. Metals: Sherwin Williams 'Acrolon 100' – heavy duty Polyurethane
4. Metals Primer - Sherwin Williams 'Pro-Cryl' – Universal heavy duty primer
5. Ferrous Metals: See Section 09960 Protective Coatings
   a. Any galvanized metal to be painted should be solvent cleaned per SSPC-SP1, with a non-hydrocarbon based solvent, then primed, as specified. If surface has significant rust, then prepare per SSPC-SP2, then clean and prime as above. Topcoat after following label

directions for drying times, etc, at specified coating thickness. Never apply an alkyd-based product directly to galvanized steel.

6. Any aluminum surfaces to be painted shall be cleaned as above and also solvent cleaned per SSPC-SP1. Before topcoating wipe clean with lacquer thinner and allow to dry prior to topcoating. Do not use mineral sprits or other hydrocarbon based solvents.

B. Color and finish as selected by Owner and Architect.

2.2 CAULKING

A. All perimeter joints around windows and doors are to be carefully caulked using Sherwin-Williams Stampede Urethane Sealant Caulking according to the manufactures recommendations. Interior caulking shall be Power House 65 year Siliconized Acrylic caulk and shall be applied at the direction of the Contractor tool after application. Caulk all voids and horizontal bands.

2.3 MATERIALS

A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade, Low or no VOC product will not be acceptable.

B. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.

C. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

PART 3 - EXECUTION

3.1 INSPECTION

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

D. Test moisture content of surfaces using an electronic moisture meter. Do not begin application of coatings unless moisture content of exposed surfaces is below the following maximum values:
1. Wood Surfaces: 15 percent.

3.2 SURFACE PREPARATION

A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

B. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.

C. Remove hardware, hardware accessories, machined surfaces, plates, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

D. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

E. Cementitious Materials: Prepare cementitious surfaces of concrete, concrete block, and cement plaster to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.

F. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

G. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

H. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent.

3.3 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Maintain containers used in mixing and application of paint in a clean condition free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3.4 FIELD SAMPLE APPROVAL

A. On actual wall surfaces and other exterior and interior building components, duplicate painted finishes of prepared samples. Provide full-coat finish samples on at least 100 sq. ft. of surface, as directed, until required sheen, color and texture is obtained; simulate finished lighting conditions for review of in-place work. Shades for each coat shall be distinguishable for each paint sample.

B. Final acceptance of colors will be from samples applied on the job.

C. DO NOT proceed with painting throughout the building without in field sample approval.

3.5 PAINT APPLICATION

A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Paint colors are indicated in "schedules" of the contract documents.

C. Provide finish coats which are compatible with prime paints used. Apply additional coats when undercoats or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

D. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.

E. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

F. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

G. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.

H. Sand lightly between each succeeding enamel coat.

I. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

J. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

K. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

L. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated as recommended by coating manufacturer.

M. Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.

N. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

O. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth, surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

P. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.6 FIELD QUALITY CONTROL

A. The right is reserved by Owner to invoke the following material testing procedure at any time, and any number of times during period of field painting.

B. Engage services of an independent testing laboratory to sample paint being used. Samples of materials delivered to project site will be taken, identified and sealed, and certified in presence of Contractor.

C. Testing laboratory will perform appropriate tests for any or all of following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, re-coating, skinning, color retention, alkali resistance, and quantitative materials analysis.

D. If test results show that material being used does not comply with specified requirements, Contractor may be directed to stop painting work, and remove non-complying paint; pay for testing; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non-compatible.

E. Prime coat color shall be (3) shades lower than the final finish color. Mid coat paint color shall be (1) shade lower that the final finish color. Final finish coat shall be the actual color specified in the construction documents. Provide sufficient coverage with each successive coat to fully cover the previous coat until a uniform finish is achieved.

3.7 CLEAN-UP AND PROTECTION

A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

B. Protection: Protect the work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

C. Provide “Wet Paint” signs as required to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

D. At completion of work of other trades, touch-up and restore all damaged or defaced surfaces.

3.8 EXTERIOR PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates, as indicated (or approved equal).

B. Concrete and Stucco:
   1. Satin Finish (10 - 20 Units @ 85°):
      a. 1st Coat: Sherwin Williams ‘Loxon’ – heavy duty primer / sealer
      b. 2nd Coat: ULTRA-CRETE Texture Coating Medium
      c. 3rd Coat: Sherwin Williams ‘Loxon’ XP waterproof coating
      d. 4th Coat: Sherwin Williams ‘Loxon’ XP waterproof coating

C. Ferrous Metal, Primed Metal, Zinc-Coated Metal, and Aluminum (heavy duty):
   1. See section 09960 - Protective Coatings

END OF SECTION

SECTION 09960 - PROTECTIVE COATINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Protective coatings and surface preparation for the following coating systems:
   1. Exposed atmospheric high performance coating systems.

1.2 SCOPE

A. All Exposed Steel Framing, Deck, Beams and Columns shall be prepared and coated per the products specified.

B. General Exposed Exterior or Surfaces to be Painted:
   1. Structural steel.

C. General Exposed Interior Surfaces to be Painted:
   1. Structural steel.

D. General Surfaces Not to be Painted:
   1. Concrete, unless required by the drawings.
   2. Electrical panels when not adjacent to a painted surface.
   3. Equipment nameplates.
   4. Glass.
   5. Grease fittings.
   6. Machined surfaces.
   7. Platform gratings, stair treads, door thresholds, and other walk surfaces, unless specifically indicated to be coated.
   8. Stainless steel items.
   9. Fiberglass surfaces in immersion.
   10. Prefinished metal such as Kynar coated.

1.3 DEFINITIONS

A. Definitions:
   1. Contractor is the party or persons directly contracted or subcontracted through a third party to perform the work described herein.
   2. Architect is the supervising Architect of record.
   3. Owner is the facility Owner.
   4. Manufacturer is the materials supplier.

B. Substrate Identification:
   1. AL: Aluminum.
   2. C: Concrete.
   3. CMU: Concrete Masonry Units.
   4. CO: Copper.
   5. CS: Carbon Steel.
   6. F: Fiberglass.
   7. G: Gypsum Board.
   8. GAL: Galvanized Metal.
   9. PP: Previously Painted.
   10. S: Stainless Steel.
   11. W: Wood.

C. Service Condition Identification:
1. A: Atmospheric: Any metal or concrete surface, indoors or outdoors that is exposed to view.
2. C: Corrosive: pH range 5 to 9: Atmospheric exposure to corrosive, caustic or acidic agent, chemicals, chemical fumes, chemical mixture, solutions incidental contact splash on walls or solutions Submerged conditions where the pH is 5 to 9 and H2S exposure is medium to low.
3. F: Fumes: Gas, Smoke, or Vapor, irritating, or offensive.
4. HC: High Corrosive: pH range below 4 or above 10: Atmospheric exposure to corrosive, caustic or acidic agent, chemicals, chemical fumes, chemical mixture, solutions incidental contact splash on walls or solutions Submerged conditions where the pH is 5 to 9 and H2S exposure is high.
5. HFT: Heavy Forklift Traffic Floor: Horizontal concrete surface subject to point loads above 6,000 lbs (2721.5 kg). typically related to hard tire forklift activity.
6. HT: High Temperature: Continuous non immersion temperature where the substrate temperature is above 250 F (121 C).
7. IC: Immersion Continuous: Substrate will be continually immersed in aqueous solution, including corrosive, high corrosive, or non-corrosive solutions, liquids, water or other mixtures.
8. LFT: Light Foot Traffic Floor: Horizontal concrete surface subject to point loads below 5,000 pounds (2268 kg). Normally associated with pedestrian traffic with hand carts or trucks.
9. NC: Non Corrosive: Atmospheric or submerged exposure to corrosive, caustic or acidic agent, chemicals, chemical fumes, chemical mixture or solutions where the associated exposures are relatively neutral or benign.
10. ND: Normally Dry: Substrate is exposed to moisture from environmental conditions but remains dry more than 85 percent of its service life.
11. NW: Normally Wet: Substrate is exposed to moisture from environmental conditions and remains moist not less than 85 percent of its service life.
12. PW: Potable Water: Water suitable for human consumption as defined by ANSI 61.
13. S: Submerged: Substrate is continually immersed in an aqueous solution.
14. SC: Secondary Containment, 72 Hour Immersion: Substrate will be continually immersed for 72 hours in a chemical solution as associated with EPA containment requirements.
15. SP: Splash and Spill: Substrate is frequently subjected to exposure to aqueous solutions, but is generally cleaned up within 2-8 hours
16. UV: Ultraviolet: Substrate is exposed to ultraviolet sunlight.

1.4 REFERENCES

A. ASTM International (ASTM):
1. ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
2. ASTM D 4258, Standard Practice for Surface Cleaning Concrete for Coating.
3. ASTM D 4259, Standard Practice for Abrading Concrete.
4. ASTM D 4261, Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating.
5. ASTM D 4262, Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces.
6. ASTM D 4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
7. ASTM D 4417 Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel.
8. ASTM D 4541, Standard Test Method for Pull-off Strength of Coatings Using Portable Adhesion Testers.
9. ASTM D 7091 - Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals.

B. E84, Standard Test Method for Surface Burning Characteristics of Building Materials.

C. International Concrete Repair Institute (ICRI):
1. 310.2 - Surface Preparation for Concrete.
2. CSP - Concrete Surface Profile.

D. NACE International (NACE):
1. SP0188-06 - Discontinuity (Holiday) Testing of Protective Coatings.

E. The Society for Protective Coatings (SSPC):
1. SSPC-SP 1 - Solvent Cleaning.
2. SSPC-SP 2 - Hand Tool Cleaning.
3. SSPC-SP 3 - Power Tool Cleaning.
4. SSPC-SP 5 / NACE 1 - White Metal Blast Cleaning.
5. SSPC-SP 6 / NACE 3 - Commercial Blast Cleaning.
6. SSPC-SP 7 - Brush off Blast Cleaning.
7. SSPC-SP 10 / NACE 2 - Near White Metal Blast Cleaning.
8. SSPC-SP 11 - Machine Tool Cleaning to Bare Metal.
9. SPSC-SP 12 / NACE 5 - Waterjet Cleaning.
10. SSPC-SP 13 / NACE 6 - Surface Preparation for Concrete.
11. SSPC-SP 14 / NACE 8 - Industrial Blast Cleaning.
12. SSPC-SP 15 - Commercial Grade Power Tool Cleaning.
13. SSPC-SP 16 - Brush off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non Ferrous Metals.
14. SSPC-SP WJ-1 / NACE WJ-1 Clean to Bare Substrate.
15. SSPC-SP WJ-2 / NACE WJ-2 Very Thorough Cleaning.
16. SSPC-SP WJ-3 / NACE WJ-3 Thorough Cleaning.
17. SSPC-SP WJ-4 / NACE WJ-4 Light Cleaning.
18. SSPC-PA1 - Best Practices for Paints and Coatings Application.
19. SSPC-PA2 - Measurement of Dry Coating Thickness with Magnetic Gauges.
20. SSPC-PA71 - Procedure for Determining Conformance to Steel Profile/Surface Roughness/Peak Count Requirements.

F. United States Environmental Protection Agency (EPA):
1. Method 24 - Surface Coatings.

1.5 QUALIFICATIONS

A. Coating manufacturer's authorized representative shall provide written statement attesting that the applicator has been instructed on proper preparation, mixing and application procedures for coatings specified.

B. Applicators shall have a minimum of 5 years' experience in application of similar products on similar project.
1. Contractor shall possess a valid state license as required for performance of the painting and coating work called for in this specification.
2. Provide references for minimum of three different projects completed in last five years with similar scope of work.
    a. Include name and address of project, size, and scope of work.

C. Applicators shall possess current SSPC-QP certifications as required by the Owner and Architect.

1.6 SUBMITTALS

A. Submit all required documentation noted herein and under provisions of Section 01330, Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each paint and coating product should include:
1. Colors available for each product (where applicable).
2. Product characteristics and coating manufacturer's guidelines and recommendations for surface preparation, painting, drying, curing, handling, shipping, and storage of painted structural steel.
3. Surface preparation requirements.
4. Storage and handling requirements and recommendations.

5. Application methods.
6. VOC compliance.
7. MSDS.

C. Contractor Work Plan:
1. In general, the contractor shall supply the Owner or Architect's representative with a plan of work. The work plan should detail but is not limited to the following items.
2. Proposed methods of containment, collection, and disposal of related debris, rinse water, or trash.
3. Proposed surface preparation standards and methods to achieve standard for each space or substrate identified on the plans, drawings, or finish schedule.
4. Proposed coating system for each space or substrate identified on the plans, drawings, or finish schedule.
5. Confirmation of compatibility for shop and field applied coatings. (where applicable).
6. Proposed methods and equipment to be used for paint application.
7. Proposed methods for maintaining proper environmental conditions during surface preparation, application, and curing cycles of the coating materials.
8. Proposed methods and job safety analysis procedures for maintaining a clean, safe and secure jobsite during work activity.
9. Proposed methods to protect coating during curing, shipping, handling, and storage.
10. Proposed methods for storing materials.
11. Proposed methods and examples of daily reports of contractor work progress.
12. Potential hazards and mitigation, work processes, scheduling conflicts or other planning items which would hinder successful and timely completion of the project.

D. Selection Samples: Submit a complete set of color chips that represent the full range of manufactures color samples available.

E. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

1.7 QUALITY ASSURANCE

A. Quality assurance procedures and practices shall be at the discretion of the Architect or Owner. It provides oversight of quality control monitoring of all phases of the installation process including but not limited to surface preparation and application of coatings.
1. Requirements for acceptable quality control methods shall be utilized and defined by the Owner or Architect.
2. Procedures or practices for quality control practices not specifically defined in this Section may be utilized, provided they meet recognized and acceptable professional standards and are accepted by the Architect or Owner's representative.
3. Arrange for coating manufacturer's representative to attend preconstruction conferences and make periodic visits at the construction site to provide consultation services during surface preparation work and application of coatings.
4. Quality assurance activities may be performed by a third party inspection firm contracted by the Owner or specifying Architect on their behalf at any time during the project.

B. Pre-Installation Conference:
1. The contractor, the installation sub-contractor, and the lining system manufacturer's representative shall meet on site with the Owner's representative. Particular emphasis shall be placed on these specification requirements, safety, weather conditions, surface preparation, material application, and inspection.
2. The contractor shall submit to the Owner's representative any revisions or changes agreed upon, reasons thereof, and parties agreeing or disagreeing with them.

C. Surface Preparation: Preparation of all surfaces and application of coatings specified in this section shall be in strict accordance with coating manufacturer's instructions as supplemented by these

specifications.

D. Coating Application: Apply coatings in strict accordance with manufacturer's material data sheets with particular attention to curing and drying times and temperatures.
1. Substrate Conditions: Do not proceed with immersion, submerged, industrial resinous flooring, and chemical containment work until substrate preparation and tolerances have been approved by the Owner's representative, chemical resistant system manufacturer's representative, the approved installation sub-contractor, and the contractor.

E. Inspection of Dry Film: Thickness of coatings shall be checked with a nondestructive, magnetic-type thickness gauge.
1. Ensure all dry film thickness requirements as specified have been met. Readings shall be performed at or above the frequency specified in SSPC-PA2. Meet the minimum requirements for SSPC-PA2.
2. Use an instrument such as a Tooke Gauge if a destructive tester is deemed necessary.
3. Test coating integrity of all surfaces with an approved inspection device.
4. No pinholes or other irregularities will be permitted in final coating.

F. Inspection Testing Devices: Provide following testing devices to be jointly used on this project by the contractor and Architect. Devices shall remain property of contractor during and after project.
1. Surface profile Comparator or Testex Tape to measure surface profile prior to coating application.
2. Psychrometer and psychometric tables or charts for humidity and dew point determination.
3. Dry film thickness gauge and calibration blocks for coating thickness testing.
4. Wet film thickness gauge for coating thickness testing.
5. 10 times magnifier for examination.

G. Documentation: Provide daily reports of all contractor activity on site to the Architect on the Friday, end of work week, for the previous week activity.
1. Document sample shall be approved by the Architect prior to reporting.
2. All documentation shall be delivered electronically to the Architect upon completion of the project.
3. Documentation should be consistent with inspection reports utilized by NACE certified inspectors.

H. Samples: Prior to beginning work, Architect will identify colors for surfaces to be painted. Use representative colors when preparing samples for review. Submit samples for Architect’s review of color and texture only. Provide a listing of material and application for each coat of each finish sample. Provide three (3) samples of each color.

I. On actual wall surfaces and other exterior and interior building components, duplicate painted finishes of prepared samples. Provide full-coat finish samples on at least 100 sq. ft. of surface, as directed, until required sheen, color and texture is obtained; simulate finished lighting conditions for review of in-place work.

J. Final acceptance of colors will be from samples applied on the job.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufactures name, label, and the following list of information:
1. Product name, type (description).
2. Application and use instructions.
3. Surface preparation.
4. VOC content: for two component products, provide mixed VOC in g/L.
5. Environmental issues.
6. Batch date.

7. Color number.

B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
   1. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.9 PROJECT CONDITIONS

A. Maintain environmental conditions during surface preparation, application, and curing of installed coating system.
   1. Temperature, humidity, and ventilation must be within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

B. Substrate moisture content shall be below manufacturer's recommendation for each substrate to be coated.

1.10 EXTRA MATERIAL

A. Provide extra stock of each paint color/finish: An amount sufficient to cover 5% of the total surface area for each color, but not less than one gallon.

1.11 WARRANTY

A. Provide a Five (5) year warranty for protective coating system from the manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Sherwin-Williams, 101 Prospect Ave.; Cleveland, OH 44115; Toll Free Tel: 800-524-5979; Tel: 216-566-2000; Fax: 440-826-1989

B. To establish equality under Section 01600 - Products, Materials, Equipment and Substitutions the contractor shall furnish satisfactory documentation from the manufacturer of the proposed substitute or "equal" product that the material meets the indicated requirements and is equivalent or better in the following properties.
   1. Quality.
   2. Durability.
   3. Resistance to abrasion, impact, or physical damage.
   4. Life expectancy.
   5. Ability to recoat in the future.
   6. Solids content by volume.
   7. Dry film thickness per coat.
   8. Compatibility with other coatings.
   9. Suitability for the intended service.
   10. Resistance to chemical attack.
   11. Temperature limitations during application and in service
   12. Comparable performance test results.

C. Protective coating materials shall be standard products produced by recognized manufacturers who are regularly engaged in production of such materials for essentially identical service conditions.

When requested, the contractor shall provide the Architect with the names of not less than ten successful applications of the proposed manufacturer's products that comply with these requirements.

D. Standard approved painting, coating, and lining systems are defined herein. Apply approved systems according to the finish schedule.

2.2 EXPOSED ATMOSPHERIC HIGH PERFORMANCE COATING SYSTEMS

A. Industrial Epoxy, Epoxy Finish (S/G):
   1. Minimum total film thickness, 8.0 mils dft.
   2. Spot prime all exposed substrates with the designated new substrate primer.
   3. Prime:
      a. Ferrous Metal, Minimum 5.0 mils dft: MACROPOXY 646, B58-600 Series. See drawings for more information
      b. Previously Painted, Minimum 3 mils dft: MACROPOXY 646, B58-600 Series.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine all substrates and conditions, with contractor representative present for compliance with requirements for maximum moisture content, surface soundness, and other conditions affecting the performance of the Work.

B. Do not begin application of coatings until substrates have been properly prepared, examined, and conditions properly reported. Notify Architect of unsatisfactory conditions or areas where specified surface preparation cannot be achieved.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation. Proceed with work only after conditions have been corrected, and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions. Beginning coating application constitutes contractors acceptance of substrate and conditions.

D. Identify all shop primed items and previously painted surfaces and provide preparation procedures for review and approval.

3.2 SURFACE PREPARATION

A. General:
   1. The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
      a. Remove incompatible primers and prime substrate with compatible primers or apply a tie coat as required to product the coating system indicated.
      b. Previously coated, existing surfaces shall be identified and existing coating type confirmed. In the event that the existing coating cannot be confirmed consult with the manufacturer and submit tie coat alternative solutions.
   2. Follow all surface preparation guidelines for new construction. In the event of a discrepancy consider the more effective surface preparation as the default method.
   3. Verify that the atmospheric conditions are within the acceptable temperature, humidity and sun exposure limits.
      a. Dehumidification must be utilized in the event that atmospheric conditions cannot be maintained.
   4. Adhere to manufacturer's recoat time surface preparation requirements.
      a. Surfaces exhibiting rust bloom, moisture weeping, or any other deleterious condition shall be sufficient repaired prior to the application of coating or lining system. Repair methods include necessary mean to meet original specification requirements, including

abrasive blasting as needed.

5. Remove any residual dusting or light surface contamination from prepared surfaces prior to the application of the coating system.
6. Protect all surfaces not being coated from any damage due to surface preparation work process.
7. Paint all inaccessible items before being assembled.
8. Install coating systems to only properly prepared surfaces.

B. Existing or Previously Coated Surface Preparation:
1. Clean all previously coated surfaces to remove dirt, greases, solutions, and any foreign contaminants per SSPC-SP1. Cleaning agent shall be biodegradable, highly concentrated, water reducible, alkaline detergent blend. Cleaned surfaces shall be properly rinsed to remove all cleaners and contaminants.
2. Previously coated, existing painted surfaces shall be thoroughly and completely abraded. Existing coatings shall be sufficiently deglossed and profiled for application of prime coats.
3. Exposed or corroded substrates shall be mechanically cleaned to SSPC-SP-3 “Power Tool Cleaning” in order to remove all corrosion or deteriorated material. Sand and feather edge a smooth transition from existing coatings and exposed substrate such that damaged area are not visible from a distance of two (2) feet.
4. Final surface preparation for existing coatings and deteriorated substrates shall provide intact, tightly adherent coatings, cleaned substrate, dull, and dry.

3.3 INSTALLATION

A. General Requirements:
1. Apply all coatings and materials according to the finish schedule.
2. Apply all coatings and materials with manufacture specifications in mind. Apply coatings by brush, roller, or spray equipment unless otherwise directed by the manufacturer.
3. Mix and thin coatings according to manufacture recommendation.
4. Do not apply to wet or damp surfaces.
5. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen in accordance with SSPC-PA1.Regardless of number of coats specified, apply as many coats as necessary for complete hide, uniform appearance, and achieving the required dry film thickness. Final film of coatings shall have no visible, drips, overspray, dry spray, runs, ridges, sags, holidays, dry lap or brush marks.
6. Inspection: The coated surface must be inspected and approved by the Architect or Architect.
7. Stripe coats shall be applied to all welds, edges, nuts, bolts, difficult to reach areas.
    a. Stripe coats shall be applied directly to properly prepared surface prior to spray application of primers.
    b. Stripe coats shall also be applied directly to primed surface prior to spray application of the intermediate coats for multi-coat immersion or submerged applications.
    c. Stripe coat material shall be the same or separately approved material compatible with the material used for spray application of any given coat.
8. Spray application shall be performed when conditions, environments, and permitting allow.
    a. Use only spray equipment approved by the manufacturer for the specific coat of material.
9. Multiple coat applications shall be installed according to the manufacturers printed requirements.
    a. Coats of material shall be sufficiently dry prior to the application of a subsequent coat in a coating system.
    b. Do not allow excessive drying time to pass which will inhibit or reduce the inter-coat adhesion of the multiple coat system.
    c. If recoat requirements have been exceeded, brush blast or scarify prior coat according to the manufacturers requirement. Provide written confirmation of repair process from manufacturer.
    d. Remove any dust or foreign contamination from previous coat prior to applying the next coat in a multi coat system.
10. Apply no coating when surrounding air temperature of surface to be coated is below minimum temperature allowed by manufacturer's recommendations for coating application or when it is

expected that air temperature will drop below minimum 8 hours after coating application.

11. Apply no coating when surrounding air temperature is forecasted to be less than 5 degrees F (C) above dew point within 8 hours after coating application.
12. Apply no coating to steel which is 5 degrees F (C) below air temperature or which is at a temperature over 115 degrees F (C), nor shall coating be applied to steel which is at a temperature that will cause blistering or porosity or otherwise will be detrimental to the life of the coating.
13. No coating shall be applied to wet or damp surfaces or in rain, snow, fog, or mist. Coating shall not be applied on frosted or ice-coated surfaces.
14. Dew point shall be measured by use of an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychometric Tables or equivalent.
15. The coated surface must be inspected after application of individual coats within the multi coat system and after completion of the system. Applied systems must be approved by the Architect or Architect.

B. Curing Requirements:
   1. Maintain adequate environmental conditions and ventilation during drying and curing of applied coating systems.
   2. Allow all primer and intermediate coats to sufficiently dry prior to the application of subsequent coat of material.
   3. Coating systems to be placed into immersion service shall cure under the proper conditions as stated by the manufacturer for the full curing time requirement. Deviations from the proper conditions shall be quickly resolved by the contractor and the methods used shall be confirmed by the manufacturer.
   4. All applied coatings shall be properly and completely cured prior to being place into their intended service.

C. Shop Application:
   1. All structural steel members, steel plate, or other manufactured items may be prepared and coated in a fixed location.
   2. Shop application of prime coat shall be completed only when specified surface preparation has been achieve for the substrate. Apply all primers within 4 hours of completion of surface preparation. Ferrous metal shall not be primed if rust bloom is present.
   3. Field repair any damaged shop primer, intermediate or finish coats in accordance with the preparation requirements for the given substrate. Apply repair primer, intermediate, and finish coats as required to replace damage materials and restore damaged areas equal to surface before damage.
   4. Equipment:
      a. Unless otherwise indicated, items of equipment or parts of equipment which are not submerged in service shall be shop primed and the finish coated in the field after installation with the indicated or selected color. The methods, materials, application equipment, and other details of shop painting shall comply with this section. If the shop primer requires top coating within in a specific period of time, the equipment shall be finish coated in the shop and then touched up after installation.
      b. Items of equipment or parts and surfaces of equipment which are submerged or inside an enclosed hydraulic structure when in service, with the exception of pumps and valves, shall have surface preparation and coating performed in the field.
      c. For certain pieces of equipment it may be undesirable or impractical to apply finish coatings in the field. Such equipment may include engine generator sets, equipment such as electrical control panels, switchgear or main control boards, submerged parts of pumps, ferrous metal passages in valves, or other items where it is not possible to obtain the indicated quality in the field. Such equipment shall be primed and finish-coated in the shop and touched up in the field with the identical material after installation. The contractor shall require the manufacturer of each such piece of equipment to certify as part of its Shop Drawings that the surface preparation is in accordance with these

specifications. The coating material data sheet shall be submitted with the Shop Drawings for the equipment.

d. For certain small pieces of equipment the manufacturer may have a standard coating system that is suitable for the intended service conditions. In such cases, the final determination of suitability will be made during review of the Shop Drawing submittals. Equipment of this type generally includes only indoor equipment such as instruments, small compressors, and chemical metering pumps.

e. Shop painted surfaces shall be protected during shipment and handling by suitable provisions including padding, blocking, and the use of canvas or nylon slings. Primed surfaces shall not be exposed to the weather for more than 2 months before being top coated or less time if recommended by the coating manufacturer.

D. Prime Coat Application:
1. Prime all surfaces to be painted.
2. Prime and finish all surfaces that will be inaccessible after installation.
3. Back prime all wood substrates with two coats of approved primer prior to installation.
4. Primed substrate shall be of consistent film thickness and coverage to meet the specification.
5. Provide proper environmental conditions for curing of prime coat.

E. Finish Coat Application:
1. Apply all intermediate and finish coats to properly primed substrates within the recoat requirements and according to the product data sheet of the manufacturer.
2. Apply contrasting colors for distinguishing between intermediate and finish coats.
3. Field applied intermediate and finish coats shall be applied to shop primed substrates only within sufficient adhesion can be obtained. When required, thoroughly and completely abrade existing primers and apply a subsequent tie coat of approved primer will be applied to the abraded shop primer.

3.4 QUALITY CONTROL

A. In general the contractor will maintain appropriate and measurable quality control activities that ensure successful installation of the coating systems.

B. Measure all dry film thickness readings as defined in SSPC-PA2.

C. Apply all coatings using methods defined in SSPC-PA1.

D. Perform all stripe coating using methods defined in SSPC-PA 11.

E. Maintain and provide to Architect copies of daily records of contractor activity while performing work on the project. Daily record information should include but is not limited to the following.
1. Site foreman responsible for day's activities.
2. Work hours. Start and finish times.
3. Crew members.
4. Atmospheric measurements during exterior work should include evenly sequenced measurements of general weather condition, wind speed, air temperature, and relative humidity.
5. Atmospheric measurements during high performance coating application particularly submerged or immersion items should include evenly sequenced measurements of general weather condition, wind speed, air temperature, and relative humidity during all surface preparation, application, and curing of applied systems.
6. Substrate temperatures at the time of application and completion of the application.
7. Measure wet film of applied coating using wet film thickness gauges.
8. Detailed record of start and finish times of activities performed on a given space.

F. Maintain accurate quality control records of applied coating systems.
1. Record accurate dry film thickness readings in accordance with SSPC-PA 2.

G. Supply daily reports on a timely basis to the supervising Architect.

3.5 PROTECTION

A. Protect finished coatings from damage until completion of project.
   1. Applied coatings shall not be placed into service until properly cured.
   2. Maintain acceptable environmental conditions for proper curing of the applied coating system.

B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION

SECTION 10800 - TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Special Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of each type of toilet accessory is indicated on drawings and schedules. See restroom elevation sheets. Note that items listed by City of Pompano Beach shall be provided and installed by the City's paper supply vendor and Installed by Contractor.

B. Types of toilet accessories required include the following:

1. Toilet tissue dispenser.
2. Grab bar.
3. Sanitary napkin disposal unit.
4. Soap dispenser.
5. Robe hook.
6. Mirror
7. Electric Hand Dryer
8. Diaper Changing Station

1.3 QUALITY ASSURANCE

A. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry; coordinate delivery with other work to avoid delay.

B. Accessory Locations: Coordinate accessory locations with other work to avoid interference and to assure proper operation and servicing of accessory units.

C. Products: Provide products of same manufacturer for each type of accessory unit and for units exposed in same areas, unless otherwise acceptable to Architect.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for each toilet accessory.

1.5 WARRANTY

A. A 3-year Manufacturer's warranty from final completion shall be submitted for all toilet and bath accessories. Warranty shall cover any defect or failure, including delamination, pealing, caulking, cracking, fading, discoloring, corrosion, etc. Warranty shall include material and labor required to repair or replace products, as necessary.

PART 2 - PRODUCTS

2.1 MANUFACTURERS: Subject to compliance with requirements, provide toilet accessories by one of the following:

A. Bradley Corporation (Basis of Design)

B. Bobrick Washroom Equipment, Inc.

C. Palmer Fixture

2.2 MATERIALS, GENERAL

A. See Architectural Drawings for Toilet Accessories Schedule.

2.3 MISCELLANEOUS ACCESSORIES

A. General: No names or labels are permitted on exposed faces of toilet and bath accessory units. On either interior surface not exposed to view or on back surface, provide identification of each accessory item by either a printed, waterproof label or a stamped nameplate indicating manufacturer's name and product model number.

B. Robe Hook: Heavy-duty satin finished stainless steel double prong robe hook. Place one at interior side of all toilet partition doors.

C. Surface-Mounted Toilet Accessories, General: Except where otherwise indicated, fabricate units with tight seams and joints, exposed edges rolled. Hang doors or access panels with continuous stainless steel piano hinge. Provide concealed anchorage wherever possible.

D. Recessed Toilet Accessories, General: Except where otherwise indicated, fabricate units of all welded construction, without mitered corners. Hang doors or access panels with full-length stainless steel piano hinge. Provide anchorage which is fully concealed when the unit is closed.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install toilet accessory units in accordance with manufacturers' instructions, using fasteners which are appropriate to substrate and recommended by manufacturer of unit. Install units plumb and level, firmly anchored in locations and at heights indicated.

3.2 ADJUSTING AND CLEANING

A. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.

B. Clean and polish all exposed surfaces after removing temporary labels and protective coatings.

END OF SECTION 10800

SECTION 10999 - MISCELLANEOUS SPECIALTIES

PART 1 - GENERAL

A. Requirements - Work included:

1. Fire extinguishers.
2. Fire extinguisher sign.
3. Dedication Plaque.
4. Maximum capacity signs.
5. Exterior room number and name signs.
6. Interior room number and name signs.
7. Storage signs.
8. Knox Boxes.

1.2 RELATED WORK

A. General Requirements: Division 1

1.3 SUBMITTALS

A. Manufacturer's catalog cuts, product data sheets, and installation instructions for each item specified.

B. Maintenance data for each item.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHERS

A. Acceptable Manufacturers:
1. Larsen's Manufacturing Co., Ft. Lauderdale, FL 33311 – Basis of Design.
Walter Kidde Co., Belleville, NJ 07109.
J.L. Industries, Bloomington, MN 55435.

B. Basis of Design shall be Larsen's M.P. 10 series, 4A-80B:C. as per architectural drawing detail. See drawings.

2.2 FIRE EXTINGUISHER SIGNS

A. Furnish and install on exterior side of rooms having fire extinguishers in the room. Signs shall have white raised letters chemically fused to 1/8" red acrylic plastic background. Signs to be 1-1/2" high X length required reading "FIRE EXTINGUISHER INSIDE".

B. Provide the above signs in corridors. Permanently affix to exterior wall.

2.3 DEDICATION PLAQUE

A. Type: Cast aluminum dedication plaque as manufactured by Andco Industries, Greensboro, NC, Art in Bronze, Inc., or approval equal.

1. Size: 24" X 36", Mounted. See floor plan.
2. Surface Texture: Pebble.
3. Letter Style: Helvetica.
4. Border Style: Flat band.

B. Provide plaque rubbing for Owner approval before casting.

2.4 MAXIMUM CAPACITY SIGNS

A. Provide one (1) sign depicting the maximum allowable occupancy for each assembly space. Every room or space that is assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design as required by the Florida Building Code.

B. Size shall be 6” X 12” with 3/8” radius corners.

C. Color shall be white on a red background.

D. Material shall be 1/8” thick plastic with raised symbol for identification by the blind.

E. Mounting shall be with non-removable head screws at locations directed by Architect, 5’-0” above finish floor to center line of sign.

2.5 EXTERIOR ROOM NAME AND NUMBER SIGNS

A. Manufacturer and Product
1. Basis-of-Design Product: Subject to compliance with requirements, provide one of the following:
   a. Restrooms: Emedco Model # ALBR 306 and 307
   b. Restroom Directional: Emedco Model # ADA 309 W/ directional arrow #302

B. ADA Compatibility: All exterior signage is to meet ADA requirements with respect to character size, height, finish, contrast, Grade 2 Braille, and mounting location.

2.6 INTERIOR ROOM NAME AND NUMBER SIGNS

A. General: Separate signs for room name and number required. Shall have white raised letters, "Helvetica", and numbers raised 1/32", chemically fused to 1/8" blade acrylic plastic, gray background with matte finish. 1-1/2" high X 10" minimum widths for signs, longer where nomenclature demands. 1-1/2" high X 4" minimum for 3-digit letters, and longer where required. Provide 3/8" radius corners on left end of number signs and 3/8" radius corners on right end of room name signs. Provide Grade 2 Braille at all signage which designates permanent rooms or spaces as per ADA requirements.

B. Mounting: Non-removable oval-head screws, using Rawl plugs where mounted on masonry.

C. Number shall be to the left of room name and contiguous to, mounted 5'-0" above floor and to the right of the entry to the space. Verify exact location with Architect. All mounting locations as per ADA requirements.

D. Number of Signs Required: All doors off halls corridors and passages.

E. All spaces listed in Finish Schedule Drawings, plus where more than one door is required to a space, additional signs will be required for each door.

F. ADA Compatibility: All interior signage is to meet ADA requirements with respect to character size, height, finish, contrast, Grade 2 Braille, and mounting location.

2.7 STORAGE SIGNS

A. Provide and install at all Air Conditioning, Electrical and Boiler Rooms a sign mounted on the door to read as follows: “COMBUSTIBLE STORAGE NOT PERMITTED”.

B. Provide and install at Storage Rooms with electrical equipment a sign mounted in the room to read as follows: “STORAGE NOT PERMITTED WITH 4’-0” OF ELECTRICAL EQUIPMENT”.

C. Signs shall be blade acrylic plastic, red background with white letter 1-1/2” high x width necessary for copy, with 3/8” radius corners.

D. Mount on door with non-removable oval-head screws. Verify number of signs required.

2.8 KNOX BOXES and KNOX LOCKS

A. Provide a post-mounted knox box at each main entrance at the gate at the northwest corner that will contain all keys required for entrance. Provide a knox box at the building as well, as shown in the Life Safety Plan drawing. It is our interpretation that this will be the location for emergency vehicles to respond. Confirm all requirements and ordering information from the Fire Marshal.

B. Contractor shall be fully responsible for ordering, paying for, and installing all knox boxes and Locks as required by the Fire Marshal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Clean and prepare substrates prior to installation of signage and metal plaque.

B. Securely fasten all items so as to be square and level with surrounding elements.

C. Install signage complying with manufacturer’s instructions.

D. Install knox box and knox lock complying with manufacturer’s instructions and Fire Marshal’s direction.

E. Install extinguisher cabinets complying with manufacturer’s instructions.

END OF SECTION 10999

SECTION 11484 – SPORTS SCOREBOARD

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Single-sided LED football scoreboard

1.2 REFERENCES

A. Standard for Electric Signs, UL 48

B. Standard for CSA C22.2 #207

C. Federal Communications Commission Regulation Part 15

D. National Electric Code

1.3 SUBMITTALS

A. Product data: Submit manufacturer’s product illustrations, data and literature that fully describe the scoreboards and accessories proposed for installation.

B. Shop drawings: Submit mechanical and electrical drawings.

C. Maintenance data: Submit manufacturer’s installation, operation, and maintenance manuals.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Product delivered on site.

B. Scoreboard and equipment to be housed in a clean, dry environment.

1.5 PROJECT CONDITIONS

A. Environmental limitations: Do not install scoreboard equipment until mounting structure is secure and concrete has ample time to cure.

B. Field measurements: Verify position and elevation of structure and its layout for scoreboard equipment. Verify dimensions by field measurements.

C. Verify mounting structure is capable of supporting the scoreboard's weight and windload in addition to the auxiliary equipment.

D. Installation may proceed within acceptable weather conditions.

1.6 QUALITY ASSURANCE

A. For outdoor use

B. Source Limitations: Obtain each type of scoring or related equipment through one source from a single manufacturer.

C. ETL listed to UL 48

D. NEC compliant

E. FCC compliant

F. ETLC listed to CSA 22.2 #207

1.7 WARRANTY

A. Provide 5 years of no cost parts exchange including standard shipping on electronics parts and radios due to manufacturing defects.

B. Provide toll-free service coordination.

C. Provide technical online and phone support during Daktronics business hours.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Daktronics, Inc., (Basis of Design)
201 Daktronics Drive,
P.O. Box 5128,
Brookings, SD 57006-5128

B. Or approved equal.

2.2 PRODUCT

A. Daktronics FB-2021 single-sided football scoreboard displays period time to 99:59, HOME and GUEST scores to 99, and DOWN/TO GO/BALL ON/QTR (quarter) information. T.O.L. (time outs left) to nine are optional. Arrows indicate possession. During the last minute of the period, the clock displays time to 1/10 of a second.

2.3 SCOREBOARD

A. General information – The basis of design for the scoreboard shall be the same scoreboard, with same features that the City of Pompano Beach has approved for other GoBond projects.
1. Dimensions: 8'-0" (2.44 m) high, 25'-0" (7.62 m) wide, 0'-8" (203 mm) deep
2. Base weight: 820 lb (372 kg) with vinyl captions – options may increase weight
3. Base power requirement: 290 W (red/amber digits), 620 W (white digits) with vinyl captions – options may increase wattage

4. Color: to be selected from over 150 standard colors

B. Construction
1. Alcoa aluminum alloy 5052 for excellent corrosion resistance
2. Scoreboard back, face, and perimeter: 0.063" (1.60 mm) thick
3. Scoreboard top and bottom: 0.125" (3.18 mm) thick

C. Digits & Indicators
1. LED color: Game information digits Red, team information digits Amber (-RA)
2. Clock digits: 30" (762 mm) high
3. HOME, GUEST, DOWN, TO GO, BALL ON, and QTR digits: 24" (610 mm) high
4. Seven bar segments per digit
5. PanaView® LED digit technology
6. All digits and indicators are sealed front and back with weather-tight silicone gel

D. Captions
1. Vinyl applied directly to scoreboard face
2. HOME and GUEST captions: 15" (381 mm) high
3. DOWN, TO GO, BALL ON, and QTR captions: 12" (305 mm) high
4. Color: standard white or others available upon request

E. Accessory Equipment
1. Vinyl striping applied around the clock and scoreboard face.
2. Programmable Team Name Message Centers (TNMCs)
3. Electronic Captions
4. Soccer captions on changeable panels.
5. Horn.

F. Sponsor Panel
1. Outdoor, non-backlit 3’-0” x 25’-0” horizontal panel below scoreboard

G. Arch Truss
1. DA-1001-25 with non-backlit lettering/logo & screen backing
2. Aluminum frame, 4 feet tall x 25’-0” long with 50% non-backlit lettering and standard screen backing as provided by manufacturer.

2.4 SCORING CONSOLE

A. Console is an All Sport® 5000 controller

B. Scores multiple sports using changeable keyboard inserts.

C. Controls multiple scoreboards and displays, including other All Sport 5000 controlled displays currently owned by customer.

D. Recalls clock, score, and period information if power is lost.

E. Console capable of automatically calculating and displaying DOWN & TO GO for each play.

F. Runs Time of Day and Segment Timer modes.

G. Console includes:
1. Rugged aluminum enclosure to house electronics.
2. Sealed membrane water-resistant keyboard.

3. 32-character LCD to verify entries and recall information currently displayed
4. Power cord that plugs into a standard grounded outlet; 6 watts max
5. Control cable to connect to the control receptacle junction box (wired system only)
6. Hand-held switch for main clock start/stop and horn
7. Soft-sided carrying case

H. Accessory Equipment
1. 2.4 GHz spread spectrum radio system with frequency hopping technology and 64 non-interfering channels; system includes a transmitter installed inside the console and a receiver installed inside the scoreboard.
2. Hard carrying case.
3. Battery pack.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that mounting structure is ready to receive scoreboard. Verify that placement of conduit and junction boxes are as specified and indicated in plans and shop drawings. Verify concrete has cured adequately according to specifications.

3.2 INSTALLATION

A. All power and control cables to scoreboards and displays will be routed in conduit. Power to the scoreboards/displays as well as raceways shown on electrical plans by the Electrical Contractor. Scoreboard control wiring including conduit will be the responsibility of the contractor assigned the scoreboard equipment.

B. Install scoreboards and exterior displays to beams in location detailed and in accordance with manufacturer's instructions. Verify unit is plumb and level.

3.3 INSTALLATION—CONTROL CENTER

A. Provide boxes, cover plates and jacks in locations per plans.

B. Test connect control unit to all jacks and check for proper operation of control unit, scoreboard and all features. Leave control unit in carrying case and other loose accessories with owner's designated representative.

C. Verify earth ground does not exceed 15 ohms.

END OF SECTION

SECTION 12493 – ROLLER WINDOW SHADES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and special provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Blackout Roller Window Shades

B. Related Sections include the following:
   1. Division 6 Section "Miscellaneous Carpentry" for wood blocking and grounds for mounting roller window shades and accessories.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.
B. Shop Drawings: Show fabrication and installation details for roller window shades.
C. Samples for Initial Selection: For each type of roller window shade indicated.
   1. Include similar Samples of accessories involving color selection.
D. Sample size for Verification:
   1. Fabric: Not less than 12 inches long.
   2. Roller Window Shade: Full-size unit, not less than 16 inches wide by 24 inches long.
   3. Valance: Full-size unit, not less than 12 inches wide.
   4. Cornice: Full-size unit, not less than 12 inches long.
E. Product Certificates: For each type of roller window shade, signed by product manufacturer.
F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency.
G. Maintenance Data: For roller window shades to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain roller window shades through one source from a single manufacturer.
B. Fire-Test-Response Characteristics: Provide roller window shades with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
   1. Flame-Resistance Ratings: Passes NFPA 701.
C. Provide roller window shades complying with WCSC A 100.1.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver roller window shades in factory packages, marked with manufacturer and product name, fire-test-response characteristics, lead-free designation, and location of installation using same designations indicated on Drawings and in a window treatment schedule.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install roller window shades until construction and wet and dirty finish work in spaces, including painting, is complete and dry and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Field Measurements: Where roller window shades are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Allow clearances for operable glazed units' operation hardware throughout the entire operating range. Notify Architect of discrepancies. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Roller Window Shades: Before installation begins, for each size, color, texture, pattern, and gloss indicated, full-size units equal to 5 percent of amount installed**,** but no fewer than 2 units.
   2. Fabric: Before installation begins, furnish quantity of full-size units equal to 5 percent of amount of each type, color, and size installed.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Insolroll (Basis of Design)
637 S. Pierce Ave.
Louisville, CO 80027
Ph: 800.447.5534

B. Or Approved Equal

2.2 MATERIALS

A. Blackout Roller Shades: Provide blackout roller shades for all windows
   1. lnsolroll® Clutch-Operated Roller Shade System (Basis of Design)
   2. Fabric: Zenith
   3. Color: Off-white

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, operational clearances, and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install roller window shades level and plumb and aligned with adjacent units according to manufacturer's written instructions, and located so exterior fabric edges in any position are not closer than 2 inches to interior face of glass. Install intermediate support as required to prevent deflection in headrail. Allow clearances between adjacent shades and for operating glazed opening's operation hardware, if any.
B. Head Mounted: Install headrail below the of opening head.

3.3 ADJUSTING

A. Adjust roller window shades to operate smoothly, easily, safely and free of binding or malfunction throughout entire operational range.

3.4 CLEANING AND PROTECTION

A. Clean roller window shade surfaces after installation, according to manufacturer's written instructions.
B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that roller window shades are without damage or deterioration at time of Substantial Completion.
C. Replace damaged roller window shades that cannot be repaired, in a manner approved by Architect, before time of Substantial Completion.

END OF SECTION

SECTION 13125 – ALUMINUM BLEACHER SYSTEM

PART 1 - GENERAL

1.1 SYSTEM DESCRIPTION – 5 row / 10 Row bleacher by 24 feet

A. Design and fabrication of Frame-Type Bleacher per plans.

B. Bleacher is based on the layouts provided with the bid and should not be altered.

C. Standard rise/run of 8” rise / 24” tread per row.

D. Tread planks to be Tongue and Groove (2) 2” x 10” semi Closed deck design.

E. Riser board to be 1” x 6 1/2” clear anodized finish.

F. Seatboard to be 2” x 10” anodized finish.

G. Railing System to be per plans and spec using 6 ga. Black vinyl galvanized chain-link.

H. Product drawings and foundation slab design by registered and licensed engineer by the State of Florida.

1.2 QUALITY ASSURANCE

A. Manufacturer Qualifications: Engage a firm experienced in manufacturing bleachers and grandstand structures similar to those indicated for this Project and that have a minimum of 10 years of experience and a record of successful-in-service performance.

B. Manufacturer Qualifications: Manufacturer must have ten years of experience and continuous operations in the manufacture of bleachers and grandstands; welders must be AWS certified.

C. Installer Qualifications: Engage an experienced Installer to perform the work of this Section who has specialized in installing types of bleachers and grandstands similar to those required for this Project and who is acceptable to, or certified by, manufacturer.

D. Source Quality Control: Mill Test Certification.

E. List with submission the date that you visited the site and reviewed the existing conditions.

F. If approved bidder is a dealer or representative of a bleacher manufacturer, in addition to the manufacturer, the dealer must provide the same information required in this section.

G. Manufacturer shall submit engineer sealed drawings of the bleachers signed and sealed by a professional engineer licensed by the State of Florida.

1.3 SUBMITTALS

A. Manufacturer's Product Data: Submit manufacturer's descriptive product data for project.

B. Shop Drawings: Manufacturer to submit shop drawings sealed by a registered engineer and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the applicable code and relevant laws.

C. Certificates:
   1. Insurance Certificate
   2. Bid Bond

D. Product Sample: Submit one 18-inch seat sample.

E. Color Sample: If applicable, submit sample.

1.4 BUILDING CODES

A. Provide aluminum bleachers to meet or exceed all State and Local applicable codes and in compliance with the latest Florida Building Code and CABO/ANSI A117.1 Barrier Free Subcode.

B. Provide accessible wheelchair locations as indicated on the drawings.

1.5 WARRANTY

Frame-Type Bleacher to be free from defect in material and workmanship in the course of manufacturing for a period of One (1) year beginning at Date of Substantial Completion for Projects installed, beginning at Date of Initial Delivery of Product for Projects installed by others. This warranty excludes defects resulting from abnormal use, accidental or intentional damage, or any occurrences beyond manufacturer's control.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

A. The Design intent and standard of quality is based on product provided by Southern Bleacher Company. (800) 433-0912; Graham TX, or approved equal.

B. Products specified herein have been selected because of their quality of construction, configuration, design, function, available finishes, components, accessories, dimensions, shape and style.

C. Additional manufacturers will be approved for bid provided they meet the entire scope, design intent and standard of quality as outlined.

D. Only manufacturers listed here or in an addendum are approved to bid and only in strict accordance with plans and specifications. No substitutions for product will be permitted.

E. Bidder and/or contractor will be held financially responsible for adhering to the products specified herein and as detailed on the drawings

F. Only the Architect/Owner reserves the right to accept or approve Bleacher manufacturers.

2.2 FRAME-TYPE BLEACHERS

A. Product Description
   1. Silver Edition Non-Elevated Frame-Type Bleachers:
      a. Rise and Depth Dimensions: Vertical rise and horizontal depth per row: 8 inches x 24 inches. Seat is 17 inches above its respective tread.
      b. Framework: Prefabricated Galvanized Steel angle bleacher frames are spaced at 6-foot (max.) intervals and connected by crossbraces.
      c. Seats: Nominal 2 x 10 anodized aluminum plank with 2 x 10 anodized end caps.

d. Treads: Two Tongue and Groove 2 x 10 aluminum planks with 2 x 10 anodized end caps. Smaller plank sizes not acceptable.
e. Riser boards: 1 x 6.5" clear anodized riser boards placed vertically on all rows except Row 1 which is left open.
f. Aisle: Aisle to be provided with 34" high handrail and intermediate rail at approximately 22" above tread. Handrails with rounded ends are discontinuous to allow access to seating through a 24" wide space. Aluminum tread nosing of contrasting color on aisle steps.
g. Guardrailing: Two lines of aluminum rail with 6 gauge black vinyl galvanized chain link 42 inches above seat on both sides of bleacher and across back of bleacher. Front rail, 2 line with 6 gauge black vinyl galvanized chain link 42 inches above front walk.

Extend same vinyl coated chain link fence system from concrete slab to underside of bleachers to close to close off area below the 10 row bleacher units, with gates at both ends to access the area below.

Ideally, the two fence systems shall be integrated to provide a continuous closure similar to the intent described on the drawings.

B. Materials/Finishes
1. Framework:
a. Galvanized Steel: Structural fabrication with ASTM-A529 steel. Shop connections are seal welded. After fabrication, all steel is hot-dipped galvanized to ASTM-A123 specification.
b. Aluminum Angles: Alloy – 6061-T6. Shop connections are seal welded.

2. Extruded Aluminum:
a. Seat Planks and Risers: Extruded aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II, and a minimum wall thickness of .078".
b. Tread Planks: Extruded aluminum alloy 6063-T6, mill finish and minimum wall thickness of .078".

3. Accessories:
a. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II.
b. Hardware:
(1) Bolts, Nuts: Stainless Steel.
(2) Hold-Down Clip Assembly: Aluminum alloy 6061-T6.
c. Crossbraces: Extruded aluminum angle alloy 6061-T6, mill finish.
d. Aisle Nose: Aluminum alloy, 6063-T6, black powder-coat finish.
e. Handrails: Anodized aluminum rail 1-5/8" O.D.
f. Fence/Guard railing: Two-line clear anodized aluminum rail with 6 gauge black vinyl chain link fence (2" mesh) along rear of seating and sides down to Row 2.

C. Fabrication
1. Design Load:
a. Live Load: 100 psf gross horizontal projection
b. Lateral Sway Load: 24 plf seat plank
c. Perpendicular Sway Load: 10 plf seat plank
d. Live Load of Seat and Tread Plank: 120 plf
e. Guardrail: 100 plf vertical and 50 plf horizontal.

2. All connections made in shop to be shop welded.
a. Manufactured by certified welders conforming to AWS Standards.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install bleacher unit in accordance with manufacturer's installation procedures.

B. All frame-type bleacher units shall be securely anchored to the concrete slabs which are sloped to drain. Provide shims as necessary to permanently connect the bleacher units to withstand wind loading required by code.

END OF SECTION

SECTION 16526 – EXTERIOR ATHLETIC LIGHTING

LIGHTING SYSTEM WITH LED LIGHT SOURCE

PART 1 - GENERAL

1.1 SUMMARY

A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.

B. The purpose of these specifications is to define the lighting system performance and design standards for Ultimate Park using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.

C. The sports lighting will be for the following venues:
1. Football Field - 360’ by 160’
2. Track

D. The primary goals of this sports lighting project are:
1. Guaranteed Light Levels: Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore, light levels are guaranteed not to drop below specified target values for a period of 25 years.
2. Environmental Light Control: It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors.
3. Cost of Ownership: To reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
4. Control and Monitoring: To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for a 25-year period shall be included in the bid.

1.2 LIGHTING PERFORMANCE

A. Illumination Levels and Design Factors: Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the IESNA LM-5-04 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not to drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Football Field	30 FC	2.5:1.0	72	30’ x 30’
Track	20 FC	4.0:1.0	46	30’ x 30’
North Bleachers - Home	17 FC	1.7:1.0	24	10’ x 10’
South Bleachers - Away	19 FC	1.5:1.0	10	10’ x 10’

B. Color: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.

C. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

# of Poles	Pole Designation	Pole Height
4	F1 – F4	80’

1.3 ENVIRONMENTAL LIGHT CONTROL

A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.

Lighting designs shall also meet the beam distributions standards set forth by the IES RP-6-15 in Section 5.4.1. Beam Types Figure 14: NEMA Sports Lighting Luminaire Classification.

B. A technical document addressing the issue of lighting in the vertical plane above the playing surface for aerial sports while achieving desired glare control requirements will be required for approval.

C. Spill Light and Glare Control: To minimize impact on adjacent properties, spill light and candela values must not exceed the following levels taken at 3 feet above grade.

Sports Lighting	**Maximum**
East PROPERTY Line Vertical Footcandle	3.0
Horizontal Footcandle	1.1
155’ Measured from the Softball Field #1 Left Field Foul Line - Candela	150,000
South PROPERTY Line Vertical Footcandle	1.0
Horizontal Footcandle	0.5
155’ Measured from the Softball Field #1 Left Field Foul Line - Candela	38,550

If a manufacturer’s engineered lighting scan indicates that the above criteria cannot be met, then an increase in pole mounting heights would be acceptable provided that these specified values are achieved.

D. Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights. Illumination level shall be measured in accordance with the IESNA LM-5-04 after 1 hour warm up.

E. The efficacy for field aimed fixtures must meet DLC requirement of 105 lumens per watt.

F. The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified testing laboratory with a minimum of five years experience or by a manufacturer’s laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

G. Upper Beam Definition

Fixtures shall not exceed the candlepower at the specified degrees above the center of the beam in the vertical plane as specified in the following table.

NEMA Classification of Vertical Beam	Candela	Degrees Above the Center of the Beam in the Vertical Plane
4	10,000	13.0 degrees

PART 2 - PRODUCT

2.1 SPORTS LIGHTING SYSTEM CONSTRUCTION

A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.

B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.

C. System Description: Lighting system shall consist of the following:
1. Galvanized steel poles and cross-arm assembly.
2. Non-approved pole technology:
   a. Square static cast concrete poles will not be accepted.
   b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns.
3. Lighting systems shall use concrete foundations. See Section 2.4 for details.
   a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
   b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-enforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
4. Manufacturer will supply all drivers and supporting electrical equipment
   a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure. Integral drivers are not allowed.
   b. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.

   If active cooling fans are utilized in the remote driver enclosure, then these are required to be wired for the control system to self-monitor and automatically report any failure or issue to the manufacturer and/or owner. Technical cutsheets (not illustrative) detailing this function would be a required inclusion in the mandatory pre-bid submittal detailed in Section 4.

   Integral drivers are not acceptable.
5. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
6. All luminaires, visors, and cross-arm assemblies shall withstand 150 mi/h winds and maintain luminaire aiming alignment.
7. Control cabinet to provide remote on-off control, monitoring, of the lighting system. See Section 2.3 for further details.
8. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
   a. Integrated grounding via concrete encased electrode grounding system.
   b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780.The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the

structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

D. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

A. Electric Power Requirements for the Sports Lighting Equipment:
   1. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.
   2. Energy Consumption: The kW consumption for the field lighting system shall be 43 kw or less.

2.3 CONTROL

A. Lights shall be turned on/off primarily using contactors. Under no circumstances shall the owner need to switch lights on/off using breakers.

B. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.

C. Lighting contactor cabinet(s) with electrically held contactors, constructed of NEMA Type 4 aluminum and designed for easy installation with contactors labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.

D. Dimming: System shall provide for 3-stage dimming (high-medium-low). Dimming will be set via scheduling options (Website, app, phone, fax, email)

E. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute “early off” commands by phone. Scheduling tool shall be capable of setting curfew limits.

Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

F. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).

G. Auxiliary Lighting Interface Cabinet: System shall be designed to connect emergency power circuits to the lighting system.

H. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

   1. Cumulative hours: shall be tracked to show the total hours used by the facility
   2. Report hours saved by using early off and push buttons by users.

I. Communication Costs: Manufacturer shall include communication costs for operating the control and monitoring system for a period of 25 years.

J. Communication with luminaire drivers: Control system shall interface with drivers in pole-mounted enclosures by means of powerline communication through the underground conductors.
Control systems utilizing a wireless line-of-sight communication pathway to the luminaire drivers where power is fed directly from circuit breaker to light pole, and in which power distribution to the pole is constant regardless of on/off luminaire status -- are not acceptable due to long-term performance reliability risks.

2.4 STRUCTURAL PARAMETERS

A. Wind Loads: Wind loads shall be based on the 2023 Florida Building Code. Wind loads to be calculated using ASCE 7-22, an ultimate design wind speed of 170, HVHZ, and exposure category C.

PART 3 - EXECUTION

3.1 SOIL QUALITY CONTROL

A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:
1. Providing engineered foundation embedment design by a registered engineer in the State of FL for soils other than specified soil conditions.
2. Additional materials required to achieve alternate foundation.
3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

A. Delivery Timing Equipment On-Site: The equipment must be on-site 8-12 weeks from receipt of approved submittals and receipt of complete order information.

3.3 FIELD QUALITY CONTROL

A. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.

B. Field Light Level Accountability
1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 years. These levels will be specifically stated as "guaranteed" on the illumination summary provided by the manufacturer.
2. The contractor/manufacturer shall be responsible for conducting initial light level testing and an additional inspection of the system, in the presence of the owner, one year from the date of commissioning of the lighting.
3. The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.

C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.

B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check fuses in the event of a luminaire outage.

PART 4 - DESIGN APPROVAL

4.1 PRE-BID SUBMITTAL REQUIREMENTS

A. Design Approval: The owner / engineer will review pre-bid submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.

B. Basis of Design Product: Musco's Light-Structure System™ with TLC for LED™ is the approved product or equal. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs.

C. All listed manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid; listing approved lighting manufacturers and the design method to be used.

D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system/design, will be rejected.

REQUIRED SUBMITTAL INFORMATION FOR ALL MANUFACTURERS (NOT PRE-APPROVED) 10 DAYS PRIOR TO BID

All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements. Complete the Yes/No column to indicate compliance (Y) or noncompliance (N) for each item. Submit checklist below with submittal.

Yes/ No	Tab	Item	Description
	A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	B	Equipment Layout	Drawing(s) showing field layouts with pole locations
	C	On Field Lighting Design	Lighting design drawing(s) showing: a. Field Name, date, file number, prepared by b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens and optics d. Height of light test meter above field surface.

			e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance (CV), coefficient of utilization (CU) uniformity gradient; number of luminaries, total kilowatts, average tilt factor; light loss factor. f. Technical document addressing the issue of lighting in the vertical plane above the playing surface for aerial sports while achieving the desired glare control requirements.
	D	Off Field Lighting Design	Lighting design drawing showing initial spill light levels along the boundary line (defined on bid drawings) in footcandles. Lighting design showing glare along the boundary line in candela. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	E	Photometric Report	Provide first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years experience. No partial wattage fixture reports or ISO Polar curve reports are acceptable.
	F	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed to not fall below target levels for warranty period.
	G	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of FL, if required by owner. (May be supplied upon award)
	H	Control & Monitoring System	Manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system. They will also provide ten (10) references of customers currently using proposed system in the state of FL.
	I	Electrical Distribution Plans	Manufacturer bidding an alternate product must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the state of FL.
	J	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of FL.
	K	Project References	Manufacturer to provide a list of 10 projects where the technology and specific fixture proposed for this project has been installed in the state of FL. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.
	L	Product Information	Complete bill of material and current brochures/cut sheets for all products being provided. Cut sheets shall be technical (and illustrative) and provide specific detail on fixtures, remote driver cabinets, drivers, surge protections, fusing, controls, poles and foundations. All certifications including UL and DLC shall be shown on the technical cut sheets.
	M	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	N	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	O	Cost of Ownership	Document cost of ownership as defined in the specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included. All costs should be based on 25 Years.
	P	Environmental Light Control Design	Environmental glare impact scans must be submitted showing the maximum candela from the field edge on a map of the surrounding area.

END OF SECTION 16526

Exhibit “B” – Cover Page

1. Contractor’s Response
2. W-9
3. Sunbiz
4. Local Business Forms
5. License
6. Bidder’s Qualification Statement
7. Construction Reference Sheet
8. Company Litigation History

ITB26-032 Addendum 1
Shiff Construction
Shiff Construction
Supplier Response

Event Information

Number: ITB26-032 Addendum 1
Title: Ultimate Sports Park
Type: Invitation To Bid
Issue Date: 4/6/2026
Deadline: 5/7/2026 02:00 PM (ET)
Notes: The City of Pompano Beach (“City”) will receive sealed electronic bids for ITB26-032 – Ultimate Sports Park until 2:00 p.m. (local time) on May 7, 2026, via the City’s eBid System. Bids submitted after the specified deadline will not be considered.

In the event of any ambiguity or dispute regarding the time of receipt, such uncertainty shall be resolved in favor of the City and against the Bidder.

Scope of Work: The project is located at 212 NW 16th Street, Pompano Beach, FL 33060. This project entails providing all labor, equipment, tools, and materials necessary to construct a new multipurpose natural grass sports field and a 2500 SF, 2-story concession building with bathrooms, storage, bleachers & canopy, a second-floor press box, and other track and field amenities. The scope of work includes, but is not limited to, sitework, drainage, foundation, concrete structure, mechanical, plumbing, electrical, shade structure, landscape, irrigation, fencing, parking, site lighting, and

Poured-in-Place (PIP) track and sports lighting.

All work shall be performed in accordance with the approved plans, specifications, supplementary conditions, and applicable local, state, and federal regulations. The Contractor shall be responsible for providing all labor, materials, equipment, tools, transportation, and incidentals necessary to complete the project professionally.

The Contractor shall also be responsible for maintaining site safety, minimizing public disruption, and ensuring environmental compliance throughout construction.

Prospective Bidders must be duly registered in the City's eBid System to access solicitation documents and submit responses to this Invitation to Bid (ITB). The solicitation documents can be downloaded for free from the eBid System as a PDF at: https://pompanobeachfl.ionwave.net. The City is not responsible for the accuracy or completeness of any documentation the Bidder receives from any source other than the eBid System. The bidder is solely responsible for downloading all required documents. A list of Bidders will be read aloud in a public forum. To attend the virtual public meeting, go to https://pompanobeachfl.gov/pages/meetings to find the Zoom link.

Cone of Silence Notice: Bidders are hereby notified that this Solicitation is subject to a "Cone of Silence". A Cone of Silence means a prohibition on any communication regarding any particular competitive solicitation between:

- Any person who seeks an award therefrom, including a potential vendor or vendor's representative, and
- Any member of the City Commission, all other city employees, and any non-employee appointed to evaluate or recommend selection in such procurement process. For purposes of this section, Vendor's Representative means an employee, partner, officer, or director of a potential vendor, or consultant, lobbyist, or actual or potential subcontractor or sub-consultant of a vendor.

The "cone of silence" shall terminate at the time the City awards or approves a contract, votes to reject all responses, or otherwise takes action that ends the solicitation or other procurement process. If the City Commission refers the item back to the City Manager and staff for further review, the cone of silence shall remain in effect until an award is made, a contract is approved, or the City Commission takes any other action that ends the solicitation or other procurement process.

Any firm or lobbyist for a firm is prohibited from having any communications concerning any solicitation for a competitive procurement with any member of the City Commission, City Clerk, City Manager's Office, any Evaluation Committee Member, or any other City of Pompano Beach employee after Procurement and Contracts releases a solicitation to the General Public. All communications must

go through the eBid System (IonWave) or the Purchasing Agent assigned to this solicitation, Eric Seifer, at 954-786-4166, or eric.seifer@copbfl.com, No other member of the City Commission, City Clerk, City Manager's Office, any Evaluation Committee Member, or any other City of Pompano Beach employee should contact any potential proposer or vendor, or any vendor should not contact any other department other than Procurement concerning this ITB. Any information that amends any portion of this ITB received by any method other than an Addendum issued to the ITB is not binding on the City of Pompano Beach.

Contact Information

Contact: Eric Seifer
Address: Purchasing
1010 NE 3rd Avenue
Pompano Beach, FL 33060
Phone: (954) 786-4098
Email: eric.seifer@copbfl.com

Shiff Construction Information

Address: 180 SW 6th Street
Pompano Beach, FL 33060
Phone: (954) 524-2575
Fax: (954) 524-2576
Web Address: www.shiff.com

By submitting this Response I affirm I have received, read and agree to the all terms and conditions as set forth herein. I hereby recognize and agree that upon execution by an authorized officer of the City of Pompano Beach, this Response, together with all documents prepared by or on behalf of the City of Pompano Beach for this solicitation, and the resulting Contract shall become a binding agreement between the parties for the products and services to be provided in accordance with the terms and conditions set forth herein. I further affirm that all information and documentation contained within this response to be true and correct, and that I have the legal authority to submit this response on behalf of the named Supplier (Offeror).

Justen Shiff
Signature

jds@shiff.com
Email

Submitted at 5/7/2026 01:24:52 PM (ET)

Requested Attachments

Attachment C - Local Business Unavailability Form
SHIFF - Attachment C Local Business Unavailability Form vF.pdf

Attachment H - W9 Request for Taxpayer Identification Number and Certification
W9 - 2026 - Shiff .pdf

Attachment B - Letter of Intent to Perform as a Local Subcontractor
SHIFF - Attachment B Letter of Local Subcontractor vF.pdf

Attachment A - Local Business Participation Form
SHIFF - Attachment A Local Business Participation Form vF.pdf

Attachment D - Good Faith Effort Report Form
SHIFF - Attachment D Good Faith Effort Report Form vF.pdf

Attachment J - Bid Security Bond Form
SHIFF - Attachment J USP Bid Bond.pdf

Attachment F- Bidders Qualification Statement
SHIFF - Attachment F Bidders Qualification Statement vF.pdf

Qualification of Bidders Statement form must be completed and uploaded to the Response Attachments tab of the City's eBid System

Attachment G - Workers's Compensation Affidavit
SHIFF - Attachment G Workers' Compensation Affidavit.pdf

The Workers' Compensation Affidavit must be uploaded to the eBid system.

Attachment K- Construction-reference-sheet
SHIFF - Attachment K USP References vF.pdf

The bidder must include this attachment with the bid when it is submitted.

Bonding Capacity Letter
SHIFF - Bonding Capacity Letter.pdf

The Proposer must include a letter from a qualified Surety company, licensed to do business in the State of Florida, confirming the Proposer's bonding capacity and financial reliability to perform the scope of work for this Project. The letter must be issued on the Surety company's letterhead, signed by an authorized representative.

Company Litigation and Dispute History

SHIFF - Litigation History.pdf

Bidders must submit a statement detailing any legal proceedings, claims, arbitrations, or civil actions involving the company, its parent company, subsidiaries, and key personnel. This includes, but is not limited to, all cases over the past five (5) years related to construction, contracts, or business operations. If the bidder has no litigation history to report, they must submit a letter on company letterhead stating such. This letter must be signed and certified by an authorized company representative, affirming the accuracy and completeness of the statement.

Response Attachments

SHIFF - POMPANO BEACH BUSINESS TAX RECEIPT #BTR 25-00098998.pdf

Pompano Beach Business Tax Receipt

SHIFF - GC License & Sample COIs vF.pdf

GC License & Proof of Insurance

Bid Attributes

1	**Terms & Conditions** Contractor acknowledges that it has read, understands, and agrees to be bound by all terms, conditions, and specifications contained in this solicitation and any resulting contract. Failure to comply may result in rejection of the response or termination of any resulting agreement. ☑ Agree
2	**Acknowledgement of Addenda** Contractor acknowledges receipt of all addenda issued for this solicitation and certifies that all addenda have been reviewed and incorporated into its response. Failure to acknowledge all addenda may result in rejection of the response as non-responsive. ☑ Agreed
3	**Vendor Certification Regarding Scrutinized Companies Lists (Any Dollar Amount)** Contractor certifies that it is not listed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List. Contractor further certifies that it is not engaged in a boycott of Israel and is not engaged in business operations in Cuba or Syria, in accordance with Sections 287.135 and 215.4725, Florida Statutes. Contractor agrees that it will not engage in such activities for the duration of any resulting contract. Submission of a false certification may subject Contractor to civil penalties, attorney's fees, and/or costs. Yes
4	**Drug-Free Workplace** Contractor certifies that it has implemented and maintains a drug-free workplace program in accordance with Section 287.087, Florida Statutes. Yes
5	**Conflict of Interest** Contractor certifies that it has disclosed any potential conflict of interest, including whether any City of Pompano Beach employee is an owner, officer, or employee of the Contractor's firm. If such a relationship exists, Contractor shall comply with applicable disclosure requirements pursuant to Chapter 112, Florida Statutes. Failure to disclose may result in disqualification or termination of any resulting contract. No

6 **If yes, explain Conflict of Interest**

If yes, provide details.

N/A

7 **Local Business Program Participation & Documentation**

Contractor shall submit all required Local Business Program forms (Exhibits A through D, as applicable) with its response. Forms must be fully completed, including documentation demonstrating compliance with Tier 1 or Tier 2 eligibility requirements, or clearly marked "Not Applicable," as appropriate. Failure to submit the required forms will result in the proposal being deemed non-responsive.

Contractors seeking Tier 1 or Tier 2 Local Vendor preference, or those identifying Local Vendor subcontractors or subconsultants, must provide all required supporting documentation, including valid Business Tax Receipt(s), and demonstrate compliance with applicable program requirements, including minimum local participation percentages or employee residency thresholds, in accordance with Section 32.40, City of Pompano Beach Code of Ordinances. Failure to meet these requirements will result in denial of Local Vendor preference and loss of any associated evaluation points.

Tier 1

8 **Business in Good Standing (Florida Division of Corporations)**

Is the proposer an active business entity in good standing with the Florida Division of Corporations (Sunbiz)?

Yes

9 **Substantial Completion (Calendar Days)**

Enter number of calendar days to achieve substantial completion.

335

10 **Final Completion (Calendar Days)**

Enter the number of calendar days to achieve final completion.

365

11 **Have you ever failed to complete work awarded to you? If yes, please explain.**

No

12 **Contractor affirms that it has reviewed the proposed scope of work and has developed a complete plan for its performance.**

Yes

13 **Does the Contractor intend to subcontract any portion of the work? A response of 'No' certifies that the Contractor will self-perform all aspects of the work. If 'Yes,' Contractor shall provide a list of all subcontractors and their respective trades.**

Does the contractor intend to subcontract any portion of the work?

A response of 'No' certifies that the contractor will self-perform all aspects of the work.

If 'Yes,' the contractor shall provide a list of all subcontractors and their respective trades.

Yes

14	**Contractor affirms that it has, or will have, all necessary equipment and resources available to perform the work in accordance with the solicitation requirements. The City reserves the right to request supporting documentation.** Yes
15	**Has your organization (including parent, subsidiaries, or key personnel) been involved in any litigation, arbitration, or claims within the past 5 years? If yes, upload a Litigation & Dispute Summary** Has your organization (including parent, subsidiaries, or key personnel) been involved in any litigation, arbitration, or claims within the past 5 years? If yes, upload a Litigation & Dispute Summary Yes
16	**I certify that all litigation information provided is true and complete.** ☑ Certified
17	**E-Verify / Employment Eligibility Compliance** This certification is required pursuant to Section 448.095, Florida Statutes. Contractor must certify that it is registered with and uses the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all newly hired employees. Contractor must also require all subcontractors to comply with the same requirements. Failure to comply with this requirement may result in termination of the contract, suspension, or debarment from public contracting. ☑ Certified
18	**Public Entity Crimes Certification** This certification is required pursuant to Section 287.133, Florida Statutes. Contractor must certify that neither it nor any of its affiliates has been convicted of a public entity crime and is not listed on the State of Florida's convicted vendor list. A person or affiliate placed on the convicted vendor list following such conviction is prohibited from submitting bids, being awarded contracts, or transacting business with any public entity for a period of 36 months. A "public entity crime" includes violations of state or federal law directly related to public contracting, including but not limited to fraud, bribery, collusion, conspiracy, antitrust violations, theft, or material misrepresentation. ☑ Certified
19	**Non-Collusion Certification** This certification is required to ensure fair and open competition in the procurement process. By submitting a response, Contractor certifies that its proposal is genuine and not collusive or a sham, and that it has not colluded, conspired, or agreed—directly or indirectly—with any other vendor to submit a non-competitive proposal, fix prices, or otherwise gain an unfair advantage. Contractor further certifies that it has not communicated its proposal to any competitor prior to submission and has not engaged in any conduct intended to restrict competition or influence the solicitation outcome. Such actions may constitute violations of state and federal antitrust laws and may result in disqualification or other legal consequences. ☑ Certified

Bid Lines

1	**Package Header**

Base Bid Items

Quantity: 1 UOM: LS Total: $578,453.22

Package Items

1.1 Item No. 01 – Mobilization (Not to exceed 3% of total bid price)

Quantity: 1 UOM: LS Lump Sum Price: $11,607.00 Total: $11,607.00

1.2 Item No. 02 – Insurance payment bond, performance bond (Not to exceed 3% of total bid price)

Quantity: 1 UOM: LS Lump Sum Price: $107,400.00 Total: $107,400.00

1.3 Item No. 03 – General Conditions

Quantity: 1 UOM: LS Lump Sum Price: $305,400.00 Total: $305,400.00

1.4 Item No. 04 – Demolition

Quantity: 1 UOM: LS Lump Sum Price: $51,070.80 Total: $51,070.80

1.5 Item No. 05 – Site Preparation

Quantity: 1 UOM: LS Lump Sum Price: $42,320.88 Total: $42,320.88

1.6 Item No. 06 – Field Surveying

Quantity: 1 UOM: LS Lump Sum Price: $60,654.54 Total: $60,654.54

2 Package Header

Site Development

Quantity: 1 UOM: LS Total: $5,711,536.78

Package Items

2.1 Item No. 07 – Parking Lot & Entry Plaza

Quantity: 1 UOM: LS Lump Sum Price: $258,574.46 Total: $258,574.46

2.2 Item No. 08 – Concrete Sidewalk & Curb

Quantity: 1 UOM: LS Lump Sum Price: $516,655.02 Total: $516,655.02

2.3 Item No. 09 – Restroom & Concession Building with PressBox

Quantity: 1 UOM: LS Lump Sum Price: $1,565,788.32 Total: $1,565,788.32

2.4 Item No. 10 – Shade Metal Structure with Fabric Canopy

Quantity: 1 UOM: LS Lump Sum Price: $177,247.38 Total: $177,247.38

2.5 Item No. 11 – Bleachers

Quantity: 1 UOM: LS Lump Sum Price: $228,348.17 Total: $228,348.17

2.6 Item No. 12 – Synthetic Track Surfacing

Quantity: 1 UOM: LS Lump Sum Price: $588,896.85 Total: $588,896.85

2.7 Item No. 13 – Field Markings

Quantity: 1 UOM: LS Lump Sum Price: $10,600.00 Total: $10,600.00

2.8 Item No. 14 – Fence & Gates
- A. Chain-link Fence & Gates

Quantity: 1 UOM: LS Lump Sum Price: $75,085.10 Total: $75,085.10

2.9 Item No. 14 – Fence & Gates
- B. Metal picket Fence & Gates

Quantity: 1 UOM: LS Lump Sum Price: $80,538.80 Total: $80,538.80

2.10 Item No. 15 – Site Lighting & Power including MUSCO

Quantity: 1 UOM: LS Lump Sum Price: $798,608.73 Total: $798,608.73

2.11 Item No. 16 – Multipurpose Sports Field Natural Turf

Quantity: 1 UOM: LS Lump Sum Price: $166,718.60 Total: $166,718.60

2.12 Item No. 17 – Landscape & Irrigation

Quantity: 1 UOM: LS Lump Sum Price: $494,519.68 Total: $494,519.68

2.13 Item No. 18 – Underground Drainage Utilities

Quantity: 1 UOM: LS Lump Sum Price: $465,455.07 Total: $465,455.07

2.14 Item No. 19 – Field Sports Equipment, Furniture and Signage

Quantity: 1 UOM: LS Lump Sum Price: $284,490.60 Total: $284,490.60

2.15 Item No. 20 - Items Not Included in Other Sections

Quantity: 1 UOM: LS Lump Sum Price: $10.00 Total: $10.00

3 Package Header

Allowances

Quantity: 1 UOM: LS Total: $300,010.00

Package Items

3.1 Item No. 20 – Permit Allowance

Price: $50,000.00 Total: $50,000.00

3.2 Item No. 21 – Owner's Contingency Allowance

Price: $250,000.00 Total: $250,000.00

3.3 Item No. 22 – Indemnification

Price: $10.00 Total: $10.00

Response Total: $6,590,000.00

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

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

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
SHIFF CONSTRUCTION & DEVELOPMENT, INC.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☑ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
180 SW 6TH STREET

Requester's name and address (optional)

6 City, state, and ZIP code
POMPANO BEACH, FLORIDA 33060

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number
[ ][ ][ ] – [ ][ ] – [ ][ ][ ][ ]

or

Employer identification number
2 0 – 2 9 1 8 6 0 2

Part II Certification

Under penalties of perjury, I certify that:

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

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

Sign Here | **Signature of U.S. person ▶** [signature] **Date ▶** 02.09.26

General Instructions

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

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*



Detail by Entity Name

Florida Profit Corporation
SHIFF CONSTRUCTION & DEVELOPMENT, INC.

Filing Information

Document Number	P05000077831
FEI/EIN Number	20-2918602
Date Filed	05/27/2005
State	FL
Status	ACTIVE
Last Event	AMENDMENT
Event Date Filed	12/18/2007
Event Effective Date	NONE

Principal Address

180 SW 6th St
Pompano Beach, FL 33060

Changed: 02/22/2019

Mailing Address

180 SW 6th St
Pompano Beach, FL 33060

Changed: 02/22/2019

Registered Agent Name & Address

FEINER, ROD A
1404 SOUTH ANDREWS AVENUE
FORT LAUDERDALE, FL 33316

Officer/Director Detail

Name & Address

Title PD

SHIFF, JUSTEN D
180 SW 6th St
Pompano Beach, FL 33060

Title V

SHIFF, JUSTEN
180 SW 6th St
Pompano Beach, FL 33060

Title SD

SHIFF, JUSTEN D
180 SW 6th St
Pompano Beach, FL 33060

Title TD

SHIFF, MELISSA M
180 SW 6th St
Pompano Beach, FL 33060

Annual Reports

Report Year	Filed Date
2024	02/01/2024
2025	02/12/2025
2026	01/09/2026

01/09/2026 -- ANNUAL REPORT	View image in PDF format
02/12/2025 -- ANNUAL REPORT	View image in PDF format
02/01/2024 -- ANNUAL REPORT	View image in PDF format
01/19/2023 -- ANNUAL REPORT	View image in PDF format
01/25/2022 -- ANNUAL REPORT	View image in PDF format
02/04/2021 -- ANNUAL REPORT	View image in PDF format
01/21/2020 -- ANNUAL REPORT	View image in PDF format
02/22/2019 -- ANNUAL REPORT	View image in PDF format
03/01/2018 -- ANNUAL REPORT	View image in PDF format
02/14/2017 -- ANNUAL REPORT	View image in PDF format
03/03/2016 -- ANNUAL REPORT	View image in PDF format
03/02/2015 -- ANNUAL REPORT	View image in PDF format
02/19/2014 -- ANNUAL REPORT	View image in PDF format
02/28/2013 -- ANNUAL REPORT	View image in PDF format
03/07/2012 -- ANNUAL REPORT	View image in PDF format
04/20/2011 -- ANNUAL REPORT	View image in PDF format
01/13/2010 -- ANNUAL REPORT	View image in PDF format
03/23/2009 -- ANNUAL REPORT	View image in PDF format
04/30/2008 -- ANNUAL REPORT	View image in PDF format
12/18/2007 -- Amendment	View image in PDF format
04/20/2007 -- ANNUAL REPORT	View image in PDF format
07/31/2006 -- ANNUAL REPORT	View image in PDF format
05/27/2005 -- Domestic Profit	View image in PDF format

Florida Department of State, Division of Corporations

LOCAL BUSINESS EXHIBIT "A"
CITY OF POMP□NO B□□CH□FLORID□
LOC□L B□SIN□SS P□RTICIP□TION FORM

Solicitation Number □ Title: ITB□□□□□□ Ultimate Sports Park Prime Contractor's Name: SHIFF CONSTRUCTION & DEVELOMENT, INC.

Name of Firm□□ddress	Contact Person□ Telephone Number	Type of Wor□to be Performed□Material to be Purchased	Contract □mount or □
Shiff Construction & Development, Inc. 180 SW 6th St. Pompano Beach, FL 33060	Justen Shiff 954-524-2575	Supervision, General Site Work/Grading, Drywall/Framing/Insulation	~15%
Metalu□Corp. □□□□ N □ndrews □ve □□t□Pompano Beach□FL □□□□□	Roselin Coca □□□□□□□□□□□	Structural Steel	□□□
DBF Construction, Inc. 240 SW 12th Ave. Pompano Beach, FL 33069	Mark Giannetti 954-532-1918	Demolition, Concrete, Underground Utilities, & Parking Lot	~10%
Ted Conner Landscaping□Inc. □□□□ NW □□th □ve. Pompano Beach□FL □□□□□	Jason Conner □□□□□□□□□□□	Landscaping □ Irrigation	□□□□

LOCAL BUSINESS EXHIBIT "A"

LOCAL BUSINESS EXHIBIT "B"
LOCAL BUSINESS
LETTER OF INTENT TO PERFORM AS A LOCAL SUBCONTRACTOR

Solicitation Number ITB26-032

TO: Shiff Construction & Development, Inc.
(Name of Prime or General Bidder)

The undersigned City of Pompano Beach business intends to perform subcontracting work in connection with the above contract as (check below)

_____ an individual
__x__ a corporation
_____ a partnership
_____ a joint venture

The undersigned is prepared to perform the following work in connection with the above Contract, as hereafter described in detail:

Demolition, Concrete, Underground Utilities, Parking Lot

at the following price: [redacted]

4.29.26
(Date)

DBF Construction, Inc.
(Print Name of Local Business Contractor)

1850 NW 15th Ave., Ste 215
(Street Address)

Pompano Beach, FL 33069
(City, State Zip Code)

BY: _____
(Signature)

IMPORTANT NOTE: Signatures on this form MUST be by an authorized employee of Subcontractor and must be uploaded to the Response Attachment Tab

LOCAL BUSINESS EXHIBIT "B"

LOCAL BUSINESS EXHIBIT "B"
LOC□L B□SIN□SS
L□TT□R OF INT□NT TO P□RFORM □S □ LOC□L S□BCONTR□CTOR

Solicitation Number ITB

TO: Shiff Construction □ Development□Inc.
□Name of Prime or General Bidder□

The undersigned City of Pompano Beach business intends to perform subcontracting wor□ in connection with the above contract as □chec□ below□

□ an individual □ a corporation

□ a partnership □ a joint venture

The undersigned is prepared to perform the following wor□ in connection with the above Contract□as hereafter described in detail:

Landscaping & Irrigation

at the following price: $614,808

5/7/2026 | 6:22 AM PDT
□Date□

Ted Conner Landscaping, Inc
□Print Name of Local Business Contractor□

1560 NW 24 Ave
□Street □ddress□

Pompano Beach, FL 33069
□City□State □ip Code□

BY: DocuSigned by: Jason Conner FB5AF65BC8244A0...
□Signature□

IMPORTANT NOTE: Signatures on this form MUST be by an authorized employee of Subcontractor and must be uploaded to the Response Attachment Tab

LOCAL BUSINESS EXHIBIT "B"

LOCAL BUSINESS EXHIBIT "B"
LOCAL BUSINESS
LETTER OF INTENT TO PERFORM AS A LOCAL SUBCONTRACTOR

Solicitation Number ITB26-032

TO: Shiff Construction & Development, Inc.
Name of Prime or General Bidder

The undersigned City of Pompano Beach business intends to perform subcontracting work in connection with the above contract as checked below:

☐ an individual ☑ a corporation

☐ a partnership ☐ a joint venture

The undersigned is prepared to perform the following work in connection with the above Contract as hereafter described in detail:

Structural Steel

at the following price: [illegible]

5/5/2026
Date

Metalux Corp.
Print Name of Local Business Contractor

3250 N Andrews Ave Ext,
Street Address

Pompano Beach, FL 33064
City State Zip Code

BY: Javier Rosado
Signature

IMPORTANT NOTE: Signatures on this form MUST be by an authorized employee of Subcontractor and must be uploaded to the Response Attachment Tab

LOCAL BUSINESS EXHIBIT "B"

LOCAL BUSINESS EXHIBIT "C

LOC□L B□SIN□SS
□N□V□IL□BILITY FORM

BID □ ITB□□□□□□□□□□□□□□□□

I□□□□□□□□□□□□□□□□

LOCAL BUSINESS EXHIBIT "D"
GOOD F□ITH □FFORT R□PORT
LOC□L B□SIN□SS P□RTICIP□TION

BID □□□□□□□□□□□□□□□□□□□□□□ ITB□□□□□□□

□. What portions of the contract have you identified as Local Business opportunities□

□□□□□□ N/A Submitted Exhibits A & B □□□□□□□□□□□□□□□□□□□□

LOCAL BUSINESS EXHIBIT “D” – Page □

□□□

pompano beach
Florida's Warmest Welcome

CITY OF POMPANO BEACH
BUSINESS TAX RECEIPT
FISCAL YEAR: 2025 - 2026

Business Tax Receipt Valid from: October 1, 2025 through September 30, 2026

4469624
SHIFF CONSTRUCTION & DEVELOPMENT INC
SHIFF, JUSTEN
180 SW 6 ST
POMPANO BEACH FL 33060

4/29/2026

DUPLICATE

THIS IS NOT A BILL

THIS IS YOUR BUSINESS TAX RECEIPT. PLEASE POST IN A CONSPICUOUS PLACE AT THE BUSINESS LOCATION.

BUSINESS OWNER: SHIFF CONST & DEVELOPMENT INC
BUSINESS LOCATION: 180 SW 6 ST POMPANO BEACH FL

RECEIPT NO:	**CLASSIFICATION**
26-00098998	**CONTRACTOR GENERAL (GC)**

NOTICE: A NEW APPLICATON MUST BE FILED IF THE BUSINESS NAME, OWNERSHIP OR ADDRESS IS CHANGED. THE ISSUANCE OF A BUSINESS TAX RECEIPT SHALL NOT BE DEEMED A WAIVER OF ANY PROVISION OF THE CITY CODE NOR SHALL THE ISSUANCE OF A BUSINESS TAX RECEIPT BE CONSTRUED TO BE A JUDGEMENT OF THE CITY AS TO THE COMPETENCE OF THE APPLICANT TO TRANSACT BUSINESS. **THIS DOCUMENT CANNOT BE ALTERED.**

BUSINESS TAX RECEIPTS EXPIRE SEPTEMBER 30TH OF EACH YEAR

DocuGard 04541 – 6 Security Features

- Prints "VOID" on front when duplicated
- Blue background highlights erasure alterations
- Watermark on back can be seen when sheet is held on an angle
- Coin-reactive ink on watermark changes color when scratched with a coin
- Microtext border contains the DocuGard name and is difficult to copy
- Security Features Box lists tamper-resistant attributes

DocuGard 04541 – 6 Security Features

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- Microtext border contains the DocuGard name and is difficult to copy
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Ron DeSantis, Governor

Melanie S. Griffin, Secretary

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

SHIFF, JUSTEN DAVID

SHIFF CONSTRUCTION & DEVELOPMENT INC
180 SW 6 STREET
POMPANO BEACH FL 33060

LICENSE NUMBER: CGC1509764

EXPIRATION DATE: AUGUST 31, 2026

Always verify licenses online at MyFloridaLicense.com

ISSUED: 08/07/2024

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

ATTACHMENT F: BIDDERS' QUALIFICATIONS STATEMENT

THE UNDERSIGNED GUARANTEES THE TRUTH AND ACCURACY OF ALL STATEMENTS AND ANSWERS HEREIN CONTAINED:

BIDDER'S GENERAL INFORMATION: BIDDER shall furnish the following information. Failure to comply with this requirement will render the Bid non-responsive and shall cause its rejection. **Additional sheets can be attached as required.**

1. **Bidder's Information:**

BIDDER'S Name and Principal Address:	SHIFF CONSTRUCTION & DEVELOPMENT, INC
Contact Person's Name and Title:	JUSTEN SHIFF | PRESIDENT
BIDDER'S Telephone:	954-524-2575
BIDDER'S Email address:	JDS@SHIFF.COM
BIDDER'S License Number (Please attach certificate of status, competency, and/or state registration)	CGC 1509764
BIDDER'S Federal Identification Number:	20-2918602
Number of years as a Contractor in this type of work:	26 YEARS
Number of years under your present business name?	26 YEARS
How many years under a previous business name? List name(s).	26 YEARS

2. **Type of Business:**

☐ Sole Proprietorship ☐ Partnership ☒ Corporation ☐ Joint Venture

If a Corporation, answer this:

Date of incorporation: 05/27/2005

In what State: FLORIDA

If a Partnership or Individual Proprietorship, answer this:

Date of organization:

If a partnership, state whether the partnership is general, limited association:

3. **What is the last project of a similar scope of work that the company have completed?**

JIMMY EVERT TENNIS CENTER
YOUTH SPORT SPORT
MITCHELL MOORE PARK

ATTACHMENT F: BIDDERS' QUALIFICATIONS STATEMENT

4. **Names and titles of all officers, partners, or individuals doing business under a trade name:**

Name of Officers	Name and Address of Partners:
President:	JUSTEN SHIFF
Vice President:	JUSTEN SHIFF
Vice President:	JUSTEN SHIFF
Secretary:	JUSTEN SHIFF
Treasurer:	MELISSA SHIFF

5. **Subsidiary or Affiliated Companies in Which Principals Have Financial Interest**

NAME AND ADDRESS OF SUBSIDIARY OR AFFILIATED COMPANIES	EXPLAIN IN DETAIL THE PRINCIPAL'S INTEREST IN THIS COMPANY AND NATURE OF BUSINESS
N/A	

6. Have you, in the previous five years, been denied a contract award on which you submitted the low bid in competitive bidding, or been refused prequalification? If so, please list and describe:

NO

7. Have you ever failed to complete work awarded to you? If yes, where and why?

NO

8. Within the previous 5 years, has your organization or predecessor organizations ever failed to complete a project? If so, state the name of the organization and the reason thereof.

NO

9. Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract:

BRODER & SONS | 6191 ORANGE DR #615F | DAVIE, FL 33314 | 954-584-3002 | WESTFIELD INSURANCE CO.

10. Have the Surety Company, which will provide your bonds, provide you with written verification showing that your firm will be bonded for the amount of the contract. This must be submitted with your bid. Include the bonding capacity per project and aggregate.

Bonding Capacity per Project: $60 MILLION Per aggregate: $80 MILLION

ATTACHMENT F: BIDDERS' QUALIFICATIONS STATEMENT

11. List your firm, licensing, type of work licensed for, and also the licensing and types of work the individual who will have personal supervision of the work is licensed for.

Type of License	License#	Type of Work
SHIFF CONSTRUCTION GC	CGC 1509764	GC & CONSTRUCTION MANAGEMENT

NOTE: If more space is needed, additional pages can be added. Simply attach or insert extra pages at the end of this document and label them clearly as continuation pages. For best results, ensure consistent formatting (font, margins, headers) across all pages to maintain a cohesive, professional appearance.

12. Will you self-perform? YES _X_ NO ___.

13. Will you subcontract any part of this WORK? If so, give details. If yes, list all proposed subcontractors to be used on this project if the Bidder is awarded the Contract for this project. The successful Bidder shall submit a COMPLETE list of any work that he proposes to subcontract for the primary elements of this scope and the proposed subcontractors prior to execution of the contract.

SUBCONTRACTOR LIST

The undersigned Bidder hereby designates, as follows, all major subcontractors whom he proposes to utilize for this service. The Bidder is further notified that all subcontractors shall be properly licensed, insured, and shall be required to furnish the City with a certificate of insurance in accordance with General Conditions Requirements.

% does not include City allowances

Name	Address	License	Classification of Work	Contract Amount	Percentage (%)
DBF Construction, Inc.	1850 NW 15th Ave. Suite 215 Pompano Beach, FL 33069	CGC1512467	Underground utilities, concrete, demo, parking lot	$654,165.62	~10%
Spada Flat Work LLC	8464 Belvedere Rd. B3 West Palm Beach, FL 33411		Flatwork	~$700,000	~11%
Metalux Corp	3250 N Andrews Ave Ext Pompano Beach, FL 33064		Structural Steel	$52,552.26	~1%
Ted Conner Landscaping, Inc.	1560 NW 24th Ave. Pompano Beach, FL 33069	Arborist #FL-1310A	Landscape & Irrigation	$614,808	~10%
Caulfield & Wheeler, Inc.	7900 Glades Rd. Suite 100 Boca Raton, FL 33434		Surveying	~$60,000	~1%
Beynon Sports Surfaces, Inc.	16 Alt Rd. Cockeysville, MD 21030		Track & Longjump surfacin	~$280,000	~4%
Musco Sports Lighting, LLC	500 High Ave W Oskaloosa, IA 52577		Sportslighting	~$410,000	~6%
Gerhold Electric, Inc.	3851 NW 124th Ave Coral Springs, FL 33065	EC #13007778	Electrical	~$530,000	~8%
Broward County Fence LLC	5051 NE 13th Ave Oakland Park, FL 33334		Fencing	~$156,000	~2%
A Flag and Flagpole	3427 Griffin Rd Fort Lauderdale, FL 33312		Flagpole	~$20,000	<1%
All American Windows and Doors, Inc.	6001 Powerline Rd. Fort Lauderdale, FL 33309		Division 8	~$70,000	~1%
R.D. Souza, Inc.	4375 NW 128th St. Opa-Locka, FL 33054		Stucco & Finishes	~$105,000	~2%

NOTE: If more space is needed, additional pages can be added. Simply attach or insert extra pages at the end of this document and label them clearly as continuation pages. For best results, ensure consistent formatting (font, margins, headers) across all pages to maintain a cohesive, professional appearance.

ATTACHMENT F: BIDDERS' QUALIFICATIONS STATEMENT

THIS IS CONTINUATION OF PREVIOUS PAGE FOR ADDITIONAL SUBCONTRACTORS

SUBCONTRACTOR LIST

The undersigned Bidder hereby designates, as follows, all major subcontractors whom he proposes to utilize for this service. The Bidder is further notified that all subcontractors shall be properly licensed, insured, and shall be required to furnish the City with a certificate of insurance in accordance with General Conditions Requirements.

% does not include City allowances

Name	Address	License	Classification of Work	Contract Amount	Percentage (%)
Harbor Point Commercial Flooring, Inc.	4980 SW 52nd St, Suite 118 Davie, FL 33314		Flooring	~$20,000	<1%
Wards Plumbing	3300 S Congress Ave, Suite 19 Boyton Beach, FL 33426	RF-0066715	Plumbing	~$160,000	~3%
Hall Mechanical & Air-Conditioning, LLC	2040 Tigertail Blvd. Suite E Dania Beach, FL 33004	CAC1820023	HVAC	~$170,000	~3%
Campany Roofing	1425 Watertower Road West Palm Beach, FL 33403	CCC1327912	Roofing	~$75,000	~1%
Matrix Construction Builders	225 E Dania Beach Blvd Suite 120 Dania Beach, FL 33004	CGC1536440	Shell	~$445,000	~7%

NOTE: If more space is needed, additional pages can be added. Simply attach or insert extra pages at the end of this document and label them clearly as continuation pages. For best results, ensure consistent formatting (font, margins, headers) across all pages to maintain a cohesive, professional appearance.

ATTACHMENT F: BIDDERS' QUALIFICATIONS STATEMENT

14. List and describe all bankruptcy petitions (voluntary or involuntary) which have been filed by or against the Proposer, its parent or subsidiaries, or predecessor organizations during the past five (5) years. Include in the description the disposition of each such petition.

N/A

15. Equipment

Provide details of the equipment you or your subcontractor will use in this project.

Equipment	Own	Rent	Purchase
SKID STEER		X	
FRONT END LOADER	X		
EXCAVATOR	X		
LULL TELEHANDLER		X	
DUMP TRUCK	X		

NOTE: If more space is needed, additional pages can be added. Simply attach or insert extra pages at the end of this document and label them clearly as continuation pages. For best results, ensure consistent formatting (font, margins, headers) across all pages to maintain a cohesive, professional appearance.

The Bidder acknowledges and understands that the information contained in response to this Qualification Statement shall be relied upon by the City of Pompano Beach, Florida, in awarding the contract, and such information is warranted by the Bidder to be true. The discovery of any omission or misstatement that materially affects the Bidder's qualifications to perform under the contract shall cause the City to reject the Bid, and if, after the award, to cancel and terminate the award and/or contract.

JUSTEN SHIFF | PRESIDENT
Print Name/Title

04.29.26
Date:

Signature

JDS@SHIFF.COM
Email:

ATTACHMENT G – WORKERS' COMPENSATION AFFIDAVIT

THE CITY OF POMPANO BEACH, FLORIDA

WORKERS' COMPENSATION AFFIDAVIT

CERTIFICATION OF NUMBER OF EMPLOYEES

(Complete only if your firm has less than four (4) employees)

N/A _____ (Company Name) hereby certifies and affirms that the entity named herein has less than four (4) employees nor uses any subcontractor(s) with four (4) or more employees and will not have four (4) or more employees during the term of this contract.

I further certify that, if during the period covered by this affidavit, the entity named herein becomes an employer with four (4) or more employees or uses subcontractor(s) with four (4) or more employees, a Certificate of Insurance shall be provided to the City of Pompano Beach, within five (5) business days.

With respect to the construction industry, all employment in which one (1) or more employees are employed shall provide evidence of Workers' Compensation coverage.

Under penalties of perjury, I declare that I have read the foregoing WORKERS' COMPENSATION AFFIDAVIT and that the facts stated in it are true.

Electronic or handwritten signature:

_____

Print/Type Name: _____

Title: _____

ATTACHMENT K: CONSTRUCTION PROJECT REFERENCE SHEET

INSTRUCTIONS

Submission of this form is mandatory. Failure to comply with the requirements of this solicitation may result in the submittal being deemed non-responsive and the Bidder or Proposer being deemed non-responsible and/or disqualified.

The Bidder must submit three (3) completed Construction Projects and Reference Sheets demonstrating relevant experience.

Project Requirements

To be considered responsive and responsible, each project must meet the following minimum requirements:

Evidence that the Bidder successfully completed at least three (3) projects within the past ten (10) years of similar scope, magnitude, and complexity to the project described in this ITB.

Required Project Information

Each submitted project must include:

- Project name and location
- Description of work performed (including project scope and major trades overseen)
- Original and final contract amounts
- Original and actual completion dates
- Identification of delays or change orders (if applicable)
- Explanation of relevance to this Project

Project Reference Requirements

Each project must include at least one (1) verifiable client reference, including:

- Name and title
- Company / Agency
- Phone number
- Email address

Verification of References

- The City may, but is not obligated to, contact any references provided
- Contact, if made, may be conducted by phone, email, or other reasonable means, at the City's discretion
- Failure to provide verifiable references or failure of references to respond may result in the Bidder being deemed non-responsible
- The City may attempt to contact references up to three (3) times, but failure to do so shall not limit the City's ability to evaluate the Bidder

City Discretion / Waiver

The City reserves the right, at its sole discretion, to:

- Waive reference verification requirements
- Rely on the City's internal performance records
- Consider any other reliable information regarding the Bidder's past performance

Evaluation of Experience

The City will evaluate:

- Similarity of past projects bidder
- Performance (schedule, budget, quality)
- Reference feedback (if obtained)
- Overall ability to successfully perform the Work
- Subcontractor experience for major components of the work

The City reserves the right to deem a Bidder non-responsible if:

- Projects do not meet minimum requirements
- References are unsatisfactory or unverifiable
- Information provided is incomplete, inaccurate, or misleading

ATTACHMENT K: CONSTRUCTION PROJECT REFERENCE SHEET

Project/Reference Number 1

Project Name: YOUTH SPORTS PARK COMPLEX
Project Location (City, State): 700 NE 10TH STREET - POMPANO BEACH, FLORIDA 33060
Owner / Client Name (Agency or Company): CITY OF POMPANO BEACH

Was the Bidder the Prime Contractor (if applicable as a requirement in the Solicitation)?
☒ Yes ☐ No ☐ N/A
Description of Work (Include scope, major trades, and relevance to this project): 10.5 ACRES NEW PARK FACILITY. TWO FULL SIZE TURF SYNTHETIC TURF MULTISPORT FIELDS, TWO LASER GRADED NATURAL TURF MULTISPORTS FIELS, CONSTRUCTION OF 4000sf PARK BUILDING INCLUDING COVERED PATIO, RESTROOM, & CONCESSIONS, INCLUDES ALL MAJOR TRADES, PARKING LOT, TREES & LANDSCAPE, ASPHALT, STREET LIGHTING, SIDEWALKS, MONUMENT SIGNS, AND BENCHES.

Original Contract Amount of portion of scope performed by the bidder ($): $6,391.071.16
Final Contract Amount of portion of scope performed by the bidder ($): $6,355,476.46

Original Contract Duration and Completion Date for the portion of work performed by the bidder: 90-day CMAR, followed by construction; August 2023
Actual Final Duration and Completion Date for the portion of work performed by the bidder: 29 MONTHS | AUGUST 2023

Were there any delays or change orders relative to work performed or overseen by the bidder?
☐ No ☒ Yes → If yes, briefly explain: COVID PRICE INCREASE | CITY Direct Purchase Order - SPORTS LIGHTING

Owner / Client Reference Name: FERNAND THONY
Title: GO BOND DIRECTOR
Phone Number: 954-928-5248
Email Address: FERNAND.THONY@COPBFL.COM
Best Time to Contact Reference: MON-THUR 7:00 AM - 6:00 PM

FOR INTERNAL USE ONLY (CITY)

1. Did the bidder serve as the prime contractor on this project?
☐ Yes ☐ No

2. Was the portion of work performed by the bidder similar in scope, size, and complexity to the scope in this bid?
☐ Yes ☐ No

3. Was the project completed on time?
☐ Yes ☐ No ☐ With delays (explain): _____

4. Was the project completed within budget or with reasonable change order management?
☐ Yes ☐ No ☐ Acceptable with minor changes

5. Was the contractor responsive and professional throughout the project?
☐ Yes ☐ No

6. Did the contractor maintain adequate staffing, supervision, and coordination?
☐ Yes ☐ No

7. Were there any significant disputes, claims, defaults, or performance issues?
☐ No ☐ Yes → If yes, explain: _____

8. Was the project completed to the Owner's satisfaction?
☐ Yes ☐ No

9. Would you use this contractor again?
☐ Yes ☐ No ☐ Maybe

Overall Reference Rating: ☐ Excellent ☐ Good ☐ Fair ☐ Poor

Checked By (Name, Date, and Time)	Emailed	Call 1	Call 2	Call 3

ATTACHMENT K: CONSTRUCTION PROJECT REFERENCE SHEET

Project/Reference Number 2

Project Name: PATCH REEF PARK PLAYGROUND
Project Location (City, State): 2000 WEST YAMATO ROAD - BOCA RATON, FLORIDA 33431
Owner / Client Name (Agency or Company): GREATER BOCA RATON BEACH DISTRICT
Was the Bidder the Prime Contractor (if applicable as a requirement in the Solicitation)?
☒ Yes ☐ No ☐ N/A
Description of Work:
(Include scope, major trades, and relevance to this project)

PLAYGROUND CONSTRUCTION: REPLACE EXISTING PLAYGROUND, SPLASH PAD, RESTROOM BUILIDNG, LANDSCAPING, ALL MAJOR TRADES, INCLUDING ROOF, MECHANICAL, ELECTRICAL, PLUMBING.

Original Contract Amount of portion of scope performed by the bidder ($): $3,848.376.48
Final Contract Amount of portion of scope performed by the bidder ($): $3,919,738.54

Original Contract Duration and Completion Date for the portion of work performed by the bidder: 8 months, June 2025
Actual Final Duration and Completion Date for the portion of work performed by the bidder: 7 MONTHS | MAY 2025

Were there any delays or change orders relative to work performed or overseen by the bidder?
☐ No ☒ Yes → If yes, briefly explain: SPLASH PAD SURFACE CHANGE | CONDUIT FOR CCTV | ONE SWING REMOVED FROM ORIGINAL DESIGN

Owner / Client Reference Name: MELISSA DAWSON
Title: FACILITIES MANAGER
Phone Number: 561-706-5677
Email Address: MDAWSON@MYBOCAPARKS.ORG
Best Time to Contact Reference: MON-FRI 8AM - 4 PM

FOR INTERNAL USE ONLY (CITY)

1. Did the bidder serve as the prime contractor on this project?
☐ Yes ☐ No

2. Was the portion of work performed by the bidder similar in scope, size, and complexity to the scope in this bid?
☐ Yes ☐ No

3. Was the project completed on time?
☐ Yes ☐ No ☐ With delays (explain): _____

4. Was the project completed within budget or with reasonable change order management?
☐ Yes ☐ No ☐ Acceptable with minor changes

5. Was the contractor responsive and professional throughout the project?
☐ Yes ☐ No

6. Did the contractor maintain adequate staffing, supervision, and coordination?
☐ Yes ☐ No

7. Were there any significant disputes, claims, defaults, or performance issues?
☐ No ☐ Yes → If yes, explain: _____

8. Was the project completed to the Owner's satisfaction?
☐ Yes ☐ No

9. Would you use this contractor again?
☐ Yes ☐ No ☐ Maybe

Overall Reference Rating: ☐ Excellent ☐ Good ☐ Fair ☐ Poor

Checked By (Name, Date, and Time)	Emailed	Call 1	Call 2	Call 3

ATTACHMENT K: CONSTRUCTION PROJECT REFERENCE SHEET

Project/Reference Number 3

Project Name: JIMMY EVERT TENNIS CENTER (JETC)
Project Location (City, State): 1000 E SUNRISE BLVD - FORT LAUDERDLAE 33304
Owner / Client Name (Agency or Company): CITY OF FORT LAUDERDALE
Was the Bidder the Prime Contractor (if applicable as a requirement in the Solicitation)?
☒ Yes ☐ No ☐ N/A
Description of Work:
(Include scope, major trades, and relevance to this project) A PREMIER TENNIS FACILTIY FEATURING 700 SEAT STADIUM WITH NEW CONSTRUCTION OF 20 CLAY COURTS WITH STATE OF THE ART SUBSURFACE IRRIGATION. THE COMPLEX INCLUDES ENCHANCED LIGHTING WITH UPGRADED AMENITIES SUCH AS 13 NEW SHADE STRUCTURES, 40 BENCHES, ALUMINUM BLEACHERS, MODERN SCOREBOARDS. ADDITIONAL IMPROVEMENTS INCLUDE UPGRADED PATHWAYS, NEW FENCING, FULLY RENOVATED RESTROOMS, & PROF LANDSCAPING.
Original Contract Amount of portion of scope performed by the bidder ($): $7,121,239.53
Final Contract Amount of portion of scope performed by the bidder ($): $7,790,958.88

Original Contract Duration and Completion Date for the portion of work performed by the bidder: 9 Months, October 2025
Actual Final Duration and Completion Date for the portion of work performed by the bidder: 9 MONTHS | OCTOBER 2025

Were there any delays or change orders relative to work performed or overseen by the bidder?
☐ No ☒ Yes → If yes, briefly explain: PAINT EXISTING ROOF | ADDITIONAL DRAINAGE | ADDITIONAL CONCRETE SCOPE

Owner / Client Reference Name: MARC ISAAC
Title: PROJECT MANAGER
Phone Number: 954-828-8230
Email Address: MISAAC@FORTLAUDERDALE.GOV
Best Time to Contact Reference: MON-FRI 8AM-4PM

FOR INTERNAL USE ONLY (CITY)

1. Did the bidder serve as the prime contractor on this project?
☐ Yes ☐ No

2. Was the portion of work performed by the bidder similar in scope, size, and complexity to the scope in this bid?
☐ Yes ☐ No

3. Was the project completed on time?
☐ Yes ☐ No ☐ With delays (explain): _____

4. Was the project completed within budget or with reasonable change order management?
☐ Yes ☐ No ☐ Acceptable with minor changes

5. Was the contractor responsive and professional throughout the project?
☐ Yes ☐ No

6. Did the contractor maintain adequate staffing, supervision, and coordination?
☐ Yes ☐ No

7. Were there any significant disputes, claims, defaults, or performance issues?
☐ No ☐ Yes → If yes, explain: _____

8. Was the project completed to the Owner's satisfaction?
☐ Yes ☐ No

9. Would you use this contractor again?
☐ Yes ☐ No ☐ Maybe

Overall Reference Rating: ☐ Excellent ☐ Good ☐ Fair ☐ Poor

Checked By (Name, Date, and Time)	Emailed	Call 1	Call 2	Call 3

SHIFF
CONSTRUCTION + DEVELOPMENT

LITIGATION HISTORY FORM

Case(s) are disclosed below:

Shiff Construction & Development, Inc. vs. National Shell Contractors, LLC

Parent Company – Shiff Construction & Development, Inc.
Vendor – Defandant
Case # CACE23019924
Jurisdiction of Filing: Florida; Broward County
Type of Case: Civil
Claim or cause of action and brief description of each count: Contract Dispute & Indebtness
Brief description of the subject matter and the project involved: Project Name: Deerfield Beach Center for Active Aging - Subcontractor price dispute
Disposition of Case : Settled
Vendor Name: National Shell Contracting, LLC
Disposition of Case: Settled

Shiff Construction & Development, Inc. vs. City of North Miami Beach

Shiff Construction & Development, Inc.- Plaintiff
City of North Miami Beach – Defendant
Type of Case: Civil
Description: Disputed Bid Protest
Jurisdiction of Filing: Florida; Miami-Dade County
Case # 2026-002173-CA-01
Disposition of Case: April 2026 Pending

Shiff Construction & Development Inc. has not been debarred or suspended from bidding or proposing on a procurement project by any government entity during the last five (5) years.

Exhibit “C” – Cover Page

1. General Conditions

Exhibit C
General Conditions

ARTICLE 1. DEFINITIONS.

1.01 **The Contract Documents:** The Contract Documents consist of the Agreement Form, Addenda, Supplementary Conditions, General Conditions, Documents contained in the Project Manual, Drawings, Plans, Specifications, and all modifications issued after execution of the Contract and all documents as defined in Article 9., "CONTRACT DOCUMENTS", of the Construction Agreement.

1.02 **The Owner, the Contractor, and the Project Consultant:** are those mentioned as such in the Contract Documents.

1.02.01 **Owner**: The City of Pompano Beach, Florida, (also referred to as the "City").

1.02.02 **Contractor**: The "party of the second part" to the Contract. The person, firm or corporation with whom a contract has been made with the Owner for the performance of the Work defined by the Contract Documents.

1.02.03 **Project Consultant:** The individual, partnership, corporation, association, joint venture, or any combination thereof, of properly registered professional architects, engineers or other design professionals who has entered into a contract with the Owner to provide professional services for development of the design and Contract Documents for the Work of this Project and provide Construction Contract Administration as described in the Contract Documents.

1.03 **City Engineer:** City Engineer of the City of Pompano Beach, Florida.

1.04 **Final Completion**: Means that date subsequent to the date of Substantial Completion at which time the Contractor has completed all of the Work (or designated portion thereof) in accordance with the Contract Documents as certified by the Project Consultant and/or approved by the Owner. In addition, Final Completion shall not be deemed to have occurred until any and all governmental bodies, boards, entities, etc., which regulate or have jurisdiction of the Work, have inspected, approved and certified the Work.

1.06 **Inspector:** An employee(s) of The City of Pompano Beach, Florida, referred to hereinafter as the "**Inspector,**" who(m) is/are assigned by the City Engineer to periodically inspect the Project during the construction process, and who assist(s) the City Engineer in reviewing field performance and its compliance with the Contract Documents.

1.06.01 **Resident Inspector:** An employee or subconsultant of the **Project Consultant** employed to perform either periodic or full-time specific inspection duties.

1.07 **Other Contractors**: Any person, firm or corporation with whom a Contract has been made by the Owner for the performance of any work on the site, which work is not a portion of the Work covered by the Contract.

1.08 **Owner's Representative**: The City Official who has been delegated responsibility by the City Manager to act as the City's project coordinator. (In most cases, the City Engineer shall be assigned this duty.)

1.09 **Phase**: A designated subdivision of the Work, usually with its own requirements for Substantial and Final Completion, and liquidated damages. A Phase may be designated for completion by the Owner's own forces, or by Other Contractors.

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

1.11 **Punch List**: A list of items of work required to render complete, satisfactory, and acceptable the construction services provided for in the Contract Documents and created pursuant to Florida Statute 218.735(7)(a).

1.12 **Subcontractor**: A person or entity other than a materialman or laborer who enters into a Contract with Contractor for the performance of any part of Contractor's Work. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

1.13 **Sub-subcontractor**: A person or entity other than a materialman or laborer who enters into a contract with a Subcontractor for the performance of any part of such Subcontractor's contract. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor. The term "Sub-subcontractor" does not include separate subcontractors of a separate contractor.

1.14 **Submittals**: Are prepared by the Contractor or those working on his behalf (subcontractors, material suppliers, and others) to show how a particular aspect of the Work is to be fabricated and installed. The Contractor's submittals include shop drawings, product data, samples, mock-ups, test results, warranties, maintenance agreements, workmanship bonds, project photographs, record documents, field measurement data, operating and maintenance manuals, reports, certifications, periodic and final “as-builts”, surveys, videos and other types of information described in the specifications.

1.15 **Substantial Completion**: The term Substantial Completion as used herein, shall mean that point at which, as certified in writing by the Project Consultant, the Work, or a designated portion thereof, is at a level of completion in substantial compliance with the Contract Documents such that the Owner or its designee can enjoy use or occupancy and can use or operate it in all respects for its intended purpose. In the event the Work includes more than one Phase, the Owner, at its discretion, may set Substantial Completion dates for each Phase and may impose provisions for liquidated damages for each Phase.

1.16 **Subconsultant:** A person or organization of properly registered professional architects, engineers or other design professionals who has entered an agreement with the Project Consultant to furnish professional services in support of the Project Consultants agreement with the Owner.

1.17 **Superintendent**: The executive representative for the Contractor present on the work at all times during progress, authorized to receive and fulfill instructions from the Owner and the Project Consultant and capable of superintending the work efficiently.

1.18 **Work**: The totality of the obligations, including construction and other services, imposed on the Contractor by the Contract Documents, whether completed or partially completed, and including all labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

1.19 **Written Notice**: Shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, if delivered at or sent by certified mail or other traceable delivery service to the last business address known to him who gives notice. Trackable electronic transmissions shall also be considered as written notice.

ARTICLE 2. THE WORK.

2.01 The Contractor shall perform all of the Work required by the Contract Documents and shall provide materials, supplies, tools, equipment, labor and services directly related to the Work, and shall perform the Work in a good and workmanlike manner with sufficient manpower to perform the Work in accordance with the time requirements set forth in the Contract Documents, and shall perform all other acts and supply all other things necessary to complete the Work in strict accordance with the Contract Documents.

2.02 When completed the Work shall conform to the requirements of the Contract Documents and be completely ready for occupancy and finally completed.

2.03 The Contractor represents and warrants to the Owner that:

2.03.01 It is financially solvent and has sufficient working capital to perform the obligations under this Construction Contract;

2.03.02 It is experienced and skilled in the construction of the type of project described in the Contract Document;

2.03.03 It is able to provide the labor, materials, equipment and machinery necessary to complete the Work for the agreed upon price;

2.03.04 It is fully licensed under all applicable laws and authorized to do business in the State of Florida in the name of the entity identified as the "Contractor" in the Construction Contract, and is legally permitted to perform all the work set forth in this Construction Contract.

2.03.05 It has visited the jobsite and examined its nature and location, including without limitation: the surface conditions of the site and any structure or obstruction both natural or man-made; the surface water conditions and water ways of the site and surrounding area; the subsurface conditions of the land as disclosed by soil test borings; and the location of electric and utility lines and water, sanitary, sewer and storm drain lines, as well as site ingress and egress. The Contractor acknowledges receipt and has reviewed the site geotechnical report provided for the Owner.

2.03.06 It will comply with all federal, state and local governmental laws, rules and regulations relating to its responsibilities as set forth in the Contract Documents.

ARTICLE 3. COORDINATION AND CORRELATION OF DRAWINGS AND SPECIFICATIONS.

3.01 The Contractor represents that:

3.01.01 The Contractor and Subcontractors have fully examined and compared all Drawings, Specifications and other Contract Documents including but not limited to those relating to the architectural, structural, mechanical, electrical, civil engineering and plumbing elements and have compared and reviewed all general and specific details on the Drawings and the various technical and administrative requirements of the Specifications.

3.01.02 All construction materials, labor, methods, means, techniques, sequences and procedures required to carry out the Work, all safety precautions and programs required in connection with carrying out the Work, all conflicts, discrepancies, errors and omissions that Contractor is aware of as a result of the examination and comparison of the Contract Documents have been either corrected or clarified to the satisfaction of the Contractor prior to execution of this Construction Contract.

3.01.03 The Contract Sum is reasonable compensation and represents the total lump sum cost for the Work and that all systems and Work shall be functional and in accordance with the requirements of the Contract Documents.

3.01.04 The Contract Time is adequate for the performance of the Work.

3.02 The Contractor is responsible for all means, methods, techniques and sequencing of construction.

3.03 If, after execution of this Construction Contract, the Contractor detects a conflict, discrepancy, error or omission in the Contract Documents then it shall immediately notify Project Consultant and Owner prior to proceeding with the specific portion of the Work.

ARTICLE 4. INTENT AND INTERPRETATION.

4.01 With the respect to the intent and interpretation of this Contract, the Owner and the Contractor agree as follows:

4.01.01 The Contractor shall have a continuing duty to read, examine, review, compare and contrast each of the documents which make up this Contract and shall immediately give written notice to the Owner and the Project Consultant of any conflict, ambiguity, error or omission which the Contractor may find with respect to these documents before proceeding with the affected Work.

4.01.02 The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all.

4.01.03 The intent of the Contract Documents is to include all labor, materials, equipment services and transportation necessary for the proper execution of the Work. The Contractor shall continually refer to drawing, specifications and other Contract Documents in this regard.

4.01.04 In the event of a conflict among the Contract Documents, the most stringent requirement to the Contractor shall control.

4.02 The Project Consultant shall be the initial interpreter of the requirements of the Contract Documents and the judge of the performance thereunder.

4.02.01 The Project Consultant shall render interpretations necessary for the proper execution or progress of the Work with reasonable promptness on written request of either the Owner or the Contractor, and shall render written decisions, within a reasonable time, on all claims, disputes, change order requests, substitution requests, requests for interpretation and other matters in question between the Owner and the Contractor relating to the execution or progress of the Work or the interpretation of the Contract Documents.

4.02.02 Interpretations and decisions of the Project Consultant shall be consistent with the intent of and reasonably inferable from the Contract Documents.

4.02.03 In the capacity of interpreter the Project Consultant shall endeavor to secure faithful performance by both the Owner and the Contractor, and shall not show partiality to either.

ARTICLE 5. OWNERSHIP OF THE CONTRACT DOCUMENTS WHICH MAKE UP THE CONTRACT

5.01 Subject to any rights the Project Consultant may have, the Contract Documents and each of them, as well as any other documents, intellectual property, software, computer-assisted material or disks relating to or regarding the Work, shall be and remain the property of the Owner. This shall be the case even if prepared, created or provided by the Project Consultant, Contractor, Subcontractor or others.

5.02 The Contractor shall have the right to keep copies of same upon completion of the Work; provided, however, that in no event shall the Contractor use, or permit to be used, any portion or all of same on other projects without the Owner's prior written authorization.

5.03 The Contractor agrees to provide any and all items referred to in this Paragraph to Owner upon demand by Owner. In the event Contractor fails to provide same to Owner as demanded, Contractor acknowledges that the Owner will need same and will be irreparably harmed and be subject to an injunction to provide same.

ARTICLE 6. TEMPORARY UTILITIES.

6.01 Water For Execution of the Work: The Contractor shall provide temporary water lines sufficient to supply all water needed for the construction and other services required by the Contract Documents and shall pay for all service connections and water used by the Contractor or Subcontractors unless the contrary is provided for elsewhere in the Contract Documents.

6.02 Electrical Energy: The Contractor shall provide temporary electrical energy and power lines sufficient to supply all electricity needed for the construction and other services required by the Contract Documents and shall pay for all service connections and electricity used by the Contractor or Subcontractors unless the contrary is provided for elsewhere in the Contract Documents.

6.03 Temporary Sanitary Facilities and Sewers:

6.03.01 The Contractor shall provide and maintain in a neat and sanitary condition such accommodations and facilities for the use of his employees as may be necessary to comply with the regulations of any governmental agencies, departments, etc. which address or govern these issues.

6.03.02 No nuisance will be permitted.

6.03.03 Upon completion of Work, such facilities shall be removed and the premises left in a sanitary condition.

6.03.04 Contractor is not permitted to use restrooms or other sanitary facilities within the Owner's existing building or on-site facilities unless the contrary is provided for elsewhere in the Contract Documents.

ARTICLE 7. PROGRESS.

7.01 Contractor shall provide the Owner with full information in advance as to its plans for performing each part of the Work. This shall include, but not be limited to, schedules provided to the Owner as Post-Award Information and subsequently updated schedules submitted to the Owner on a monthly basis as required in Article 10 below, as a condition precedent to payment(s).

7.01.01 Such schedule shall be in a form acceptable to the Owner.

7.01.02 The Contractor's schedule shall be updated no less frequently than monthly (unless the parties otherwise agree in writing) and shall be updated to reflect conditions encountered from time to time and shall apply to the total Project.

7.01.03 Each such revision shall be provided to the Owner and the Project Consultant.

7.01.04 Compliance with the requirements of this Subparagraph shall be a condition precedent to payment to the Contractor, and failure by the Contractor to comply with said requirements shall constitute a material breach of this Contract.

7.01.05 By providing these Schedules to Owner, Owner does not in any way acknowledge or consent that the Schedules are acceptable or reasonable, but it is simply reviewing same for its own informational purposes.

7.02 If at any time during the progress of Work, the Contractor's actual progress is inadequate to meet the requirements of the Contract Documents, such as the required completion dates, the Owner may so notify Contractor who shall thereupon take such steps as may be necessary to improve its progress so as to complete the Work on or before the required Substantial Completion Date.

7.02.01 If within a reasonable period as determined by Owner, the Contractor does not improve performance to meet the requirements of the Contract Documents, such as the required completion dates, then the Owner may require an increase in any or all of the following: Contractor's Subcontractor crews and Contractor's own labor force, the number of shifts, overtime operation, Contractor's supervision and additional days of work per week, all without cost to Owner.

7.02.02 Neither such notice by Owner nor Owner's failure to issue such notice shall relieve Contractor of its obligation to achieve the quality of work and rate of progress required by the Contract Documents.

7.03 Failure of Contractor to comply with the instructions of the Owner may be grounds for determination by Owner that Contractor is not prosecuting its Work with such diligence as will assure completion within the time specified.

7.04 Upon such determination, Owner, in addition to any and all other rights set forth in the Contract Documents and remedies afforded Owner under the Contract Documents or at law, may:

7.04.01 Elect to proceed with the Work with its own employees, agents, contractors, subcontractors, suppliers and assess all costs, expenses or fees for same against contractors and/or

7.04.02 Terminate for cause Contractor's right to proceed with the performance pursuant to the Contract Documents, or any separable part thereof, in accordance with the applicable provisions of the Contract Documents.

ARTICLE 8. EXPEDITING

8.01 The Work, equipment and material provided under this Contract may be subject to expediting by Owner.

8.02 Owner shall be allowed reasonable access to the shops, factories and other places of business of the Contractor and/or Subcontractors for expediting purposes.

8.03 As required by Owner, Contractor shall supply schedules and progress reports for Owner's use in expediting, and Contractor shall cooperate with Owner and require Subcontractors to cooperate with Owner in such expediting.

8.04 Any expediting performance by Owner shall not relieve Contractor of its sole and primary responsibility for timeliness of delivery of the equipment and material to be provided under the Contract Document.

ARTICLE 9. COMPLETION

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

9.01.01 For a Project with an estimated cost of less than million, the Punch List shall be completed within thirty (30) calendar days after Substantial Completion of the Project, as same is defined in the Contract Documents. If Substantial Completion is not defined in the Contract Documents, the list shall be completed upon reaching beneficial occupancy or use.

9.01.02 For a Project with an estimated cost of million or more, the Punch List shall be completed within thirty (30) calendar days, unless otherwise extended elsewhere in the Contract Documents, but not to exceed sixty (60) calendar days, after reaching Substantial Completion, as same is defined in the Contract Documents. If Substantial Completion is not defined in the Contract Documents, the list shall be completed upon reaching beneficial occupancy or use.

9.02 For a Project involving the construction of more than one building or structure, or involving a multiphase project, a Punch List shall be created for each building, structure, or phase of the Project pursuant to the limitations provided for above in 9.01.01 and 9.01.02, as applicable.

9.03 The failure to include any corrective work or pending items not yet completed on the List does not alter the responsibility of the Contractor to complete all the construction services purchased pursuant to the contract. All items that require correction under the Contract Documents and that are identified after the preparation and delivery of the Punch List remain the obligation of the Contractor as defined by the Contract Documents.

9.04 Upon completion of all of the items on the Punch List, the Contractor may submit a payment request for all remaining retainage withheld by the local governmental entity pursuant to this section. If a good faith dispute exists as to whether one or more items identified on the list have been completed pursuant to the Contract Documents, the Owner may continue to withhold an amount not to exceed 150 percent of the total costs to complete the outstanding item.

9.05 In the event that the Contractor fails, in whole or in part, to comply with the obligations and responsibilities required hereunder in paragraph 9.01, the Owner need not pay or process any payment request for remaining retainage.

ARTICLE 10. CONTRACT PAYMENTS

10.01 Schedule of Values:

10.01.01 The Contractor shall maintain and update the Schedule of Values originally provided to the Owner as Post-Award Information.

10.01.02 The Contractor's Schedule of Values apportions the Contract Price among the different elements of the required Work for purposes of periodic and final payments and shall be submitted as detail in support of the Contractor's monthly Application for Payment.

10.01.03 The Schedule of values shall be presented with such detail, and supported with whatever information the Project Consultant or the Owner reasonably requests.

10.01.04 The Contractor shall not imbalance its Schedule of Values nor artificially inflate or exaggerate any element thereof. Contractor's failure to comply with this provision shall be grounds for Owner to terminate Contractor, as provided for elsewhere herein.

10.02 The Owner shall pay the Contract Price to the Contractor in accordance with the procedures provided herein.

10.02.01 On or before the **15th** day of each month after commencement of performance, but no more frequently than once monthly, the Contractor may submit an Application for Payment to the Owner for the period ending the last day of the previous month or other pay period as mutually defined and agreed to by the Contractor and Owner and as provided for in the Contract Documents. The Contractor shall also deliver a copy of the Application for Payment to the Project Consultant.

10.02.02 Said Application for Payment shall be in the format required elsewhere in the Contract Documents and include whatever supporting information as may be required by the Project Consultant, the Owner, or both.

10.02.03 The Owner shall not be required to pay for stored materials or equipment except as set forth in Article 25 below.

10.02.04 Each Application for Payment shall be signed by the Contractor and shall constitute the Contractor's representation that the quantity of work has reached the level for which payment is requested, that the Work has been properly installed or performed in substantial compliance with the requirements of the Contract Documents, and that the Contractor knows of no reason why payment should not be made as requested.

10.02.05 Upon receipt of the Application for Payment, the Project Consultant shall:

a. Within ten (10) days, review the Application for Payment and may also review the Work at the Project site or elsewhere to determine whether the quantity and quality of the Work is as represented in the Application for Payment and is as required by the Contract Documents.

b. Approve in writing the amount which, in the opinion of the Project Consultant, is properly owing to the Contractor.

10.02.06 The Owner shall make payment to the Contractor within fifteen (15) days following the Project Consultant's written approval of the Application for Payment but in no event later than twenty-five (25) days after the invoice was received by the Owner.

10.02.07 The Owner may reject the Application for Payment within twenty (20) business days after the date on which the Application for Payment is stamped as received. The rejection shall be in writing and shall specify the deficiency in the payment request or invoice and the action necessary to make the payment request or invoice proper.

10.02.08 If the Owner disputes a portion of an Application for Payment, the undisputed portion must be timely paid.

10.02.09 The Contractor may submit a corrected Application for Payment which corrects the deficiency or deficiencies specified in writing by the Owner. The Owner shall either pay or reject the corrected Application for Payment within ten (10) business days after receipt of same.

10.02.10 If a dispute regarding the Application for Payment cannot be resolved pursuant to the process outlined herein, it must be resolved in accordance with the dispute resolution procedures outlined in Article 45.

10.02.11 The amount of each monthly payment shall be the amount approved for payment by the Project Consultant less such amounts, if any, otherwise owing by the Contractor to the Owner or which the Owner shall have the right to withhold as authorized by the Contract Documents or reasonable business practices. In the event of a dispute with regard to a portion of the Application for Payment, the Owner shall pay the undisputed portion pursuant to the timeline established in this Section.

10.02.12 The Project Consultant's approval of the Contractor's Applications for Payment shall not preclude the Owner from the exercise of any of its rights as set forth in the Contract Documents.

10.02.13 The submission by the Contractor of an Application for Payment also constitutes an affirmative representation and warranty that all Work for which the Owner has previously paid is free and clear of any lien, claim, or other encumbrance by any person whatsoever.

10.02.14 As a condition precedent to payment, the Contractor shall, as required elsewhere in the Contract Documents and as required by the Owner, also provide to the Owner documents relating to the Project, including but not limited to, updated schedules and daily logs, properly executed documents that all subcontractors, materialmen, suppliers or others having rights, acknowledge receipt of all sums due pursuant to all prior Payment Requests and waive and relinquish any rights or other claims of any nature relating to the Project.

10.02.15 Furthermore, the Contractor warrants and represent that, upon payment of the Application for Payment submitted, title to all work included in such payment shall be vested in the Owner.

10.02.16 Dollar Value/Time Graphs: Each of the Contractor’s Application for Payment shall be accompanied by a graph, prepared by the Contractor, that consecutively tracks the percentage of completion of both the Application for Payment’s dollar value attained and the contract time (calendar days) elapsed, all coinciding with the date of the Application for Payment.

10.03 When payment is received from the Owner, the Contractor shall within five (5) days pay all subcontractors, materialmen, laborers and suppliers the amounts they are due for all work covered by such payment. In the event such payments are not made in a timely manner the Owner may, in its discretion, invoke reasonable procedures in order to protect Owner's interest or Owner's desire to assist in having subcontractors, laborers, suppliers, materialmen or others paid.

10.04 It is mutually agreed that payments made under this Contract shall not constitute acceptance of defective or improper materials or workmanship nor shall same act as a waiver or release of future performance in accordance with the Contract Documents.

ARTICLE 11. WITHHOLDING PAYMENT TO CONTRACTOR

11.01 The Owner may withhold as retainage five (5) percent of the payment owed to the Contractor until completion of the Project.

11.02 If the City pays the retainage amount upon the Contractor's request which is attributable to the labor, services, or materials supplied by one or more contractors or suppliers, the Contractor shall timely remit payment of such retainage to those subcontractors or suppliers.

11.03 Regardless of the provisions in this Article, in no event shall the Owner be required to pay or release any amounts that are the subject of a good faith dispute, a claim brought pursuant to Fla. Stat. § 255.05, or otherwise the subject of a claim or demand by the Owner.

11.04 In addition to the Retainage, payments, including but not limited to Final Payment, may be withheld or reduced by the Owner in its sole discretion if any of the following exists:

11.04.01 The Work is not proceeding in accordance with the Construction Documents Schedule as anticipated by the Project Consultant or the Owner. In that event, the Project Consultant or the Owner will assess the anticipated delay and the Owner will use the amounts specified for Liquidated Damages as the basis for amounts withheld. Said funds shall be held until such time as the Project Consultant or Owner determine that the Work is back on schedule. By making said funds available to Contractor, Owner does not waive its right to assess liquidated damages at the completion of the Project;

11.04.02 Liquidated Damages as set forth in this Contract;

11.04.03 Defective Work unremedied;

11.04.04 Punch-List items unremedied;

11.04.05 Subject to Owner's written notice to Contractor in accordance with the Contract Documents back charge items for work performed by Owner or another contractor at the request of Owner, which work is within the scope of the Work under this Construction Contract;

11.04.06 Claims filed by subcontractors, laborers, suppliers, materialmen or others;

11.04.07 Failure to comply with any and all insurance requirements;

11.04.08 Failure of the Contractor to make payment properly to Subcontractors or others;

11.04.09 Damage to the Owner or another contractor;

11.04.10 Reasonable evidence that the Work will not be completed on or before the Substantial Completion or Final Completion Date;

11.04.11 Failure of the Contractor to carry out any of its obligations in accordance with the Contract Documents;

11.04.12 Failure of the Contractor to submit the information or documents required by this Contract or reasonably required by Owner, including but not limited to schedules and daily logs.

ARTICLE 12. CONTRACTOR'S RIGHT UPON NONPAYMENT.

12.01 If within thirty (30) days of the date payment to the Contractor is due, the Owner, without cause or basis hereunder, fails to pay the Contractor any amounts then due and payable to the Contractor, the Contractor shall have the right to cease work until receipt of proper payment after first providing ten (10) days written notice of its intent to cease work to the Owner.

ARTICLE 13. INFORMATION AND MATERIAL SUPPLIED BY THE OWNER.

13.01 The Owner shall furnish to the Contractor, prior to the execution of the Contract, any and all written and tangible material, including but not limited to surveys and other information concerning existing conditions on the Site.

13.02 The Owner shall also furnish, if appropriate, the legal description of the Project site, and any required survey.

ARTICLE 14. LICENSES AND PERMITS.

14.01 All licenses and permits necessary to commence and prosecute the Work to completion shall be procured and paid for by the Contractor, unless expressly provided for elsewhere in the Contract Documents.

14.03 All easements and rights-of-way will be procured and paid for by the Owner unless otherwise specifically provided within the Contract Documents.

ARTICLE 15. CEASE AND DESIST ORDER.

15.01 In the event the Contractor fails or refuses to perform the Work as required herein, the Owner may instruct the Contractor to cease and desist from performing the Work in whole or in part. Upon receipt of such instruction, the Contractor shall immediately cease and desist as instructed by the Owner and shall not proceed further until the cause for the Owner's instructions has been corrected and the Owner instructs that the Work may resume.

15.02 In the event the Owner issues such instruction to cease and desist, and in the further event the Contractor fails and refuses within seven (7) days of receipt of same to provide adequate assurance to the Owner that the cause of such instructions will be eliminated or corrected, then the Owner shall have the right, but not the obligation, to carry out the Work with its own forces, or with the forces of another contractor, and the Contractor shall be fully responsible and liable for the costs of performing such work by the Owner.

15.03 The rights set forth herein are in addition to, and without prejudice to, any other rights or remedies the Owner may have against the Contractor.

ARTICLE 16. DUTIES, OBLIGATIONS AND RESPONSIBILITIES OF THE CONTRACTOR.

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

16.02 The Contractor shall supervise the Work and bear full responsibility for any and all acts or omissions of those engaged in the Work on behalf of the Contractor.

16.03 The Contractor hereby warrants that all labor provided under this Contract shall be competent to perform the tasks undertaken, that the product of such labor shall yield only first-class results, that all material and equipment provided shall be new and of high quality, that the Work will be complete, of high quality, without defects, and in compliance with the requirements of the Contract Documents. Any Work not complying with the requirements of this Subparagraph shall constitute a breach of the Contractor's warranty.

16.04 Unless expressly provided for elsewhere in the Contract Documents, the Contractor shall obtain and pay for all required permits, fees, and licenses and shall comply with all legal requirements applicable to the Work.

16.05 The Contractor shall prepare and submit schedules and supporting documentation as required elsewhere in the Contract Documents.

16.06 Record Keeping on Site:

16.06.01 The Contractor shall keep a daily log, an updated copy of the Contract Documents, approved shop drawings and other submittals, and other documents and materials as required by the Contract Documents at the site.

16.06.02 All of these items shall be available to the Owner and the Project Consultant at all regular business hours.

16.06.03 Upon final completion of the Work, all of these items shall be finally updated and provided to the Owner and shall become the property of the Owner.

16.07 Shop Drawings And Other Submittals:

16.07.01 The Contractor shall submit for approval with reasonable promptness and in a timely manner so as to cause no delay in the Work, various submittals including shop drawings as required for the Work of the various trades.

16.07.02 These shop drawings and other submittals shall be in accordance with the requirements of the Contract Documents and shall be carefully checked in every respect and signed by the Contractor before submitting same to the Project Consultant.

16.07.03 Shop drawings and other submittals from the Contractor are not part of the Contract Documents but are documents prepared and utilized by the Contractor to coordinate the Work.

16.07.04 The Contractor shall not do any Work requiring shop drawings or other submittals unless such have been approved in writing by the Project Consultant.

16.07.05 All Work requiring approved shop drawings or other submittal shall be done in compliance with such approved documents. However, approval by the Project Consultant or the Owner shall not be evidence that Work installed pursuant thereto conforms with the requirements of the Contract Documents.

16.07.06 The Owner and the Project Consultant shall have no duty to review partial submittal or incomplete submittal except as may be provided otherwise within the Contract Documents.

16.07.07 The Contractor shall maintain a submittal log which shall include, at a minimum, the date of each submittal, the date of any resubmittal, the date of any approval or rejection, and the reason for any approval or rejection.

16.07.08 The Contractor shall have the duty to carefully review, inspect and examine any and all submittal and resubmittals before submission of same to Owner or the Project Consultant.

16.08 The Contractor shall maintain the Project site in a reasonably clean condition during performance of the Work. Upon final completion, the Contractor shall thoroughly clean the Project site of debris, trash and excess materials or equipment. In the event the Project is located at or near occupied facilities, then Owner may establish additional rules and regulations regarding conditions at the Project, including but not limited to, keeping the Project and the occupied premises clean, safe, and secure.

16.09 At all times, the Contractor shall permit the Owner and the Project Consultant to enter upon the Project site and to review or inspect the Work.

ARTICLE 17. SUBCONTRACTS.

17.01 The Contract Documents make no attempt to fix the scope of the Work of any Subcontractor nor the responsibilities of any such Subcontractor, it being understood that the Contractor shall fix the scope of all Work and responsibilities of the Subcontractor. Contractor shall not replace Subcontractor without good cause.

17.02 The Contractor shall continuously update information concerning Subcontractors submitted to the Owner as Post-Award Information by submitting:

17.02.01 The general form of Subcontract Agreement used by the Contractor within thirty (30) days of execution of the Construction Contract.

17.02.02 Updated listings of Subcontractors denoting changes to the list submitted as Post-Award Information within ten (10) days of said change.

17.02.03 Copies of executed Subcontractor Contracts within ten (10) days of their execution.

17.02.04 A complete accounting of all payments made to Subcontractors and the balances owed to the Subcontractors with each Application For Payment submitted by the Contractor.

17.03 All contracts with Subcontractors shall incorporate by reference the terms and conditions of this Construction Contract.

17.04 The Contractor shall cause and require to be included in all Subcontracts a provision for the benefit of the Owner binding the Subcontractors to remain bound by the Subcontracts in the event the Contractor is replaced by another contractor pursuant to the terms of the Contract Documents. The Contractor shall also include in all Subcontracts a provision requiring the Subcontractor, in the event of the Contractor's termination, to consent to the assignment of their Subcontracts to the Owner.

17.05 The Owner may at any time request from the Subcontractors, or any of them, a sworn statement of account with the Contractor and the Contractor shall cause to be included in all Subcontracts a requirement that the Subcontractors provide said sworn statement upon Owner's request.

17.06 Each Subcontractor and supplier must agree to assign all of its warranties to Owner. In addition, each Subcontractor and supplier must warrant all of its Work, equipment, materials and labor to Owner in accordance with the terms and provisions of its contractual obligations to Contractor and any legal or statutory provisions that apply to its work, materials or equipment.

17.07 Owner may at its discretion require Contractor to have major sub-subcontractors or suppliers comply with the requirements of this Article 16 or other provisions of the Contract Documents.

ARTICLE 18. CONTRACTOR'S SUPERINTENDENT

18.01 Before starting the Work, Contractor shall designate an English speaking, competent, authorized representative (hereinafter Superintendent), acceptable to the Owner, to represent and act for the Contractor. The Contractor shall:

18.01.01 Inform Owner, in writing, of the name and address of such representative together with a clear definition of the scope of his authority to represent and act for Contractor and shall specify any and all limitation on such authority.

18.01.02 Keep the Owner informed of any subsequent changes in the foregoing.

18.02 The Superintendent shall be present (or be temporarily represented by a person familiar with the project work activities and schedule) at the site of the Work at all times when the Work is actually in progress.

18.04 All notices, determinations, instructions and other communications given to the Contractor's Superintendent shall be binding upon the Contractor.

18.05 The Superintendent shall maintain a daily log/report which shall include at least the following information: weather conditions; trades at site; manpower totals by trade; heavy equipment in use; activities in progress;

and inspections at site. Copies of the daily entries shall be provided to the Owner once per month, or as required elsewhere in the Contract Documents.

ARTICLE 19. COOPERATION WITH OTHERS.

19.01 The Owner and other contractors and subcontractors may be working at the site during the performance of the Construction Contract, and Contractor's work may be interfered with as a result of such concurrent activities. Contractor shall fully cooperate with Owner and other contractors to avoid any delay or hindrance of the Work. Owner may require that certain facilities be used concurrently by Contractor and other parties and Contractor shall comply with such requirements.

19.02 If any part of the Contractor's work depends on proper execution or results from any work performed by the Owner or any separate contractor, the Contractor shall, prior to proceeding with the Work, promptly report to the Owner any apparent discrepancies or defects in such work that render it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acceptance of the Owner or separate contractor's work as fit and proper to receive Contractor's Work, except as to defects which may subsequently become apparent in such work performed by others.

ARTICLE 20. SITE CONDITIONS.

20.01 Contractor shall have the sole responsibility to conduct reasonable inspection of the site and to satisfy itself concerning the nature and location of the Work and the general and local conditions, and particularly, but without limitation, with respect to the following: those affecting transportation, access, disposal, handling and storage of material; availability and quality of labor, water and electric power; availability and condition of roads; climatic conditions; location of underground utilities as depicted in the Contract Documents; governmental processes and requirements for obtaining permits other than issuance of the original building permits, certificates of occupancy and other regulatory/utility approvals; physical conditions at the work sites and the Project area as a whole; topography and ground surface conditions; subsurface geology, and nature and quality of surface and subsurface materials to be encountered; equipment and facilities needed preliminary to and during performance of the Construction Contract; and all other matter which can in any way affect performance of the Construction Contract, or the cost associated with such performance.

20.02 The failure of Contractor to acquaint itself with any applicable condition will not relieve it from the responsibility for properly estimating either the duration, difficulties, or the costs of successfully performing the Work.

20.03 Contractor may reasonably rely upon site documentation provided by the Owner. In the event that during the course of the Work Contractor encounters an underground utility facility that was not shown on the Contract Documents; or subsurface or concealed conditions at the Project site which differ materially from those shown on the Contract Documents and from those ordinarily encountered and generally recognized as inherent in work of the character called for in the Contract Documents; or unknown physical conditions of the Project site, of an unusual nature, which differ materially from that ordinarily encountered and generally recognized as inherent in work of the character called for in the Contract Documents, Contractor, without disturbing the conditions and before performing any work affected by such conditions, shall, within forty-eight (48) hours of their discovery, notify Owner and Project Consultant in writing of the existence of the aforesaid conditions. Project Consultant and Owner shall, within two (2) business days after receipt of Contractor’s written notice, investigate the site conditions identified by Contractor. If, in the sole opinion of Project Consultant, the conditions do materially so differ and cause an increase or decrease in Contractor’s cost of, or the time required for, the performance of any part of the Work, whether or not changed as a result of the conditions, Project Consultant shall recommend an equitable adjustment to the Contract Price, or the Contract Time, or both. If Owner and Contractor cannot agree on an adjustment in the Contract price or the Contract time, the adjustment shall be referred to Project Consultant for determination. Should Project Consultant determine that the conditions of the Project site are not so materially different to justify a change in the terms of the Contract, Project Consultant shall so notify Owner and Contractor in writing, stating the reasons, and such determination shall be final and binding upon the parties hereto. No request by Contractor for an equitable adjustment to the Contract under this provision shall be allowed unless Contractor has given

written notice in strict accordance with the provisions of this Article. No request for an equitable adjustment or change to the Contract Price or Contract Time for differing site conditions shall be allowed if made after the date certified by Project Consultant as the date of substantial completion.

ARTICLE 21. RESPONSIBILITY FOR WORK SECURITY.

21.01 Contractor shall at all times conduct, at its expense, all operations under the Construction Contract in a manner to avoid the risk of loss, theft or damage by vandalism, sabotage or other means to any property.

21.01.01 Contractor shall promptly take such reasonable precautions as are necessary and adequate against any conditions which involve risk of a loss, theft or damage to its property.

21.01.02 Contractor shall continuously inspect all of its Work, materials, equipment and facilities to discover and determine any such conditions and shall be solely responsible for discovery, determination and correction of any such condition.

21.02 Contractor shall comply with all applicable laws and regulations.

21.02.01 Contractor shall cooperate with Owner on all security matters as set forth elsewhere in the Contract Documents and shall promptly comply with any project security requirements established by Owner.

21.02.02 These security requirements may be more stringent in the event portions of the facilities or project are occupied or otherwise being used.

21.02.03 Such compliance with these security requirements shall not relieve Contractor of its responsibility for maintaining property security for the above noted items, nor shall it be constructed as limiting in any manner Contractor's obligation to undertake reasonable action as required to establish and maintain secure conditions at the site.

21.03 Contractor shall prepare and maintain accurate reports of incidents of loss, theft or vandalism and shall provide these reports to Owner in a timely manner.

ARTICLE 22. PROTECTION OF WORK IN PROGRESS, MATERIALS AND EQUIPMENT.

22.01 Contractor shall be responsible for and shall bear any and all risks of loss or damage to Work in progress, all materials delivered to the site, and all materials and equipment involved in the Work until completion and final acceptance of the Work under this Contract.

22.02 Permanent openings for the introduction of work and materials to the structure and construction site shall be protected so that upon completion, the Work will be delivered to the Owner in proper, whole and unblemished condition.

ARTICLE 23. ADMINISTRATION OF THE CONTRACT.

23.01 The Project Consultant will provide Administration of the Contract.

23.01.01 For those projects for which the City Engineer serves as the Project Consultant, all references to the Project Consultant shall be considered to be the City Engineer.

23.01.02 In the event the Owner should find it necessary to replace the Project Consultant, the Owner shall retain a replacement and the role of the replacement shall be the same as the role of the original Project Consultant.

23.02 Unless otherwise directed by the Owner in writing, the Project Consultant will perform those duties and discharge those responsibilities allocated to the Project Consultant by the Owner.

23.03 Neither the Project Consultant nor the Owner will be responsible for construction means, methods, techniques, sequences or procedures, safety precautions and programs in connection with the Work or for the acts of omission or commission of the Contractor, its Subcontractors or their agents or employees.

23.04 The Project Consultant and Owner will each have the authority to reject Work which does not conform to the Contract Documents and to require special inspection or testing with prior approval by the Owner. Neither the Project Consultant's nor the Owner's authority to act under this Paragraph, nor any decision made by them in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the Project Consultant or the Owner to the Contractor, any Subcontractor, any of their agents or employees, or any other person performing any of the Work.

23.05 The Contractor shall forward all communications to the Project Consultant, with simultaneous copies to the Owner.

23.06 The Project Consultant will review and certify the Contractor's Application for Payments which the Owner must subsequently approve prior to Payment of the Contractor.

23.07 The Project Consultant shall approve shop drawings for design only, the Contractor being responsible for all dimensions, quantities, etc., necessary to complete the Work in compliance with the Drawings and Specifications and other Contract Documents.

23.08 The duties, responsibilities and limitations of authority of the Project Consultant and the Owner will not be modified nor extended without written consent of the Contractor, the Project Consultant, and the Owner.

23.09 Notwithstanding anything to the Contrary in these General Conditions or any other "Contract Document" as that term is defined in the Professional Services Agreement between the City of Pompano Beach, Florida and the Project Consultant, it is not the intention nor shall any of the provisions of those documents act as a release, limitation or discharge of the obligations or responsibilities of the Project Consultant pursuant to its agreement with the Owner.

23.10 The Project Consultant will utilize the Contractor Performance Report to monitor and record the Contractor's performance for the work specified by the contract. The Contractor Performance Report has been included as an exhibit to the contract.

ARTICLE 24. MATERIALS.

24.01 The Contractor shall provide materials and equipment as required in the Contract Documents. No substitution will be permitted except in the instance where a material is no longer available during the progress of the Work or is deemed by the Owner to be no longer suitable or appropriate for incorporation into the Work or for obvious economic benefits accruable to the Owner.

24.01.01 Any such substitution must be approved by the Project Consultant and Owner prior to incorporation of the proposed substitution into the Work.

24.01.02 Proposed substitutions must be submitted for consideration from the Contractor to the Project Consultant and the Owner. Documentation for the proposed substitution must include, but is not limited to substantiation of the Contractor's efforts to obtain the originally specified materials including documentary evidence from the original materials' manufacturer that such materials are not available.

24.01.03 Product delivery lead times shall not serve as a basis for any substitution request except for where approved in advance by the Owner.

24.01.04 All additional costs incurred by the Owner as the result of any substitution will be the direct responsibility of and borne by the Contractor.

24.02 The Contractor shall make written request to the Project Consultant for and obtain his written approval of the use of any materials proposed for use when "approval" materials are specified or a performance type specification is utilized without mentioning any standard by name.

24.03 If, in the opinion of the Project Consultant, a specified product or equipment no longer meets the quality of the products or equipment required for the Work, Project Consultant shall request a Change Order Proposal from the Contractor for modifying the Contract to incorporate the respective changes to the Work required, the Contract amount, and the Contract Time as beneficial to the Owner.

ARTICLE 25. STORED MATERIALS.

25.01 Contractor shall, at its expense, receive, unload, store in a secure place, and deliver from storage to the construction site all materials and equipment required for the performance of the Contract.

25.01.01 Contractor is not entitled to payment for same except for those materials which in Owner's discretion are properly stored and are going to be installed or incorporated into the construction of the Project within thirty (30) days of delivery to the construction site.

25.01.02 The storage facilities and methods of storing shall meet Owner's approval and shall be in accordance with manufacturer's recommendations, or Owner will not be obligated to pay for same.

25.01.03 Materials and equipment subject to degradation by outside exposure shall be stored in a weather tight enclosure provided by Contractor at its expense.

25.01.04 Owner may at its discretion require material to be stored in an air-conditioned location.

25.02 Provided the above conditions are met, the stored materials may be included in a subsequent Application for Payment if the Contractor also complies with the following:

25.02.01 An applicable purchase order is provided listing the materials in detail and identifying the Contract Documents, by name, with verification that the total value of the purchase order amount reconciles with the corresponding application for payment stored materials line item value.

25.02.02 Evidence that proper storage security is provided.

25.02.03 The Owner is provided legal title (free of liens or encumbrances of any kind) to the material that is stored or stockpiled.

25.02.04 The Contractor and/or its Subcontractor have provided insurance for the Stored Materials against loss, damage (from whatever source), or disappearance, including loss or theft prior to incorporation into the Work. By execution of the Contract, Contractor releases Owner from any responsibility for Stored Materials and assumes all liability for and risk of loss or damage, by whatever means, including Owner's alleged negligence, regardless of whether the Owner has paid for said Stored Materials.

25.03 Once any Stored Material is paid for by Owner, it shall not be removed from the designated storage area except for incorporation into the Project or upon subsequent written approval by Owner.

25.04 No Applications for Payment shall be submitted nor payments made based on the value of materials stored at locations other than the Project, unless otherwise approved in writing by the Owner.

25.05 It is further agreed between the parties that the transfer of title and the Owner's payment for any Stored Material pursuant to the Contract Documents shall in no way relieve the Contractor of the responsibility for providing and installing such material in accordance with the requirements of the Contract Documents.

25.06 The Contractor warrants that title to all of the Work or Stored Materials covered by the Application for Payment will pass to the Owner either by incorporation in the Project or upon receipt of payment by the

Contractor, whichever occurs first, free and clear of all liens, claims, security, interest or encumbrance; and that none of the Work and none of the Stored Materials covered by the Application for Payments will have been acquired by the Contractor, or by any other person performing the Work at the site or providing materials and equipment to the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such person.

25.07 In the event stored materials which Owner is paying for in advance of their being installed or incorporated into the Project pursuant to this Paragraph are not installed or incorporated into the Project within thirty (30) days of when they are delivered to the site, Contractor shall not be entitled to payment for any future stored materials on this Project and the amounts previously approved for payment for said materials shall be deducted from the Contractor's next application for payment..

ARTICLE 26. INSPECTION: REJECTION OF MATERIALS AND WORKMANSHIP.

26.01 All material and equipment provided and work performed shall be properly inspected by Contractor, at its expense, and shall at all times be subject to quality surveillance, inspections, observations or quality audit by Owner, Project Consultant and any inspectors conducting an inspection pursuant to code, law, regulations, etc.

26.01.01 Contractor shall provide safe and adequate facilities, and all samples, drawings, lists and documents necessary for such quality surveillance, observation or quality audit.

26.01.02 The Contractor shall permit and facilitate inspection of the Work by the Owner, Project Consultant, Inspectors for any governmental agency, authority, or board.

26.01.03 Owner also reserves the right to designate others such as consultants, commissioning authorities, test and balance agents, forensic specialists, etc. to conduct inspections during or subsequent to the Work as Owner in its discretion desires.

26.01.04 Owner and Project Consultant shall be afforded full and free access to the shops, factories or places of business of Contractor and its Subcontractors for such quality surveillance, observation or quality audit and to determine the status of the Work.

26.01.05 In the event the Project Consultant or Owner requires a factory inspection, the Contractor shall notify the suppliers that the material shall not be produced or fabricated without due notice to the Project Consultant and Owner and an opportunity for such inspection.

26.02 If any Work should be covered up without approval or consent of the Project Consultant or Owner, it must, if required by the Project Consultant or Owner, be uncovered for examination at the Contractor's expense.

26.03 If any material, equipment or workmanship is determined by Owner, City Engineer, Project Consultant or Inspector either during performance of the Work or on final quality surveillance, or during any applicable warranty period, to be defective or not complying with the requirements of this Construction Contract, Owner, City Engineer, Project Consultant or Inspector will notify Contractor in writing that such material, equipment or portions of the Work is rejected and Owner reserves the right to withhold payment on any such item or seek compensation from Contractor for same. Thereupon, Contractor shall, at its own expense, immediately remove, replace or correct such defective material, equipment or portions of the Work by making the same comply strictly with all requirements of the Contract Documents. The Contractor shall be responsible for the costs of any additional site observations, special inspections and/or testing, or other activities of either the Project Consultant or the Owner made necessary by the correction of such defective materials, equipment or portions of the Work.

26.04 Neither the failure to make such quality surveillance, observation or quality audit, nor to discover defective workmanship, materials, or equipment, shall prejudice the rights of Owner to correct or reject the same as hereinafter provided.

ARTICLE 27. WARRANTY.

27.01 Unless otherwise provided elsewhere in the Contract Documents, all material and equipment incorporated into any Work covered by the Contract Documents shall be new and, where not specified, of the most suitable grade of their respective kinds for their intended use, and all workmanship shall be in accordance with construction practices acceptable to Owner and Project Consultant.

27.02 Unless otherwise provided in the Contract Documents, Contractor warrants all Work, equipment, materials and workmanship to be in accordance with the Contract Documents, any and all applicable codes, proper and workmanlike, first class and free from defects for a period of twelve (12) months (unless longer guarantees or warranties are provided for elsewhere in the Contract Documents in which case the longer periods of time shall prevail) from and after Final Completion of the Work under the Contract Documents, regardless of whether the same were provided or performed by Contractor or by any Subcontractor.

27.03 Contractor's warranty with respect to latent defects shall be in accordance with Chapter 95, Florida Statutes, and other applicable provisions of State law.

27.04 In the event of damage or injury to persons or property or other consequential or resultant damages result from Contractor's breach of any warranties, then the Contractor will be responsible for same.

ARTICLE 28. OFFICE SPACE FOR THE OWNER'S PERSONNEL.

28.01 The Contractor shall provide, at Contractor's expense, for the duration of the Work, a suitable lockable office for any Owner designated personnel.

ARTICLE 29. PROJECT RECORD DOCUMENTS AND SURVEY.

29.01 A marked up record set of the Contract Documents and other project records as required elsewhere within the Contract Documents will be kept up to date by the Contractor on the jobsite at all times. These documents will be given to the Project Consultant at the completion of the Work as required by the Contract Documents, and properly labeled as "Project Record Documents."

29.02 In addition to the "Project Record Documents", the Contractor will cause to have prepared by a Surveyor, registered in the State of Florida, a site survey clearly representing all Work done under this Contract and updating the original survey as may have been provided by the Owner.

29.03 The Contractor shall submit Project Record Documents and Survey in the manner and format specified elsewhere in the Contract Documents.

29.04 This is a critical item and final payment will be withheld from the Contractor until "Project Record Documents" and survey are provided by the Contractor and approved by the Project Consultant.

ARTICLE 30. SALVAGE.

30.01 Any salvage resulting from clearing, grubbing, grading, draining, remodeling or altering any existing facilities on this site shall be the property of the Owner; and this material shall be piled or stacked on the site if the Owner desires this material.

30.02 If this material is not desired by the Owner, it shall be disposed of by the Contractor at his expense.

ARTICLE 31. CLAIMS BY THE CONTRACTOR.

31.01 Although Contractor acknowledges the No Damage for Delay clause set forth in Article 6 of the Agreement between Owner and Contractor, in the event the Contractor is entitled to assert any other claim against Owner for any reason, claims by the Contractor against the Owner (except for claims asserted under Article 20 which are treated as set forth therein), are subject to the following terms and conditions:

31.01.01 All Contractor claims against the Owner shall be initiated by a written claim submitted to the Owner, c/o the City Engineer, and the Project Consultant. Such claim shall be received by the Owner and the Project Consultant no later than fifteen (15) calendar days after the event, or the first appearance of the circumstances causing the claim, and same shall set forth in detail all known facts and circumstances supporting the claim and the actual damages or injuries suffered;

31.01.02 The Contractor shall continue diligently with its performance hereunder regardless of the existence of any claims submitted by the Contractor;

31.01.03 In the event the Contractor seeks to make a claim, as a condition precedent to any such claim the Contractor shall strictly comply with the notice requirements above and such claim shall be made by the Contractor before proceeding to execute any additional or changed Work. Failure of the condition precedent to occur, i.e., providing notice as required in Article 31.01.01 above, shall constitute a complete waiver by the Contractor of any claim for additional compensation or extension of time. This written notice requirement may not be waived by verbal representations or the acts of representatives of the Owner or Project Consultant;

31.01.04 In connection with any claim by the Contractor against the Owner for compensation in excess of the Contract Price, any liability of the Owner for the Contractor's cost shall be strictly limited to direct cost of labor and materials incurred by the Contractor at the jobsite and shall in no event include indirect cost, overhead, loss of profit, or consequential damages of the Contractor. The Owner shall not be liable to the Contractor for claims of third parties including, but not limited to, subcontractors, suppliers, laborers, etc.

ARTICLE 32. CHANGE ORDERS.

32.01 One or more changes to the Work within the general scope of this Contract may be ordered by the Owner by Change Order, Project Consultant’s Supplementary Instructions, and Construction Change Directives.

32.02 The Contractor shall proceed with any extra Work or changes which alter the Contract by adding to, or deducting from the Contract Sum or Contract Time in strict accordance with the following terms and conditions:

32.02.01 Change Order shall mean a written order to the Contractor executed by the Owner and the Project Consultant after execution of this Contract, directing a change in the Work and may include a change in the Contract Price or the time for the Contractor's performance, or any combination thereof;

32.02.02 Any change in the Contract Price or time resulting from a Change Order shall be determined as follows:

a. By mutual agreement between the Owner and the Contractor as evidenced by (a) the change in the Contract Price or time being set forth in Change Order in accordance with Article 32.02.08 below, and (b) the execution of the Change Order; or,

b. If no mutual agreement occurs between the Owner and the Contractor, the change in the Contract Price, if any, shall be derived based upon the Cost Plus Price basis (as set forth in Article 32.02.08 below) by determining the “total actual costs” (in accordance with Article 32.02.09 below), incurred or savings achieved, resulting from revisions in the Work. Such total actual costs or savings shall include a component for direct jobsite overhead and profit but under no circumstances shall it include non-job site overhead expenses or costs or any other indirect costs or components. Any such costs or savings shall be documented in the format, and with such content and detail as the Owner or the Project Consultant requires. If agreement is not reached as to the change in time, Contractor shall be given a reasonable time based upon the scope of Work required by the change.

32.02.03 The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work and the change in the Contract Price and the

time for performance by the Contractor. The Contractor, by executing the Change Order, waives and forever releases any claim against the Owner for additional time or compensation for issues or matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order.

32.02.04 The Contractor shall notify and obtain the consent and approval of the Contractor's surety with reference to all Change Orders if such notice, consent or approval are required by the Owner, the Project Consultant, the Contractor's surety or by law. The Contractor's execution of the Change Order shall constitute the Contractor's warranty to the Owner that the surety has been notified of, and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto, and that the penal sums of the performance and payment bonds furnished by Contractor and Surety are adjusted coextensively with the amount of the Change Order.

32.02.05 The Owner, without invalidating the Contract, may require the change for any reason whatsoever. All such Work shall be executed under the terms of the original Contract.

32.02.06 All change orders and adjustments shall be in writing and executed by the Contractor and Owner; otherwise, no claim for additional compensation or time will be allowed.

32.02.07 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be the total actual cost (as set forth in Article 32.02.09 below) saved as confirmed by the Project Consultant. The amount shall not include an amount for the overhead and profit of the Contractor which the Owner is not required to pay as a result of the deletion or decrease. When both additions and credits covering related Work or substitutions are involved in a change, the overhead and profit shall be calculated on the basis of net increase, if any, with respect to that change.

32.02.08 The value of any change ordered under the Contract for extra Work and/or any reductions in Work required, shall be determined under one or more of the following procedures before a written Change Order is issued.

a. By **UNIT PRICES** named in the Contract or subsequently agreed upon by the Owner and the Contractor, which prices shall include Contractor's overhead and profit.

b. By **LUMP SUM PRICE** agreed upon actual reasonable costs and direct job site overhead by the Owner and the Contractor, which price shall include Contractor's overhead and profit but under no circumstances shall it include non job site overhead, expenses or costs or any other indirect costs; a breakdown of the estimated costs comprising the lump sum price may be required by the Project Consultant for his review. Percentage for overhead and profit shall be determined in accordance with the method listed for COST PLUS PRICE, subparagraph (c.) below.

c. By a **COST PLUS PRICE** based on total actual costs as defined in Article 32.02.09 below, plus an added percentage, all determined as follows:

OVERHEAD AND PROFIT:

JOB SITE OVERHEAD, including supervision and the furnishing, use and maintenance of small tools and ordinary equipment incidental to and required for the work of subcontractors (whether performed by them or others) shall be considered to be just and fully compensated for, by adding an amount equal to five percent (5%) of the sum of material costs (as defined under Article 34.08.09(a) below) and labor costs (as defined under Article 34.08.09(b) below), and rentals (as defined under Article 32.08.09(c) below). There shall be no compensation for any non job site overhead, expenses or costs.

PROFIT, may then be added by the subcontractor to the above material costs and labor costs, including the JOB SITE OVERHEAD allowance, at the rate of 10% of the sum of those costs.

JOB SITE OVERHEAD, including general supervision and the furnishing, use and maintenance of small equipment incidental to and required for the Work of the General Contractor (including that of his subcontractors) shall be considered to be just and fully compensated for by adding an amount equal to ten percent (10%) of the sum of material costs (as defined under Article 32.08.09(a) below and labor costs (as defined under Article 32.08.09(b) below) and rentals (as defined under Article 32.08.09(c) below). There shall be no compensation for any non job site overhead expenses or costs.

PROFIT may then be added by the Contractor to the above material costs and labor costs, including the JOB-SITE OVERHEAD allowance, at the rate of five percent (5%) of the sum of those costs.

d. BOND ALLOWANCE, for maintaining the Performance Bond at 100% of the contract amount, a sum of one percent (l%) of the total cost of the change, (including material, labor, overhead and profit, and equipment rentals) shall be allowed on all change orders.

32.02.09 The total actual costs of materials, labor and equipment rentals may include the following only:

a. Material costs actually recorded by the Contractor and/or subcontractors as they are delivered to the site and as evidenced from originally receipted invoices, listing appropriate quantities and unit prices. Records in proper form shall be maintained and available to the Project Consultant at all times.

b. Labor costs represented by the actual wages paid to all laborers, apprentices, journeymen, and foremen involved in and necessary to completing the particular construction operations, for each day and every hour such labor teams and foremen are actually employed and on the extra Work required, including the net cost of insurance, Social Security and Workmen's Compensation. The furnishing, use and maintenance of small tools and ordinary equipment normal to the work of individual workmen in the trades will be considered part of the labor costs. Records in proper form shall be maintained and available to the Project Consultant at all times.

c. Rentals for special equipment or machinery such as power-driven roller, tractors, trucks, shovels, drills, mixers, pumps, hoists, etc., required for the economic performance of the Work, at reasonable rental prices agreed upon before work commences, shall be allowed the Contractor and/or his subcontractors by the Project Consultant for each and every hour such special equipment is in use on the particular work.

32.02.10 The Contractor is obligated to proceed with the Work for a Change Order, even though there has not been an agreement reached with the Owner as to an adjustment to the Contract Price or time, and even if there is a dispute as to same. In such instances the Owner, City Engineer or Project Consultant will issue a Construction Change Directive to Contractor providing for the scope of work to be performed and the payment therefore based on 32.02.09 above. A Change Order or proposed Change Order shall not be the basis of the Contractor not performing pursuant to the Contract Documents.

32.02.11 The Contractor, Owner and Project Consultant shall administer and document the Change Order process by utilizing the documentation specified elsewhere in the Contract Documents, including a Construction Change Directive.

32.03 The Project Consultant will have authority to order minor changes in the Work not involving an adjustment to the Contract Sum or Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order of the Project Consultant and such changes shall be binding on the Owner and the Contractor.

32.04 The Owner has authorized the following approval thresholds for Change Orders in the Name of The City of Pompano Beach, Florida under its General Services Manual, the rules of which are incorporated below:

A. The City Manager is authorized to approve change orders up to the cumulative total of 10 percent of the original construction contract amount, not to exceed ,000 in the aggregate.

B. When the cumulative total of all change orders on a project has exceeded the ceiling established in 32.04A above, all subsequent change orders will require prior City Commission approval, except in emergency cases as declared by the City Manager, or where the change order in question would be in the form of a credit, thereby reducing the adjusted contract amount.

C. Approval of change orders under this policy shall be for the purposes of expediting the work in progress and shall be confirmed by City Commission action at the next regular meeting of the City Commission.

ARTICLE 33. DISCOVERING AND CORRECTING DEFECTIVE OR INCOMPLETE WORK.

33.01 In the event that the Contractor covers, conceals or obscures its work in violation of this Contract or in violation of a directive from the Owner or the Project Consultant, such work shall be uncovered and displayed for the Owner's or Project Consultant's inspection upon request, and shall be reworked at no cost in time or money to the Owner.

33.02 If any of the work is covered, concealed or obscured in a manner not covered by Subparagraph (A) above, it shall, if directed by the Owner or the Project Consultant, be uncovered and displayed for the Owner's or Project Consultant's inspection. If the uncovered work conforms substantially with this Contract, the costs incurred by the Contractor to uncover and subsequently replace such work shall be borne by the Owner; otherwise, such costs shall be borne by the Contractor.

33.03 The Contractor shall, at no additional cost in money to the Owner or extension of time correct work rejected by the Owner or by the Project Consultant as defective or failing to conform to this Contract. Additionally, the Contractor shall reimburse the Owner for all testing, inspections and other expenses incurred as a result thereof.

33.04 In addition to its warranty obligations set forth elsewhere herein, the contractor shall be specifically obligated to correct any and all defective or nonconforming work for a period of twenty-four (24) months following final completion upon written direction from the Owner.

33.05 The Owner may, but shall in no event be required to, choose to accept defective or nonconforming work.

33.05.01 In such event, the Contract Price shall be reduced, at Owner’s option, by the greater of (i) the reasonable costs of removing and correcting the defective or nonconforming work, or (ii) the difference between the fair market value of the Project as constructed and the fair market value of the Project had it not been constructed in such a manner as to include defective or nonconforming work.

33.05.02 If the remaining portion of the unpaid Contract Price, if any, is insufficient to compensate the Owner for the acceptance of defective or nonconforming work, the Contractor shall, upon written demand from the Owner, pay the owner such remaining compensation for accepting defective or nonconforming work.

ARTICLE 34. SAFETY, PROTECTION OF WORK AND PROPERTY.

34.01 Contractor shall be fully and solely responsible for conducting all operations under this Construction Contract at all times in such a manner as to avoid the risk of bodily harm to persons and damage to property. Contractor shall continuously and diligently inspect all Work, material and equipment to discover any conditions which might involve such risks and shall be solely responsible for discovery and correction of any such conditions.

34.02 Contractor shall instruct its personnel on the requirements of the Contractor's safety program and shall coordinate with other contractors and subcontractors on safety matters.

34.03 Contractor shall provide safety equipment and enforce the use of such equipment by its employees.

34.04 Contractor shall maintain accurate accident and injury reports and shall provide to Owner a monthly summary of injuries and man hours lost due to injuries.

34.05 Contractor shall maintain all portions of the Work in a neat, clean and sanitary condition at all times.

34.06 Contractor shall assure that all Subcontractors shall, without expense to Owner, comply with the foregoing.

34.07 Contractor shall comply with any and all rules, regulations, laws, etc., which apply to safety requirements, including but not limited to OSHA requirements.

34.08 Safety Precautions and Programs:

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

34.08.02 In the event the Contractor encounters on the site material reasonably believed to be asbestos or polychlorinated biphenyl (PCB) which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and Project Consultant in writing. The Work in the affected area shall not thereafter be resumed except by written notice from the Owner. The Work in the affected area shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB), or when it has been rendered harmless, by written agreement of the Owner, Contractor and Project Consultant.

34.08.03 The Contractor shall not be required to perform without consent any Work relating to asbestos or polychlorinated biphenyl (PCB).

34.09 Safety of Persons and Property

34.09.01 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

a. Employees on the Work and other persons who may be affected thereby;

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

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

34.09.02 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of person or property or their protection from damage, injury or loss.

a. The Contractor and his Subcontractors shall comply with and conform in all respects to the standard set forth in the Occupational Safety and Health Act (OSHA) of 1970.

b. The Contractor shall prominently post and maintain on the jobsite:

1) OSHA 200: Log and summary of occupational injuries and illnesses.

2) OSHA 2203: Provisions of the Act poster.

34.09.03 The Contractor shall implement and maintain a continuing safety program applicable to all Contractor employees, Subcontractors, and Sub-subcontractors, to include:

a. Designating a responsible member of the Contractor's organization at the site as the Contractor's "Safety Officer" whose duty shall be the prevention of accidents, safety inspections, and accident documentation. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and the Project Consultant.

b. Holding weekly safety meetings with employees and Subcontractors.

c. Implementing OSHA Voluntary Protection Programs.

d. Ensuring the presence of an American Red Cross (or other organization acceptable to the Owner) certified Cardiopulmonary Resuscitation (CPR) and first-aid trained individual on site at all times.

e. Compliance with the Drug Free Work Place Act of 1988, the Federal Omnibus Transportation Employee Testing Act of 1991, and the certification of compliance with the same as required by the Owner in Document 00457, Drug-Free Workplace Certification.

f. Erecting and maintaining reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

g. Ensuring that employees are not discriminated against or discharged for filing reasonable safety or health complaints or for otherwise exercising their rights in these regards.

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

34.09.05 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to properly caused in whole or in part by the Contractor, a Subcontractor or a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is reasonable, except damage or loss attributable to acts or omissions of the Owner or Project Consultant or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault of negligence of the Contractor.

34.09.06 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

34.09.07 Building materials, Contractor's equipment and other supplies may be stored on the premises, but the placing of same shall be in substantial, watertight storage sheds upon the premises where directed in which he shall store all materials which would be damaged by weather. This shall in no manner relieve the Contractor from full responsibility for such materials. Sheds and other storage structures must be secured and anchored in a manner sufficient to withstand hurricane force winds as defined by applicable codes but not less than a 120 mile per hour wind uplift force.

34.10 **Emergencies:** In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss.

ARTICLE 35. ROYALTIES AND PATENTS.

35.01 The Contractor shall pay all royalties and license fees.

35.02 The Contractor shall be responsible for all infringement of patent rights and shall assume the defense, including payment of attorney fees and costs, of any suit brought against Contractor and/or Owner for infringement of any United States patent or for wrongful use of proprietary information of any third party.

35.03 Contractor hereby indemnifies and shall defend and hold harmless Owner, its officers, its officials, its agents, its employees, and its representatives, respectively, from and against all claims, losses, costs, damages, and expenses, including attorney's fees, incurred by Owner and its representatives, respectively, as a result of or in connection with any claims or actions based upon infringement or alleged infringement of any patent, and arising out of the use of the equipment or materials provided under this Construction Contract by Contractor, or out of the process of actions employed by, or on behalf of Contractor in connection with the performances of this Construction Contract. Contractor shall, at its sole expense, promptly defend against any such claim or action unless directed otherwise by Owner or its representatives; provided that Owner or its representatives shall have notified Contractor upon becoming aware of such claims or actions, and provided further, that Contractor's aforementioned obligations shall not apply to equipment, materials, or processes furnished or specified by Owner or its representatives.

35.04 Contractor shall have the right, in order to avoid such claims or actions, to substitute at its expense non-infringing equipment, materials, or processes, or to modify such infringing equipment, materials and processes so they become non-infringing, or obtain the necessary licenses to use the infringing equipment, materials or processes, provided that such substituted and modified equipment, materials and processes shall meet all the requirements and be subject to all the provisions of the Contract Documents.

35.05 The indemnification pursuant to Florida Statute 725.06 and other Florida laws, etc., shall have a separate consideration of , receipt of which is hereby acknowledged and incorporated into the project sum. This is incorporated by reference into the Bid Documentation and Specifications if any.

ARTICLE 36. TAXES.

36.01 Contractor shall pay all taxes, levies, duties and assessments of every nature which may be applicable to any Work under this Contract.

36.02 The Contract Sum and any agreed changes thereto shall include all taxes imposed by law. Contractor shall make any and all payroll deductions as required by law.

36.03 Contractor herein indemnifies and holds the Owner harmless from any liability on account of any and all such taxes, levies, duties, assessments and deductions.

ARTICLE 37. INDEMNITY AND HOLD HARMLESS.

37.01 To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner, its officers, its officials, its agents and employees and each of them hereinafter collectively referred to as the Owner, from and against any and all judgments, demands, claims, causes of action, liability, expenses, losses, costs, fines, and damages (including reasonable attorney’s fees and expert’s fees) of every kind and character brought against the Owner by any person, party or entity of any kind or nature whatsoever arising out of, incident to, relating or regarding the Contractor’s performance under this Agreement, the condition of the premises, and/or the Contractor’s acts of omission or commission. The above indemnification does NOT serve as a waiver by Owner of the statutory limits of liability set forth in s.768.28, Florida Statutes, nor does it serve as authorization for Owner or Contractor to be sued by any third parties.

37.02 Contractor, however, shall not be responsible to Owner for damages resulting out of bodily injury or damages to property which a Court of competent jurisdiction determines as being attributed to the negligence of Owner, its respective agents, servants, employees or officers.

37.03 Said indemnifications by Contractor shall be extended to include all "Subcontractors", deliverers, suppliers, furnishers of material or anyone acting for, on behalf of, or at the request of the Contractor.

37.04 Contractor recognized the broad nature of this indemnifications and hold harmless clause and voluntarily makes this covenant and expressly acknowledges the receipt of Ten () Dollars, which payment is incorporated into the Contract Sum, and such other good and valuable consideration provided by Owner in support of this indemnification in accordance with the laws of the State of Florida.

37.05 This clause shall survive termination of this Agreement and pursuant to Florida Statute 725.06 be incorporated by reference into any and all Bid Documentation or Specifications.

ARTICLE 38. TERMINATION BY THE CONTRACTOR.

38.01 If the Owner repeatedly fails to perform its material obligations to the Contractor for a period of 30 days after receiving written notice from the Contractor of its intent to terminate hereunder, the Contractor may terminate performance under this Contract by written notice to the Owner and the Project Consultant.

38.02 In such event, the Contractor shall be entitled to recover from the Owner as though the Owner had terminated the Contractor's performance for convenience pursuant to the terms and conditions of this Contract.

ARTICLE 39. OWNER'S RIGHT TO SUSPEND CONTRACTOR'S PERFORMANCE.

39.01 The Owner shall have the right at any time to direct the Contractor to suspend its performance, or any designated part thereof, for any reason whatsoever, or without reason. If any such suspension is directed by the Owner, the Contractor shall immediately comply with same;

39.02 In the event the Owner directs a suspension of performance under this Paragraph through no fault of the Contractor, the Owner shall pay the Contractor as full compensation for such suspension the Contractor's reasonable costs, actually incurred and paid, of the following items only:

39.02.01 Demobilization and remobilization, including such costs paid to subcontractors;

39.02.02 Preserving and protecting Work in place;

39.02.03 Storage of materials or equipment purchased for the Project, including insurance thereon;

39.02.04 Performing in a later, or during a longer, time frame than that contemplated by this Contract.

ARTICLE 40. TERMINATION BY THE OWNER.

40.01 The Owner may, at the Owner’s option, for any reason and at any time terminate for convenience, any work under this Contract, in whole or, from time to time, in part, in accordance with the following terms and conditions:

40.02 The Owner shall give written notice of such termination to Contractor 7 days before it becomes effective.

40.02.01 The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop work when such termination becomes effective.

40.02.02 The Contractor shall also terminate outstanding orders and subcontracts.

40.02.03 The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders.

40.02.04 The Owner may direct the Contractor to assign the Contractor's right, title and interest under termination orders or subcontracts to the Owner or its designee.

40.02.05 The Contractor shall transfer title and deliver to the Owner such completed or partially completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has.

40.02.06 When terminated for convenience, the Contractor shall be compensated as follows:

a. The Contractor shall submit a termination claim within one year to the Owner and the Project Consultant specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the Owner or the Project Consultant. If the Contractor fails to file a termination claim with the Owner's Project Consultant within one (1) year from the effective date of termination, the Owner shall have no further obligation to the Contractor and Contractor waives any and all rights for compensation based upon the termination.

b. The Owner and the Contractor may agree to the compensation, if any, due to the Contractor hereunder;

c. Absent agreement to the amount due to the Contractor, the Owner shall pay the Contractor the following amounts:

1. Contract prices for labor, materials, equipment and other services accepted under this Contract;

2. Reasonable costs incurred in preparing to perform and in performing the terminated portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for direct jobsite overhead (and not home office or other overhead) and profit thereon (such profit shall not include anticipated profit or consequential damages); provided, however, that if it appears that the Contractor would have not profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

3. Reasonable costs of settling and paying legitimate claims arising out of the termination of subcontractors or orders pursuant to this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.

4. The total sum to be paid the Contractor under this Subparagraph shall not exceed the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

40.03 The Owner may terminate this Contract for cause in accordance with the following terms and conditions:

40.03.01 If the Contractor does not perform the Work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Contract, then the Owner, in addition to any other rights it may have against the Contractor or others, may terminate the performance of the Contractor for cause upon seven (7) day written notice and assume possession of the Project site and of all materials and equipment at the site and may complete the Work.

40.03.02 In such case, the Contractor shall not be paid further until the Work is complete.

40.03.03 After final completion has been achieved, if any portion of the Contract Price (as it may be modified hereunder) remains after the cost to the Owner of completing the Work, including all costs and expenses of every nature incurred, has been deducted by the Owner, such remainder shall be paid to the Contractor. Otherwise, the Contractor shall pay the Owner any and all costs, fees, damages or expenses which the Owner has paid or is obligated to pay in excess of the contract price (as it may be modified hereunder). This obligation for payment shall survive the termination of the Contract. In the event the employment of the Contractor is terminated by the Owner for cause pursuant to this Subparagraph and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience and the terms of Article 40.02 shall apply.

ARTICLE 41. CONTRACTOR'S INSURANCE

41.01 The Contractor shall maintain such insurance as will protect the Contractor and Owner from claims under Workmen's Compensation Acts, and from any other claims or damages for personal injury, including death and property damage, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either, as more fully set forth below and in the amounts provided herein. Prior to commencement of the Work, all Certificates of Insurance executed by authorized representatives of the insurance company shall be filed with the Owner and shall be subject to its approval for accuracy of protection. In addition, the Owner may at any time require that Contractor or its insurer provide any other documentation regarding insurance to Owner including, but not limited to, the policy. The Contractor shall not commence Work under this Contract until the provisions of this paragraph have been complied with. Owner may withhold payments due to Contractor in accordance with this Contract or terminate or suspend this Contract with all costs or expenses associated with same to be paid by Contractor in the event Contractor fails to comply with any requirement in the Contract regarding insurance. In the event of cancellation of any policy, Contractor is obligated to immediately notify Owner of same and obtain policy(s) in accordance with the Contract Documents.

41.02 Contractor shall comply with any and all insurance obligation required by law, rules, regulations, etc., including but not limited to those required by State Regulations for Educational Facilities.

41.03 The Contractor will be required to provide a Certificate of Insurance indicating that Workers' Compensation has been provided for all employees in compliance with Chapter 440, Florida Statutes.

41.04 The Contractor shall procure and carry Comprehensive General Liability insurance including contractual and indemnification liability covering this Contract and Products/Completed Operations Liability Insurance covering personal injury and bodily injury in limits of not less than, ,000,000 for injury or death to any one person and not less than, ,000,000 each occurrence; and shall carry insurance against property damage in limits of not less than, ,000,000 per claimant and, ,000,000 per occurrence as a minimum coverage. The Contractor shall also procure and carry Owner's and Contractor's protective liability insurance. In the event that work to be performed hereunder by Contractor involves the removal and disposal of asbestos-related materials, Contractor shall, in addition to the foregoing coverages, also provide and carry Asbestos Liability-Occurrence form only, with, ,000,000 per occurrence, ,000,000 aggregate. All insurance shall name the Owner as an additional insured, and shall remain in full force and effect for two (2) years following Contractor’s completion of the work.

41.05 The Contractor shall carry at no additional expense to the Owner, Builders' Risk Insurance for the perils of fire, vandalism, malicious mischief and those included in extended coverage in the amount of one hundred percent (100%) of the values at risk. Such policies shall be written to protect the Contractor and the Owner as their interest may appear.

41.06 All Contractors shall maintain automobile liability insurance against bodily injury and property damage in at least the amounts of one million dollars (,000,000) per claimant, one million dollars (,000,000) per occurrence.

41.07 The insurance coverage amounts provided for in this Section are the minimum required insurance amounts. The Owner may require additional insurance or coverage on a case-by-case basis. Any insurance or coverage amounts in addition to those provided for herein shall be specified in the Contract Documents.

41.08 The Owner is not maintaining any insurance on behalf of Contractor covering against loss or damage to the Work or to any other property of Contractor. In the event Contractor maintains insurance against physical loss or damage to Contractor's construction equipment and tools, such insurance shall include an insurer's waiver or rights of subrogation in favor of Owner.

41.09 The requirements contained herein as to types and limits, as well as Owner's approval of insurance coverage to be maintained by Contractor, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by Contractor under the Contract.

41.10 The policies of such insurance in force, shall be issued by companies qualified to do business in the State of Florida and be acceptable to the Owner and shall provide that the Owner be given thirty (30) days advance written notice of the cancellation, expiration or any material change in the coverage afforded thereunder. The companies must be rated at least A-VI by AM Best or Aa3 by Moody's Investor Service. All policies must remain in effect during performance of the Work and for a period of one year after final completion.

41.11 Uninsured Claims. If any action by any person, firm or corporation is brought or threatened against the Owner or against the Contractor and the Owner for any alleged loss, damage or injury arising out of or in the consequence of the performance or nonperformance of the Contract which, in the reasonable opinion of the Owner, may not be covered by the contingent liability, public liability or property damage insurance policy, or, which together with other such actions or claims seeks a recovery in excess of the amount payable under such policies, the amount of such recovery sought or so much thereof as the Owner reasonably deems necessary, may be withheld by the Owner from any money due the Contractor. The Owner in its sole discretion may permit the Contractor to substitute other satisfactory security in lieu of the monies so withheld. If the liability of the Owner is determined by judgment or award of a court or other tribunal of competent jurisdiction, or if such recovery sought shall have been admitted by the Contractor to be valid, the Owner may pay such judgment, award of admitted recovery out of the monies retained by the Owner under the provisions of this subparagraph and return the remaining balance, if any, to the Contractor.

41.12 Adequate funds shall be retained for the insurance costs listed in the Schedule of Values attached to the Contractor’s respective Applications for Payment to account for insurance coverage renewals on multi-year projects coupled with invoices to substantiate the annual costs.

ARTICLE 42. PERFORMANCE BOND AND PAYMENT BOND

42.01 For a Project with an estimated cost of ,000 or more, the Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as specifically required in the Contract Documents on the date of execution of the Contract.

ARTICLE 43. RIGHT TO AUDIT PROVISIONS

43.01 Contractor's records which shall include but not be limited to accounting records, written policies and procedures, computer records, disks and software, videos, photographs, subcontract files (including proposals of successful and unsuccessful bidders), original estimates, estimating worksheets, correspondence, change order files (including documentation covering negotiated settlements), and any other supporting evidence necessary to substantiate charges related to this contract (all the foregoing hereinafter referred to as "records") shall be open to inspection and subject to audit and/or reproduction, during normal working hours, by Owner's agent or its authorized representative to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by the contractor or any of his payees pursuant to the execution of the contract. Such records subject to examination shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with this contract.

43.02 For the purpose of such audits, inspections, examinations and evaluations, the Owner's agent or authorized representative shall have access to said records from the effective date of this contract, for the duration of the Work, and until 5 years after the date of final payment by Owner to Consultant pursuant to this contract.

43.03 Owner's agent or its authorized representative shall have access to the Contractor's facilities, shall have access to all necessary records, and shall be provided adequate and appropriate work space, in order to

conduct audits in compliance with this article. Owner's agent or its authorized representative shall give auditees reasonable advance notice of intended audits.

43.04 Contractor shall require all subcontractors, insurance agents, and material suppliers (payees) to comply with the provisions of this article by insertion of the requirements hereof in any written contract agreement. Failure to obtain such written contracts which include such provisions shall be reason to exclude some or all of the related payees' costs from amounts payable to the Contractor pursuant to this contract.

43.05 If an audit inspection or examination in accordance with this article, discloses overcharges (of any nature) by the Contractor to the Owner in excess of 10% percent of the total contract billings, the actual cost of the Owner's audit shall be paid by the Contractor.

ARTICLE 44. LAWS AND REGULATIONS

44.01 Contractor and its employees and representative shall at all times, comply with all applicable laws, ordinances, statutes, rules and regulations in effect at the time Work is performed pursuant to the Contract Documents.

44.02 If, during the term of this Construction Contract, there are any changed or new laws, ordinances or regulations not in existence at the time of signing this Construction Contract which become effective and which affect the cost or time of performance of the Construction Contract, Contractor shall within fifteen (15) days of the discovery of said law, ordinance or regulation, notify Owner in writing and submit detailed documentation of such effect in terms of both time and cost of performing the Construction Contract. Upon concurrence by Owner as to the effect of such changes, an adjustment in the compensation and/or time of performance may be made at Owner's discretion.

44.03 If any discrepancy or inconsistency should be discovered between the Contract Documents and any law, ordinance, regulation, order or decree, Contractor shall within fifteen (15) days of discovery of same report the same in writing to Owner who will issue such instructions as may be necessary.

ARTICLE 45. DISPUTE RESOLUTION.

45.01 The Owner and Contractor agree that, in the event of a dispute, the parties will attempt to resolve such dispute without litigation and that resolution through mediation procedures will be encouraged.

45.02 The existence of a dispute between the parties shall not be the basis of the Contractor unilaterally electing not to continue performance pursuant to the terms of the Contract Documents.

ARTICLE 46. GOVERNING LAW; VENUE; WAIVER OF TRIAL BY JURY.

46.01 The Construction Contract shall be governed by the laws of the State of Florida.

46.02 In the event either party institutes litigation related in any manner to this contract for any reason, the sole venue for all such litigation shall be in the 17th Judicial Circuit of Florida in Broward County, Florida, or in the U.S. District Court for the Southern District of Florida, as well as the applicable appellate courts serving said venues.

46.03 To the fullest extent permitted by law, Owner, Contractor, and Contractor’s Surety do hereby each waive the right to trial by jury in any action or proceeding, including any counterclaims/crossclaims/third (or more remote) party complaints which may be brought by Owner, Contractor, or Surety, jointly and/or severally, arising out of or in any way related to this Construction Contract and/or attendant suretyship including, without limiting the generality thereof, any claim for damages resulting from any act or omission of Owner, Contractor, or Surety, jointly or severally, in any way connected with this Construction Contract.

ARTICLE 47. RIGHTS AND REMEDIES.

47.01 The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

ARTICLE 48. SUCCESSORS, ASSIGNS AND ASSIGNMENT.

48.01 The Owner and the Contractor each binds itself, its partners, successors, assigns and legal representatives to the other party in respect to all covenants, agreements and obligations contained in the Construction Contract. It is agreed that the Contractor shall not assign, transfer, convey or otherwise dispose of the contract or its right, title and interest in and to the same or any part thereof, without previous consent of the Owner and concurred to by the Sureties.

48.02 If requested by Owner the Contractor agrees to assign all Subcontracts required for performance of this Contract to the Owner upon the Owner or Project Consultant's determination that Contractor has defaulted under the Contract Documents. The Contractor shall include in all Subcontracts, equipment leases and purchase orders a provision requiring the subcontractor, equipment lessor or supplier, in the event of Contractor's default under this Contract, to consent to the assignment of their subcontracts to the Owner.

ARTICLE 49. PUBLIC RECORDS.

49.01 A. The City of Pompano Beach is a public agency subject to Chapter 119, Florida Statutes. The Contractor shall comply with Florida's Public Records Law, as amended. Specifically, the Contractor shall:

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

b. Upon request from the City's custodian of public records, provide the City with a copy of 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 or as otherwise provided by law;

c. Ensure that public records that are exempt or that are confidential and exempt from public record requirements are not disclosed except as authorized by law;

d. 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 the contract if the Contractor does not transfer the records to the City; and

e. Upon completion of the contract, 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 the 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 the 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.

49.02 The failure of Contractor to comply with the provisions set forth in this Article shall constitute a Default and Breach of this Agreement and the City shall enforce the Default in accordance with the provisions set forth in Article 40.

PUBLIC RECORDS CUSTODIAN

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:

CITY CLERK
100 W. Atlantic Blvd., Suite 253
Pompano Beach, Florida 33060
(954) 786-4611
RecordsCustodian@copbfl.com

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 THE REQUIREMENT

A. The Contractor shall at all times maintain at the site of the project a record copy of the following:

1. Drawings
2. Specifications
3. Addenda
4. Change Orders and other modifications to the Contract.
5. Approved Shop Drawings, Product Data and Samples.
6. Field Test Records.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. All applicable sections of the Specifications.

B. General Conditions.

1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in Contractor's field office apart from documents used for construction.

1. Provide files and racks for storage of documents.
2. Provide locked cabinet or secure storage space for storage of samples.

B. File documents and samples in accordance with Construction Specifications Institute (CSI) format.

C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.

D. Make documents and samples available at all times for inspection by the City's Representatives.

1.04 MARKING DEVICES

A. Provide felt tip marking pens for recording information in the color code designated by Project Manager.

1.05 RECORDING

Definition: The Project Record is the updated and revised plans and specifications, including a running account of all known revisions and changes made to the original plans and specifications, complete with copies of any field sketches and clarifications, issued over the course of construction. The Project Record is the responsibility of the Contractor.

A. The Contractor shall label each document, "Project Record" in neat large printed letters, or by rubber stamp.

B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.

C. Drawings: Legibly mark to record actual construction:

1. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
2. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
3. Field changes of dimension and detail.
4. Changes made by Field Order or by Change Order.
5. Details not on original Contract Drawings.
6. The Record Drawing set shall show benchmark positions and their vertical values. Benchmarks are optional for Plan Views, but required for Profile Views.

D. Specifications and Addenda; Legibly mark each Section to record:

1. Manufacturer, trade name, catalog number, and supplier of each produce and item of equipment actually installed.
2. Changes made by field order or by Change Order.

1.06 RECORD DRAWINGS

Definition: The Record Drawings are a revised set of drawings submitted by a Contractor upon completion of a project. They reflect all changes made in the specifications and working drawings during the construction process, and show the exact dimensions, geometry, and location of all elements of the work completed under the Contract.

A. The Contractor shall maintain full size (24"X 36") project record to reflect the "record" items of work as the work progresses. Upon completion of the work, the Contractor shall prepare a set of record drawings on full-size, reproducible material and an electronic file in (DWG format, AutoCAD, Version 2018 or more recent version OR GIS). The record drawings will, in the greatest possible detail, reproduce the exact final conditions of the entire project. Including, but not limited to, final survey, utilities, architecture, structural, civil conditions, electrical, mechanical, paving, landscaping, irrigation, updating all details and

all notes, parking, and any other plans related to a specific project. For the purpose of producing the final record drawings, based on the project record, the Consultant will furnish one set of full-size design drawings on reproducible material and an electronic file (DWG format, AutoCAD, Version 2018 or more recent version OR GIS) to the Contractor on compact disk or any other electronic means.

Definition: Design drawings or construction drawings are subject to clarifications, but are complete with enough information (plan, sections, dimensions, details, and notes, etc.) to enable the depicted item's construction or replication without additional information.

B. At a minimum the project record shall be reviewed on the 20th working day of every third month, or more often, as deemed necessary by Project Manager, after the month in which the final Notice-to Proceed is given as well as on completion of work. Failure to maintain the project record up-to-date shall be grounds for withholding monthly progress payments until such time as the record drawings are brought up-to date.

C. The project record shall be accessible to the City at all times during construction period.

D. The cost of maintaining record changes, and preparation of the record drawings shall be included in the unit prices bid for the affected items. Upon completion of the work, the Contractor shall furnish the Project Manager the set of record drawings on full-size, reproducible material and an electronic file in (DWG format, AutoCAD, Version 2018 or more recent version OR GIS) Pay request quantities must match this same set of record drawings. The completed Record drawings shall be delivered to the Program Manager at least forty-eight (48) hours prior to final inspection of the work. The Final Inspection will not be conducted unless the Record Drawings are in the possession of the Project Manager.

E. The completed (or final) record drawings shall be certified by a Professional Land Surveyor, a registered and licensed Architect, a registered and licensed Engineer, a registered and licensed Landscape Architect, registered in the State of Florida. This certification shall consist of the professional discipline official's embossed seal bearing the professional discipline official's registration number, signature and date on each sheet of the drawing set. In addition, the key sheet, cover sheet or first sheet of the plans set shall list the business address and telephone number for all of the professional discipline officials.

F. Representative items of work that should be shown on the record drawings as verified, changed or added are shown below:

1. All deviations from condition shown in the Construction Documents including Change Orders, Field Orders and other varying conditions.

2. Every utility (gas, telephone, power, water, force main, etc.) encountered and/or crossing drainage, water or sanitary sewer facilities (whether it is a conflict or has sufficient clearances) shall be located, both horizontally and vertically. The clearance between the facilities horizontal and vertical shall be noted. For instance, if a two inch (2”) gas main crosses over the top of a six inch (6”) potable water main, the bottom elevation of the gas main shall be noted and the top of the water main shall be noted. The difference between the two facilities will be the clearance between the two facilities. Parallel mains shall note the clearance between the outside of the mains. It shall be the Contractor's responsibility to note these crossings on a daily basis and ensure that this information is reflected on the Record Drawing plan set. Crossings will not require state plane coordinates.

3. Pipelines that are "dead" or have been abandoned shall be located during construction and shall be annotated Record Drawing Plans.

4. As-built survey drawings shall meet applicable minimum technical standards for land surveys as outlined in Section 61G17 (https://www.flrules.org/gateway/Division.asp?DivID=269) of the Florida Administrative Code.

NOTE: For technical information on AutoCAD and GIS, please refer to the "Electronic As-Built Requirements" located on the City Engineering Website:

https://cdn.pompanobeachfl.gov/city/pages/engineering/downloadslinks/06_Digital%20Record%20Drawing%20Standards%20and%20Requirements%20(2019).pdf

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Exhibit “D” – Cover Page

1. Insurance Requirements
2. Approved Insurance

EXHIBIT D – INSURANCE REQUIREMENTS

CONTRACTOR shall not commence services under the terms of this Agreement until certification or proof of insurance detailing terms and provisions has been received and approved in writing by the CITY's Risk Manager. If you are responding to a bid and have questions regarding the insurance requirements hereunder, please contact the City's Purchasing Department at (954) 786-4098. If the contract has already been awarded, please direct any queries and proof of the requisite insurance coverage to City staff responsible for oversight of the subject project/contract.

CONTRACTOR is responsible to deliver to the CITY for timely review and written approval/disapproval Certificates of Insurance which evidence that all insurance required hereunder is in full force and effect and which name on a primary basis, the CITY as an additional insured on all such coverage.

Throughout the term of this Agreement, CITY, by and through its Risk Manager, reserve the right to review, modify, reject or accept any insurance policies required by this Agreement, including limits, coverages or endorsements. CITY reserves the right, but not the obligation, to review and reject any insurer providing coverage because of poor financial condition or failure to operate legally.

Failure to maintain the required insurance shall be considered an event of default. The requirements herein, as well as CITY's review or acceptance of insurance maintained by CONTRACTOR, are not intended to and shall not in any way limit or qualify the liabilities and obligations assumed by CONTRACTOR under this Agreement.

Throughout the term of this Agreement, CONTRACTOR and all subcontractors or other agents hereunder, shall, at their sole expense, maintain in full force and effect, the following insurance coverages and limits described herein, including endorsements.

A. Worker's Compensation Insurance covering all employees and providing benefits as required by Florida Statute, Chapter 440. CONTRACTOR further agrees to be responsible for employment, control and conduct of its employees and for any injury sustained by such employees in the course of their employment.

B. Liability Insurance.

(1) Naming the City of Pompano Beach as an additional insured as CITY's interests may appear, on General Liability Insurance only, relative to claims which arise from CONTRACTOR's negligent acts or omissions in connection with CONTRACTOR's performance under this Agreement.

(2) Such Liability insurance shall include the following <u>checked types of insurance</u> and indicated minimum policy limits.

Type of Insurance		Limits of Liability
GENERAL LIABILITY:		Minimum 1,000,000 Per Occurrence and $2,000,000 Per Aggregate
* Policy to be written on a claims incurred basis		
XX	comprehensive form	bodily injury and property damage
XX	premises - operations	bodily injury and property damage
XX_	explosion & collapse hazard	
XX_	underground hazard	
XX	products/completed operations hazard	bodily injury and property damage combined
XX	contractual insurance	bodily injury and property damage combined
XX	broad form property damage	bodily injury and property damage combined
XX	independent CONTRACTORs	personal injury
XX	personal injury	
__	sexual abuse/molestation	Minimum $1,000,000 Per Occurrence and Aggregate
__	liquor legal liability	Minimum $1,000,000 Per Occurrence and Aggregate

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AUTOMOBILE LIABILITY:	[X]	Minimum $1,000,000 Per Occurrence and $1,000,000 Per Aggregate. Bodily injury (each person) bodily injury (each accident), property damage, bodily injury and property damage combined.	
XX	comprehensive form	[ ] Minimum $10,000/$20,000/$10,000 (Florida's Minimum Coverage)	
XX	owned		
XX	hired		
XX	non-owned		

REAL & PERSONAL PROPERTY			
___	comprehensive form	Agent must show proof they have this coverage.	

EXCESS LIABILITY		Per Occurrence	Aggregate
XX_	other than umbrella	bodily injury and property damage combined	$5,000,000	$5,000,000

PROFESSIONAL LIABILITY		Per Occurrence	Aggregate
XX _	* Policy to be written on a claims made basis	$1,000,000	$2,000,000

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(3) If Professional Liability insurance is required, CONTRACTOR agrees the indemnification and hold harmless provisions set forth in the Agreement shall survive the termination or expiration of the Agreement for a period of three (3) years unless terminated sooner by the applicable statute of limitations.

C. Employer's Liability. If required by law, CONTRACTOR and all subcontractors shall, for the benefit of their employees, provide, carry, maintain and pay for Employer's Liability Insurance in the minimum amount of One Hundred Thousand Dollars ($100,000.00) per employee, Five Hundred Thousand Dollars ($500,000) per aggregate.

D. Policies: Whenever, under the provisions of this Agreement, insurance is required of the CONTRACTOR, the CONTRACTOR shall promptly provide the following:

(1) Certificates of Insurance evidencing the required coverage;

(2) Names and addresses of companies providing coverage;

(3) Effective and expiration dates of policies; and

(4) A provision in all policies affording CITY thirty (30) days written notice by a carrier of any cancellation or material change in any policy.

E. Insurance Cancellation or Modification. Should any of the required insurance policies be canceled before the expiration date, or modified or substantially modified, the issuing company shall provide thirty (30) days written notice to the CITY.

F. Waiver of Subrogation. CONTRACTOR hereby waives any and all right of subrogation against the CITY, its officers, employees and agents for each required policy. When required by the insurer, or should a policy condition not permit an insured to enter into a pre-loss agreement to waive subrogation without an endorsement, then CONTRACTOR shall notify the insurer and request the policy be endorsed with a Waiver of Transfer of Rights of Recovery Against Others, or its equivalent. This Waiver of Subrogation requirement shall not apply to any policy which includes a condition to the policy not specifically prohibiting such an endorsement, or voids coverage should CONTRACTOR enter into such an agreement on a pre-loss basis.

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

COMMERCIAL GENERAL LIABILITY INSURANCE

Contractor agrees to maintain commercial general liability at a limit of liability not less than $1,000,000 each occurrence and $2,000,000 annual aggregate. Contractor agrees it's coverage will not contain any restrictive endorsement(s) excluding or limiting product/completed operations, independent contractors, broad form property damage, X-C-U coverage, contractual liability or separation of insureds.

ADDITIONAL INSURED ENDORSEMENTS

Contractor agrees to endorse City as an additional insured on the commercial general liability with the CG 20 10 04 07 or GC 20 10 14 13 Additional Insured - City's Lessees, or Contractors endorsement, or a similar endorsement providing equal or broader additional insured coverage, in addition to endorsing the City as an additional insured with the CG 20 37 14 13 Additional Insured – City's Lessees, or Contractors – Completed Operations, or a similar endorsement providing equal or broader additional insured coverage **(Attach actual copies of the endorsement(s)…contact your insurance agent).**

BUSINESS AUTO LIABILITY INSURANCE

The Contractor agrees to maintain business automobile liability at a limit of liability not less than $1,000,000 each occurrence. Coverage shall include liability for owned, non-owned and hired automobiles. In the event the Contractor does not own automobiles, the Contractor agrees to 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.

CONTRACTOR'S POLLUTION LIABILITY INSURANCE

The Contractor agrees to maintain contractor's pollution liability at a limit of liability not less than $1,000,000 each claim and $2,000,000 for all claims. If this insurance is provided on an annual practice insurance policy, the Contractor agrees to maintain the policy for a period not less than three (3) years after the issuance of the final release and certificate of final completion issued by the City for the Project. The original retroactive date on an annual practice policy must equal or proceed the effective date of the Contract, or the performance of the Work hereunder and remain unchanged for the same three (3) year period stated for this type of policy. If this insurance is provided on a per-project basis insurance policy, the Contractor agrees to maintain an extended reporting period not less than three (3) years commencing the issuance of the final release and certificate of final completion issued by the City for the Project. The original retroactive date on a per-project basis policy must equal or proceed the effective date of the Contract, or the performance of Work hereunder and remained unchanged for the same three (3) year period stated for this type of policy.

CONTRACTOR'S PROFESSIONAL LIABILITY INSURANCE

The Contractor agrees to maintain contractor's professional liability at a limit of liability not less than $1,000,000 each claim and $2,000,000 total for all claims. If this insurance is provided on an annual practice insurance policy, the Contractor agrees to maintain the policy for a period not less than three (3) years after the issuance of the final release and certificate of completion issued by City for the Project. The original retroactive date on an annual practice policy must equal or proceed the effective date of the Contract, or the performance of the Work hereunder and remained unchanged for the same three (3) year period stated for this type of policy. If this insurance is provided on a per-project basis insurance policy, the Contractor agrees to maintain an extended reporting period not less than three (3) years commencing the issuance of the final release and certificate of final completion issued by the City for the Project. The original retroactive date on a per-project basis policy must equal or proceed the effective date of the Contract, or the performance of the Work hereunder and remained unchanged for the same three (3) year period stated for this type of policy.

COMMERCIAL UMBRELLA/EXCESS LIABILTY INSURANCE

The Contractor agrees to maintain either a commercial umbrella or excess liability at a limit of liability not less than $5,000,000 each occurrence and $5,000,000 aggregate.
The Contractor agrees to endorse the City as an additional insured on the commercial umbrella/excess liability, unless the commercial umbrella/excess liability provides coverage on a true follow-form basis, or the City is automatically defined as an additional protected person. The City's additional insured status or policy's follow-form type must be stated on the certificate of insurance provided to the City.

BUILDER'S RISK INSURANCE
The Contractor, prior to notice to proceed or commencement of the Work, whichever occurs first agrees to maintain builder's risk insurance with a policy period not less than the Contract Time, plus three (3) additional months affording coverage to protect the interests of the City, Contractor, and Contractor's sub-contractors at every tier, architects, or engineers, including sub-limits for i) debris removal of damaged covered property, ii) any property acquired under a sales tax incentive program iii) property in transit, iv) property stored off-site and v) boiler and machinery (machinery), which may become part of the Work. Such insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who have an insurable interest in such insurance, until final payment has been made as provided in the contract or until no person or entity other than the City has an insurable interest in the property as specifically required per the contract to be covered, whichever is later.

Coverage shall be written on an all-risk, replacement cost, and completed value form basis in an amount at least equal to one-hundred percent 100% of the projected completed value of the Work, and include but not limited to cost of materials supplied, used or installed by others, including temporary works, scaffolding, shoring, form work and fences, as well as subsequent modifications of that sum due to Change Orders. This policy shall also include coverage for soft costs, which shall include at a minimum additional expense for interest, legal, consulting, insurance, architectural and engineering, Contractor's overhead and general conditions, and equipment rental, in an amount not less than ten percent (10%) of the one-hundred percent (100%) projected completed value of the Work. The soft cost limit shall be a scheduled limit on the policy in addition to a scheduled limit for the hard cost amount. Collectively, the scheduled soft cost limit and hard cost limit should equal one-hundred percent (100%) of the projected value of the Work. The Contractor agrees to be responsible for reporting increases in the projected completed value of the Work due to Change Orders to its insurance carrier. The City agrees the builders' risk policy shall contain certain sub-limits in amounts less than one-hundred percent (100%) of the projected completed value as commonly found in the standard all-risk builders' risk insurance coverage form for projects of similar types and amounts.
The Contractor further agrees that any flat deductible(s) shall not exceed twenty-five thousand ($25,000) and any, percentage deductible (when applicable) for wind or a flood insurance sub-limit shall not exceed five percent (5%) of the one-hundred percent (100%) projected completed value of the Work, unless disclosed on the certificate of insurance to the City. The Contractor shall disclose to and provide City proof of any deductible buy-down policy purchased, including limits and premiums, specifically applicable to any percentage deductible(s) under the Builder's Risk insurance policy.

Contractor agrees to endorse the builder's risk insurance with a standard permission to occupy endorsement for a period of at least one hundred twenty (120) days after the building is occupied

in whole or in part, or put to its intended use, or partially accepted by the City. The manuscript endorsement shall amend the automatic termination clause to only terminate coverage if the policy expires, is cancelled, the City's interest in the building ceases, or the building is accepted or insured by the City. The Contractor agrees this endorsement must be stated on the certificate of insurance provided to the City.

The Contractor agrees to endorse the City as a "Loss Payee" on the builder's risk insurance.
If available under the builder's risk insurance coverage form, the Contractor may include flood insurance coverage in the builder's risk insurance policy. The Contractor agrees the flood sublimit shall not be less than twenty-five percent (25%) of the one-hundred percent (100%) projected completed value of the Work with a percentage deductible, if applicable, not greater than five percent (5%) of the hard costs amount stated in the builder's risk insurance policy, unless disclosed on the certificate of insurance to City. This sublimit for flood insurance may be included in the one-hundred percent (100%) of the projected completed value of the Work stated in contract. In addition, the Contractor shall purchase a flood insurance policy for each building through the National Flood Insurance Program (NFIP) as defined below. If a sub-limit for flood insurance, as stated above, is included and continuously maintained in the builder's risk policy by the Contractor, then the excess flood insurance requirement below is waived and not required by the City.

FLOOD INSURANCE
The Contractor shall place the flood insurance once the bottom floor of each building is poured and the finished floor elevation is established by a land surveyor, and an elevation certificate is available for each building, as defined by the National Flood Insurance Program (NFIP), under the Work, the Contractor agrees to maintain an individual NFIP General Flood Policy on each building under construction in the maximum amount available under the NFIP. The flood deductible for each building insured under the NFIP policy may not exceed ten-thousand dollars ($10,000), unless disclosed on the certificate of insurance to the City. In the event any of the NFIP General Flood insurance's policy periods of twelve (12) months on each building expires prior to each building obtaining a final release and certificate of final completion issued by the City for the Project, the Contractor agrees to renew the NFIP General Flood insurance policy on each building. The Contractor shall provide the City with two (2) new elevation certificates by a land surveyor based on finished construction for each building. One (1) original signed and sealed final elevation certificates for each building shall be provided to the City's Risk Manager.

The Contractor agrees to provide individual excess flood insurance policies over and above the underlying NFIP policies on each building under construction. The excess flood insurance coverage amounts shall not be less than twenty-five percent (25%) of the one-hundred percent (100%) projected completed value for each building insured. The deductible on each excess flood insurance policy is the maximum policy limit of the underlying Primary NFIP General Flood insurance policies. In the event any of the individual excess flood insurance's policy periods of twelve (12) months on each building expires prior to each building obtaining a final release and certificate of final completion issued by the City for the Project, the Contractor agrees to renew the individual excess flood insurance policy on each building. If excess flood insurance, as stated above, is provided and continuously maintained by the Contractor, then the flood insurance sub-limit requirement in Section above is waived and not required by the City.
For any building suffering flood damage as defined in the underlying NFIP flood policies, the Contractor agrees to pay for all flood losses as a result of the underlying NFIP policies

terminating and not be maintained as terminating and not be maintained as an underlying primary insurance requirement to maintain a NFIP policy for the maximum amount available under either the builder's risk insurance and, if applicable, all excess flood insurance policies. The Contractor agrees to endorse the City as a Loss Payee under all National Flood Insurance Program flood policies and if applicable, all excess flood insurance policies.

A loss insured under the builder's risk insurance, and if applicable, the NFIP flood or excess flood insurance, shall be adjusted by the insurance carrier on behalf of the Contractor and City, who both agree to work collectively to produce the necessary proof of loss to satisfy applicable pre-loss and post-loss policy conditions for each insurance claim. Settlement checks shall be made payable in accordance with each policy's settlement provisions. Any settlement proceeds from a claim shall be restrictively endorsed by all parties named on the check to be deposited in the City's general fund for construction under the municipal campus account. All settlement proceeds shall be used to replace the damage itemized in the statement of loss accepted by each insurance company. The City may make the necessary financial journal entries (including change order to the purchase order) in the municipal campus account in a fiduciary capacity for the Contractor, and all other parties with an insurable interest, to preserve and maintain the amount of budgeted funds allocated to this Work just prior to any loss. Under no circumstances, may either party be unjustly enriched from any insurance settlement proceeds from claims filed under the builder's risk insurance, and if applicable, the NFIP flood or excess flood insurance. In the event any portion of the contract relating to builders risk, NFIP flood or excess flood insurance conflicts with any other section in this Contract, or any section in an AIA Document A133–2009, this Section of this contract shall govern unless mutually agreed upon otherwise by Contractor and City.

PUBLIC CONSTRUCTION BOND

The Contractor shall furnish a Public Construction Bond to the City in an amount not less than one hundred percent (100%) of the Contract Price. The bond furnished by the Contractor shall incorporate by reference the terms of the Contract as fully as though they were set forth verbatim in such bonds. In the event the Price is adjusted by Change Order executed by the Contractor, the penal sum of the bond shall be deemed increased by like amount. The bond furnished by the Contractor shall be in form required by the City and in conformity with Section 255.05, Florida Statutes, shall be recorded in the Public Records of Broward County before construction commences, and shall be executed by a surety, or sureties, reasonably suitable to the City.

WAIVERS OF SUBROGATION

The Contractor agrees by entering into this written Contract to a waiver of subrogation in favor of the City for each policy required by this section providing coverage during the life of this Contract. When required by the insurer, or should a policy condition not permit the Contractor to enter into a pre-loss Contract to waive subrogation without an endorsement, the Contractor agrees to notify the insurer and request the policy be endorsed with a waiver of transfer of rights of recovery against others, or an equivalent endorsement. This waiver of subrogation requirement shall not apply the public construction bond to any policy, which includes a condition that specifically prohibits such an endorsement, or voids coverage should the Contractor enter into such a Contract on a pre-loss basis. Waiver of subrogation must be shown on the certificate of insurance to the City.

Exhibit D

SHIFF-1 OP ID: DL

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 04/07/2026

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Lanza Insurance Agency Inc. 9900 W Sample Road - Ste 300 Coral Springs, FL 33065 Diana Lanza Schott 954-825-0424	CONTACT NAME: Diana Lanza Schott PHONE (A/C, No, Ext): 954-825-0424 FAX (A/C, No): E-MAIL ADDRESS: Diana@Lanzalns.com
INSURED Shiff Construction & Development Inc 180 SW 6 Street Pompano Beach, FL 33060	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : James River Insurance Co — 12203 INSURER B : Progressive Express Ins. Co. — 10193 INSURER C : James River Insurance Co — 12203 INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE / X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY / X PRO-JECT / LOC OTHER:	X	X	P0000006808	04/04/2026	04/04/2027	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
B	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY / SCHEDULED AUTOS X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY	X	X	06427311	05/07/2026	05/07/2027	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
C	UMBRELLA LIAB / X OCCUR EXCESS LIAB / CLAIMS-MADE DED / RETENTION $	X	X	P0000014669	04/04/2026	04/04/2027	EACH OCCURRENCE AGGREGATE	$ 1,000,000 $ 1,000,000
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		Note: SHIFF will increase its umbrella insurance coverage pending award of the project.			PER STATUTE / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Shiff Construction & Develpement Inc is listed as an Additional Insured on the Commercial General Liability on a Primary -Non Contributory basis including Completed Operations
Waiver of Subrogation on general liability in favor of Shiff Construction & Develpement Inc CON'T

CERTIFICATE HOLDER

BIDPURP

For Bid Purposes Only

Shiff Construction and Development Inc
180 SW 6 Street
Pompano Beach, FL 33060

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

PLACEHOLDER

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NOTEPAD:

HOLDER CODE BIDPURP
INSURED'S NAME Shiff Construction &

SHIFF-1
OP ID: DL

PAGE 2
Date 04/07/2026

Shiff Construction & Develpement Inc is listed as an Additional Insured on the Commercial General Liability on a Primary -Non Contributory basis including Completed Operations
Waiver of Subrogation on general liability in favor of Shiff Construction & Develpement Inc
A minimum thirty (30) day endeavor to notify due to cancellation
Non payment 10 days

PLACEHOLDER

SHIFCON-02 GYOON

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 9/18/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Acrisure Southeast Partners Insurance Services, LLC
1317 Citizens Blvd
Leesburg, FL 34748

CONTACT NAME:
PHONE (A/C, No, Ext): (800) 845-8437 FAX (A/C, No):
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Insurance Company of the West	27847
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
SHIFF CONSTRUCTION & DEVELOPMENT, INC.
180 SW 6th St
Pompano Beach, FL 33060

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						X PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N ☐ N / A			WFL505097306	9/26/2025	9/26/2026	E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

FOR BID PURPOSES ONLY
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxx, XX

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

PLACEHOLDER

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Bid Title: _____ RFP _____
The City of Pompano Beach, Florida Page __ of __ Pages

ATTACHMENT G – WORKERS' COMPENSATION AFFIDAVIT

THE CITY OF POMPANO BEACH, FLORIDA

WORKERS' COMPENSATION AFFIDAVIT

CERTIFICATION OF NUMBER OF EMPLOYEES

(Complete only if your firm has less than four (4) employees)

N/A

_____ (Company Name) hereby certifies and affirms that the entity named herein has less than four (4) employees nor uses any subcontractor(s) with four (4) or more employees and will not have four (4) or more employees during the term of this contract.

I further certify that, if during the period covered by this affidavit, the entity named herein becomes an employer with four (4) or more employees or uses subcontractor(s) with four (4) or more employees, a Certificate of Insurance shall be provided to the City of Pompano Beach, within five (5) business days.

With respect to the construction industry, all employment in which one (1) or more employees are employed shall provide evidence of Workers' Compensation coverage.

Under penalties of perjury, I declare that I have read the foregoing WORKERS' COMPENSATION AFFIDAVIT and that the facts stated in it are true.

Electronic or handwritten signature:
_____

Print/Type Name: _____

Title: _____

PLACEHOLDER

BRODER & COMPANY
6191 Orange Drive, #61396
Davie, FL 33314

7/23/2025

RE: Shiff Construction & Development, Inc.

To Whom It May Concern:

We are the bonding agents for Shiff Construction & Development, Inc. They are presently bonded by Westfield Insurance Company. Their present bond line is $60 million single job and $80 million aggregate uncompleted work program.

Westfield Insurance Company is rated A (Excellent) XIII by AM Best.

Our investigation of Shiff Construction & Development, Inc. has been extremely favorable, and we are confident that you will find them highly qualified and responsive to your needs. We would anticipate no difficulty in being able to respond to any bonding requirements subject to our review and determination that the contract and bond documents are acceptable.

If you have any questions, please let us know.

Sincerely,

Arthur K. Broder
Broder & Company
Agent & Attorney-in-Fact
Westfield Insurance Company

PLACEHOLDER