

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS

Purchasing Department

600 S. Commerce Avenue

Sebring, Florida 33870

Purchasing Main Line: (863) 402-6500

Purchasing Designated Contact: Lori DeLoach, Purchasing Manager

Email: LDELOACH@HighlandsFL.Gov

Direct Line: (863) 402-6504



INVITATION TO BID

**ITB No: 22-013-LKD New Traffic Operations Building
Highlands County Project No. 19007**

- ✓ **Non-Mandatory Pre-Solicitation Meeting:** **Tuesday, April 25, 2023, 01:30 PM**
Location: **Engineering Training Room, 505 S. Commerce Ave, 2nd Floor, Sebring, FL 33870**
- ✓ **Request for Information Deadline:** **Thursday, May 4, 2023, prior to 5:00 PM**
- ✓ **Submission Deadline:** **Wednesday, May 17, 2023, prior to 3:30PM**

Advertised Date: April 15, 2023, and April 22, 2023

PROHIBITED SUBMISSION TO THIS SOLICITATION/PROPOSAL/QUOTE. Any party who is in active litigation with Highlands County on the due date for responses to this solicitation/proposal/quote or who has received notice from Highlands County that the party is in breach of a contractual obligation under a contract with Highlands County and where such breach has not been resolved to the satisfaction of Highlands County on the due date for responses to this solicitation/proposal/quote, shall not submit a response to this solicitation/proposal/quote. In the event of a submission by such a party as described hereinabove, the submission shall be considered non-responsible and shall be rejected.

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HIGHLANDS COUNTY PROJECT NO. 19007

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HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS

Purchasing Division and Engineering Department



DIVISION 0 - SECTION 00010 INVITATION TO BID ("ITB")

The Board of County Commissioners ("Board") of Highlands County, Florida ("County") will receive sealed Bids in the Highlands County Purchasing Division ("Purchasing Division") for:

ITB NO. 22-013 New Traffic Operations Building, Highlands County Project No. 19007

Specifications may be obtained by downloading from our website: www.highlandsfl.gov, or on www.VendorRegistry.com. Questions can be directed at Purchasing Designated Contact noted on the cover page of this solicitation.

A **NON-MANDATORY PRE-BID meeting will be held at 1:30 P.M. on Tuesday, April 25, 2023**, in the Highlands County Engineering Training Room, 505 S. Commerce Ave. 2nd Floor, Sebring, Florida 33870.

The purpose of this meeting is to provide a forum where the Bidders can further familiarize themselves with the Specifications of the ITB. The public is invited to attend this meeting.

SUBMISSIONS and original BID BOND, if applicable, MUST BE DELIVERED to the Purchasing Department, 600 S. Commerce Avenue., Sebring, FL 33870 to reach said office no later than **3:30 P.M., Wednesday, May 17, 2023**, at which time they will be opened. Responses may be submitted by one of the following methods:

Electronic submission to the County website, www.highlandsfl.gov linking to VendorRegistry.com in **one all-inclusive adobe file** of all documents and, **Label file name as "22-013 Bidder Name-Submission"**

OR

Hard Copy submission in a sealed and marked package. Affix the supplied "Sealed Solicitation Label" with the name of the Proposer, solicitation number, and title to the exterior of the package so as to identify the enclosed response. A hard copy response is to include the following: **one (1) original all-inclusive paper copy** (signed in blue ink), of the response, and electronic copy (Thumb drive) of the original response containing **one all-inclusive Adobe file** of all documents. **Label file name as "22-013 Bidder Name Submission"**

NOTE: Original Bid Bond (hard copy,) as required, are to be physically received by Purchasing prior to the submission deadline provided on the cover page or as revised via Addendum.

LATE SUBMISSIONS: Submissions received later than the date and time as specified will be rejected. The Board shall not be responsible for delays caused by the method of delivery such as, but not limited to; Internet, United States Postal Service, overnight express mail service(s), or delays caused by any other occurrence.

One or more County Commissioners may be in attendance at meetings.

Highlands County's Local Preference Policy and Women/Minority Business Preference Policy will apply to the award of this Bid. Please see the Highlands County Board of County Commissioners Purchasing Manual with an effective date of June 21, 2022.

The County reserves the right to accept or reject any or all Bids or any parts thereof, and the determination of this Award, if an Award is made, will be made to the most responsive and responsible Bidder whose Bid and qualifications indicate that the Award will be in the best interest of the County. The County reserves the right to waive irregularities in the Bid.

To receive consideration, a Bidder must submit a Bid on all Work. A Bid Bond in an amount of five percent (5%) of the Bid must be included on Bids over one hundred thousand dollars (\$100,000.00). If the successful Bid is greater than two hundred thousand dollars (\$200,000.00), a Public Construction Bond will be required. An Irrevocable Letter of Credit may be considered in lieu of the Public Construction Bond depending on its verbiage. The Bidder must be a Licensed to do this work in the State of Florida. The Bid must be accompanied by evidence of the Bidder's qualifications to do business in the State of Florida.

The principal features of the Project are:

To provide all materials, equipment, and labor to construct an approximately 10,321 sf office building, warehouse, open storage area, parking area and associated incidental construction.

The County does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of the Board's functions, including one's access to, participation, employment or treatment in its programs or activities. Anyone requiring reasonable accommodation as provided in the Americans with Disabilities Act or Section 286.26, Florida Statutes, should contact Human Resources, ADA Coordinator at: 863-402-6500 (Voice), or via Florida Relay Service 711, or by e-mail: hrmanager@highlandsfl.gov. Requests for CART or interpreter services should be made at least 24 hours in advance to permit coordination of the service.

Board of County Commissioners, Highlands County, FL

<http://www.highlandsfl.gov>

-END OF SECTION-

DIVISION 0 - SECTION 00100
INSTRUCTIONS TO BIDDERS
ITB 22-013-LKD

Article 1 - Defined Terms

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated below and in Section 00700 of this ITB which are applicable to both the singular and plural thereof:
- A. Alternative – Amount proposed by Bidder and stated on the Bid Form that will be added to or deducted from the base Bid amount if Engineer decides to accept a corresponding change in either Scope of Work or in products, materials, equipment, systems or installation methods described in Construction Documents.
 - B. Award – The selection by the County of the lowest responsible and responsive Bidder to perform the Work.
 - C. Bid – The Bid Form and other documents submitted by a Bidder in response to this ITB.
 - D. Bidder – The individual or entity who submits a Bid directly to the County.
 - E. Bid Form – Section 00300 of this ITB, which shall be used to submit a Bid. This section may or may not include an Excel Itemized Bid Form.
 - F. Bidding Documents – This ITB, all Addenda to this ITB, and the Construction Documents.
 - G. Board – County’s Board of County Commissioners.
 - H. Construction Documents – The Civil construction Drawings and Specifications for the “NEW TRAFFIC OPERATIONS BUILDING, Highlands County Project No. 19007”, dated 12/7/2022, consisting of nine (9) sheets and Architectural Drawings and Specifications for the “NEW TRAFFIC OPERATIONS BUILDING, designed by CMHM Architects Inc., dated 5/21/2022, consisting of twenty-two (22) sheets.
 - I. County Attorney – Highlands County’s Attorney.
 - J. County Engineer – Highlands County’s Engineer.
 - K. County or Owner – Highlands County, a political subdivision of the State of Florida.
 - L. Engineer – The Engineer of Record.
 - M. Project Manager – Highlands County’s Project Manager
 - N. Purchasing Division - Highlands County’s Purchasing Division, which issues Bidding Documents and administers the bidding procedures.
 - O. Site – The Site described and depicted in the Construction Documents.
 - P. Solicitation Package – Consist of all published Bid Documents. To include, but not limited to; Invitation to Bid, Itemized Bid Form, Addenda, and Plans.
 - Q. Work – The Work described and depicted in the Construction Documents.
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Article 2 - Copies of Bidding Documents

- 2.01 Complete sets of the Solicitation Package in the number and for the deposit sum, if any, stated in the Advertisement or this ITB may be obtained from the Purchasing Division.
- 2.02 The official Solicitation Package is available for download through the County's website HighlandsFL.Gov through VendorRegistry.com the County's official advertising mechanism. Information obtained from other sites are to be considered UN-official and possibly incomplete.
- 2.03 Complete a complete Solicitation Package must be used in preparing Bids; neither Owner nor Project Manager assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.04 Owner and Project Manager in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

Article 3 - Qualifications of Bidders

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit detailed written evidence with the Bid Form as follows:
 - A. **Experience:** Bidder is to have completed three (3) jobs within the past five (5) years which are of equal magnitude and complexity as the type of work to be done for the Owner. Provide a list of the three (3) jobs which include the name of the entity, complete address, name, phone number, fax, and email of a responsible individual qualified to respond to questions concerning the Bidder's abilities, costs, schedules, etc. Prior successful, on-time accomplishment of such equal work will be a consideration in determining whether the Bidder is qualified to perform the Work.
 - B. **Contractor License Requirements:** All Contractors performing construction and related work in Highlands County must comply with Highlands County Ordinances, codes, rules and regulations, Florida law, and the requirements of any and all other governmental agencies which have jurisdiction over the work being performed. A copy of the current Contractor License it to be provided.
- 3.02 Each Bid is to contain proof of enrollment in E-Verify.
- 3.03 Provide a print out of the SunBiz.Org registration for your EIN as evidence of Bidder's qualification to do business in the State.
- 3.04 In addition, the bidder may be requested to demonstrate Bidder's qualifications to perform the Work, within ten (10) days and prior to Notice of Award,
 - A. The Bidder may be requested to submit detailed written evidence such as financial data (note if financial data is considered confidential it must be marked as such) and other such data as may be called for below:

- B. A listing of all Subcontractors is required when the subcontract value exceeds ten percent (10%) of the total contract amount. Provide experience statements for these Subcontractors.
- C. List of present commitments (workload), including name of project, location, and value of contract.

Article 4 - Examination of Bidding Documents, Other Related Data, and Site

- 4.01 Subsurface and Physical Conditions known to Owner are shown in the Construction Documents. No Site-specific subsurface studies have been done.
- 4.02 Underground Facilities known to Owner are shown on the Construction Documents. No Site-specific utility locates have been done.
- 4.03 No Hazardous Environmental Condition has been identified at the Site.
- 4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in Paragraphs 5.03, 5.04 and 5.05 of Section 00700 Standard General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to Hazardous Environmental Conditions at the Site, if any, and possible changes in the Contract Documents due to Hazardous Environmental Conditions uncovered or revealed at the Site which were not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 5.06 of Section 00700 Standard General Conditions.
- 4.05 On request, the Purchasing Division will provide Bidder access to Site to conduct such examinations, investigations, explorations, tests, and studies, as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.
- 4.06 On request, the Purchasing Division will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.
- 4.07 It is the responsibility of each Bidder before submitting a Bid to:
 - A. Examine and carefully study the Solicitation Package, including any Addenda and the other related data identified in the Bidding Documents;
 - B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
 - C. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
 - D. Carefully study all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site;

- E. Obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, test, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
 - F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Document;
 - G. Become aware of the general nature of the Work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Document;
 - H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
 - I. Promptly give Engineer and the Purchasing Division written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer and the Purchasing Division is acceptable to Bidder; and
 - J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer and the Purchasing Division written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer and the Purchasing Division are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

Article 5 - Pre-Bid Meeting

- 5.01 Pre-Bid Meeting are as specified on the cover page of this solicitation and may be revised via addenda.

Article 6 - Site and Other Areas

6.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work is to be obtained and paid for by the Contractor. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents.

Article 7 - Interpretation and Addenda

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be directed to the Purchasing Division. Interpretations or clarifications considered necessary by the Purchasing Division and Project Manager in response to such questions will be issued by Addenda and will be posted on the website under this solicitation by the Purchasing Division. Requests for Information (RFI) received after the set date may not be answered. Only RFI answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner, Engineer or the Purchasing Division.
- 7.03 Addenda will be posted to the County's website; www.highlandsfl.gov. It is the sole responsibility of the Bidder to frequently check the County's website for notifications such as Addendums, meeting notifications.

Article 8 - Bid Security

- 8.01 **Bid Bond:** A Bid Bond in the amount of five percent (5%) of the Bid, must be included on each Bid over one hundred thousand dollars (\$100,000.00). The **Original Bid Bond (hard copy)**, as required, are to be physically received by Purchasing prior to the submission deadline provided on the cover page or as revised via Addendum.
- 8.02 **Public Construction Bond:** If the successful Bid is greater than two hundred thousand dollars (\$200,000.00), a "Public Construction Bond" of not less than one hundred percent (100%) of the Awarded Bid amount will be required. All Bonds must be in a form acceptable to Owner and County Attorney. Awarded Bidder must record Public Construction Bond at the Clerk's Recording Department and comply with Section 255.05, Florida Statutes. All Bonds must be in a form acceptable to Owner and County Attorney.

Article 9 - Contract Times

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed 335 calendar days and, (b) final completion 365 calendar days and ready for final payment are set forth in the Bid Form.

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Article 10 - Liquidated Damages

- 10.01 Owner and Contractor recognize that time is of the essence of this Agreement, Section 00500, to be provided to the awarded Bidder, and that Owner will suffer financial loss if the Work is not completed within the times specified. In agreeing upon the daily liquidated damages amount stated in this paragraph, Owner and Contractor have considered the original Contract Price, the average construction, engineering, and inspection costs experienced by Owner, and anticipated costs of project-related delays and inconveniences to Owner and the public. Owner and Contractor also recognize the delays, expense, and difficulties involved in proving 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 (and not as a penalty) Contractor shall pay Owner **liquidated damages as shown on the Bid Form, Section 00300** for each calendar day that expires after the time specified as Final Completion on the Bid Form, Section 00300 until the Work is completed and ready for final payment. Liquidated damages shall be deducted by Owner from any balance due Contractor or, if the balance due Contractor is less than the amount of liquidated damages, Contractor shall pay to Owner the remaining unpaid liquidated damages within thirty (30) days after Owner's invoice is sent to Contractor.
- 10.02 Owner does not waive its right to liquidated damages due under this Agreement by allowing Contractor to continue and to finish the Work, or any part of it, after the expiration of the Contract Time including granted time extensions.
- 10.03 In the case of a default of this Agreement and the completion of the Work by Owner, Contractor and Contractor's surety are liable for the liquidated damages under this Agreement, but Owner will not charge liquidated damages for any delay in the final completion of Owner's performance of the Work due to any unreasonable action or delay on the part of Owner.

Article 11 - Substitute or "Or-Equal" Items

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment described in the Bidding Documents with consideration of possible substitute or "or-equal" items if allowed within the Bidding Documents. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer. **Application for such acceptance will be considered by Engineer during the allotted time frame for Request for Information (RFI).**

Article 12 - Subcontractors, Suppliers and Others

- 12.01 The apparent Successful Bidder, and any other Bidder so requested, shall within five (5) days after Bid opening, submit to Owner a list of all proposed contractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identifications are required. Such list shall be accompanied by an Experience Statement with pertinent information regarding similar projects and other evidence of qualification for each Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner, Project Manager or the Purchasing Division after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.
- 12.02 If the apparent Successful Bidder declines to make any such substitution, Owner may Award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner, Project Manager or the Purchasing Division makes no written objection prior to giving of the Notice of Award will be deemed acceptable to all indicated parties subject to revocation of such acceptance after the Effective Date of the Contract.
- 12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.
- 12.04 It is the responsibility of the Contractor to insure that all Subcontractors comply with all insurance requirements.

Article 13 - Bid Form

- 13.01 Bidder shall use and/or make necessary copies of Section 00300 "Bid Form" of this ITB for their Submittal Document(s).
- 13.02 All blanks on the Bid Form shall be completed by printing in black ink or by typewriter and the Bid Form shall be signed by a person with authorization pursuant to Florida law to represent the Bidder. A Bid Price shall be indicated for each unit price item listed therein, if applicable, or the words "No Bid", "No Change", or "Not Applicable" entered. All names shall be typed or printed below the signature line with all signatures in blue ink.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership and state of organization and type of partnership shall be shown below the signature.

- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.
- 13.06 A Bid by an individual shall show the Bidder's name and official address, telephone number, fax number, and email address.
- 13.07 A Bid by a joint venture shall be executed by each participant in the joint venture in accordance with the signature requirements stated in the preceding paragraph and in the manner indicated on the Bid Form. The official address of the joint venture must be shown below the signature.
- 13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.09 All Bid Forms shall have the name, official address, telephone number, fax number, and email address for communications regarding the Bid.
- 13.10 Attachments to the Bid Form shall include the following:
 - A. Documentation as required in Article 3 of this Section including a copy of Contractors License.
 - B. All certificates of insurances from the Contractor required to fulfill the obligations of this Project.
 - C. Certifications from Section 00160, signed and notarized.

Article 14 - Basis of Bid; Evaluation of Bids

- 14.01 Bidders shall submit a Bid on a Lump Sum and Unit Price basis as noted on the Bid Form for the Work listed in these Bid Documents.
- 14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances.

Article 15 - Submittal of Bids

- 15.01 Each prospective Bidder's to submit the requested documents and if required, the original hard copy Bid Bond Section 00410 of this ITB.
- 15.02 ***Any blank spaces on the form(s), qualifying notes or exceptions, counter offers, lack of required submittals, or signatures, on County's Form may result in the submission being declared non-responsive by the County. Any form not applicable is to be returned marked "N/A"***

The list of forms below is meant only as a guide. It is the Bidder's responsibility to review and include all requested and required documentation.

15.03 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or Invitation to Bid and shall be enclosed in a sealed opaque envelope or package, plainly marked with the Bid #, Bid / Project Title; (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the bid security and other required documents. The enclosed "Sealed Submission Label" it so be affixed to the exterior of the sealed hard copy submission package.

15.04 Responses may be submitted prior to the submission deadline date and time by either:

Electronic submission to the County website using VendorRegistry.com

OR

Hard Copy submission in a sealed and marked package with the name of the Respondent, solicitation number, and title so as to identify the enclosed response. A hard copy submission shall include one (1) original and one (1) exact electronic copy (thumb drive) of the Submission packet.

Original Bid Bonds (hard copy), as required, are to be received by Purchasing by the deadline provided on the cover page.

Article 16 - Modification and Withdrawal of Bids

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

Article 17 - Opening of Bids

17.01 Bids will be opened at the time and place indicated in the advertisement or ITB Section 00010 or as revised via Addenda, and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids by means of a copy of the "Bid Opening Sheet." The public is invited to attend this meeting.

Article 18 - Bids to Remain Subject to Acceptance

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form and as allowed by Section 119.071, Florida Statutes, but Owner may, in its sole discretion, release any Bid and return the bid security prior to the end of this period.

Article 19 - Award of Contract

19.01 Owner reserves the right to reject any or all Bids, including without limitation, non-conforming, non-responsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder that it finds, after reasonable inquiry and evaluation, to be non-responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an Award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the successful Bidder.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause of disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 Evaluation of Bids

A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternatives, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. In the comparison of Bids, alternatives will be applied in the same order of priority as listed in the Bid Form. For comparison purposes alternatives may be accepted until doing so would cause the budget to be exceeded. After determination of the successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to the successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.

C. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

D. In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or the entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as required by Article 12 of this Section 00100. The County reserves the right to approve subcontractors, Suppliers or the entities proposed for this project.

E. **PROHIBITED SUBMISSION TO THIS SOLICITATION** Any party who is in active litigation with Highlands County on the due date for responses to this solicitation or who has received notice from Highlands County that the party is in breach of a contractual obligation under a contract with Highlands County and where such breach has not been resolved to the satisfaction of Highlands County on the due date for responses to this solicitation, shall not submit a response to this solicitation. In the event of a submission by such a party as described hereinabove, the submission shall be considered non-responsible and shall be rejected.

- 19.04 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 19.05 If the Contract is to be awarded, Owner will Award the Contract to the Bidder whose Bid is determined to be the most advantageous to Owner, taking into consideration those Bids in compliance with the requirements as set forth in this ITB.
- 19.06 The acceptance of the Bid will be by written Notice of Intent of Award posted in the County's website HighlandsFL.Gov through VendorRegistry.Com. In the event of failure of the lowest responsible qualified Bidder to perform, as prescribed herein, Owner may Award to the next lowest responsible and responsive qualified Bidder.

Article 20 - Insurance

- 20.01 The successful Bidder shall provide the required Certificate of Insurance within 15 calendar days from the Notice of Intent to Award or prior to commencement of work whichever is sooner.

Article 21 - Signing of Agreement

- 21.01 When Owner gives a Notice of Award to the successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents, which are identified in the Agreement attached thereto. Within fifteen (15) days thereafter, successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached Contract Documents to Owner. Within thirty (30) days thereafter, Owner shall deliver one fully signed counterpart to successful Bidder.

Article 22 - Retainage

- 22.01 Provisions concerning retainage are set forth in the Contract Documents.

Article 23 - Designated Contacts and Request for Information (RFI) Deadline

- 23.01 All questions regarding this ITB must be submitted in writing
- A. to the Purchasing Designated Contact (identified on the cover page of this solicitation.)
 - B. Prior to the deadline provided on the cover.
 - C. The County will release responses in the form of an Addendum. Addendums will be posted to the County's website: www.highlandsfl.gov via www.VendorRegistry.com.
 - D. It is the Contractors responsibility to obtain and review all Addendums prior to bid submittal.

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DIVISION 0 - SECTION 00160

DRUG FREE WORKPLACE CERTIFICATION

CERTIFICATION PURSUANT TO SECTION 287.087, FLORIDA STATUTES

PREFERENCE TO DO BUSINESS WITH DRUG FREE WORKPLACE PROGRAMS

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to the HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS

by _____

[Print individual's name and title]

for _____

[Print name and state of incorporation or other formation of the entity submitting this sworn statement]

whose business address is _____ and

whose Federal Employer Identification Number (FEIN) is _____ (hereinafter referred to as "Bidder")

2. CERTIFICATION

Bidder hereby certifies that at the time of its Bid the Bidder has a drug free workplace program in place. The program meets the requirements of Section 287.087, Florida Statutes.

THIS CERTIFICATION IS MADE PURSUANT TO SECTION 287.087, FLORIDA STATUTES, AND IS, UPON DELIVERY, A PUBLIC RECORD.

Print Name: _____ Date: ____/____/____

STATE OF FLORIDA
COUNTY OF _____

The foregoing Certification was sworn to before me this ____ day of _____, 20____, by _____, as _____, the duly authorized officer of _____, on its behalf, who is either personally known to me [] or has produced _____ as identification [].

(AFFIX NOTARY SEAL)

Signature: _____

Print Name: _____

Notary Public, State of _____

Commission No. _____

My Commission Expires: _____

PUBLIC ENTITY CRIMES CERTIFICATION

**SWORN STATEMENT UNDER SECTION 287.133(3)(a), FLORIDA STATUTES,
ON PUBLIC ENTITY CRIMES**

**THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER
OFFICIAL AUTHORIZED TO ADMINISTER OATHS.**

DESCRIPTION OF CONTRACT: _____

STATE OF FLORIDA }ss
COUNTY OF _____ }

Before me, the undersigned authority, personally appeared _____ who, being by me first duly sworn, made the following statement:

1. The business address of _____ (name of bidder or contractor), is

2. I understand that a public entity crime as defined in Section 287.133 of the Florida Statutes includes a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity in Florida or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or such an agency or political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy or material misrepresentation.

3. I understand that "convicted" or "conviction" is defined by the statute to mean a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilt or nolo contendere.

4. I understand that "affiliate" is defined by the statute to mean (1) a predecessor or successor of a person or a corporation convicted of a public entity crime, or (2) an entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime, or (3) those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate, or (4) a person or corporation who knowingly entered into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months.

5. Neither the bidder or contractor nor any officer, director, executive, partner, shareholder, employee, member or agent who is active in the management of the bidder or contractor nor any affiliate of the bidder or contractor has been convicted of a public entity crime subsequent to July 1, 1989.

(Draw a line through paragraph 5 if paragraph 6 below applies.)

6. There has been a conviction of a public entity crime by the bidder or contractor, or an officer, director, executive, partner, shareholder, employee, member or agent of the bidder or contractor who is active in the management of the bidder or contractor or an affiliate of the bidder or contractor. A determination has been made pursuant to 287.133(3)

by order of the Division of Administrative Hearings that it is not in the public interest for the name of the convicted person or affiliate to appear on the convicted vendor list. The name of the convicted person or affiliate is

_____.

A copy of the order of the Division of Administrative Hearings is attached to this statement.

(Draw a line through paragraph 6 if paragraph 5 above applies.)

THIS SWORN STATEMENT IS MADE PURSUANT TO SECTION 287.133(3)A, FLORIDA STATUTES, AND IS, UPON DELIVERY, A PUBLIC RECORD

Signature: _____

Print Name: _____

Print Title: _____

On ____ day of _____, 20____.

Sworn and subscribed before me in the State and County first mentioned above on the _____ day of _____, 20____.

(AFFIX NOTARY SEAL)

Signature: _____

Print Name: _____

Notary Public, State of _____

Commission No. _____

My Commission Expires: _____

DISCRIMINATION CERTIFICATION

**CERTIFICATION PURSUANT TO SECTION 287.134, FLORIDA STATUTES
DISCRIMINATION; DENIAL OR REVOCATION OF THE RIGHT TO TRANSACT BUSINESS WITH
PUBLIC ENTITIES**

**THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER
OFFICIAL AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted to the HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS

by _____
[Print individual's name and title]

for _____
[Print name and state of incorporation or other formation of the entity submitting this sworn statement]

whose business address is _____ and

whose Federal Employer Identification Number (FEIN) is _____ (hereinafter referred to as "Bidder")

2. CERTIFICATION

Bidder hereby certifies that at the time of its Bid the Bidder has not been placed on the discriminatory vendor list by the Department of Management Services.

THIS CERTIFICATION IS MADE PURSUANT TO SECTION 287.134, FLORIDA STATUTES, AND IS, UPON DELIVERY, A PUBLIC RECORD.

Print Name: _____ Date: ____/____/____

STATE OF FLORIDA
COUNTY OF _____

The foregoing Certification was sworn to before me this ____ day of _____, 20____, by _____, as _____, the duly authorized officer of _____, on its behalf, who is either personally known to me [] or has produced _____ as identification [].

(AFFIX NOTARY SEAL)

Signature: _____
Print Name: _____
Notary Public, State of _____
Commission No. _____
My Commission Expires: _____

SCRUTINIZED COMPANIES CERTIFICATION

**CONTRACTING WITH SCRUTINIZED COMPANIES
CERTIFICATION PURSUANT TO SECTION 287.135, FLORIDA STATUTES**

**THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR
OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted to the HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS

by _____
[Print individual's name and title]

for _____
[Print name and state of incorporation or other formation of the entity submitting this sworn statement]

whose business address is _____ and

whose Federal Employer Identification Number (FEIN) is _____ (hereinafter referred to as "Bidder")

2. CERTIFICATION

Bidder hereby certifies that at the time of its Bid the Bidder is not on the Scrutinized Companies that Boycott Israel list created pursuant to Section 215.4725, Florida Statutes, is not participating in a boycott of Israel, is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List and that it does not have business operations in Cuba or Syria.

THIS CERTIFICATION IS MADE PURSUANT TO SECTION 287.135(5), FLORIDA STATUTES, AND IS, UPON DELIVERY, A PUBLIC RECORD.

Print Name: _____

STATE OF _____
COUNTY OF _____

The foregoing Certification was sworn to before me this ___ day of _____, 20___, by _____, as _____, the duly authorized officer of _____, on its behalf, who is either personally known to me [] or has produced _____ as identification [].

(AFFIX NOTARY SEAL)

Print Name: _____
Notary Public, State of Florida
Commission No. _____
My Commission Expires: _____

E-VERIFY CERTIFICATION

CERTIFICATION OF PARTICIPATION IN THE UNITED STATES CITIZENSHIP AND IMMIGRATION SERVICE BUREAU'S E-VERIFY PROGRAM

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to the HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS

by _____

[Print individual's name and title]

for _____

[Print name and state of incorporation or other formation of the entity submitting this sworn statement]

whose business address is _____ and

whose Federal Employer Identification Number (FEIN) is _____ (hereinafter referred to as "Bidder")

2. CERTIFICATION

Bidder hereby certifies that at the time of its Bid the Bidder participates in the United States Citizenship and Immigration Services Bureau's E-Verify Program, and does not knowingly employ, hire for employment, or continue to employ an unauthorized alien.

Bidder's E-verify Company ID #: _____

THIS CERTIFICATION IS, UPON DELIVERY, A PUBLIC RECORD.

Print Name: _____ Date: ____ / ____ / ____

STATE OF FLORIDA
COUNTY OF _____

The foregoing Certification was sworn to before me this ____ day of _____, 20____, by _____, as _____, the duly authorized officer of _____, on its behalf, who is either personally known to me [] or has produced _____ as identification [].

(AFFIX NOTARY SEAL)

Signature: _____

Print Name: _____

Notary Public, State of _____

Commission No. _____

My Commission Expires: _____

STATEMENT OF INDEMNIFICATION

The CONTRACTOR agrees to be liable for any and all damages, losses, and expenses incurred, by the COUNTY and Florida Department of Transportation (FDOT,) in any way related to the services provided herein and this Agreement, caused by the acts and/or omissions of the CONTRACTOR, or any of its employees, agents, sub-contractors, representatives, volunteers or the like. The CONTRACTOR agrees to indemnify, defend and hold the COUNTY and FDOT harmless for any and all such claims, suits, judgments or damages, losses and expenses, including but not limited to, court costs, expert witnesses, consultation services and attorney’s fees, arising from any and all acts and/or omissions of the CONTRACTOR, or any of its employees, agents, sub-contractors, representatives, volunteers, or the like through and including any appeals in any way related to the services provided herein and this Agreement. Said indemnification, defense, and hold harmless actions shall not be limited by any required insurance coverage amounts set forth herein and shall survive termination or natural termination of this Agreement.

It is agreed by the undersigned Contractor that they accept the above conditions:

FOR THE CONTRACTOR:

BY _____

Printed Name and Title

STATE OF FLORIDA, COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____, 20____.

Personally known _____ OR Produced identification _____ (Type of Identification)

(Signature of Notary Public)

SEAL

(Commission Expiration Date)

TRENCH SAFETY CERTIFICATION

FLORIDA TRENCH SAFETY ACT CERTIFICATION AND DISCLOSURE STATEMENT (MANDATORY)

The undersigned acknowledges the requirements of the Florida Trench Safety Act and hereby certifies that the undersigned is an authorized representative of the bidder and in that capacity commits the bidder to the following in the performance of the work in the event that the subject contract is awarded to and executed by said bidder.

- I. The bidder acknowledges the Florida Trench Safety Act and the requirements established herein.
2. The bidder further acknowledges that the aforementioned Act established the Federal excavation safety standards set forth at 29 CFR Part 1926.650, Subpart P as the interim State standard until such time as the State of Florida, through its Department of Labor and Employment Security, or any successor agency, adopts, updates or reviews said interim standard. This State of Florida standard may be supplemented by special shoring requirements established by the State of Florida or any of its political subdivisions.
3. The bidder, as Contractor, shall comply with all applicable excavation/trench safety standards.
4. The Contractor shall consider the geotechnical information available from the County, its own sources and all other relevant information in its design of the trench safety system it will employ on the subject project. The Contractor acknowledges that it is solely responsible for the selection of the data on which it relies in designing said safety system, as well as for the system itself.
5. The amount the bidder has set forth in the requirement titled "Florida Trench Safety Act" includes the following excavation/trench safety measures and the linear feet of trench excavated under each safety measure. These units, cost and the unit prices inferred shall be disclosed solely for the purpose of compliance with the procedural requirements of the aforementioned Act. No adjustment to the Contract Time or Price shall be made for any difference in the number of linear feet of trench excavation, except as may otherwise be provided in these Contract Documents.

Trench Safety Measure (Description)	Unit (QTY)	Unit of Measure (LF, SY)	Unit Cost	Extended Cost
A.			\$	\$ _____
B.			\$	\$ _____
C.			\$	\$ _____
D.			\$	\$ _____
			TOTAL	\$ _____

Total above must be identical to cost shown in the requirement titled "Florida Trench Safety Act". (Use additional blank sheets to further itemize if more room is required.)

6. This amount disclosed as the cost of compliance with the applicable trench safety requirement does not constitute the extent of the Contractor's obligation to comply with said standards. Contractor shall expend additional sums, at no additional cost to the County (except as may otherwise be provided), which are necessary to so comply.
7. Acceptance of the bid to which this certification and disclosure applies in no way represents that the County or its representatives has evaluated and thereby determined that the above costs are adequate to comply with the applicable trench safety requirements nor does it in any way relieve the bidder, as Contractor, of its sole responsibility to comply with the applicable trench safety requirements.

(Authorized Signature)

(Typed name of firm, corporation, business or individual)


Sealed Submission Label

Cut along the outer border and affix this label to your sealed submission envelope to identify it as a "Sealed Bid/Proposal"

Deliver to: Highlands County Purchasing Department
600 S. Commerce Ave., 2nd Floor
Sebring, FL 33870
Contact Information: Lori DeLoach, Purchasing Manager
(863) 402-6504

PLEASE PRINT CLEARLY



	SEALED BID/PROPOSAL DOCUMENTS • DO NOT OPEN •
SOLICITATION No.:	ITB 22-013-LKD
SOLICITATION TITLE:	New Traffic Operations Building (Project# 19007)
DATE DUE:	Wednesday, May 17, 2023
TIME DUE:	Prior to: 3:30 PM
SUBMITTED BY:	 (Name of Company)
e-mail address	Telephone
DELIVER TO:	Highlands County Board of County Commissioners Attn: Purchasing Department 600 South Commerce Avenue, 2 nd Floor Sebring, Florida 33870
Note: submissions received after the time and date above will not be accepted.	

*Notice: The Date Due/Submission Deadline Date/Opening Date as stated on this label and other forms contained herein may have been updated via issuance of Addenda. It is the sole responsibility of the Contractor/Vendor to monitor the County webpage for any updates. Contractor/Vendor may strike through and update Date Due/Submission Deadline Date/Opening Date to match any updates to this date that have been published via Addenda.

DIVISION 0 - SECTION 00250

GENERAL TERMS AND CONDITIONS FOR CONSTRUCTION PROJECTS

- A. All Bidding Documents shall become the property of the County.
- B. Compliance with Florida Statutes Section 287.087, on Drug Free Workplace, Section 287.133(2)(a), on Public Entity Crimes, Section 287.134, on Discrimination, and Section 287.135, Prohibiting contracting with scrutinized companies is required.
- C. Bids are due and must be received in accordance with the instructions given in Section 00010 and 00100 of this ITB.
- D. Owner will not reimburse Bidder(s) for any costs associated with the preparation and submittal of any Bid.
- E. Bidders, their agents and associates shall NOT solicit any County official. Bidders, their agents and associates shall NOT contact any County official other than the the Purchasing Designated Contact listed on the cover page of this ITB for additional information and clarification.
- F. Due care and diligence has been exercised in the preparation of this ITB and all information contained herein is believed to be substantially correct; however, the responsibility for determining the full extent of the service required rests solely with those making response. Neither Owner nor its representatives shall be responsible for any error or omission in the Bids submitted, nor for the failure on the part of the Bidders to determine the full extent of the exposures.
- G. All timely responses meeting the specifications set forth in this ITB will be considered. However, Bidders are cautioned to clearly indicate any deviations from these specifications. Any deviations are to be submitted in writing prior to the RFI deadline and approved via addendum to be acceptable. The terms and conditions contained herein are those desired by Owner and preference will be given to those Bids in full or substantially full compliance with them.
- H. Each Bidder is responsible for full and complete compliance with all laws, rules and regulations including those of the Federal Government, the State of Florida and the County of Highlands. Failure or inability on the part of the Bidder to have complete knowledge and intent to comply with such laws, rules and regulations shall not relieve the Bidder from its obligation to honor its Bid and to perform completely in accordance with its Bid.
- I. County, at its discretion, reserves the right to waive minor informalities or irregularities in any Bids, to reject any and all Bids in whole or in part, with or without cause, and to accept that Bid, if any, which in its judgment will be in its best interest.
- J. Award will be made to the Bidder whose Bid is determined to be the most advantageous to Owner, taking into consideration those Bids in compliance with the requirements as set forth in this ITB. The Board reserves the right to reject any and all Bids for any reason or make no Award whatsoever or request clarification of information from the Bidders.
- K. Any interpretation, clarification, correction or change to this ITB will be made by written addendum issued by the Purchasing Division. Any oral or other type of communication concerning this ITB shall not be binding.
- L. Bids must be signed by an individual of the Bidder's organization legally authorized to commit the Bidder to the performance of the product(s) and/or service(s) contemplated by this ITB.

M. The awarded Contractor shall comply with the County's and Florida Department of Transportation (as outlined in Local Agency Program Agreement) insurance requirements.

Contractor's Liability Insurance

1. The Contractor shall not commence any work in connection with an agreement until it has obtained all of the following types of insurance and has provided proof of same to the Owner, in the form of a certificate prior to the start of any work, nor shall the Contractor allow any subcontractor to commence work on its subcontract until all similar insurance required of the subcontractor has been so obtained and approved. All insurance policies shall be with insurers qualified and doing business in Florida.
 2. The Contractor and/or subcontractor shall maintain the following types of insurance, with the respective minimum limits:
 - a. GENERAL LIABILITY - One Million Dollars (\$1,000,000) any single occurrence;
 - 1) Damage to Rented Premises – Fifty Thousand Dollars (\$50,000) any single occurrence;
 - 2) Medical Expense – Five Thousand Dollars (\$5,000) Any one person;
 - 3) Personal & Advertising Injury – One Million Dollars (\$1,000,000)
 - b. AUTOMOBILE PUBLIC LIABILITY - \$1,000,000 Combined Single Limit
 - c. GENERAL AGGREGATE – Two Million Dollars (\$2,000,000);
 - d. EXCESS/UMBRELLA COVERAGE – Ten Million Dollars (\$10,000,000);
 - e. PRODUCTS - COMPLETED OPERATIONS LIABILITY AGGREGATE – Two Million Dollars (\$2,000,000); and,
 - f. WORKER'S COMPENSATION – covering the statutory obligation for all persons engaged in the performance of the work required hereunder and Employers' Liability insurance with limits not less than \$1,000,000 per occurrence. Evidence of qualified self-insurance status will suffice for this subsection (self-insurance is prohibited on Federal-aid funded projects). In case any class of employees engaged in hazardous work under an agreement at the site of the project is not protected under the Worker's Compensation statute, the Contractor shall provide, and cause each subcontractor to provide, adequate insurance, satisfactory to the COUNTY, for the protection of its employees not otherwise protected.
 3. Certificates of Insurance: The Contractor shall provide the COUNTY's Procurement Services Department with a Certificate of Insurance evidencing such coverage for the duration of the awarded agreement. Said certificate shall be dated and show:
 - a. The name of the insured Contractor,
 - b. The specified job by name and job number,
 - c. The name of the insurer,
 - d. The number of the policy
 - e. The effective date
-

- f. The termination date
 - g. A statement that the insurer will mail notice to the COUNTY at least thirty (30) days prior to any material changes in the provisions or cancellation of the policy
4. County and State of Florida, Department of Transportation as Additional Insured:
- a. Additional insured verbiage: "Highlands County, a Political Subdivision of the State of Florida and its elected officials, its agents, employees, and volunteers" and State of Florida, Department of Transportation shall be named as an "Additional Insured" on all policies except Worker's Compensation and Professional Liability.
5. Certificate Holder:
- Highlands County Board of County Commissioners, 600 Commerce Ave., Sebring FL 33870.
6. Waiver: Receipt of certificates or other documentation of insurance or policies or copies of policies by the COUNTY, or by any of its representatives, which indicates less coverage than is required, does not constitute a waiver of the Contractor's obligations to fulfill the insurance requirements specified herein.
7. Loss Deductible Clause: The COUNTY shall be exempt from, and in no way liable for, any sums of money which may represent a deductible in any insurance policy. The payment of such deductible shall be the sole responsibility of the Contractor and/or subcontractor providing such insurance.
8. Additional Requirements: All insurance carriers shall have an AM Best Rating of at least A- and a size of VII or larger. The General Liability and Workers' Compensation policies shall have a waiver of subrogation in favor of Highlands County. The liability policies shall be Primary/Non-Contributory.

Property Insurance

- 1. The Contractor shall purchase and maintain Builders Risk Insurance for all work at the Project site to the full insurable value thereof. This Insurance shall insure against the perils of extended coverage and shall include "all risk" insurance for physical loss or damage including, without duplication of coverage, vandalism, flood, earthquake, sink holes, and malicious mischief. If any damages are not covered under the "all risk" insurance, the Contractor, at its cost shall affect and maintain similar property insurance for materials or other equipment for the Project which are stored off site or in transit for use as part of the Project or to be included in an Application for Payment.
- 2. Any loss insured under the property insurance policy required by this section is to be made payable to the Owner as Trustee for the insured.
- 3. The Owner as Trustee shall deposit in a separate account any money received as a result of an insured loss and it shall distribute it in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made, replacement of damaged work shall be covered through change order if necessary.
- 4. The Owner as Trustee shall have power to adjust and settle any loss with the insurers.

Notice of Occurrence, Accident, Injury or Damage

1. The Contractor shall promptly notify the County Contact Person, in writing, of any accident or occurrence involving injury to persons or damage of property during the course of construction. The report shall be made notwithstanding the fact that no injury or damage may be apparent at the time of the accident or occurrence. The Contractor shall also provide any supporting documentation reasonably requested by the Owner or the County Contact Person.
- N. If submitting a Bid for more than one ITB, each Bid must be in a separate envelope and correctly marked. Only one (1) Bid per project shall be accepted from any person, corporation or firm. Modifications will not be accepted or acknowledged.
- O. Bond requirements as stated in Section 0100, Article 8 Bonding Security.
- P. Each Bid is to contain proof of enrollment in E-Verify.
- Q. Board policy prohibits any County employee or members of their family from receiving any gift, benefit, and/or profit resulting from any contract or purchase. Board policy also prohibits acceptance of gifts of any kind with the exception of advertising novelties valued less than ten dollars (\$10.00).
- R. Construction Projects that are awarded for less than two hundred thousand dollars (\$200,000.00) and without a Public Construction Bond require the following provisions:
1. At any time prior to final completion of the Contract, Owner will not authorize or make payment to the Contractor in excess of ninety-five percent (95%) of the amount due on the Contract on the basis of the Work suitably completed.
 2. In case of the default by the Contractor, the laborers, materialmen, and Subcontractors, as defined in Section 713.01, Florida Statutes, making claims for unpaid bills, may be paid from the five percent (5%) retainage.
 3. The final payment of retainage shall not be made until: (1) the Project has been inspected by the Project Manager or other person designated by the County for the purpose; (2) Project Manager or other designated person has issued a written certificate that the Project has been constructed in accordance with the approved Construction Documents and approved Change Orders; (3) the County has accepted the Project; and (4) the Contractor has supplied the County with signed and dated statements from all laborers, materialmen, and subcontractors as defined in Section 713.01, Florida Statutes, and identified under subparagraph (d) of this paragraph 2, that they have no claims against the Contractor for the Work under the Contract. Said statements shall identify the Project by name and Project number.

(remainder of page intentionally left blank)

4. The Contractor, before beginning Work or within two (2) workdays thereafter, shall post in a conspicuous place on the Site the following notice.

“Notice is hereby made to all those concerned and affected that

**CONTRACTOR’S NAME is performing the
NEW TRAFFIC OPERATIONS BUILDING
Highlands County Project No. 19007**

All parties furnishing labor and/or materials to said project must, within twenty (20) days of first providing such labor and/or materials, deliver notice of such in writing, by certified mail, returned receipt requested, to:

**HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS
ENGINEERING DEPARTMENT
ATTN: J.D. LANGFORD, P.E., County Engineer
505 S. COMMERCE AVE., SEBRING, FLORIDA 33870**

5. The Contractor shall provide a certified list of all Subcontractors, laborers, and material suppliers to the Owner or Designee within thirty (30) days of receiving the Notice to Proceed with the Work. This list shall be updated thereafter each month with a certified statement that the list and its updates include the names and address of all Subcontractors, laborers, and material suppliers furnishing labor and/or material for the Project.
 6. The Contractor shall provide a written statement with each pay request to the Project Manager which indicates how each payment will be distributed. This pay request breakdown shall define the disbursement intended for all the funds requested. When the Contractor receives any payment, it shall pay such moneys received to each Subcontractor and material supplier as set forth in that written statement.
 7. The Contractor shall provide a written statement with all but the first payment request from each of the Subcontractors, laborers, and material suppliers indicated in paragraph 5 of this Section R that they have in fact received payment as indicated in paragraph 6 of this Section R. In the event a payment is not made as indicated on a prior written statement provided pursuant to paragraph 6 of this Section R, the Contractor shall furnish an explanation as to the reasons for such deviation and shall request approval from the Project Manager.
- S. Late Bids will not be accepted under any circumstances. If Bids are received after the scheduled time of the Bid Opening Meeting, the Bidder will be contacted for disposition. The Purchasing Division, at the Bidder’s expense, can return the unopened envelope, or, at the Bidder’s request, in writing, can destroy it.
- T. Faxed Bids will not be accepted. Any blank spaces on the required Bid Form or the absence of required submittals or signatures may cause the Bid to be declared non-responsive.
- U. The County is not responsible for correcting any errors or typos made on the Bid response. Incorrect calculations may cause the Bid to be declared non-responsive. Where applicable, unit pricing will prevail in determining the extended price.

- V. Minority Owned and Women owned businesses are encouraged to submit a bid.
- W. The Bidder shall comply with the Florida Sales and Use Tax Law as it may apply to this Contract. The quoted amount(s) shall include any and all Florida Sales and Use Tax payment obligations required by Florida Law of the successful Bidder and/or its Subcontractors or material suppliers. The County reserves the right to obtain materials by Direct Purchase method.
- X. Public Records: Any material submitted in response to this ITB will become Public Record pursuant to Section 119(1)(b) and (c), Florida Statutes

IF YOU HAVE QUESTIONS REGARDING THE APPLICATION OF FLORIDA STATUTES, CHAPTER 119, TO YOUR DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE COUNTY'S CUSTODIAN OF PUBLIC RECORDS:

**COUNTY CLERK: GLORIA RYBINSKI
COUNTY PUBLIC INFORMATION OFFICER
600 SOUTH COMMERCE AVENUE
SEBRING, FLORIDA 33870
TELEPHONE NUMBER: (863) 402-6836
HCBCCRECORDS@HIGHLANDSFL.GOV**

- 1. Consultant/Contractor agrees to comply with public records laws, specifically to:
 - 1.1. Keep and maintain public records required by the County to perform the services set forth herein.
 - 1.2. Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Florida Statutes, Chapter 119, or as otherwise provided by law.
 - 1.3. Ensure that public records which 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 Consultant/**Contractor** does not transfer the records to the County.
 - 1.4. **Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the Consultant/Contractor or keep and maintain public records required by the County to perform the services set forth herein. If the Consultant/Contractor transfers all public records to the County upon completion of the contract, the Consultant/Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Consultant/Contractor keeps and maintains public records upon completion of the contract, the Consultant/Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the County's custodian of public records, in a format that is compatible with the information technology systems of the County.**
- Y. All pages included in or attached by reference to this ITB shall be called and constitute the Invitation to Bid.

Z. The Contractor agrees to comply with s.20.055(5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with s.20.055(5), Florida Statutes as shown below.

(5) It is the duty of every state officer, employee, agency, special district, board, commission, contractor, and subcontractor to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing pursuant to this section. Beginning July 1, 2015, each contract, bid, proposal, and application or solicitation for a contract shall contain a statement that the corporation, partnership, or person understands and will comply with this subsection.

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DIVISION 0 - SECTION 00300

BID FORM

THIS BID IS SUBMITTED TO: Highlands County Board of County Commissioners
Attn: Purchasing Division
600 S Commerce Ave., Sebring, FL 33870

SOLICITATION IDENTIFICATION: **ITB 22-013**
New Traffic Operations Building
SOLICITATION NAME: **Highlands County Project No. 19007**

SUBMITTED BY:

Bidder's Name

Bidder's Authorized Representative's Name and Title

Bidder's Address 1

Bidder's Address 2

Contact's Name and Title (Print)

Contact's E-mail Address

Contact's Phone Number

Dun's Number

Employer Identification Number/Federal Employer Identification (as shown on Sunbiz.org)

BIDDER IS: (CHECK ONE)

Individual

Partnership

Corporation

Limited Liability Company

Joint Venture*

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

- A. The Bidder proposes and agrees, if this Bid is accepted, to furnish all labor, materials, and equipment to construct and complete the Work according to and as specified or indicated in the solicitation identified above and the Bidding Documents for the Bid Price and within the time periods stated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
- B. Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for thirty (30) days after the day of Bid opening. Bidder will sign and deliver the required number of the other documents required by this ITB within fifteen (15) days after the date of County's Notice of Award.
- C. **ACKNOWLEDGEMENT OF ADENDA** Bidder/Proposer represents that:
- It is the sole responsibility of the bidder/proposer to check the Purchasing web-site for any addenda issued for this solicitation.

- Bidder/Proposer acknowledges they have examined and carefully studied this solicitation and the following Addenda (receipt of all which is hereby acknowledged):

Addenda Number	Date Issued	Addenda Number	Date Issued	Addenda Number	Date Issued	Addenda Number	Date Issued

1. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, performance, and furnishing of the Work;
2. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.
3. Bidder acknowledges that County and Project Manager do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the Site. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning 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 or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price, and other terms and conditions of the Contract Documents.
4. Bidder is aware of the general nature of the Work to be performed by County and others at the Site that relates to the Work.
5. Bidder has correlated information known to Bidder, information and observations obtained from visits to the Site and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
6. Bidder has given Project Manager written notice of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in the Bidding Documents and the written resolution thereof by Project Manager is acceptable to Bidder, and the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.
7. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization 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; Bidder is not privy to any information or have any knowledge of any information pertaining to this ITB to which other Bidders do not have access; and Bidder has not sought by collusion or any other means to obtain for itself any advantage over any other Bidder or over County.

D. Documentation included with Bid packet

Forms		YES	NO
	Proposal/Bid Form: include acknowledgement of all addenda, original signature.		
	Drug-Free Workplace Certification, F.S. 287.087		
	Public Entity Crimes Sworn Statement, F.S. 287.133		
	Discrimination Certification, F.S. 287.134		
	Scrutinized Companies Certification, F.S. 287.135		
	E Verify Certification		
	Statement of Indemnification		
	Sub-Contractor List		
	Trench Safety Certification		
	Bid Security in the form of _____, as required Original Hard Copy of Bond sent to Purchasing to arrive prior to the submission deadline		
Miscellaneous Documentation		YES	NO
	Woman or Minority Owned Business (Include a copy of your certificate if applicable)		
	Required Bidder's Qualification Statement with supporting data included		
	A list of three (3) jobs similar in scope in the last 5 years and size included		
	Copy of any applicable Licenses (Contractor's License)		
	Sunbiz.org print-out for bidder EIN#		
	Acord Insurance Certificate (sample included)		
	HARD COPY SUBMISSION: One (1) Original Submission Package, PAPER COPY) and one (1) exact electronic copy, on thumb drive, of the Submission package. With an additional excel file containing the "Itemized Bid Form" to be completed and included as an unlocked Excel file." OR ELECTRONIC SUBMISSION: Upload one (1) all-inclusive adobe file of the Submission package to the County Website via VendorRegistry.com. With an additional excel file containing the "Itemized Bid Form" to be completed and included as an unlocked Excel file." Files are to be labeled "22-009 bidder name". Reminder: Bid Bond Original, hard copy to be received in Purchasing Dept prior to submission deadline.		
	Sealed Submission Label		

E. Pricing

1. This is a Lump Sum and Unit Price Bid. Bidder will complete the Work in accordance with the Contract Documents for the following Lump Sum and Unit Price Bid items. Award will be based on the total Lump Sum Bid Price, sum of Unit Price items, and requirements of Bidder. All work for this ITB will be awarded to one (1) Bidder. Bidder agrees to hold pricing for 120 calendar days from the solicitation deadline. In the event of a discrepancy the unit price shall prevail to determine the extended price.

CIVIL CONSTRUCTION COSTS:

TASK NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	Extended Price (Qty*Unit)
1	MOBILIZATION	1	LS		
2a	BONDS (reimbursed at cost, no markup)	1	LS		
2b	INSURANCE (reimbursed at cost, no markup)	1	LS		
3	CONSTRUCTION SURVEY STAKING INC. AS-BUILT	1	LS		
4	MAINTENANCE OF TRAFFIC	1	LS		
5	TEMPORARY SEDIMENT BARRIER (SILT FENCE)	1,354	LF		
6	REGULAR EXCAVATION	57	CY		
7	EMBANKMENT (IN-PLACE)	1,508	CY		
8	OPTIONAL BASE COURSE (BASE GROUP 1), 4" COMPACTED THICKNESS	85	SY		
9	OPTIONAL BASE COURSE (BASE GROUP 8), 6" COMPACTED THICKNESS	2,216	SY		
10	4" THK CONCRETE FOR SIDEWALK, BACKFLOW PREVENTOR PAD (2,500 PSI) & GATE CONTROLS	86	SY		
11	6" THK CONCRETE FOR GENERATOR, BAY ENTRIES, DUMPSTER PAD (4,000 PSI)	78	SY		
12	TYPE B STABILIZATION (8" COMPACTED THICKNESS)	3,220	SY		
13	TYPE B STABILIZATION (12" COMPACTED THICKNESS)	473	SY		
14	SUPERPAVE ASPHALTIC CONCRETE, SP 9.5, 1-1/2" THICK, RAP 30% MAX.	198	TN		
15	15" REINFORCED CONCRETE PIPE (RCP)	612	LF		
16	18" REINFORCED CONCRETE PIPE (RCP)	121	LF		
17	18" MITERED END SECTION	1	EA		
18	TYPE "C" INLET	6	EA		
19	BACKFLOW PREVENTOR	1	EA		
20	1-1/2" PVC (UTILITY PLAN WATER SERVICE) INC. SERVICE TAP	156	LF		
21	3/4" PVC (UTILITY PLAN WATER SERVICE)	137	LF		

22	PVC TEE (UTILITY PLAN WATER SERVICE)	1	EA		
23	4" PVC (INCLUDING CORING OPERATIONS AND CLEAN-OUT)	65	LF		
24	8' CHAINLINK FENCE (24' AUTOMATED GATE AND PEDESTRIAN GATE) INCLUDING MOTOR, CONDUIT, HINGES, & ALL OTHER NECESSARY HARDWARE & INCIDENTALS TO MAKE THEM OPERABLE	142	LF		
25	DETECTABLE WARNING SURFACE, YELLOW, EMBEDDED	10	SF		
26	SINGLE POST SIGN, F&I, R7-8-FL (12"x18") HANDICAP PARKING SIGN	2	AS		
27	SINGLE POST SIGN, F&I, R1-1 (30"x30"), STOP SIGN	1	AS		
28	CONCRETE PARKING BUMPER	22	EA		
29	PAINTED PAVEMENT MARKINGS, STD, WHITE, SOLID, 6"	453	LF		
30	PAINTED PAVEMENT MARKINGS, STD, BLUE, SOLID, 6"	72	LF		
31	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE MESSAGE, WHEELCHAIR "UNIVERSAL SYMBOL OF ACCESSIBILITY"	2	EA		
32	PAINTED PAVEMENT MARKINGS, STD, WHITE, SOLID, 24"	12	LF		
33	YELLOW CONCRETE BOLLARDS	3	EA		
34	LANDSCAPING	1	LS		
35	IRRIGATION	1	LS		
36	ARCHITECTURAL CONSTRUCTION (PER APPENDIX C PLAN SET)	1	LS		
TOTAL BID AMOUNT [numeric]					\$

LS = Lump Sum, SY = Square Yard, TN = Ton, LF = Linear Foot, and EA = Each, CY= Cubic Yard, AS=Assembly

The total of the items listed above must total the lump sum amount below.

Total Lump Sum Bid Amount: _____
 [Written in Words]

- F. **Term:** Bidder agrees that the Work will be **substantially complete** within **three-hundred & thirty-five (335) calendar days** and achieve **final completion** and ready for final payment within **three-hundred & sixty-five (365) calendar days** after the date when the Contract Times commence to run. The Contract Times will commence to run on the thirteenth (13th) day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty (30) days after the Effective Date of the Agreement.
- G. **Liquidated Damages:** Owner and Contractor recognize that time is of the essence of this Agreement, and that Owner will suffer financial loss if the Work is not completed within the times specified. In agreeing upon the daily liquidated damages amount stated in this paragraph, Owner and Contractor have considered the original Contract Price, the average construction, engineering, and inspection costs experienced by Owner, and anticipated costs of project-related delays and inconveniences to Owner and the public. Owner and Contractor also recognize the delays, expense, and difficulties involved in proving 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 (and not as a penalty) Contractor shall pay Owner **One-Thousand Five Hundred Dollars (\$1,500.00)** for each calendar day that expires after the time specified in paragraph 3.01 of this Article until the Work is completed and ready for final payment. Liquidated damages shall be deducted by Owner from any balance due Contractor or, if the balance due Contractor is less than the amount of liquidated damages, Contractor shall pay to Owner the remaining unpaid liquidated damages within thirty (30) days after Owner's invoice is sent to Contractor.

Owner does not waive its right to liquidated damages due under this Agreement by allowing Contractor to continue and to finish the Work, or any part of it, after the expiration of the Contract Time including granted time extensions.

In the case of a default of this Agreement and the completion of the Work by Owner, Contractor and Contractor's surety are liable for the liquidated damages under this Agreement, but Owner will not charge liquidated damages for any delay in the final completion of Owner's performance of the Work due to any unreasonable action or delay on the part of Owner.

- H. Bidder shall coordinate with the Project Manager in order to comply with all applicable quality control testing in accordance with the Drawings and Specification.
- I. **Statement of Acknowledgement: The Contractor agrees to comply with s.20.055(5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with s.20.055(5), Florida Statutes as shown below.**
(5) It is the duty of every state officer, employee, agency, special district, board, commission, contractor, and subcontractor to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing pursuant to this section. Beginning July 1, 2015, each contract, bid, proposal, and application or solicitation for a contract shall contain a statement that the corporation, partnership, or person understands and will comply with this subsection
- J. Communications concerning this Bid have been addressed only to the contacts listed in Article 23 of Section 00100 of ITB 22-013-LKD.

Submitted on: _____, 20____.

State Contractor License No. _____.

If Bidder is:

An Individual:

Individual Name: _____

Signature: _____

Doing business as: _____

Business address: _____

Phone No.: _____

A Partnership:

(SEAL)

Partnership's name: _____

State in which organized: _____

Type of partnership: _____

Name of general partner: _____

Signature: _____

Business address: _____

Phone No.: _____

A Corporation:

(SEAL)

Corporation's name: _____

State of incorporation: _____

Name of authorized person to sign: _____

Title: _____

Signature: _____

Date of qualification to do business: _____

Attest: (Secretary) _____

Business address: _____

Phone No.: _____

A Limited Liability Company:

Limited Liability Company's name: _____

State in which registered: _____

Type of limited liability company
(member managed, or manager
managed)

Name of manager or authorized
member to sign:

Signature:

Business address:

Phone No.:

A Joint Venture:

(SEAL)

Name 1:

Signature 1:

Address 1:

Name 2:

Signature 2:

Address 2:

Address for receipt of official
communications:

Phone number for official
communications:

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

**DIVISION 0 – SECTION 00410
BID BOND
ITB 22-013-LKD**

STATE OF FLORIDA COUNTY OF
HIGHLANDS

KNOW ALL MEN BY THESE PRESENTS, that we _____
(hereinafter called "Principal"), and _____ as Surety, (hereinafter called "Surety"),
are held and firmly bound unto the Highlands County, a political subdivision of the State of Florida
(hereinafter called "Owner"), in the sum of _____ Dollars (\$ _____), lawful
money of the United States of America, for the payment of which sum well and truly to be made, we bind
ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these
presents:

WHEREAS, the "Principal" contemplates submitting or has submitted to bid to the said "Owner"
for Bid No. ITB 22-013-LKD:

New Traffic Operations Building, Highlands County Project No. 19007

WHEREAS, it was a condition precedent to the submission of said bid that a certified check or
bid bond in the amount of not less than five percent (5%) of the amount of bid be submitted with said
bid as a guarantee that the Bidder would, if awarded the contract, enter into a written contract with the
"Owner" within fifteen (15) consecutive calendar days after having been given notice of award of the
contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that if the bid of the
"Principal" herein be accepted and said "Principal", within fifteen (15) consecutive calendar days after
notice being given of such acceptance, enter into a written contract with the "Owner", then this obligation
shall be void; otherwise, the sum herein stated shall be due and payable to the "Owner", and the "Surety"
herein agrees to pay said sum immediately upon demand of said "Owner", in good and lawful money
of the United States of America; as liquidated damages for failure thereof said "Principal".

IN WITNESS WHEREOF, the said _____, as "Principal" herein, has caused these presents to be signed in its name by its _____ and attested by its _____ under its corporate seal, and the said _____ as "Surety" herein, has caused these presents to be signed in its _____ and attested by its _____ under its corporate seal, this _____ day of _____, A.D. 20__.

ATTEST:

Title: _____

CONTRACTOR, AS PRINCIPAL:

By: _____ (Seal)

Title: _____

ATTEST:

Title: _____

AS SURETY:

By: _____ (Seal)

Title: _____

DIVISION 0 - SECTION 00600
PUBLIC CONSTRUCTION BOND
ITB 22-013-LKD
(Section 255.05(3), Florida Statutes)

Bond No. _____

BY THIS BOND, we, _____,
whose principal business address and phone number are _____
(_____), as Principal and _____, whose principal business
address and phone number are _____ (_____), as Surety, are bound to
Highlands County, a political subdivision of the State of Florida, herein called Owner, whose principal business
address and telephone number are 600 South Commerce Avenue, Sebring, Florida 33870 (863-402-6500), in
the sum of _____ (\$_____), for payment of which we bind ourselves,
our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the Contract dated _____, between Principal and Owner for construction of the **New Traffic Operations Building, Highlands County Project No. 19007**, that Contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, services, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in that Contract; and
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under that Contract; and
4. Performs the Principal's guarantee of all work and materials furnished under that Contract for the time specified in that Contract, then this Bond is void; otherwise, it remains in full force.

Any action instituted by a claimant under this Bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2) and (10), Florida Statutes.

Any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with that Contract or the changes does not affect Surety's obligation under this Bond.

Dated _____, 20_____.

AS SURETY:

CONTRACTOR, AS PRINCIPAL:

By: _____
(As Attorney in Fact)

By: _____
Title: _____

INSTRUCTIONS FOR PUBLIC CONSTRUCTION BOND

1. A good and sufficient Public Construction Bond, in the penal sum of not less than one hundred percent (100%) of the Contract Price, with a Surety Company satisfactory to the County, will be required of Contractor guaranteeing that the contract, including the various guarantee periods thereunder will be faithfully performed; and that Contractor will promptly make payment to all persons supplying Contractor labor, materials, supplies and services used directly or indirectly by Contractor in the prosecution of the work provided for in the Contract.
2. The Surety Company furnishing this Bond shall be authorized to do business in the State of Florida, shall be in compliance with the provisions of the Florida Insurance Code, shall have twice the minimum surplus and capital required by the Florida Insurance Code, and shall hold a currently valid certificate of authority issued by the United States Department of Treasury pursuant to Title 31, Sections 9304-9308, of the United States Code. Surety Company must have a rating of not less than "A-X" by the latest edition of the KEY RATING GUIDE as published by A.M. Best Company, Inc., A.M. Best Road, Oldwick, NJ 08858.
3. The Attorney-in-Fact (Resident Agent) who executes the Public Construction Bond on behalf of the Surety Company must attach a notarized copy of his or her power-of-attorney as evidence of his or her authority to bind the Surety Company on the date of execution of the bonds. All signatures must be original. No copied or facsimile signatures will be accepted. All Contracts, Public Construction Bond, and respective powers-of-attorney will have the same date.
4. In the event the Surety Company becomes unsatisfactory to the County, County may at its discretion, require from Contractor an additional or new bond in the same or lessor penal sum, satisfactory to the County, and to be conditioned as above required. Upon Contractor's failure to furnish such additional or new bond within ten (10) days from the date of written notice to do so, all payments under the Contract will be withheld until such additional bond is furnished.

DIVISION 0 - SECTION 00700

GENERAL CONDITIONS

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ARTICLE 1: DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.
 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic

Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 12.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security, interests, or encumbrances upon Contract – related funds, real property, or personal property and claims delivered to Owner by laborers, Subcontractors, and Suppliers who have not been paid by Contractor.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. Intent of Certain Terms or Adjectives:
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 09 or any other provision of the Contract Documents.
- C. Day:
 1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion as provided for in Section 700.

E. Furnish, Install, Perform, Provide:

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

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

ARTICLE 2: PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner unexecuted copies of the bonds and related powers of attorney that Contractor will be required to furnish. Within 10 days after execution of the Agreement by Owner, Contractor shall deliver to Owner fully executed bonds, accompanied by a certified copy of the signing individual’s authority to bind the surety establishing that it is effective on the date the agent or attorney-in-fact signed the accompanying bond, as provided in Section 0100, Article 8 Bonding Security.
- B. *Evidence of Contractor’s Insurance:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Section 00250.

- C. *Evidence of Owner's Insurance:* After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by the Owner.

2.02 *Copies of Documents*

- A. Owner shall furnish Contractor with 1 printed copy of the fully executed Contract Documents, and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

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

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records. Contractor shall be ready, willing, and able to attend this conference within 10 calendar days after the date of award. The date, time, and place of this conference will be set by Engineer.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3: DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies:

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 10.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 10.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. Resolving Discrepancies:

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

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 16.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4: COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the day indicated in a Notice to Proceed.
- B. Contractor, before beginning the Work or within 2 workdays thereafter, shall post in a conspicuous place on the Site the following notice.

Notice is hereby made to all those concerned and affected that
“Contractor’s Name” is performing the
“New Traffic Operations Building”,
Highlands County Project No. 19007”.

All parties furnishing labor and/or materials to that project must, within twenty (20) days of first providing such labor and/or materials, deliver notice of such in writing, by certified mail, return receipt requested, to:

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS
ENGINEERING DEPARTMENT

ATTN: **J.D. LANGFORD, P.E., County Engineer**

505 S. Commerce Ave., SEBRING, FLORIDA 33870-3869

4.02 Starting the Work

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

4.03 Reference Points

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

4.04 Progress Schedule

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 10.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 15.04, or as Owner and Contractor may otherwise agree in writing.

4.05 Delays in Contractor's Progress

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times.

Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 7); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 7.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5: AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 Availability of Lands

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

- A. Limitation on Use of Site and Other Areas:
 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or

areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 6.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.
- E. Contractor shall at all times control dust and keep the Sites free from accumulation of waste materials or rubbish caused by Contractor's employees or subcontractors, and at the completion of the Work, Contractor shall remove all Contractor's rubbish from and about the Sites and all Contractor's tools and surplus materials and shall leave Contractor's Sites and any other Work area clean. Owner may remove the rubbish and charge the cost to Contractor as the Engineer may determine to be just. In the event that Contractor does not keep the Sites and any other Work area free of rubbish or accumulations of waste materials and control dust, Owner will withhold an additional 5% from any pay request, above and beyond the standard 10% retainage.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 3. Technical Data contained in such reports and drawings.

- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.
- C. *Subsurface Conditions Known to Owner:* The subsurface conditions at or contiguous to the Site known to Owner are shown on the Drawings and Specifications that are Exhibit "A" of the Contract Documents. Contractor is not entitled to rely upon any other information and data known to or identified by Owner or Project Manager.
- D. *Unforeseen Physical Conditions:* Contractor shall notify Engineer in writing of any subsurface or latent physical condition at the Site differing materially from those indicated in the Contract Documents. Engineer shall promptly investigate those conditions and advise Owner in writing if additional information shall be required. Owner shall then obtain such information, and if deemed necessary, shall issue written orders to perform necessary revisions.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A

above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. Possible Price and Times Adjustments:
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 12.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. Protection of Underground Facilities.

1. Existing utilities and other facilities such as drainage structures have been indicated on the Drawings and Specifications only to the extent that such information was made available to Owner. There is no guarantee as to the accuracy or completeness of this information, and Owner will not be responsible for such accuracy or completeness.
2. Contractor shall be responsible for protecting all such utilities indicated in the manner determined necessary by the owner of such utilities. Any utilities not indicated on the Drawings and Specifications, which do not require relocation, shall be protected by Contractor. The Work shall be performed at the original Contract Price. All visible surface facilities or underground utilities shown on the Drawings and Specifications, whether or not shown to be relocated, shall be protected or relocated by Contractor at its expense.
3. Abandoned utilities, when encountered, shall be severed and plugged at Contractor's expense.
4. the utility during relocation.
5. Contractor shall be responsible for discovery of existing underground installations, in advance of excavating or trenching, by contacting all local utilities and by prospecting and pot holing. Any damage to facilities not shown shall be solely the responsibility of Contractor.

5.06 *Hazardous Environmental Conditions at Site*

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
 - B. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
 - C. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
 - D. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby
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(except in an emergency as required by Paragraph 6.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition and impose a set-off against payments to account for the associated costs.

- E. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- F. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- G. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- H. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6: CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.
- C. In all cases, local labor shall be given preference when available.
- D. Whenever Owner shall notify Contractor that any man on the Work is, in his opinion, incompetent, unfaithful, or disorderly, or who uses threatening or abusive language to any person representing Owner when on the Work, such man shall be immediately discharged from the Work and shall not be re-employed thereon except with the consent of Owner.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.
- D. The responsibility for the protection and safekeeping of equipment and materials on or near the Site will be entirely that of Contractor and that no Claim shall be made against Owner by reason of any act of an employee or trespasser. Should an occasion arise necessitating access to the sites occupied by the stored materials and equipment, Contractor shall immediately move same. No materials or equipment may be placed upon the property of Owner until Owner has approved the location contemplated by Contractor to be used for storage.

6.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the

specification or description contains or is followed by words reading that no like, equivalent, or “or equal” item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an “or equal” item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

- 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
- 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
- 3) it has a proven record of performance and availability of responsive service; and
- 4) it is not objectionable to Owner.

b. Contractor certifies that, if approved and incorporated into the Work:

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

B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.

C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal”, which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination:* Neither approval nor denial of an “or-equal” request shall result in any change in Contract Price. The Engineer’s denial of an “or-equal” request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer consider the proposed item as a substitute pursuant to Paragraph 6.05.

6.05 *Substitutes*

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
2. The requirements for review by Engineer will be as set forth in Paragraph 6.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions

of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 6.05.D, by timely submittal of a Change Proposal.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. Prior to submitting the first Application for Payment and within 3 workdays after any change, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.

- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

6.07 *Patent Fees and Royalties*

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

6.08 *Permits*

- A. Unless otherwise provided in the Contract Documents or Section 218.80, Florida Statutes, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.
- B. Owner is exempt from payment of sales and compensating use taxes of the State of Florida and of cities and counties thereof on all materials to be incorporated into the Work.
- C. Direct Purchase: Contractor shall provide assistance to Owner for Direct Purchases to enable Owner to purchase tangible personal property needed for this Project which Owner intends to purchase in order to realize savings of sales tax on all tangible personal property needed for this Project. Contractor will recommend direct purchases for items where those direct purchases will result in significant tax savings to Owner. Owner will either accept or reject Contractor's recommendations, and purchases will be made according to Owner's decision. Owner retains the absolute right, with or without Contractor's recommendation, to purchase any or all tangible personal property needed for this Project.
- D. Contractor will provide detailed scoping and pricing for purchase orders with a minimum value of Five Thousand Dollars (\$5,000.00), in harmony with the Subcontractors to Owner for the incorporation in Owner's purchase orders.
- E. Owner will issue purchase orders within three (3) workdays from the date of receipt of requisition, directly to the vendors and provide a copy of each purchase order to Contractor.
- F. Contractor will be responsible for the materials until they are incorporated into the Project and will purchase and/or have ample Builder's Risk insurance for the direct purchased materials.
- G. Contractor will issue a deductive subcontract adjustment to the Subcontractor which will account for the value of the material and the sales tax as it pertains to that Subcontractor's contract. All subcontracts shall include a clause incorporating, by reference, the provisions of this Paragraph 6.09.
- H. As the material is delivered to the Site, the Subcontractor will sign off on the delivery receipt/invoice for the material delivered, store and secure the material adequately at the Site, and forward the invoice to Contractor who will review, approve and forward the invoice to Owner's Representative for approval and processing.
- I. Owner will draft a check for the approved invoice amount and mail that check directly to the vendor. A list of the check numbers with related dates of issue, names of vendors, amounts paid, and paid invoice numbers will be forwarded to Contractor in order that Contractor can accurately track payment.
- J. Contractor and Owner are encouraged to take advantage of all discounts available.
- K. Owner will issue to Contractor a deductive Change Order in the amount of the direct purchased materials. The amount equal to the sales tax which would have been paid if those materials had been purchased by Contractor will be credited to Owner through a Contingency line item on the pay application's schedule of values, and the Contract Price specified in Article 4 of the Agreement shall be reduced by an amount equal to the amounts paid directly by Owner for direct purchases made pursuant to this Article, plus an amount equal to the sales tax that would have been paid if those materials had been purchased by Contractor.

6.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

- B. It shall be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations. Contractor shall bear all costs and losses, and shall indemnify and hold harmless Owner and Owner's officers and employees from and against all liabilities, damages, losses, and costs, including, but not limited to, reasonable attorney's fees arising out of or relating to Work or other action that is contrary to Laws or Regulations.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

6.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Owner for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

6.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.12.A.2 or 6.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other

individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.
- H. Contractor shall pay for all damages to private property, public property, and any public utilities.

6.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.16 *Shop Drawings, Samples, and Other Submittals*

- A. Shop Drawing and Sample Submittal Requirements:
 - 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
1. Shop Drawings:
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.16.D.
 2. Samples:
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 6.16.D.4.

E. Resubmittal Procedures:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

6.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;

6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.
- E. All materials incorporated in the Work shall comply with the requirements of the Construction Documents. Any Defective Work which develop within 1 year after the date of final acceptance shall be promptly repaired by or replaced to "as new" condition by Contractor without any additional expense to Owner.

6.18 Delegation of Professional Design Services

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.
- F. If Contractor provides professional design services as a design professional, as that term is defined in Section 725.08(4), Florida Statutes, Contractor shall indemnify and hold harmless Owner and Owner's officers and employees, from liabilities, damages, losses, and costs, including, but not limited to reasonable attorneys' fees, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of Contractor providing professional design services as a design professional and other persons employed or utilized by Contractor in the performance of the professional design services.

6.19 Storage of Materials

- A. The responsibility for the protection and safekeeping of equipment and materials on or near the Site will be entirely that of Contractor, and no claim shall be made against Owner by reason of any act of an employee or trespasser. Should an occasion arise necessitating access to the Sites occupied by

these stored materials and equipment, Contractor shall immediately move same. No materials or equipment may be placed upon the property of Owner until Owner has approved the location contemplated by Contractor to be used for storage.

6.20 Erosion and Drainage Control

- A. Contractor shall implement Best Management Practices (BMP's) to provide for drainage of storm water and such water as may be applied or discharged on the Site in performance of the Work. Drainage facilities shall be adequate to prevent damage to the Work, the Site and adjacent property.
- B. Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris or other substances resulting from this work. Contractor shall clean up and isolate such materials on a continuing basis to prevent risk of washing into such drainage ways.
- C. Contractor shall determine if a Stormwater Discharge Permit or a Construction Dewatering Discharge Permit applies to the Work. Contractor shall obtain required permit(s) if necessary for completion of the Work.

6.21 Protection of Trees and Natural Conditions

- A. No trees or shrubs shall be damaged or removed beyond delineated limits of disturbance except those flagged by Owner. No areas shall be disturbed beyond the designated limits indicated by Owner. Contractor shall install orange safety fence to delineate limits of disturbance, and Contractor shall be responsible for damage mitigation beyond these limits.

6.22 Dewatering

- A. If dewatering is required at the Site, Contractor shall comply with all dewatering requirements of governmental agencies.

6.23 Protection of Public and Private Property

- A. Contractor shall protect, shore, brace, support and maintain all underground pipes, conduits, drains, and other underground or above ground structures uncovered or otherwise affected by the construction of the Work performed by Contractor. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, guard posts, and other surface structures affected by construction operations, together with all trees, sod and shrubs in yards and parking lots removed or damaged, shall be restored to their original condition or replaced as determined and approved by Owner, whether within or outside Owner's right-of-way. All replacements shall be made with new materials.
- B. Contractor shall be responsible for all damages to streets, roads, highways, shoulders, ditches, embankments, culverts, facilities and utilities, bridges, property corners and monuments and other public or private property, regardless of location or character, which may be caused by construction of the Work or by transporting equipment, materials or men to or from the Work or any part or site thereof, whether by Contractor or Contractor's Subcontractors. Contractor shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over, the damaged property concerning its repair or replacement or payment of costs incurred in connection with the damage.
- C. All fire hydrants and water control valves shall be kept free from obstruction and for use at all times.
- D. Contractor shall be responsible for any damage to existing structures during the course of the Work.

6.24 Maintenance of Traffic

- A. Contractor shall provide traffic control plans as required by the controlling highway, street or road authority. Contractor shall perform the Work so as to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever necessary to cross, use, obstruct or close roads, driveways and walks, whether public or private, Contractor shall, at its own expense, provide and maintain suitable and safe bridges, detours or other temporary expedients, for the accommodation

of public and private travel, and shall give reasonable notice to owners of private drives before interfering with them. Such maintenance of traffic will not be required when Contractor has obtained permission from the owner and tenant of private property, or from the authority having jurisdiction over the public property involved, to obstruct traffic at the designated point. Obstructions, such as material piles and equipment, shall be provided with appropriate warning signs and lights.

- B. After completion, the roadway shall be restored to original condition, and disturbed areas shall be restored to original condition.

6.25 *Testing*

- A. Contractor shall be responsible for all testing required for sampling and testing of materials to prove compliance with the Contract Documents. This shall include, but not be limited to mix design approvals for concrete and asphalt, pipe bedding gradations and Proctor tests and gradations for imported granular fill materials. Specific requirements shall be included in the applicable specification sections.
- B. Tests required to monitor control performance of the Work in accordance with the Contract Documents such as concrete cylinder tests and compaction tests shall be ordered and paid for by Contractor. Any retesting required as a result of the first test failure will be at Contractor's expense. Contractor will assist in providing locations and allowing the tests to be conducted without obstructions and in accordance with all Laws and Regulations. Contractor shall correct or modify its operations where indicated necessary by the test results.

6.26 *Unfavorable Construction Conditions*

- A. During unfavorable weather, wet ground or other unsuitable construction conditions, Contractor shall confine its operations to work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which affect adversely the quality or efficiency thereof, unless special means or precautions are taken by Contractor to perform the Work in a proper and satisfactory manner.

6.27 *Notices to Owners and Authorities*

- A. Contractor shall notify owners of adjacent property and utilities when prosecution of Work may affect them.
- B. Utilities and other concerned agencies shall be contracted at least 48 hours prior to cutting or closing streets or other traffic areas or excavating near Underground Facilities or pole lines.

6.28 *Storage of Fuel or Hazardous Materials*

- A. No fuel or other hazardous materials shall be stored on the Site. Extreme care and compliance with all regulations shall be required when handling all such materials.

ARTICLE 7: OTHER WORK AT THE SITE

7.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner

performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

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

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations

set forth in this paragraph.

- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 8: OWNER'S RESPONSIBILITIES

8.01 Communications to Contractor

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

8.02 Replacement of Engineer

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

8.03 Furnish Data

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

8.04 Pay When Due

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

8.05 Lands and Easements; Reports, Tests, and Drawings

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 Insurance

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 2.

8.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 10.

8.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.02.B.

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

8.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

8.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 9: ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

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

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any

failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 13.

9.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 6.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 6.19.
- C. Engineer's authority as to Change Orders is set forth in Article 10.
- D. Engineer's authority as to Applications for Payment is set forth in Article 14.

9.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 12.03.

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

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

9.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any

Supplier, or of any other individual or entity performing any of the Work.

- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.08 shall also apply to the Resident Project Representative, if any.

9.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 10: AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

10.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order if approved, in writing, by Owner.
 - 1. Change Orders:
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives*: A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 10.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
 - 3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as

provided herein.

10.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

10.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 6.15 or in the case of uncovering Work as provided in Paragraph 13.05.

10.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 10.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 11.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 12.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 10.04.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 12.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 10.04.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
 - 1. a mutually acceptable fixed fee; or
 - 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 12.01.B.1 and 12.01.B.2, the Contractor's fee be 15 percent;
 - b. for costs incurred under Paragraph 12.01.B.3, the Contractor's fee shall not be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 10.01.C.2.a and 10.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under

Paragraphs 12.01.A.1 and 12.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

- d. no fee shall be payable on the basis of costs itemized under Paragraphs 12.01.B.4, 12.01.B.5, and 12.01.C;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 10.04.C.2.a through 10.04.C.2.e, inclusive.

10.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 10.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 11.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

10.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 - 1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 - 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 11.
 - 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 11.

- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 11.

10.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 10.02, (b) required because of Owner's acceptance of defective Work under Paragraph 13.04 or Owner's correction of defective Work under Paragraph 13.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 10.06, or Article 11.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 10.07, it shall be deemed to be of full force and effect, as if fully executed.

10.08 *Notification to Surety*

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

ARTICLE 11: CLAIMS

11.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete,

and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 16 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 16 for the final resolution of disputes.
- G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 12: COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

12.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 12.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 - 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 12.01.C, and shall include only the following

items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 12.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
 5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of
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property insurance established in accordance with Section 00250), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

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

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

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 12.01.B.1 or specifically covered by Paragraph 12.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 12.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 10.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 12, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

12.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances:* Contractor agrees that:

- 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all

applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

12.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 13: TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all

required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

- B. Owner shall retain and Contractor shall pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 13.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.
- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

13.03 Defective Work

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that

would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

- F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 14.

13.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 14. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

13.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 14.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

13.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof,

until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.07 Owner May Correct Defective Work

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.07 will be charged against Contractor as set-offs against payments due under Article 14. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.07.

ARTICLE 14: PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

14.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 12.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. Applications for Payments:
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner. If the payment and performance of the Work is not secured by a payment and performance bond, all applications for

payment shall include a written statement that indicates how the payment will be distributed. Contractor shall disburse the payment as provided in that written statement.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
4. *If Requested by Owner:*
 - a. Contractor shall deliver a certified list of all Subcontractors, laborers, and material suppliers to Owner within 30 days of receiving the request. This list shall be updated by Contractor thereafter each month with a certified statement by Contractor that the list and its updates include the names and address of all of Subcontractors, laborers, and Suppliers furnishing labor and/or material for the Project.
 - b. Contractor shall provide a written statement with each pay request to the Owner which indicates how each payment will be distributed. This pay request breakdown shall define the disbursement of all the funds requested.
 - c. When Contractor receives any payment pursuant to this Contract, Contractor shall pay laborers and each Subcontractor and Supplier the amounts stated in Contractor's written statement delivered to Owner for that pay request.
 - d. Contractor shall provide a written statement with all but the first payment request from each of the Subcontractors, laborers, and Suppliers identified in Paragraph 14.01.B.4.b., that they have in fact received payment as provided in Paragraph 14.01.B.4.c. In the event a payment will not be made as stated on a prior written statement delivered pursuant to Paragraph 14.01B.4.b., Contractor shall furnish an explanation as to the reasons for such deviation and shall request approval from the Engineer.

C. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 12.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented

that:

- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 13.07, or has accepted defective Work pursuant to Paragraph 13.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. Reductions in Payment by Owner:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but

not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 13.07, or has accepted defective Work pursuant to Paragraph 13.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.01.C.1 and subject to interest as provided in the Agreement.

14.02 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

14.03 Substantial Completion

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work

substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

14.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect

thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Article 6 regarding builder's risk or other property insurance.

14.05 Final Inspection

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

14.06 Final Payment

- A. Application for Payment:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 6.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

- B. Engineer's Review of Application and Acceptance:

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 14.07.

Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

14.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 16.

14.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such

Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

14.09 *Local Government Prompt Payment Act*

- A. If the total cost of the construction services purchased by Owner pursuant to this Contract exceeds \$200,000, the provisions of this Article are subject to the provisions of the Local Government Prompt Payment Act, Sections 218.70 through 218.79, inclusive, Florida Statutes, except to the extent provided therein and in that event provisions of this Article are modified and amended to the extent required to be consistent with the Local Government Prompt Payment Act.

14.10 *Interest*

- A. All moneys not paid when due as provided in Paragraph 14 shall bear interest at the maximum rate of six (6) percent per annum, simple.

ARTICLE 15: SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 4. Contractor's repeated disregard of the authority of Owner or Engineer; or
 5. Contractor becomes involved as a debtor in a bankruptcy proceeding, or becomes involved in a reorganization, dissolution, or liquidation proceeding, or if a trustee or receiver is appointed over all or a substantial portion of the property of Contractor under federal bankruptcy law or any state insolvency law.
- B. If one or more of the events identified in Paragraph 15.02.A occurs, then after giving Contractor (and any surety) ten (10) days written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 1. declare Contractor to be in default, give Contractor (and any surety) notice that the Contract is terminated, and enforce the rights available to Owner under any applicable payment and performance bond; or
 2. notify Contractor of the deficiency with a requirement that the deficiency be corrected within a

specified time, otherwise the Contract will be terminated at the end of such time; or

3. take whatever action is deemed appropriate by Owner.

- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Section 00250, the provisions of that bond shall govern over any inconsistent provisions of Paragraph 15.02.B.

15.03 Owner May Terminate for Convenience

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

15.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms

as provided in Paragraph 15.03.

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

ARTICLE 16: FINAL RESOLUTION OF DISPUTES

16.01 Methods and Procedures

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 17: MISCELLANEOUS

17.01 Giving Notice

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

17.02 Computation of Times

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

17.03 Cumulative Remedies

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other

provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 Limitation of Damages

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

17.05 No Waiver

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

17.06 Survival of Obligations

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

17.07 Controlling Law

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

17.08 Headings

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

**DIVISION 0 - SECTION 00800
SUPPLEMENTARY CONDITIONS
ITB 22-013-LKD**

- A. This project doesn't have any supplementary conditions.

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DIVISION 0 - SECTION 00836
WAIVER OF RIGHT TO CLAIM AGAINST THE PUBLIC CONSTRUCTION BOND (FINAL PAYMENT)
ITB 22-013-LKD

The undersigned, in consideration of the final payment in the amount of \$ _____, hereby waives its right to claim against the Public Construction Bond for labor, services, or materials furnished to _____
_____ on the job of Highlands County, a political subdivision of the State of Florida, for improvements to the following described project: "NEW TRAFFIC OPERATIONS BUILDING, Highlands County Project No. 19007"

DATED ON _____, 20____.

By: _____

IN WITNESS WHEREOF _____ have (has) hereunto set hand and seal
this _____ day of _____, 20____.

WITNESS:

(Seal)

Print Name: _____

SWORN AND SUBSCRIBED TO BEFORE ME THIS _____ day of _____, 20____.

Notary Public
State of Florida-at-Large

My Commission Expires: _____

WAIVER OF RIGHT TO CLAIM AGAINST THE PAYMENT BOND (PROGRESS PAYMENT)
ITB 22-013-LKD

The undersigned, in consideration of the sum of \$_____, hereby waives its right to claim against the Public Construction Bond for labor, services, or materials furnished through (insert date) to (insert the name of your customer) on the job of (Highlands County, a political subdivision of the State of Florida), for improvements to the following described project: "NEW TRAFFIC OPERATIONS BUILDING, Highlands County Project No. 19007". This waiver does not cover any retention or any labor, services, or materials furnished after the date specified.

DATED ON _____, 20 ____.

By: _____

IN WITNESS WHEREOF _____ have (has) hereunto set hand and seal this _____ day of _____, 20 ____.

WITNESS:

(Seal)

Print Name: _____

SWORN AND SUBSCRIBED TO BEFORE ME THIS ____ day of _____, 20 ____.

Notary Public
State of Florida-at-Large

My Commission Expires: _____

APPENDIX "A"

SPECIFICATIONS

FOR

TRAFFIC OPERATIONS BUILDING

HIGHLANDS COUNTY BOARD of COUNTY
COMMISSIONERS

Sebring, Florida

CMHM Job No. 19058

March 29, 2023

CMHM Architects Inc. Architect
1036 South Florida Avenue, Lakeland, FL 33803
Tel: 863/688-8882

GENERAL DESIGN GUIDELINE SPECIFICATIONS

CIVIL • STRUCTURAL • ARCHITECTURAL
MECHANICAL • ELECTRICAL

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS

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Refer to Drawings

SECTION 01230 / ALTERNATE(S)

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This section specifies administrative and procedural requirements for Alternates.

- B. Definitions

- 1. Guaranteed Maximum Price (GMP) / Base Bid Amount: is a lump sum amount for all work described in the documents, exclusive of lump sum amounts for all of the alternates described in this section.
- 2. Alternate: is an amount proposed by bidders and stated on the Bid Form for certain construction activities defined in the bidding requirements that may be added to/or deducted from Base Bid amount if the OWNER decides to accept a corresponding change in the amount of construction to be completed. The OWNER reserves the right to accept or reject alternates in any order.

- C. Coordination

- 1. Coordinate related work and modify or adjust adjacent work as necessary to ensure that work affected by each accepted alternate is complete and fully integrated into the project.

- D. Schedule

- 1. A "Schedule of Alternates" is included at the end of this section. Include as part of each alternate all miscellaneous devices, accessory objects and similar items incidental to our reasonably required for a complete installation whether or not mentioned as part of the alternate.

END OF SECTION 01230

SECTION 01310 / PROCEDURES AND CONTROLS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.02 COORDINATION AND MEETINGS

- A. General: Prepare and distribute to each entity performing work at project site, a written memorandum of instructions on required coordinating activities, including required notices, reports and attendance at meetings. Prepare similar memorandum for separate contractors where interfacing of work is required.
- B. Weekly Job Coordination Meeting: In addition to specific pre-installation meetings and coordination meetings for each major element of work, and regular project meetings for other purposes, hold weekly job coordination meetings at regularly scheduled times which are convenient for everyone involved. Request representation (at each meeting) by every entity currently involved in coordination or planning for work of the entire project and by a representative qualified and authorized to make binding agreements. Conduct meetings in a manner which will resolve coordination problems. Record results of meetings and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

OWNER, ARCHITECT, and when necessary, ENGINEERING CONSULTANTS, will attend weekly job coordination meetings. If deemed necessary by the ARCHITECT he will record his own separate minutes of such meetings and distribute a copy to each: OWNER, Consultants and CONTRACTOR. CONTRACTOR will be responsible for further distribution if deemed necessary.

1.03 ADMINISTRATIVE/SUPERVISORY PERSONNEL

- A. Site Superintendent: The CONTRACTOR shall employ a competent SUPERINTENDENT and necessary assistants who shall be in attendance at the Project site during performance of the Work. The SUPERINTENDENT shall represent the CONTRACTOR, and communications given to the SUPERINTENDENT shall be as binding as if given to the CONTRACTOR. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case. The CONTRACTOR shall maintain at the project job site a full-time SUPERINTENDENT who will devote 100% of this working hours to this project.
 - 1. Experience: SUPERINTENDENT shall have a minimum work experience of five (5) years on projects of similar size and scope. Submit work experience and references of proposed SUPERINTENDENT for

OWNER'S and ARCHITECT'S review and approval. An approved SUPERINTENDENT shall not be removed from the project without the prior approval of the OWNER and ARCHITECT. The CONTRACTOR shall, upon demand from OWNER, immediately remove any SUPERINTENDENT that the OWNER may consider incompetent or undesirable.

2. Locations: Contracts involving work at more than one location shall require a SUPERINTENDENT at each location unless other provisions are approved by the OWNER.
 3. Superintendent's Instructions: In the CONTRACTOR'S absence, the SUPERINTENDENT shall represent the CONTRACTOR and all written instructions directed to the SUPERINTENDENT shall be binding.
 4. Supervision: The SUPERINTENDENT shall give adequate supervision to the work.
 - a. The SUPERINTENDENT shall carefully study and compare the CONTRACT DOCUMENTS and immediately report any errors, omissions, or discrepancies to the ARCHITECT.
 - b. The SUPERINTENDENT shall not be removed without prior written notice to and written consent of the ARCHITECT and the OWNER.
- B. General: In addition to a General Superintendent and other administrative and supervisory personnel required for performance of the work, provide specific coordinating personnel as specified herein.
- C. Project Manager: Provide a Project Manager, who is experienced in administration and supervision of building construction including mechanical and electrical work, and who is hereby authorized to act as the general coordinator of interfaces between units of work. For purpose of this provision, "interface" is defined to include the scheduling and sequencing of work, sharing of access to work spaces, installation, protection of each other's work, cutting and patching, tolerances, cleaning, selections for compatibility, preparation of coordination drawings, inspections, tests and temporary facilities and services.
- D. Submittal of Staff Names and Duties: Within 14 days of Contract Commencement date, submit a listing of CONTRACTOR'S principal staff assignments and consultants, naming persons and listing their addresses and telephone numbers.
- E. The Contractor shall retain all personnel assigned to this Project until the punch list is completed, all close out documents have been reviewed and are accepted by the owner and architect. Personnel assigned to the project shall not be removed, dismissed or reassigned without the owner's knowledge and written approval.

1.04 LIMITATIONS FOR USE OF SITE

- A. In addition to site utilization limitations and requirements shown on drawings, and indicated by other contract documents, administer allocation of available space equitably among entities needing access and space, so as to produce best overall efficiency in performance of total work of project. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site.
- B. Facilities, or portions of facilities shall not be occupied during construction, unless exits, fire detection and early warning systems, fire protection, and safety barriers are continuously maintained and clearly marked at all times. FBC 423.6.1 Occupancy During Construction.

1.05 TRADESPERSONS AND WORKMANSHIP STANDARDS

- A. Initiate and maintain procedures to ensure that persons performing work at site are skilled and knowledgeable in methods and craftsmanship needed to produce required quality-levels for workmanship in completed work. Remove and replace work which does not comply with workmanship standards as specified and as recognized in the construction industry for application indicated. Timely remove and replace other work damaged or deteriorated by faulty workmanship or its replacement such that final project completion date is met.

1.06 INSPECTIONS, TESTS AND REPORTS

- A. General: Required inspection and testing services are intended to assist in determination of compliances of work with requirements, but do not relieve CONTRACTOR of responsibility for those compliances, or for general fulfillment of requirements of Contract documents. Specified inspections and tests are not intended to limit CONTRACTOR'S Quality Control program. Afford reasonable access to agencies performing tests and inspections.
- B. OWNER'S Tests: Where tests or inspections are indicated as OWNER'S responsibility, OWNER will engage independent testing agency to perform required services. CONTRACTOR will be responsible for timely notification and coordination for such tests.
- C. Qualification of Testing Agencies: Except as otherwise indicated and except where manufacturer's testing facilities are indicated as acceptable, engage independent testing laboratories specializing in required services and complying with "Recommended Requirements" for Independent Laboratory Qualification" by ACIL.
- D. Reports: Submit test/inspection reports, including agency's analysis of results and recommendations where applicable, to ARCHITECTS, OWNER and Consultant except as otherwise indicated, and submit copies directly to governing authorities where required or requested.

1.07 THRESHOLD BUILDING INSPECTIONS

- A. Threshold inspection is not required for this project.

PART 2 - EXECUTION

2.01 GENERAL INSTALLATION PROVISIONS

- A. Pre-Installation Conferences: Well in advance of installation of every major unit of work which requires coordination and interfacing with other work, meet at project site with installers and representatives of manufacturers and fabricator who are involved in or affected by units of work, and in its coordination or integration with other work which has preceded or will follow. Advise OWNER, ARCHITECT/ENGINEER of scheduled meeting dates. At each meeting review progress of other work and preparations for particular work under consideration, including requirements of Contract documents, options, related change order, purchases, deliveries, shop drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection. Record significant discussions of each conference, and record agreements and disagreement, along with final plan of action.

Distribute record of meeting promptly to everyone concerning, including ARCHITECT, ENGINEER and OWNER.

Do not proceed with the work if associated pre-installation conference cannot be concluded successfully. Instigate actions to resolve impediments to performance of the work, and reconvene conference at earliest date feasible.

- B. Installer's Inspection of Conditions: Require installer of each major unit of work to inspect substrate to receive work, and conditions under which work will be performed, and to report (in writing to CONTRACTOR) unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.
- C. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable instructions and recommendations for installation, to the extent these are more explicit or more stringent than requirements indicated in Contract documents.
- D. Inspect each item of materials or equipment immediately prior to installation, and reject damaged and defective items.
- E. Provide attachment and connection devices and methods for securing work properly as it is installed; true to line and level, and within required tolerances if

not otherwise indicated. Allow for expansions and building movements. Provide uniform joint widths in exposed work, organized for best possible visual effect. Refer questionable visual-effect choices to ARCHITECT for final decision.

- F. Recheck measurements and dimensions of the work, as an integral step of starting each installation.
- G. Install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion which will ensure best possible results for each unit of work, in coordination with entire work. Isolate each unit of work from non-compatible work, as necessary to prevent deterioration.
- H. Coordinate enclosure (closing-in) of work with required inspections and tests, so as to minimize necessity of uncovering work for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, mount individual units of work at industry-recognized standard mounting heights for application indicated. Refer questionable mounting height choices to ARCHITECT/ENGINEER for final decision.

2.02 CUTTING AND PATCHING

- A. General: Do not cut-and-patch structural work in a manner resulting in reduction of load-carrying capacity or load-deflection ratio; submit proposed cutting and patching to ARCHITECT/ENGINEER for structural approval before proceeding. Do not cut-and-patch operational elements and safety-related components in a manner resulting in reduction of capacities to perform in a manner intended or resulting in decreased operational life, increased maintenance, or decreased safety. Do not cut-and-patch work which is exposed on exterior or exposed in occupied spaces of building, in a manner resulting in reduction of visual qualities or resulting in substantial evidence of cut-and-patch work, both as judged solely by ARCHITECT. Remove and replace work judged by ARCHITECT to be cut-and-patched in a visually unsatisfactory or otherwise objectionable manner.
- B. Materials: Except as otherwise indicated or approved by ARCHITECT/ENGINEER, provide materials for cutting-and-patching which will result in equal-or-better work than work being cut-and-patched; in terms of performance characteristics and including visual effect where applicable. Use materials identical with original materials where feasible and where recognized that satisfactory results can be produced thereby.
- C. All penetrations through fire-rated construction shall be fire stopped per NEC 300-21 using a through penetration fire stop system (XHEZ) listed in the UL fire resistance directory.
- D. Temporary Support and Protection: Provide adequate temporary support for work to be cut, to prevent failure. Do not endanger other work or persons. Provide

adequate protection of other work during cut-and-patching, to prevent damage; and provide protection of the work from adverse weather exposure.

- E. Cut work by methods least likely to damage work to be retained and work adjoining.
 - 1. Where physical cutting action is required, work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work.
 - 2. Comply with the requirements of applicable sections of Division 2 where cutting-and-patching requires excavating and backfilling.
- F. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.
 - 1. Where feasible, inspect and test patched areas to demonstrate integrity of work.
- G. Restore exposed finishes of patched areas:
 - 1. Extend finish restoration onto adjacent existing areas as required, in a manner which will eliminate evidence of patching.
 - 2. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched areas have received prime and base coats.

2.03 CLEANING AND PROTECTION

- A. General: During handling and installation of work at project site clean and protect in progress and adjoining work on a basis of perpetual maintenance. Apply suitable protective covering on newly installed work where reasonably required to ensure freedom from damage or deterioration at time of completion; otherwise, clean and perform maintenance on newly installed work as frequently as necessary through remainder of construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- B. In addition to removal of rubbish and leaving the building broom clean, the Contractor shall clean and wash all glass; replace any broken glass; remove stains, spots, marks and dirt from finished work; clean hardware, remove paint spots and smears from all surfaces; and clean fixtures and wash all concrete, tile and other floors.
- C. The trades shall remove their rubbish and debris from the building site promptly upon its accumulation and in no event later than the CONTRACTOR regular cleaning schedules, and all trash shall be deposited at one central point(s), as determined by the CONTRACTOR.

- D. Burning of rubbish on site will not be permitted. Rubbish shall not be thrown through window openings or from any great heights, but shall be conducted to ground by means of approved chutes, or other means of conveyance.
- E. Cleaning: Before pre-final inspection, the project (individual areas) is to be thoroughly cleaned. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of work to the condition expected from a normal, commercial building cleaning and maintenance program. Comply with the manufacturer's instructions for operations. Provide final cleaning prior to Final Inspection.
- F. Limiting Exposures of Work: To extent possible through reasonable control and protection methods, supervise performance of work in a manner and by means which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging or otherwise deleterious exposure during construction period. Such exposures include (where applicable, but not by way of limitation) static loading, dynamic temperatures, thermal shock, high or low humidity, air contamination or pollution, water, ice solvents, chemicals, light, radiation, puncture, abrasion, heavy traffic, soiling, bacterial, insect infestation, combustion, electrical current, high speed operation, improper lubrication, unusual wear, misuse, incompatible interface, destructive testing, misalignment, excessive weathering, unprotected storage, improper shipping/handling, theft and vandalism.

END OF SECTION 01310

SECTION 01330 / SHOP DRAWING REQUIREMENTS

Part 1 - REQUIREMENTS

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.02 GENERAL

- A. Follow shop drawing requirements of General Conditions referenced, and amended herein.

1.03 DEFINITIONS

- A. Shop drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by CONTRACTOR or any sub-contractor, manufacturer, supplier or distributor, and which illustrate some portion of the work.

Samples are physical examples furnished by CONTRACTOR to illustrate materials, equipment or workmanship, and to establish standards by which the work will be judged.

1.04 SPECIAL SHOP DRAWING REQUIREMENTS

- A. Division 3, Concrete; Division 4, Masonry; Division 5, Metals; Section 06402/Custom Shop Fabricated Millwork; Division 7, Thermal and Moisture Protection; Division 8, Doors and Windows; Division 10, Specialties; Division 11, Equipment; Division 12, Furnishings; Division 13, Special Construction; Division 15, Mechanical; and Division 16, Electrical where applicable, CONTRACTOR shall provide one complete set of reproducible sepias (sheet size 36" x 24") describing and detailing all shop or field fabricated work with each piece keyed to ARCHITECT'S numbering system where applicable, along with three sets of blueline or blackline prints of same.
- B. ARCHITECT will note all comments on the reproducibles, duplicate copies for ARCHITECT and OWNER and return reproducibles to CONTRACTOR for further reproductions and distributions.
 - 1. For submittals not conducive to the foregoing procedure, provide a minimum of seven copies each, for the following distribution:
 - 1 - OWNER
 - 2 - ARCHITECT
 - 1 - ENGINEER Consultant
 - 2 - CONTRACTOR
 - 1 - Subcontractor / Supplier

2. Additional copies may be submitted by CONTRACTOR if desired for further distribution.
3. Structural areas requiring threshold building inspections will require one additional set of submittals.
4. Each submittal is to make clear reference to Project Name, Specification Sections and Drawing Numbers.
5. No partial submittals will be accepted without prior agreement of ARCHITECT.
6. HVAC Submittals: Provide additional copies of specific data, to be retained by ARCHITECT, to be turned over to the OWNER'S selected Test & Balance agency.

1.05 CONTRACTOR'S RESPONSIBILITIES

- A. Within twenty-one calendar days of contract start date deliver to ARCHITECT a comprehensive schedule of submittals anticipated and necessary for this project.
- B. Review, stamp with CONTRACTOR'S approval and submit, with reasonable promptness and in orderly sequence so as to cause no delay in the work, all shop drawings and samples required by contract documents or subsequently by ARCHITECT as covered by modifications. Properly identify all shop drawings and samples and list name, address and telephone number of subcontractor/supplier. At time of submission, CONTRACTOR shall inform ARCHITECT in writing of any deviation in shop drawings or samples from requirements of these contract documents. **All deviations are to be marked in red on submittal. Submittals not marked correctly will be returned to CONTRACTOR for correction and re-submittal.** Submit complete shop drawings for a single trade. No partial submittals will be reviewed without prior agreement of ARCHITECT.
 1. **All products installed in the building envelope shall have the product approval number indicated on the submittal. Products shall conform to the FBC, latest edition.**
- C. By approving and submitting shop drawings and samples, CONTRACTOR thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated each shop drawing and sample with all requirements of the work, related trades and contract documents.
- D. Make all corrections required by ARCHITECT and resubmit required number of corrected copies of shop drawings or new samples until accepted by ARCHITECT and his consulting ENGINEERS. No additional days for re-submittals, because of rejection of product or shop drawings. Direct specific attention in writing or on resubmitted shop drawings to revisions other than corrections requested by ARCHITECT on previous submissions.

- E. **ARCHITECT'S review of shop drawings or samples does not relieve CONTRACTOR of responsibility for any deviation from requirements of contract documents, unless CONTRACTOR has informed ARCHITECT in writing of such deviation at time of submission and ARCHITECT and OWNER accept the specific deviation; nor shall ARCHITECT'S review relieve CONTRACTOR from responsibility for errors or omissions in CONTRACTOR'S preparation of shop drawings or samples. ARCHITECT will not verify quantities of materials or verify dimensions except as they compare to the contract documents. Field verification of dimensions remain the responsibility of the CONTRACTOR.**
- F. Deliver no materials or equipment to project and commence no portion of work requiring shop drawing or sample submission until submission has been reviewed by ARCHITECT and returned in satisfactory manner to CONTRACTOR. All such portions of work shall be in accord with shop drawings, samples and contract documents.
- G. Unless agreed to in advance, completion of all Shop Drawing submission shall be accomplished no later than 90 calendar days after contract commencement date.

1.06 ARCHITECT'S RESPONSIBILITY

- A. ARCHITECT requires twenty-one calendar days for processing each shop drawing submittal. Those requiring color selections could require additional time and all trades, where color selection of related items is critical, will have to be submitted before final selections will be made. This requirement is particularly important for the choice of interior material colors which require simultaneous selection. ARCHITECT will review shop drawings and samples with reasonable promptness but only for conformance with design concept of project and with information given in contract documents. ARCHITECT'S review of a separate item does not indicate approval of an assembly in which item functions. **ARCHITECT'S review shall not be construed as relieving the CONTRACTOR from compliance with the plans and specifications, nor departure therefrom. The CONTRACTOR will remain responsible for details and accuracy, for confirming and correlating all quantities and dimensions for selecting fabrication processes, for techniques of assembly and for performing his work in a safe manner.**

END OF SECTION 01330

SECTION 01400 / QUALITY CONTROL SERVICES

PART 1 - REQUIREMENTS AND RESPONSIBILITIES

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.
- B. This section provides for but is not limited to the following Quality Control Services:
 - 1. Materials Testing
 - a. Soils Compaction
 - b. Concrete Testing
 - c. Masonry Grout Testing
 - d. Structural Steel Inspection and Testing
 - e. Paint Testing
 - f. Carpet Testing
 - g. Subgrade and Limerock Base
- C. HVAC Systems Testing, Adjusting and Balancing to be provided by CONTRACTOR.

1.02 RESPONSIBILITIES

- A. The CONTRACTOR: will procure and pay for Quality Control Services.
- B. The CONTRACTOR will give ARCHITECT, OWNER and testing agency timely notice (one working day minimum, more if specified elsewhere) of readiness and of dates arranged so the OWNER and the ARCHITECT may observe testing. Cooperate with testing agency, and permit full rights of entry and observation. Independent testing laboratory control is employed to help produce work of uniformly high quality and does not relieve CONTRACTOR of complete responsibility of furnishing and installing work equal to or greater than minimum quality specified hereinafter. If tests fail to meet specified levels then CONTRACTOR will be responsible for reworking area failing tests, then arranging to have the areas retested. The CONTRACTOR will pay for failed tests.
- C. The Testing Agency will make all tests promptly and accurately, and furnish one copy each of results, directly to OWNER, ARCHITECT, STRUCTURAL ENGINEER, THRESHOLD INSPECTOR (if applicable) and CONTRACTOR.

PART 2 - MATERIALS TESTING

2.01 SOILS COMPACTION

- A. Test compacted soil occupied by building for density equal to 98% of Standard Proctor Maximum Dry Density tested by ASTM Method D-698.
- B. Make the following tests in location directed by ARCHITECT, OWNER, and/or testing lab.
 - 1. Site compaction
 - 2. Foundation compaction
 - 3. Fill compaction under slabs on grade
 - 4. Subgrade and limerock base.Refer to specific preparation instruction in Division 2.

2.02 CONCRETE

- A. Make one compression test set of four cylinders for each 50 cubic yards or less of concrete placed in one day or single pour event. Laboratory is to have complete freedom to take and make cylinders at any time and place in pour, pick up cylinders and make all test themselves. Make and cure test specimens in accord with "Standard Method of Making and Curing Concrete Compression and Flexure Test Specimens in the Field" (A.S.T.M. designation C-31). Test in accord with "Standard Methods of Test for Compressive Strength of Molded Concrete Cylinders", (A.S.T.M. designation C-39), except as hereinafter modified. Standard age of test is to be 28 days. Minimum compressive strength of specimen cylinders is design compressive strength. Test one cylinder at 7 days, test two cylinders at 28 days and the average value is to be used as test result. Hold 4th cylinder for further testing as instructed by OWNER or ARCHITECT.
- B. Criteria for acceptance of concrete cylinder tests shall comply with FBC section 1905 and below:
 - 1. Every arithmetic average of any three consecutive strength tests equals or exceeds $f' c$.
 - 2. No individual strength test (average of two cylinders) falls below $f' c$ by more than 500 psi (3.45 MPa) when $f' c$ is 5,000 psi (34.45 MPa) or less, or by more than 0.10 $f' c$ when $f' c$ is more than 5,000 psi.

2.03 MASONRY GROUT

- A. Make one compression test set of four specimens (per paragraph 2.02) for each 20 cubic yards or less of grout placed in one day or a single pour event. Laboratory is to have complete freedom to take and make specimens at any time and place in pour, pick up specimens and make all tests themselves. Standard age of tests is to be 28 days. Minimum compressive strength of specimen is design compressive strength. Test one cylinder at 7 days, test two cylinders at 28 days and the average value is to be used as test result. Hold 4th cylinder for further testing as instructed by OWNER or ARCHITECT.

2.04 STRUCTURAL STEEL

- A. Structural steel connections, welding and steel decking will at the discretion of the OWNER and ARCHITECT, be field checked at random by testing agency.

2.05 PAINT

Paint testing will be at the discretion of the OWNER and ARCHITECT.

- A. Adherence to paint specifications will be field checked at random by testing agency.

2.06 CARPET

- A. The CONTRACTOR shall provide, prior to installation of carpet, one test sample for each color or type of carpet. The test samples shall be full roll width and three feet long. (This is not necessary if carpet is Class 1 or 2.)

- 2.07 The CONTRACTOR shall provide to the OWNER in the close out documents, written certification that no asbestos containing materials were used in this project per the Federal Asbestos hazard Emergency Response Act (AHERA) 40 CFR, Part 763 as the latest revision.

END OF SECTION 01400

SECTION 01770 / CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

PART 2 – INSPECTIONS

2.01 MILL OR FACTORY INSPECTION

- A. If mill or factory inspection is required by the CONTRACT DOCUMENTS, the CONTRACTOR shall notify the suppliers that the materials shall not be produced or fabricated without due notice to the ARCHITECT.

2.02 PUNCH LIST INSPECTION

- A. When the CONTRACTOR has pre-formed his own punch list inspection and believes that the Work is substantially complete, the CONTRACTOR shall submit to the OWNER and the ARCHITECT, a list of items to be completed or corrected. When the OWNER and the ARCHITECT on the basis of the punch list inspection determine that the Work is in fact substantially complete, the ARCHITECT will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion and shall state the responsibilities of the OWNER and the CONTRACTOR for Project security, maintenance, heat, utilities, damage to the Work, and insurance, and the CONTRACTOR shall complete the items listed therein with a not to exceed time of 30 days for single source contract's and 60 days for multiple contract's, or as modified by the contract. Guarantees required by the Contract shall commence on the date of Substantial Completion of the Work. The Certificate of Substantial Completion shall be submitted to the OWNER and the CONTRACTOR for their written acceptance of the responsibilities assigned to them in such certificate. Upon Substantial Completion of the Work, and execution by both the OWNER and the CONTRACTOR of the Certificate of Substantial Completion, the OWNER shall pay the CONTRACTOR an amount sufficient to increase total payments to the CONTRACTOR to one hundred percent of the Contract Price less retainage.

- 2.03 FINAL INSPECTION: The Final Inspection will be made by the OWNER on the first work day following the Completion Date or as soon thereafter as possible.

- A. It will be the responsibility of the CONTRACTOR to complete the work for Final Inspection on the Completion Date, which work shall include, but not be limited to the following:

1. Proper completion of all items which may be listed on a pre-final inspection list which the CONTRACTOR may request from the ARCHITECT.
 2. Complete operation of all mechanical systems, fire alarms, intercom systems, and sanitary facilities.
 3. All site work.
- B. If the work is not ready for Final Inspection on the Completion Date, the Final Inspection will be held on a subsequent date when the ARCHITECT, OWNER, and CONTRACTOR have determined that the work is ready for Final Inspection. Without written prior approval, liquidated damages shall be assessed beginning the first working day after the completion date.
- C. If the work is ready for Final Inspection prior to the completion date the CONTRACTOR may request an earlier Final Inspection.

2.04 WORK COVERED UP

- A. If the work should be covered up without approval or consent of the ARCHITECT or OWNER, the ARCHITECT or the OWNER may require the work to be uncovered for examination at the CONTRACTOR'S expense.

2.05 DEFECTS OR OMISSIONS

- A. Defects or omissions remaining at the time of the Final Inspection will be noted and three times the installed and operational value of these items may be withheld pending their completion and acceptance. If defects or omissions remain thirty days after the OWNER'S acceptance of the project the OWNER may, without further notice to the CONTRACTOR, correct the defects or omissions and withhold the cost from the CONTRACTOR'S retainage.

2.06 REVIEW AND ASSIGNMENT OF WARRANTIES

- A. CONTRACTOR shall obtain and shall transmit to OWNER'S Representative all special product, system, equipment or material warranties required by the Contract Documents and the Subcontracts at time of substantial completion. CONTRACTOR shall review all such warranties to confirm that the warranties are in compliance with the requirements of the Contract Documents and Subcontracts. By execution of this Agreement, CONTRACTOR hereby assigns to OWNER all of CONTRACTOR rights, title and interest in and to any and all warranties, including Uniform Commercial Code warranties, that CONTRACTOR receives or is entitled to receive from any Subcontractor or supplier in connection with the Project.
- B. All warranties shall be placed in a three (3) ring binder separated with tabs by division.

- C. The contractor shall also furnish a JPG copy of each warranty on a compact disk. The format for the JPG picture file shall be the division followed by a short description of the item. (i.e. 15WH1.JPG or 15AHU1.JPG)

2.07 OPERATIONS AND MAINTENANCE DOCUMENTATION

- A. CONTRACTOR shall obtain and transmit to OWNER'S Representative all documentation required by the Contract Documents regarding the operation and recommended maintenance programs relating to the various elements of the Project at time of substantial completion. Two Sets of documentation shall be furnished to OWNER'S Representative in uniform three-ring binders labeled with the Project name and number on the cover. These binders shall be tabbed and labeled by Division and include each subcontractors warranty and release of lien.

2.08 REVIEW AND APPROVAL OF AS-BUILT DRAWINGS

- A. As-built drawings shall be provided as part of the closeout documents. CONTRACTOR'S final retainage shall be held until the requirements of this section are met.
- B. CONTRACTOR shall provide to the OWNER an as-built survey showing building location, finished floor elevation(s), walks, site grade elevations, storm drainage systems, inverts, utilities, etc. shall be signed and sealed by a surveyor registered in the State of Florida. Provide six (6) signed and sealed copies and one (1) electronic copy in AutoCAD format.
- C. CONTRACTOR shall provide as-built drawings and shall confirm to OWNER that such drawings are adequate and complete and in compliance with the requirements of the Contract Documents.

2.09 AVAILABILITY OF PROJECT-RELATED RECORDS TO OWNER

- A. All records relating directly or indirectly to the Project which are in the possession or control of CONTRACTOR shall be made available to OWNER, its designee, and any governmental authority for audit, inspection, and copying upon request of OWNER'S Representative. Such records include, without limitation: all drawings, specifications, Submittals, subcontractor bids, the Daily Log, correspondence, the Request Log, the Submittal Log, minutes, memoranda, tape or videotape recordings, or other writings or things which document the Project, its design, and its construction.

END OF SECTION 01770

SECTION 02000 / SITEWORK, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 2. Provisions of this Section 02000 also apply to all sections of this Division 2. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

PART 2 - CONSTRUCTION STAKE-OUT

- 2.01 It shall be the duty of the CONTRACTOR to make his own construction stake-out from Bench Marks and Control Points established. Field crew(s) shall be under the direction of a registered surveyor, duly licensed in the State of Florida.

PART 3 - GUARANTEE

- 3.01 All materials and workmanship involved in this project shall be guaranteed free from defects owing to faulty material or workmanship for a period of one year, unless otherwise specified, after the date of acceptance. Any part of work proving defective from these causes, within this period, shall be replaced free of cost to the OWNER. Copies of all guarantees must be furnished the OWNER before final acceptance.

PART 4 - SCHEDULE OF WORK

- 4.01 All work shall be so scheduled as to minimize interference with traffic and convenience of the public. The ARCHITECT/ENGINEER and OWNER reserves the right to require rescheduling of the work where interference is indicated. The work shall progress as expeditiously as possible.

PART 5 - SAFETY PRECAUTIONS

- 5.01 The CONTRACTOR shall take all precautions for the safety of employees on the work, and shall comply with all applicable provisions of safety laws and building codes to prevent accidents or injury to persons on or about the premises where the work is being performed. The CONTRACTOR shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workmen and the public and shall post danger signs, use blinker lights, or other means deemed appropriate to warn against the hazards created by

features of construction including off-site signs if required by governing agencies and he shall designate a responsible member of his organization on the work whose duty shall be the prevention of accidents.

- A. The CONTRACTOR shall comply with the Occupational Safety and Health Administrations (OSHA) excavation safety standards 29 CFR, Section 1926.650, Subpart P., otherwise known as "Trench Safety Act", Chapter 90-96, Florida Statutes.
 - 1. The CONTRACTOR shall provide written assurance of compliance with this law.
 - 2. A trench safety system shall be designed by the CONTRACTOR.
 - a. Provide a separate cost item identifying the cost to comply with the Trench Safety ACT.
- B. Comply with the Underground Facility Damage Prevention & Safety Act, referred to as "Sunshine State One-Call of Florida, Inc.", prior to digging. Toll Free: 1-800-432-4770.

PART 6 - PROTECTION OF PROPERTY

- 6.01 The CONTRACTOR shall be solely responsible for properly storing and protecting all materials, equipment, and the entire work furnished under this contract from the time such materials and equipment are delivered at the site of the work until final acceptance of the entire work. He shall at all times, take the necessary precautions to prevent injury or damage by water or by inclemencies of the weather to materials, equipment, and work. All injury or damage to materials, equipment, and work resulting from any cause whatsoever shall be made good by the CONTRACTOR. If it becomes necessary to remove and restack materials to avoid impeding the progress of any part of the work or interference with the work to be done by any other CONTRACTOR, the CONTRACTOR shall remove and restack such materials at his own expense.
 - A. The CONTRACTOR accepts the site as he finds it upon mobilization, unless specifically agreed to otherwise with the OWNER prior to starting work. Site features (either on site or adjacent thereto) designated to remain in place after completion of project shall be protected from damage and if damaged the CONTRACTOR will be required to replace same acceptable to OWNER, ARCHITECT or governing agencies at no additional expense to the OWNER. (Examples: streets, curbs, walks, trees, shrubs, wells, irrigation systems, utilities, buildings, etc.)

PART 7 - DEWATERING OF TRENCHES

7.01 Dewatering of trenches and excavations shall be considered an integral part of the CONTRACTOR'S responsibility if required to complete the work in this contract.

PART 8 - TESTS

8.01 The costs of all tests for soils and related compaction or concrete construction will be paid by the CONTRACTOR. Tests will be made at any time or place during the progress of construction as deemed necessary by the OWNER, ARCHITECT, ENGINEER or testing agency. Should the work fail a test, the OWNER shall withhold further progress payments until the CONTRACTOR reworks, replaces, or causes the work to meet the requirements set forth and passes a new test. **CONTRACTOR will reimburse the OWNER for the cost of failed tests.**

PART 9 - MATERIALS AND WORKMANSHIP QUALITY

9.01 The materials and quality of workmanship shall conform to current Department of Transportation Specifications and otherwise specified herein or on the drawings.

PART 10 - GEOTECHNICAL EXPLORATION

10.01 Geotechnical investigation will be performed by a licensed Testing & Environmental company. Only portions of the Geotechnical ENGINEER'S site preparation recommendations will be included in this Division.

A. A full report is available in both ARCHITECT'S, ENGINEER'S, and OWNER'S offices for review by interested parties. Copies of the full certified report must be obtained from a licensed Testing & Environmental company and CONTRACTOR will be required to comply with the requirements of the full report.

1. Boring locations are indicated on drawings and Boring Logs are bound in these specifications following Section 02301/Grading and Earthwork (Buildings and Structures). They are not intended as representation or warranty of accuracy or continuity between soil borings. It is expressly understood that OWNER will not be responsible for interpretations or conclusions drawn therefrom by CONTRACTOR. Data are made available for convenience of CONTRACTOR.

END OF SECTION 02000

SECTION 02230 / CLEARING AND DEMOLITION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 02000 and other sections of this division.

PART 2 - CLEARING, GENERAL

2.01 The site (to limits shown on drawings) shall be cleared of trees and stripped of all existing overgrowth, debris and other organic matter. Acceptable strippings may be stockpiled and later used for the site filling outside buildings, if approved by ARCHITECT and ENGINEER.

2.02 Typical piping encountered shall be removed and disposed of off site, **except** all piping to remain shall be identified by OWNER and protected from damage by CONTRACTOR during construction. Any damage to active irrigation system to remain shall be corrected by CONTRACTOR at no cost to the OWNER.

2.03 Disposal

All waste materials shall be disposed of by the CONTRACTOR in an approved manner, at regular intervals.

PART 3 - DEMOLITION, GENERAL

3.01 Extent of demolition is shown on drawings in so far as possible and includes complete removal of indicated areas and disposal of demolished material, as designated and reasonably incidental to work intended.

A. OWNER assumes no responsibility for actual condition of structures to be demolished.

B. Conditions existing at time of inspection for bidding purposes will be maintained by OWNER in so far as practicable.

3.02 Partial Removal: Items of salvable value to the CONTRACTOR and not specifically designated to be turned over to the OWNER may be removed from site or structure as work progresses. Transport salvaged items from site as they are removed.

A. Storage or sale of removed items on site will not be permitted.

3.03 Traffic: Conduct demolition operations and removal of debris to ensure minimum interference with walks, drives and other adjacent occupied or used facilities. Coordination with local governmental agencies as required.

- 3.04 Protection: Ensure safe passage of persons around area of demolition. Conduct operations to prevent injury to adjacent buildings (parts), facilities and persons. Promptly repair, in kind, any damages caused to adjacent facilities by demolition or construction operations at no cost to OWNER.
- 3.05 Utilities Services: Maintain existing utilities and irrigation system indicated to remain, keep in service, and protect against damage during demolition and clearing operations.
- 3.06 Disposal and Cleaning: Remove from site all debris, rubbish, and other materials resulting from demolition and clearing operations.
- A. Do not bury any debris on site. Over excavation of storm water retention/detention areas to dispose of debris and/or unacceptable strippings will not be allowed.

END OF SECTION 02230

SECTION 02300 / GRADING AND EARTHWORK (For site outside building area)

PART 1 -GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 02000 and other sections of this division.

PART 2 -MATERIALS

2.01 USE OF MATERIALS EXCAVATED

- A. Contractor shall review geotechnical engineers report to verify excavated soils are suitable for use as fill material. All suitable materials resulting from the excavation shall be used as far as practicable in the construction shown in the plans or required for completion of the work.
1. Excavated materials bearing in excess of 10% clay are not to be used as backfill for trenches or behind retaining walls or around underdrain features. For these areas provide more easily compactable sandy material.
 2. Excavated fill material shall have a radium Ra226 content of less than 5 spci/g to be considered suitable for use on site.

2.02 GENERAL REQUIREMENTS FOR EMBANKMENT MATERIALS

- A. Embankments shall be constructed of material containing no muck, stumps, roots, brush, vegetable matter, rubbish or other material that will not compact into a suitable and enduring manner and material designated as undesirable shall be removed and properly disposed. Utilization of material in embankment construction shall be in accordance with plan details.

2.03 GRAVEL

- A. Crushed limestone or equivalent, washed free of loam, sand, clay or other foreign substances, 3/4" to 1 1/4" range.

2.04 FILTRATION/SEPARATION FABRIC

- A. Water permeable filtration fabric of fiberglass or polypropylene fabric, continuous roll material, equivalent to "Typar" geotextile #3201, 1.8 oz./SY. Lap joints 6" minimum.

PART 3 - CONSTRUCTION METHODS

3.01 GRADING TOLERANCE

Except at specific locations requiring tighter tolerances, areas to be graded shall be brought to within ± 0.1 foot of the designated elevation after necessary allowance has been made for finishes such as topsoil, finishes, paving, sod, etc.

3.02 Where the grading work consists of only light adjustments of the shoulders and slopes, such as is occasioned by dressing of shoulders, etc., prior to the blading of any areas containing sod or heavy weeds, it shall be cut up by rotovators, pulvimixers, or other similar equipment.

3.03 SITE PREPARATION PROCEDURES - PAVED AREAS

Refer to the Geotechnical ENGINEER'S report for specific procedures, as amplified on the civil drawings and as follows.

- A. If required, perform remedial dewatering prior to any earthwork operations.
- B. Place fill material, as required. The fill should consist of "clean", fine sand with less than 5 percent soil fines. Use of fill materials with soil fines between 5 and 10 percent may be permissible, but strict moisture control may be required. Place fill in uniform 10 to 12-inch loose lifts and compact each lift into a minimum density of 98 percent of the Standard Proctor ASTM D698 maximum dry density.
- C. The aforementioned recommended lift thicknesses and compaction criteria is applicable for the filling in any ditch or swale areas at the site which are within paving, sidewalk or other structural areas.
- D. In paved areas, perform compliance tests at a frequency of not less than one test per 10,000 square feet per lift or at a minimum of two test locations, whichever is greater, however, testing lab will determine actual test locations and frequency.
- E. Refer to drawings and geotechnical engineers report for on-site soil suitability.

3.04 EROSION AND SEDIMENTATION CONTROL

- A. The work specified herein and shown on the drawings consists of designing, providing, maintaining and removing temporary erosion and sedimentation controls as necessary, including maintenance and removal of the control features.
- B. Temporary erosion controls include, but are not limited to; grassing, mulching, seeding, watering and re-seeding on-site surfaces and spoil and disturbed area surfaces and providing interceptor ditches at ends of berms and at these locations, to control erosion during construction, or maintained, within acceptable limits as established by the Southwest Florida Water Management District (SWFWMD) and the Florida Department of Environmental Protection (FDEP).

- C. Temporary sedimentation controls include, but are not limited to; silt curtains, traps, barriers, staked hay bales, and silt barrier at the foot of silt surfaces and extreme areas which will ensure that sedimentation pollution will either be eliminated, or maintained, within acceptable limits established by the Southwest Florida Water Management District (SWFWMD) and the Florida Department of Environmental Protection (FDEP). The CONTRACTOR is responsible for providing effective temporary erosion sedimentation control measures during construction, or until final controls become effective.
- D. All piles of excavated materials (dirt, strippings from clearing and grubbing) shall have, effectively maintained within the base periphery, a staked silt barrier or staked hay bales in order to ensure that erosion and sedimentation control can be accomplished.

3.05 STABILITY OF EXCAVATIONS

- A. Slope sides of excavations to comply with local codes and ordinances having jurisdiction including the "Trench Safety Act". Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.
- B. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction. Protect structures, utilities, sidewalks, pavements, and other facilities from damage by vibration, settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

3.06 EXCAVATION FOR UTILITY TRENCHES

- A. Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flow lines and invert elevations. Keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups. Compact the bottom of each trench with equipment suitable to achieve 98 percent of the Standard Proctor ASTM D698 Maximum Dry Density. Grade bottoms of trenches as indicated, notching under pipe below to provide solid bearing for entire body of pipe.

B. Backfill and Fill: General: Do not backfill trenches until installed items have been satisfactorily tested, inspections have been made and backfilling is authorized by ARCHITECT/ENGINEER or OWNER. Use care in backfilling to avoid damage or displacement of pipe system.

1. All trench backfill located below existing or proposed pavement shall be compacted to 98% maximum density in accordance with AASHTO T-99, Method "C".
2. Backfill excavations as promptly as work permits, but not until completion of the following:
Acceptance of construction below finish grade.
Inspection, testing, and recording locations of underground utilities.
Removal of concrete formwork.
Removal of trash and debris.
3. Placement and Compaction: Place backfill and fill materials in uniform layers not more than 12" in loose depth (not more than 4" in loose depth for material compacted by hand-operated tampers).
Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Test as required in other parts of this Specification.

Place backfill and fill materials evenly adjacent to structures, to required elevations. Place indicated fill after pipe is placed 2/3 up its sides before compacting. Take care to prevent wedging action of backfill against structures by carrying material uniformly around structure to approximately same elevation in each lift.

3.07 MAINTENANCE AND PROTECTION OF WORK

A. While construction is in progress adequate drainage for the area shall be maintained at all times. The CONTRACTOR shall maintain all earthwork construction throughout the life of the contract, unless otherwise provided, and shall take all reasonable precautions to prevent loss of materials from the area due to the action of wind or water. He shall repair at his expense, except as otherwise provided herein, any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work.

3.08 DEWATERING

- A. Prevent surface water, subsurface or ground water from flowing into excavations and from flooding project site and surround area.
- B. Do not allow water to accumulate in excavations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

- C. Convey water removed from excavations and rainwater to collecting or run-off areas. Establish and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches.
- D. Remedial dewatering is considered an integral part of this project's work, and therefore full consideration shall be given to the need for this requirement and no additional compensation will be allowed.

3.09 EXCAVATION

Excavation is unclassified and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.

END OF SECTION 02300

SECTION 02301 / GRADING AND EARTHWORK (Buildings and Structures)

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 02000 and other sections of this division.

1.02 DESCRIPTION OF WORK

- A. The extent of earthwork is shown on drawings and described herein.

1.03 TESTING AND INSPECTION SERVICE

- A. CONTRACTOR will engage soil testing and inspection service for quality control testing during earthwork operations.

1.04 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Test Reports: Submit following reports directly to OWNER from the testing services, with copy to ARCHITECT, ENGINEER and CONTRACTOR.
1. Field density (compaction) test reports of each test made.
 2. One optimum moisture-maximum density curve for each type of soil encountered.
 3. One sieve analysis (percent passing #200 sieve) for each type of fill material.

1.05 JOB CONDITIONS

- A. Site Information: CONTRACTOR accepts the site as he finds it. OWNER has contracted for Geotechnical exploration as stated in Section 02000. A full report is available in ARCHITECT'S, ENGINEER'S and OWNER'S offices for review by interested parties. Boring locations are indicated on drawings and Boring Logs are bound in these specifications following this section. It is not intended as representation or warranty of accuracy or continuity between soil borings. It is expressly understood that OWNER will not be responsible for interpretations or conclusions drawn therefrom by CONTRACTOR. Data are made available for convenience of CONTRACTOR. Additional test borings and other exploratory operations may be made by CONTRACTOR at no cost to OWNER.
- B. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction. Protect structures, utilities, sidewalks, pavements, and other facilities from damage by vibration, settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

PART 2- PRODUCTS

2.01 SOIL MATERIALS

- A. Satisfactory Soil: materials are defined as those complying with American Association of State Highway and Transportation Officials (AASHTO) M145, soil classification groups A-1, A-2-4, A-2-5, and A-3. No soil bearing clay is to be used under the buildings.
- B. Unsatisfactory Soil: materials are those defined in AASHTO M145 soil classification groups A-2-6, A-2-7, A-4, A-5, A-6 and A-7; also, clay, peat and other highly organic soils.
- C. Drainage Fill: washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, with 100% passing a 1 1/2" sieve and not more than 5% passing a No. 4 sieve.
- D. Backfill and Fill Materials: satisfactory soil materials free of clay, rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetable and other deleterious matter.
- E. All imported fill material shall have a radium Ra226 content of less than 5pCi/g.

PART 3 - PREPARATION OF BUILDING BASE

- 3.01 Refer to and comply with instructions in the Geotechnical ENGINEER'S report.
- 3.02 Perform remedial dewatering prior to any earthwork operations as required.
- 3.03 Site Preparation Procedures: The existing natural surficial soils are to be prepared prior to placement of engineered fill and foundation construction on the soils, in accordance with the following site preparation recommendations.
 - A. The proposed building area, plus a margin of 6.0 feet (minimum) beyond the perimeter of any foundation system on all sides of the building shall be cleared and grubbed of any vegetation, tree root systems, and organic topsoils. Upon completion of the stripping activity, the stripped area shall be excavated to a depth of 2.0 feet below the designed underslab elevation (finished floor elevation less 2.33 feet) for typical building areas to include perimeter column pad locations.
 - B. The exposed subgrade soils shall be compacted with a medium 6 ton, steel drum, vibratory roller to a depth of 24.0 inches below the exposed surface to a minimum of 98 percent of the Standard Proctor Maximum Dry Density as determined by ASTM D-698. Any soft, yielding areas should be excavated and replaced with compacted sandy structural backfill (less than 10% passing sieve #200). A quality control testing firm will be retained to verify that required density level has been achieved. If any existing

structures/buildings are within 500 ft. of the proposed building, a vibratory roller is prohibited. Any compaction to within 25 feet of any existing structure shall be accomplished with a small steel plate compactor, or non-vibratory roller.

If the groundwater table is encountered, the area should be dewatered through the method of sump-pumping or well-pointing. The duration of the dewatering activity should be such that the groundwater table is lowered at least 3.0 feet below the bottom of the excavation.

Note: The structural fill soil is defined as clean, cohesionless, granular fine sand containing less than ten percent (10%) material by weight which can pass through sieve #200.

- C. Fill necessary to elevate the building area to desired underslab elevation shall then be placed in 12.0 inch thick layers, moisture conditioned to within $\pm 2\%$ to $\pm 3\%$ of its optimum moisture content and compacted to a minimum of 98 percent of the Standard Proctor Maximum Dry Density. All imported fill shall be structural (free of roots and debris and should contain less than 10%, by dry weight, passing sieve #200).

Building area fill soils below the upper 4.0 feet should have a maximum plasticity index (PI) of 20 and a maximum liquid limit (LL) of 50. Building areas within the upper 4.0 feet of fill should have a maximum plasticity index (PI) of 12 and a liquid limit (LL) of 40.

- D. Continuous wall footing trenches and isolated column pad footings shall then be excavated to recommended footing bottom. Bottom of excavated foundation shall be tested to ensure that soil to a depth of 12.0 inches below continuous strip/wall footings is compacted to 98 percent of the Standard Proctor Maximum Dry Density, and to a depth of 24.0 inches below isolated column footings. If compaction is found to be Type your question here and then click Search.deficient, additional compactive effort should be applied until proper density is achieved and verified. If necessary, overexcavate bottom of footing, compact exposed soils to required depth, and provide compacted backfill (with proper density) to bottom of footing elevation.
 - E. Foundation backfill on sides of formed footings, and building slab subgrade fill is to consist of clean granular fill, free of roots and debris, which is placed in 12-inch lifts and compacted to 98 percent of the Standard Proctor Maximum Dry Density.
 - F. A qualified testing agency will be engaged by the OWNER prior to site preparation to provide field observation of site preparation steps, compaction operations on natural and fill soils, and conduct field in-place density testing to confirm that the specified requirements are met.
- 3.04 The foregoing recommended lift thicknesses and compaction criteria is applicable for the filling in any ditch or swale areas at the site which are within building, or other structural areas.

- 3.05 Perform compliance tests within the fill at a frequency of not less than one test per 2500 square feet per lift in the building areas, or at a minimum of two test locations, whichever is greater.
- A. The testing lab will determine actual test locations and frequency.

PART 4 - EXECUTION

4.01 EXCAVATION

- A. Earth Excavation: remove and dispose of pavements and other obstructions and features, roots and other organic material, underground structures and utilities indicated to be demolished and removed, material of any classification indicated in data on subsurface conditions, and other materials encountered, not suitable to remain under new construction.
1. Excavation is unclassified and includes elevation to sub-grade elevations indicated, regardless of character of materials and obstructions encountered.
- B. Unauthorized Excavation: consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of ARCHITECT and OWNER, shall be at CONTRACTOR'S expense. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to ARCHITECT. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by ARCHITECT.
- C. Additional Excavation: when excavation has reached required subgrade elevations, notify ARCHITECT. If unsuitable bearing materials are encountered at required sub-grade elevations, notify ARCHITECT for instructions. Removal of unsuitable material and its replacement as directed, if required, will be paid on basis of contract conditions relative to changes in work, and only upon acceptance of additional costs by OWNER.
- D. Stability of Excavations: slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Follow requirements of "Trench Safety Act" referenced in Section 02000. Maintain sides and slopes of excavations in safe condition until completion of backfilling.
- E. Dewatering: prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from

excavations. Convey water removed from excavations and rainwater to collecting or run-off areas. Establish and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches.

1. Remedial dewatering is considered an integral part of this project's work, therefore full consideration shall be given to the need for this requirement and no additional compensation will be allowed.
- F. Material Storage: stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage. Locate and retain soil materials away from edge of excavations. Dispose of excess soil material and waste materials as herein specified.
- G. Excavation for Structures: conform to elevations and dimensions shown within a tolerance of plus or minus 0.10'-0", and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection. **Earth forms will not be acceptable.** In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work. Recompact bottoms of all footings and call for testing. Rework and recompact as necessary to meet specified values. **Trim footing excavations immediately before concrete is placed to remove all materials softened or loosened.**
- H. Excavation for Utility Trenches: dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room.
1. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flow lines and invert elevations. Beyond building perimeter, keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups.
 2. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.
 3. Backfill trenches with concrete where trench excavations pass within 18" of column or wall footing and which are carried below bottom of such footings, or which pass under wall footings. Place concrete to 1" minimum above level of bottom of adjacent footing.
 4. Do not backfill trenches until tests and inspections have been made and backfilling is authorized by ARCHITECT/ENGINEER or OWNER. Use care in backfilling to avoid damage or displacement of pipe system.
 5. Backfill shall be placed in layers and tested for compaction as described elsewhere in these Specifications.

4.02 COMPACTION

- A. General: control soil compaction during construction providing minimum percentage of density specified for each area classification.
- B. Moisture Control: where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.
 - 1. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

4.03 BACKFILL AND FILL

- A. General: place acceptable soil material in layers to required subgrade elevations.
- B. Backfill Excavations as promptly as work permits, but not until completion of the following:
 - 1. Acceptance of construction below finish grade.
 - 2. Inspection, testing, and recording locations of underground utilities.
 - 3. Removal of concrete formwork.
 - 4. Removal of trash and debris.
- C. Placement and Compaction: place backfill and fill materials in uniform layers not more than 12" in loose depth (not more than 4" in loose depth for material compacted by hand-operated tampers).
 - 1. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification.
 - 2. Place backfill and fill materials evenly adjacent to structures, to required elevations. Take care to prevent wedging action of backfill against structures by carrying material uniformly around structure to approximately same elevation in each lift.

4.04 GRADING

- A. General: uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

- B. Grading Outside Building Lines: grade areas adjacent to building lines to drain away from structures and to prevent ponding. This includes all site areas where work has been performed by this contract or otherwise disturbed by construction operations. Finish surfaces free from irregular surface changes.
- C. Grading Surface of Fill Under Building Slabs: grade smooth and even, free of voids, compacted as specified, and to required elevation. Final grades shall provide a minimum slab thickness of 4".
- D. Compaction: after grading, compact subgrade surfaces to the depth and percentage of maximum density for each area classification.

4.05 FIELD QUALITY CONTROL

- A. Soils Testing: an independent engineering testing laboratory will be engaged by the OWNER to provide field observation of excavation, backfilling, and soil compaction procedures, and field density tests to confirm that project specifications are met.
- B. Quality Control Testing During Construction: allow testing service to inspect and approve subgrades and fill layers before further construction work is performed.

4.06 MAINTENANCE

- A. Protection of Graded Areas: protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Reconditioning Compacted Areas: where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

4.07 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Remove waste materials, including unacceptable excavated material, trash and debris, and dispose of it off OWNER'S property. Earth materials suitable for non-structural site fill may be disposed of on site, at designated locations, if authorized by ARCHITECT.

END OF SECTION 02301

GFA INTERNATIONAL

FLORIDA'S LEADING ENGINEERING SOURCE

Report of Geotechnical Exploration

**Highlands County Traffic Operations Building
4500 Kenilworth Boulevard
Sebring, Florida**

**November 26, 2019
GFA Project No. 19-6475.00**

For: Highlands County Board of County Commissioners





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November 26, 2019

Mr. Stanley W. Merantus
Highlands County Board of County Commissioners
600 South Commerce Avenue
Sebring, Florida 33870

**Subject: Report of Geotechnical Exploration
Highlands County Traffic Operations Building
4500 Kenilworth Boulevard, Sebring, Florida
GFA Project No. 19-6475.00**

Dear Mr. Merantus:

GFA International, Inc. (GFA) has completed the subsurface exploration and geotechnical engineering evaluation for the above referenced project in accordance with the geotechnical and engineering service agreement for this project. The scope of services was completed in accordance with your Formal Written Quote (FWQ) Request FWQ Number: 20-004 dated October 25, 2019, planned in conjunction with and authorized by you.

EXECUTIVE SUMMARY

The purpose of our subsurface exploration was to classify the nature of the subsurface soils and general geomorphic conditions at the site and evaluate their impact upon the proposed construction. This report contains the results of our subsurface exploration and our engineering interpretations of these with respect to the project characteristics described to us, including providing recommendations for foundation design and site preparation.

Based on prior conversations with the client, GFA understands the project consists of constructing a single-story metal frame building with associated pavement areas at 4500 Kenilworth Boulevard in Sebring, Florida. We have been provided with a Conceptual Site Plan prepared by Highlands County Engineering Department last dated March 13, 2019 which depicts the proposed building, a future building addition, a future pole barn, and proposed pavement areas.

Specific structural loads have not been provided to GFA. For the foundation recommendations presented in this report, we assumed the maximum wall loading will be 2.5 kips per linear foot and the maximum column load will be 35 kips. GFA estimates that the site is either at or near final design grade.

The recommendations provided herein are based upon the above considerations. If the stated conditions are incorrect or if the project description is revised, please inform GFA so that we may review our recommendations with respect to any modifications.

Five (5) standard penetration test (SPT) borings (B-1 through B-5), advanced to an approximate depth of 20 feet below the existing ground surface, were completed within the proposed building footprint and the future building and pole barn areas. Three (3) additional SPT borings (R-1 through R-3), advanced to an approximate depth of 6 feet below the existing ground surface, were completed within the designated pavement areas. The subsurface soil conditions encountered at the boring locations generally consisted of a surface layer of topsoil underlain by very loose to medium dense fine sand (SP) to the boring termination depths.

Considering the results of our field exploration program, the subsurface soil conditions at the project site are generally favorable for support of the proposed structures upon conventional shallow foundations. A maximum allowable soil bearing pressure of 2,500 psf may be used for foundation design. **Note that this design value is contingent upon performing the initial site preparation (partial over-excavation and replacement of in-place soils) discussed below and subject to other limitations noted herein.**

Very loose to loose fine sand soils were encountered within the upper several feet of the explored soil profile in the SPT borings. The loose soils below the building footprints will require densification to reduce the risk for the occurrence of excessive foundation settlements and associated structural distress. GFA recommends that the upper three (3) feet of in-place soils be excavated below the entire building footprints and 5 feet beyond the building perimeters on all sides. Due to the very loose and sandy nature of soils present onsite, the soils may require moisture conditioning methods in order accomplish the excavations. The excavated soils should be stockpiled for subsequent use as controlled, compacted fill.

Prior to replacing the excavated soils, the bottom of the excavations should be compacted until the upper two (2) feet of soils have been densified to at least 95 percent of modified Proctor (ASTM D 1557) maximum dry density. The excavations should then be backfilled to original grade using the removed soils. The fill should be placed in 12-inch thick loose layers and compacted to at least 95 percent of ASTM D 1557 maximum dry density.

We appreciate the opportunity to be of service to you during this phase of the project and look forward to a continued association. Please do not hesitate to contact us if you have any questions or comments, or if we may further assist you as your plans proceed.

Respectfully Submitted,
GFA International, Inc.
Florida Certificate of Authorization No. 4930

This item has been digitally signed and sealed by John Kent, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

John Kent, P.E.
Senior Project Engineer
Florida Registration No. 63218

Erik Soderstrom
Geotechnical Department Manager

Distribution: Mr. Stanley W. Merantus – Highlands County BCC

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1.0 INTRODUCTION

1.1 Scope of Services

The objective of our geotechnical services was to collect subsurface data for the subject project, summarize the test results, and discuss any apparent site conditions that may have geotechnical significance for building construction. The following scope of services is provided within this report:

1. Prepare boring logs depicting the subsurface soil conditions encountered during our field exploration.
2. Review the soil samples obtained during our field exploration for classification and additional testing if necessary.
3. Evaluate the existing soil conditions found during our exploration with respect to foundation support for the proposed structures.
4. Provide recommendations with respect to foundation support of the structures, including foundation type, maximum allowable soil bearing capacity, and bearing elevations.
5. Provide site preparation criteria for the proposed construction.
6. Present recommended pavement sections using assumed design criteria and parameters, including guidelines for pavement subgrade preparation.

1.2 Project Description

Based on prior conversations with the client, GFA understands the project consists of constructing a single-story metal frame building with associated pavement areas at 4500 Kenilworth Boulevard in Sebring, Florida. We have been provided with a Conceptual Site Plan prepared by Highlands County Engineering Department last dated March 13, 2019 which depicts the proposed building, a future building addition, a future pole barn, and proposed pavement areas.

Specific structural loads have not been provided to GFA. For the foundation recommendations presented in this report, we assumed the maximum wall loading will be 2.5 kips per linear foot and the maximum column load will be 35 kips. GFA estimates that the site is either at or near final design grade.

The recommendations provided herein are based upon the above considerations. If the stated conditions are incorrect or if the project description is revised, please inform GFA so that we may review our recommendations with respect to any modifications.



2.0 OBSERVATIONS

2.1 Site Description

The subject property consisted of a relatively flat vacant lot at the time of our field exploration. The property is bordered by citrus groves to the north and west, Kenilworth Boulevard and residences to the south, and the Supervisor of Elections Office to the east.

2.2 Field Exploration

Five (5) standard penetration test (SPT) borings (B-1 through B-5), advanced to an approximate depth of 20 feet below the existing ground surface, were completed within the proposed building footprint and the future building and pole barn areas. Three (3) additional SPT borings (R-1 through R-3), advanced to an approximate depth of 6 feet below the existing ground surface, were completed within the designated pavement areas. The boring depths were established based upon our knowledge of vicinity soils and confined to the zone of soil likely to be influenced by the planned construction. The locations of the borings are illustrated in Appendix B - Test Location Plan.

The Standard Penetration Tests (SPT) were performed in general accordance with ASTM D 1586, "Penetration Test and Split-Barrel Sampling of Soils." The SPT test procedure consists of driving a 1.4-inch I.D. split-barrel sampler into the soil profile using a 140-pound hammer falling 30 inches. The number of blows per foot, for the second and third 6-inch increment, is referred to as the N-value. The N-value has been empirically correlated with various soil properties and provides an indication of soil strength.

Site specific survey staking of the borings was not provided for our field exploration. The indicated depth and location of each boring was approximated based upon existing grade, the provided site plan, and estimated distances and relationships to the adjacent properties and existing landmarks at the site.

2.3 Visual Classification

Soil samples recovered from our field exploration were returned to our laboratory where they were visually classified by a geotechnical engineer in general accordance with the Unified Soil Classification System (ASTM D 2487). After reviewing the soil samples, no laboratory testing was deemed necessary. The samples will be retained in our laboratory for 30 days and then discarded unless we are notified otherwise in writing.

The recovered samples were not evaluated, either visually or analytically, for chemical composition or environmental hazards. GFA will be pleased to perform these services for an additional fee, if required.

2.4 Geomorphic Conditions

The geology of the site as mapped on the USDA Soil Survey website consists of Astatula sand, 0 to 5 percent slopes (9) and Astatula-Urban land complex, 0 to 8 percent slopes (42). **These are sandy soils and organic soils are not indicated.** It should be noted that the Soil Survey



generally extends to a maximum depth of 80 inches below ground surface and is not indicative of deeper soil conditions.

Boring logs resulting from our field exploration are presented in Appendix D – Log of Boring Records. The boring logs contain the soil descriptions and the standard penetration test (SPT) N-values logged during the drilling and sampling activities. Note that the soil boring data reflect information from a specific test location only and the soil conditions may vary between the strata interfaces indicated on the logs. The soil classifications and descriptions shown on the logs are generally based upon visual characterizations of the recovered samples using the Unified Soil Classification System. See Appendix E - Discussion of Soil Groups, for a detailed description of various soil groups.

The subsurface soil conditions encountered at the boring locations generally consisted of a surface layer of topsoil underlain by very loose to medium dense fine sand (SP) to the boring termination depths.

2.5 Hydrogeological Conditions

On the date of our field exploration (November 13, 2019), groundwater was not evident within the upper 10 feet of the soil profile in the borings. The groundwater table will fluctuate seasonally depending upon local rainfall and other site specific and/or local influences. Brief ponding of stormwater may occur across the site after heavy or extended rainfall events.

No additional evaluation was included in our scope of work in relation to the wet seasonal high groundwater table or any existing well fields in the vicinity. Well fields may influence water table levels and cause significant fluctuations. If a more comprehensive water table analysis is necessary, please contact our office for additional guidance.

3.0 ENGINEERING EVALUATION AND RECOMMENDATIONS

3.1 General

Our geotechnical engineering evaluation of the site and subsurface conditions at the property, with respect to the planned construction, and our recommendations for site preparation and the support of structure foundations and pavements, are based upon (1) our site observations, (2) the field data obtained, and (3) our understanding of the project information and structural conditions as presented in this report. If the stated conditions are incorrect, or if the project description is revised, please inform GFA so that we may review our recommendations with respect to any modifications.

We note that the applicability of geotechnical recommendations is very dependent upon project characteristics, specifically (1) improvement locations, (2) grade alterations, (3) and actual applied structural loads. For that reason, GFA must be provided with and review the preliminary and final site and grading plans, and structural design loads to validate all recommendations provided in this report. Without performing this review, our recommendations should not be relied upon for final design or construction of any site improvements.



3.2 Site Preparation

GFA recommends the following compaction requirements for this project:

- Proof Roll95 percent of modified Proctor
- Building Pad Fill.....95 percent of modified Proctor
- Footings95 percent of modified Proctor

The compaction percentages presented above are based upon the maximum dry density as determined by the modified Proctor test (ASTM D 1557). **All density tests should be performed to a depth of 2 feet below stripped surface and below bottom of footings.** Density testing should be performed using either the nuclear method (ASTM D 6938) or the sand cone method (ASTM D 1556). Hand Cone Penetrometer (HCP) tests can also be performed to evaluate compaction.

Our recommendations for preparation of the site for use of shallow foundation systems are presented below. This approach to improving and maintaining site soils has been found to be successful on projects having similar soil conditions.

1. Initial site preparation should consist of removing surface vegetation, topsoil, near surface roots, and other miscellaneous debris within and to a distance of 5 feet beyond of the planned construction limits. Foundations and the below grade remains of former structures within the footprint of the new construction should also be removed. Similarly, utility lines within the limits of the proposed construction should be removed or properly abandoned so that they will not adversely impact overlying structures
2. Following site stripping, the upper three (3) feet of in-place soils within the building footprints should be excavated. The excavations should be extended horizontally 5 feet beyond the building footprints on all sides. The excavated soils should be stockpiled for subsequent use as controlled, compacted fill.
3. Prior to replacing the excavated soils, the bottom of the excavations should be compacted until the upper two (2) feet of soils have been densified to at least 95 percent of modified Proctor (ASTM D 1557) maximum dry density. We recommend using a steel drum vibratory roller with sufficient static weight and vibratory impact energy to achieve the required level of compaction. Density tests should be performed on the compacted surface at a frequency of not less than one test per 2,500 square feet, or a minimum of three (3) tests, whichever is greater. Following this testing, the excavations should be backfilled to original grade using the removed soils. The fill should be placed in 12-inch thick loose layers and compacted to at least 95 percent of ASTM D 1557 maximum dry density. Note that moisture conditioning of the backfill soils during placement and compaction will likely be required to achieve the recommended level of compaction.
4. Within other portions of the site, following site stripping and prior to placing any fill, areas of surficial soils should be compacted (proof rolled) and tested. We recommend using a steel drum vibratory roller with sufficient static weight and vibratory impact energy to achieve the required compaction. Density tests should be performed on the proof rolled surface at a



frequency of not less than one test per 2,500 square feet, or a minimum of three (3) tests, whichever is greater.

5. Fill material may then be placed within the limits of the building pads and for general site grading, as required. The fill material should be inorganic (classified as SP, SW, GP, GW, SP-SM, SW-SM, GW-GP, GP-GM) containing not more than 5 percent (by weight) organic materials. **GFA does not recommend using fill materials having silt/clay-size soil fines contents exceeding 12 percent.** Fill should be placed in lifts having a maximum thickness of 12-inches. Each lift should be compacted and tested prior to the placement of the next lift. Density tests should be performed within the fill at a frequency of not less than one test per 2,500 square feet per lift in the building area, or a minimum of three (3) tests per lift, whichever is greater.
6. For foundations placed on structural fill or compacted native granular soils, the bearing subgrade should be tested for compaction and observed by an engineer or geologist or his/her representative to determine if the soil is free of organic and/or deleterious material. Density tests should be performed at a frequency of not less than one (1) density test per each isolated column footing and one (1) test per each seventy-five (75) lineal feet of wall footing.
7. The contractor should consider the final grading contours contained in the project plans when executing backfilling and compaction operations.

3.3 Vibration Monitoring

Using vibratory compaction equipment at this site may disturb the adjacent building and pavement areas. We recommend that these structures be monitored by GFA both before and during compaction operations. A proposal for providing vibration monitoring services during earthwork construction will be provided upon request.

3.4 Design of Footings

A foundation system for any structure must be designed to resist bearing capacity failures, have settlements that are tolerable, and resist the environmental forces that the foundation may be subjected to over the life of the structure. The soil bearing capacity is the soil's ability to support loads without plunging into the soil profile. Bearing capacity failures are analogous to shear failures in structural design and are usually sudden and catastrophic.

Based on the results of the soil borings performed at the site, GFA recommends that structure foundations be designed using a maximum allowable soil bearing pressure of 2,500 psf. **Note that this design value is contingent upon performing the soil improvement (partial over-excavation and replacement of in-place soils) discussed in Section 3.2 above.** Shallow foundations should be embedded a minimum of 12 inches below final grade measured from the lowest adjacent grade. Isolated column footings should be at least 24 inches in width. Continuous strip footings should have a width of at least 16 inches regardless of contact pressure.



Once site preparation has been performed in accordance with the recommendations described in this report, the soils should readily support the proposed structure bearing upon a properly designed and constructed shallow foundation system. Footings and columns should be structurally separated from the floor slab, as they will be loaded differently and at different times, unless a monolithic slab foundation is designed.

3.5 Settlement Estimates

Post construction settlements of the structures will be influenced by several interrelated factors, including (1) subsurface soil stratification and strength/compressibility characteristics, (2) footing size, bearing level, loading, and resulting footing bearing pressure, and (3) site preparation and earthwork construction techniques used by the contractor. Our settlement estimates for the proposed construction are based on the use of the site preparation and earthwork construction methods recommended in this report. Any deviation from these recommendations could result in an increase in the estimated post-construction settlements of the proposed construction.

We expect the majority of settlement to occur in an elastic manner and fairly rapidly during construction. Using the recommended maximum bearing pressure, the assumed maximum structural loads, and the field test data that we have correlated geotechnical strength and compressibility characteristics of the subsurface soils, we estimate that total settlements of the structures could be on the order of one (1) inch or less.

Differential settlements result from differences in applied bearing pressures and variations in the compressibility characteristics of the subsurface soils. Because of the general uniformity of the subsurface conditions and the recommended site preparation and earthwork construction methods presented in this report, we anticipate that differential settlements of the structures should be within tolerable magnitudes (0.5 inch or less).

3.6 Ground Floor Slabs

Ground floor slabs may be constructed upon either existing grade or granular fill following completion of the foundation site preparation and fill placement procedures outlined in Section 3.2 of this report. We recommend that a modulus of subgrade reaction (k) of 150 pounds per cubic inch (pci) be considered during design. The ground floor slabs should be structurally separated from walls and columns to allow for differential vertical movement, unless monolithic slab foundations are designed.

Excessive moisture vapor transmission through foundation slabs can result in damage to floor coverings as well as cause other deleterious affects. An appropriate moisture vapor barrier should be placed beneath the slabs to reduce moisture vapor from entering the structures through the slabs. The barriers should be installed in general accordance with applicable ASTM procedures including sealing around pipe penetrations and at the foundation edges.

3.7 Site Excavations

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P." This document was issued to better



ensure the safety of workers entering trenches or excavations. It is mandated by this federal regulation that all excavations, whether they be utility trenches, basement excavations, or footing excavations, be constructed in accordance with the OSHA guidelines.

The contractor is solely responsible for designing and constructing stable temporary excavations and should shore, slope, or bench the sides of any excavations deeper than 4 feet as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

GFA is providing this information solely as a service to our client. GFA is not assuming responsibility for construction site safety or the contractor's activities. Such responsibility is not being implied and should not be inferred.

4.0 PAVEMENT DESIGN AND CONSTRUCTION CONSIDERATIONS

4.1 Pavement Design Sections

Pavement sections were designed considering assumed traffic loading and previous experience with similar projects. Flexible pavement sections in the local geographic area typically consist of an asphaltic wearing course, a base course, and a stabilized subgrade layer. Rigid pavements are constructed either directly upon prepared soil subgrades or upon a base course and stabilized subgrade for heavier loads.

Based on our experience in the area and the assumed traffic loading criteria, recommended pavement section thicknesses are provided in the table below.

Design Pavement Sections				
Pavement Type	Layer	Material Description	Layer Thickness	
			Light Duty	Heavy Duty
Flexible	(A)	Asphalt Wearing Surface FDOT SP-9.5 or SP-12.5	1.5	2.5
	(B)	Crushed base (minimum LBR of 100), compacted to 98 percent of modified Proctor maximum dry density	6	8
	(SSG)	Stabilized subgrade (minimum LBR of 40), compacted to 98 percent of modified Proctor maximum dry density	12	12
	STRUCTURAL NUMBER (SN)		2.7	3.5
Rigid	(C)	FDOT Portland Cement Concrete	NA	8
	(B)	Crushed base (minimum LBR of 100), compacted to 98 percent of modified Proctor maximum dry density	NA	-
	(CSG)	Soil subgrade compacted to 98 percent of modified Proctor maximum dry density	NA	12



4.2 Compacted Subgrade or Embankment Fill

The subgrade or embankment fill is the layer that supports the structural pavement section. Subgrade and embankment fill should be constructed following the criteria and procedures presented in Section 4.9 of this report.

4.3 Stabilized Subgrade

The stabilized subgrade is the portion of the pavement section between the compacted subgrade or embankment fill and the base course. We recommend that subgrade material be compacted to at least 98 percent of modified Proctor maximum dry density (AASHTO T-180). The stabilized subgrade material should have a minimum Limerock Bearing Ratio (LBR) value of 40. Alternatively, the pavement section can be designed using the native on-site soils and consequently a lower LBR value. In this case, an LBR test of the native soils should be performed and incorporated into a modified pavement design. Compliance tests should be performed upon the stabilized subgrade for full depth at a frequency of one test per 5,000 square feet, or at a minimum of two test locations, whichever is greater.

4.4 Base Course

The base course is the portion of the pavement section between the surface course and stabilized subgrade. In areas where separation of at least 1.5 feet between the estimated wet seasonal high groundwater table and the bottom of the base material occurs, we recommend the base course be limerock having a minimum Limerock Bearing Ratio (LBR) value of 100. The base material should be obtained from an approved source. The base material should be placed in maximum 6-inch thick lifts and compacted to at least 98 percent of modified Proctor maximum dry density (AASHTO T-180).

If the separation between the estimated wet seasonal high groundwater table and the bottom of the base material is less than 1.5 feet, we recommend that asphaltic concrete base (FDOT SP-12.5) be used in lieu of limerock. The subgrade should be mechanically stabilized (compacted) to a minimum of 98 percent of modified Proctor maximum dry density (AASHTO T-180). Compliance tests should be performed on the base course at a frequency of one test per 5,000 square feet, or a minimum of two test locations, whichever is greater.

4.5 Flexible (Asphalt) Pavement

Asphalt pavement should consist of either FDOT SP-9.5 or SP-12.5 asphaltic concrete. The mixes should be a current FDOT approved design for the materials used for the project. Samples of the materials delivered to the project should be tested to verify that the aggregate gradation and asphalt content satisfies the mix design specifications.

The asphalt should be compacted to meet the requirements of the latest edition of the FDOT Standard Specifications for Road and Bridge Construction. Compliance tests should be performed by obtaining cores to evaluate material thickness and density at a frequency of one test per 10,000 square feet, or a minimum of two test locations, whichever is greater.



4.6 Rigid (Concrete) Pavement

Rigid pavements should be constructed using concrete having a minimum 28-day compressive strength of 4,000 psi. Fill required to raise grades in pavement areas should be compacted to at least 98 percent of modified Proctor maximum dry density (AASHTO T-180).

The pavement slabs should be reinforced to make them as rigid as practical. Proper joints should be provided at the junctions of slabs so that a small amount of independent movement can occur without causing structural damage. Construction and control joints should be in accordance with current American Concrete Institute (ACI) and industry practices.

The pavement sections presented in this report are minimum pavement section thicknesses typically used for similar type projects. The pavement materials and construction procedures should conform to FDOT, ACI, or appropriate city/county requirements.

4.7 Effects of Water

Premature pavement section deterioration can occur due to intrusion of the wet season high groundwater table and/or improper surface water runoff management. We recommend the pavement areas be constructed to have a minimum separation of 1.5 feet between the wet season high groundwater table and the base course, regardless of the type of base material. In addition, we recommend that the parking areas be constructed with full-depth curb sections. Using either extruded curb sections, which lie directly on top of the final surface course, or eliminating the curbing entirely, may allow runoff and/or irrigation water to migrate between the base and surface course. This condition can result in the separation of the surface course from the base course, causing a rippling effect, which results in premature deterioration of the pavement.

4.8 Construction Traffic

Incomplete pavement sections or pavement areas designed for light duty traffic will not perform satisfactorily under construction traffic loadings. We recommend that all construction traffic (i.e., construction equipment, vehicles, etc.) either be re-routed away from these areas or the pavement sections be designed to support construction phase loading conditions.

4.9 Pavement Site Preparation

Our recommendations for preparation of the site for pavement construction are summarized below. This approach to improving and maintaining site soils has been found to be successful with similar soil conditions.

1. Initial site preparation should consist of performing dewatering operations (if necessary) prior to any earthwork.
2. The proposed construction limits should be cleared, stripped, and grubbed of all existing topsoil, vegetation, and associated root systems to a depth of their vertical reach. This should be performed within and to a distance of 5 feet beyond the limits of the pavement areas.



3. Prior to initiating fill operations, the existing ground surface should be compacted (proof rolled) using a steel drum vibratory roller having sufficient static weight and vibratory impact energy to achieve the required compaction. After completing the proof rolling, density tests should be performed at a frequency of one test per 5,000 square feet, or at a minimum of two test locations, whichever is greater, to confirm a minimum compaction compliance of 98 percent of modified Proctor maximum dry density (AASHTO T-180). **The density tests should be performed to a depth of 2 feet below the stripped and compacted surface.** Note that moisture conditioning of the in-place soils may be required during densification to achieve the recommended level of compaction.
4. Fill material should be inorganic (classified as SP/GW) containing not more than 5 percent (by weight) fibrous organic materials. **Fill material having silt/clay-size fines contents greater than 5 percent should not be used, including cyclone sand material.** The fill should be placed in maximum 12-inch thick lifts. Each lift should be compacted to a minimum density of 98 percent of modified Proctor maximum dry density (AASHTO T-180).
5. Compliance density tests should be performed within the fill at a frequency of not less than one test per 5,000 square feet per lift, or at a minimum of two test locations, whichever is greater.
6. Representative samples of both on-site and potential import materials proposed for use as fill should be obtained and tested to determine compliance with the project specifications. The testing should include moisture-density relations (AASHTO T-180) and particle size analysis.
7. The contractor should consider the final contours and grades as established by the site grading, paving, and drainage plans when executing backfilling and compaction operations.

5.0 REPORT LIMITATIONS

This consulting report has been prepared for the exclusive use of Highland County Board of County Commissioners and members of the design team for the proposed new traffic operations building, the future addition, and future pole barn located at 4500 Kenilworth Boulevard in Sebring, Florida. This report has been prepared in accordance with generally accepted local geotechnical engineering practices; no other warranty is expressed or implied.

The evaluation submitted in this report is based in part upon the data collected during a field exploration. However, the nature and extent of variations throughout the subsurface profile may not become evident until construction. If variations then appear evident, it may be necessary to reevaluate information and professional opinions provided in this report. In the event changes are made in the nature, design, or location of the proposed structures or pavement areas, the evaluation and opinions contained in this report should not be considered valid unless the changes are reviewed, and conclusions modified or verified in writing by GFA.



GFA should be provided the opportunity to review the final foundation plans and specifications to determine if GFA's recommendations have been properly interpreted, communicated, and implemented. If GFA is not afforded the opportunity to participate in construction related aspects of foundation installation as recommended in this report or any report addendum, GFA cannot accept responsibility for the interpretation of our recommendations made in this report or in a report addendum for foundation performance.

6.0 BASIS FOR RECOMMENDATIONS

The analysis and recommendations submitted in this report are based on the data obtained from the borings performed at the locations indicated on the Test Location Plan in Appendix B. This report does not reflect any variations which may occur between borings. While the borings are representative of the subsurface conditions at their respective locations and for their vertical reaches, local variations characteristic of the subsurface soils of the region are anticipated and may be encountered. The delineation between soil types shown on the boring logs is approximate and the descriptions represent our interpretation of the subsurface conditions at the designated boring locations on the specific date drilled.

Any third-party reliance of this preliminary geotechnical report or parts thereof is strictly prohibited without the expressed written consent of GFA International, Inc. The applicable SPT methodology (ASTM D 1586) used in performing our borings, and for determining penetration resistance, is specific to the sampling tools utilized and does not reflect the ease or difficulty to advance other tools or materials.



Appendix A - Vicinity Map





Site Vicinity Map

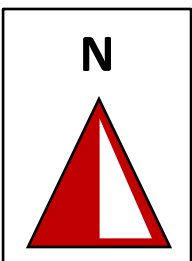
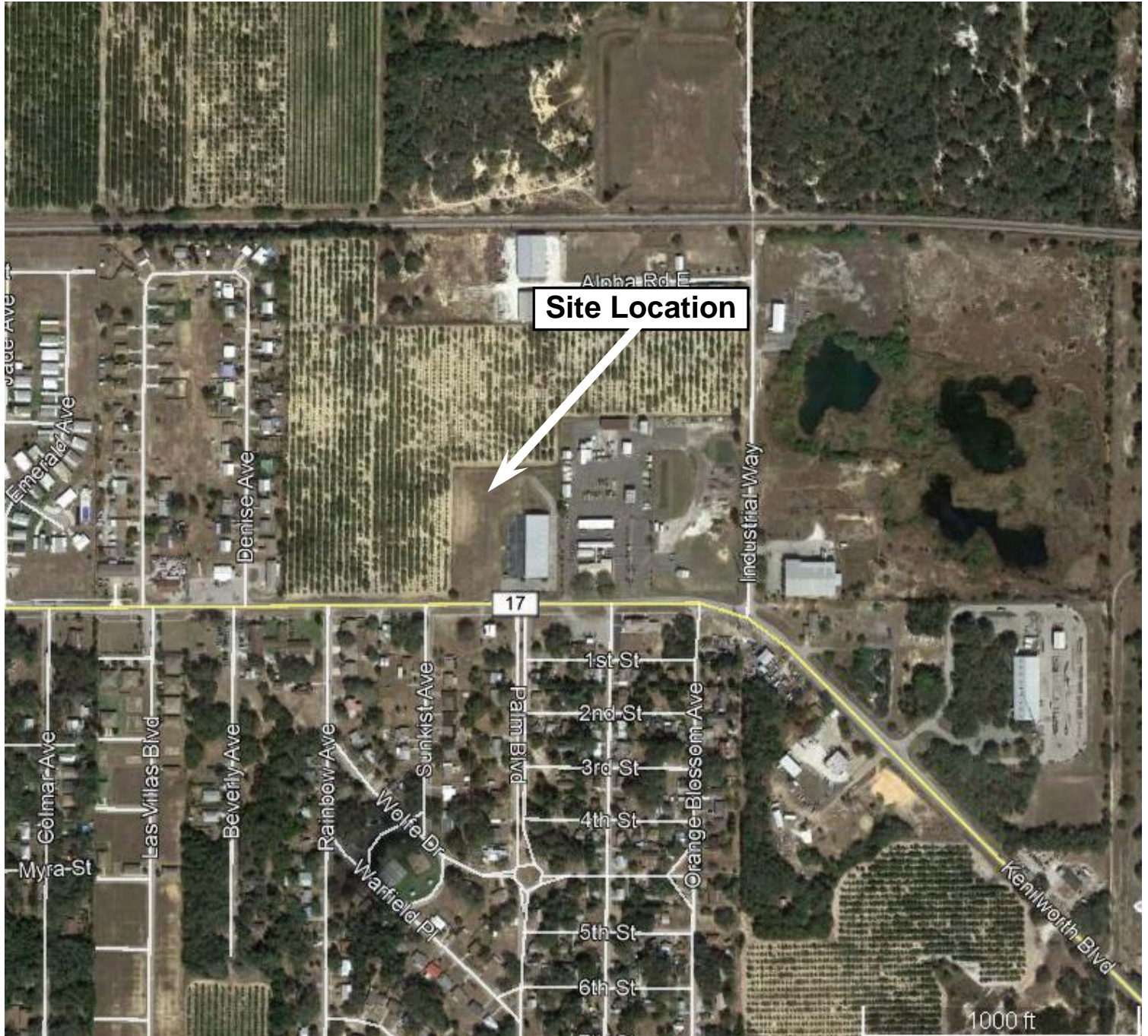
Highlands County Traffic Operations Building
4500 Kenilworth Blvd, Sebring, Florida

PROJECT NO: 19-6475.00

DRAFTED BY: TG

REVIEWED BY: JK

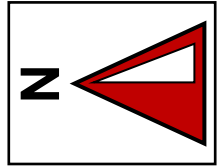
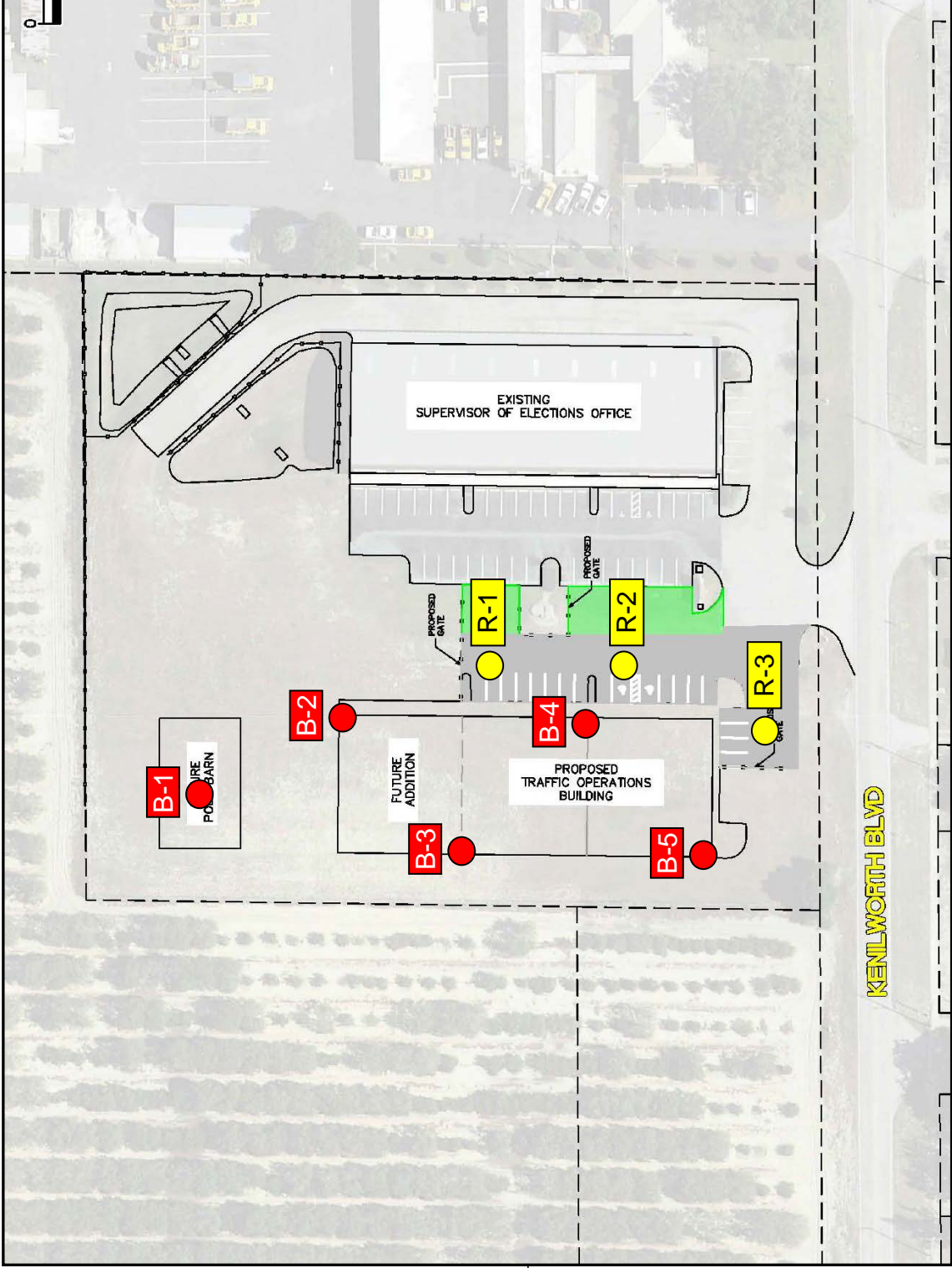
DATE: 11/18/2019



Appendix B - Test Location Plan



Test Location Plan: Highlands County Traffic Operations Building



Legend

- -Approximate Building Standard Penetration Test Boring Locations
- -Approximate Pavement Standard Penetration Test Boring Locations



Test Location Plan
 Highland County Traffic Operations Building
 4500 Kenilworth Blvd, Sebring, Florida

Project No:19-6475.00
 Reviewed By: JK

Drafted By: TG
 Date: 11/18/2019

Appendix C - Notes Related to Borings



**NOTES RELATED TO BORING RECORDS AND
GENERALIZED SUBSURFACE PROFILES**

1. Groundwater levels (if encountered) were recorded either during or following the boring completion on the date indicated. Fluctuations in groundwater levels are common - see the report text for a discussion.
2. The boring locations were identified in the field by estimated distances and offsets from existing reference marks and/or other site landmarks.
3. The completed boreholes were backfilled to adjacent site grade using drilling spoils and patched with asphalt cold mix in pavement areas.
4. The Log of Boring records represent our interpretation of soil conditions based on visual classification of the soil samples recovered from the borings.
5. The Log of Boring records are subject to the limitations, conclusions, and recommendations presented in the report text.
6. The Standard Penetration Test (SPT) N-values contained on the Log of Boring records refer to the total blow counts of a 140-pound drop hammer falling 30 inches required to drive a split-barrel sampler a total distance of 12 inches into soil strata at specific depth intervals.
7. The Hand Cone Penetrometer (HCP) values contained on Log of Boring records and the Cone Penetration Test (CPT) values contained on the Cone Penetration Sounding logs refer to the cone tip resistance recorded when pushing the cone tip into the soil strata at specific depth intervals.
8. The soil and/or rock strata interfaces shown on the Log of Boring records are approximate and may vary from those shown on the logs. The soil and/or rock descriptions shown on the Log of Boring records refer to conditions at the specific location tested. Soil/rock conditions may vary between test locations.
9. Relative density for coarse-grained soils (sands/gravels) and consistency for fine-grained soils (silts/clays) are described as follows:

Coarse Grained Soils (Sands and Gravels)				Fine Grained Soils (Silts and Clays)			
SPT N-Value	HCP Value (kg/cm ²)	CPT Value (tsf)	Relative Density	SPT N-Value	HCP Value (kg/cm ²)	CPT Value (tsf)	Consistency
0-4	0-16	0-20	Very Loose	0-2	0-20	0-3	Very Soft
5-10	17-36	21-40	Loose	3-4	21-35	4-6	Soft
11-30	37-116	41-120	Med. Dense	5-8	>35	7-12	Firm
31-50	117-196	121-200	Dense	9-15		13-25	Stiff
>50	> 196	>200	Very Dense	16-30		26-50	Very Stiff
				>30		>50	Hard

10. Grain size descriptions are as follows:

Description	Particle Size Limits
Boulder	Greater than 12 inches
Cobble	3 to 12 inches
Coarse Gravel	³ / ₄ to 3 inches
Fine Gravel	No. 4 sieve to ³ / ₄ inch
Coarse Sand	No. 10 to No. 4 sieve
Medium Sand	No. 40 to No. 10 sieve
Fine Sand	No. 200 to No. 40 sieve
Fines (Silt/Clay)	Smaller than No. 200 sieve

11. Definitions for modifiers used in soil/rock descriptions:

Proportion	Modifier	Approximate Root Diameter	Modifier
<5%	Trace	Less than ¹ / ₃₂ "	Fine roots
5% to 12%	Little	¹ / ₃₂ " to ¹ / ₄ "	Small roots
12% to 30%	Some	¹ / ₄ " to 1"	Medium roots
30% to 50%	And	Greater than 1"	Large roots

Organic Soils: Soils containing vegetative tissue in various stages of decomposition having a fibrous to amorphous texture. Usually having a dark brown to black color and an organic odor.
Organic Content Modifiers: <25%: Slightly to Highly Organic; 25% to 75%: Muck; >75%: Peat



Appendix D - Log of Boring Records





GFA International, Inc.
 607 NW Commodity Cove
 Port St. Lucie, Florida 34986
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LOG OF BORING B-1

CLIENT Highlands County Board of County Commissioners **PROJECT NAME** Highlands County Traffic Operations Building
PROJECT NUMBER 19-6475.00 **PROJECT LOCATION** 4500 Kenilworth Blvd, Sebring, Florida
DRILLING CONTRACTOR GFA International Inc. **HOLE DEPTH** 20 ft **HOLE DIAMETER** 3 in
DRILLER PM/CM **DATE STARTED** 11/13/19 **COMPLETED** 11/13/19
DRILL RIG GeoProbe **GROUND WATER LEVEL:** AT TIME OF DRILLING ---
METHOD SPT **LATITUDE** _____ **LONGITUDE** _____
NOTE: Water level not encountered prior to drilling mud @ 10' **HAMMER TYPE** _____

SPT LOGS - GFA DATA TEMPLATE.GDT - 11/18/19 11:29 - P:\PROJECTS\2019\19-6475.00 - HIGHLANDS COUNTY FWQ 20-004 GEOTECH SERVICES FOR TRAFFIC OPS\APPENDICES NORMAL\SPT LOGS B-1-S.GPJ

DEPTH (ft)	SAMPLE	SAMPLE NUMBER	BLOW COUNTS	N VALUE	GRAPHIC LOG	MATERIAL DESCRIPTION	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)
		1	1 1 2 2	3		Orange fine sand (SP)			
		2	2 1 2 2	3					
5		3	2 1 2 2	3					
		4	1 2 2 3	4					
		5	2 3 2 2	5					
10									
		6	5 5 5 5	11					
15									
		7	7 9 9 9	18					
20					20.0				

Bottom of borehole at 20.0 feet.



GFA International, Inc.
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 Port St. Lucie, Florida 34986
 (772) 924 - 3575

LOG OF BORING B-2

CLIENT Highlands County Board of County Commissioners **PROJECT NAME** Highlands County Traffic Operations Building
PROJECT NUMBER 19-6475.00 **PROJECT LOCATION** 4500 Kenilworth Blvd, Sebring, Florida
DRILLING CONTRACTOR GFA International Inc. **HOLE DEPTH** 20 ft **HOLE DIAMETER** 3 in
DRILLER PM/CM **DATE STARTED** 11/13/19 **COMPLETED** 11/13/19
DRILL RIG GeoProbe **GROUND WATER LEVEL:** AT TIME OF DRILLING ---
METHOD SPT **LATITUDE** _____ **LONGITUDE** _____
NOTE: Water level not encountered prior to drilling mud @ 10' **HAMMER TYPE** _____

SPT LOGS - GFA DATA TEMPLATE.GDT - 11/18/19 11:29 - P:\PROJECTS\2019\19-6475.00 - HIGHLANDS COUNTY FWQ 20-004 GEOTECH SERVICES FOR TRAFFIC OPS\APPENDICES NORMAL\SPT LOGS B-1-S.GPJ

DEPTH (ft)	SAMPLE	SAMPLE NUMBER	BLOW COUNTS	N VALUE	GRAPHIC LOG	MATERIAL DESCRIPTION	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)
		1	1 1 1 1	2		Light brown fine sand (SP)			
		2	1 1 1 1	2		Orange fine sand (SP)			
5		3	1 1 1 1	2					
		4	1 0 1 2	1					
		5	1 2 2 3	4					
10									
		6	2 3 3	6					
15									
		7	3 8 5 3	13					
20									

Bottom of borehole at 20.0 feet.



GFA International, Inc.
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LOG OF BORING B-3

CLIENT Highlands County Board of County Commissioners **PROJECT NAME** Highlands County Traffic Operations Building
PROJECT NUMBER 19-6475.00 **PROJECT LOCATION** 4500 Kenilworth Blvd, Sebring, Florida
DRILLING CONTRACTOR GFA International Inc. **HOLE DEPTH** 20 ft **HOLE DIAMETER** 3 in
DRILLER PM/CM **DATE STARTED** 11/13/19 **COMPLETED** 11/13/19
DRILL RIG GeoProbe **GROUND WATER LEVEL:** AT TIME OF DRILLING ---
METHOD SPT **LATITUDE** _____ **LONGITUDE** _____
NOTE: Water level not encountered prior to drilling mud @ 10' **HAMMER TYPE** _____

SPT LOGS - GFA DATA TEMPLATE.GDT - 11/18/19 11:29 - P:\PROJECTS\2019\19-6475.00 - HIGHLANDS COUNTY FWQ 20-004 GEOTECH SERVICES FOR TRAFFIC OPS\APPENDICES NORMAL\SPT LOGS B-1-S.GPJ

DEPTH (ft)	SAMPLE	SAMPLE NUMBER	BLOW COUNTS	N VALUE	GRAPHIC LOG	MATERIAL DESCRIPTION	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)
		1	1 1 1 2	2		Orange fine sand (SP)			
		2	1 1 1 1	2					
5		3	1 1 1 2	2					
		4	1 1 2 2	3					
		5	2 2 2 3	4					
10									
		6	2 5 6	11					
15									
		7	3 8 8	14					
20					20.0				

Bottom of borehole at 20.0 feet.



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LOG OF BORING B-4

CLIENT Highlands County Board of County Commissioners **PROJECT NAME** Highlands County Traffic Operations Building
PROJECT NUMBER 19-6475.00 **PROJECT LOCATION** 4500 Kenilworth Blvd, Sebring, Florida
DRILLING CONTRACTOR GFA International Inc. **HOLE DEPTH** 20 ft **HOLE DIAMETER** 3 in
DRILLER PM/CM **DATE STARTED** 11/13/19 **COMPLETED** 11/13/19
DRILL RIG GeoProbe **GROUND WATER LEVEL:** AT TIME OF DRILLING ---
METHOD SPT **LATITUDE** _____ **LONGITUDE** _____
NOTE: Water level not encountered prior to drilling mud @ 10' **HAMMER TYPE** _____

SPT LOGS - GFA DATA TEMPLATE.GDT - 11/18/19 11:29 - P:\PROJECTS\2019\19-6475.00 - HIGHLANDS COUNTY FWQ 20-004 GEOTECH SERVICES FOR TRAFFIC OPS\APPENDICES NORMAL\SPT LOGS B-1-S.GPJ

DEPTH (ft)	SAMPLE	SAMPLE NUMBER	BLOW COUNTS	N VALUE	GRAPHIC LOG	MATERIAL DESCRIPTION	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)
		1	1 0 1 1	1		Brown fine sand (SP)			
		2	1 1 2 2	3		4.0			
5		3	1 2 2 1	4		6.0	Light brown fine sand (SP)		
		4	2 2 2 2	4			Orange fine sand (SP)		
		5	2 2 3 2	5					
10									
		6	2 3 4	7					
15									
		7	3 9 7	13					
20									

Bottom of borehole at 20.0 feet.



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LOG OF BORING B-5

CLIENT Highlands County Board of County Commissioners **PROJECT NAME** Highlands County Traffic Operations Building
PROJECT NUMBER 19-6475.00 **PROJECT LOCATION** 4500 Kenilworth Blvd, Sebring, Florida
DRILLING CONTRACTOR GFA International Inc. **HOLE DEPTH** 20 ft **HOLE DIAMETER** 3 in
DRILLER PM/CM **DATE STARTED** 11/13/19 **COMPLETED** 11/13/19
DRILL RIG GeoProbe **GROUND WATER LEVEL:** AT TIME OF DRILLING ---
METHOD SPT **LATITUDE** _____ **LONGITUDE** _____
NOTE: Water level not encountered prior to drilling mud @ 10' **HAMMER TYPE** _____

SPT LOGS - GFA DATA TEMPLATE.GDT - 11/18/19 11:29 - P:\PROJECTS\2019\19-6475.00 - HIGHLANDS COUNTY FWQ 20-004 GEOTECH SERVICES FOR TRAFFIC OPS\APPENDICES NORMAL\SPT LOGS B-1-S.GPJ

DEPTH (ft)	SAMPLE	SAMPLE NUMBER	BLOW COUNTS	N VALUE	GRAPHIC LOG	MATERIAL DESCRIPTION	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)
2.0		1	1 1 1 2	2		Brown fine sand (SP)			
4.0		2	2 2 2 3	4		Light brown fine sand (SP)			
5.0		3	3 2 2 2	4		Orange fine sand (SP)			
6.0		4	2 3 2 3	5					
10.0		5	2 2 2 3	4					
15.0		6	5 5 5 6	11					
20.0		7	4 6 6 8	14					

Bottom of borehole at 20.0 feet.



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LOG OF BORING R-1

CLIENT Highlands County Board of County Commissioners **PROJECT NAME** Highlands County Traffic Operations Building
PROJECT NUMBER 19-6475.00 **PROJECT LOCATION** 4500 Kenilworth Blvd, Sebring, Florida
DRILLING CONTRACTOR GFA International Inc. **HOLE DEPTH** 6 ft **HOLE DIAMETER** 3 in
DRILLER PM/CM **DATE STARTED** 11/13/19 **COMPLETED** 11/13/19
DRILL RIG GeoProbe **GROUND WATER LEVEL: AT TIME OF DRILLING** --- Not Encountered
METHOD SPT **LATITUDE** _____ **LONGITUDE** _____
NOTE: _____ **HAMMER TYPE** _____

SPT LOGS - GFA DATA TEMPLATE.GDT - 11/18/19 11:28 - P:\PROJECTS\2019\19-6475.00 - HIGHLANDS COUNTY FWQ 20-004 GEOTECH SERVICES FOR TRAFFIC OPS\APPENDICES NORMAL\SPT LOGS R 1-3.GPJ

DEPTH (ft)	SAMPLE	SAMPLE NUMBER	BLOW COUNTS	N VALUE	GRAPHIC LOG	MATERIAL DESCRIPTION	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)
1		1	1 1 2	2		Gray fine sand (SP)			
2						2.5			
3		2	2 3 5 4	8		Orange fine sand (SP)			
4									
5		3	2 1 1	2					
6						Bottom of borehole at 6.0 feet.			



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LOG OF BORING R-2

CLIENT Highlands County Board of County Commissioners **PROJECT NAME** Highlands County Traffic Operations Building
PROJECT NUMBER 19-6475.00 **PROJECT LOCATION** 4500 Kenilworth Blvd, Sebring, Florida
DRILLING CONTRACTOR GFA International Inc. **HOLE DEPTH** 6 ft **HOLE DIAMETER** 3 in
DRILLER PM/CM **DATE STARTED** 11/13/19 **COMPLETED** 11/13/19
DRILL RIG GeoProbe **GROUND WATER LEVEL: AT TIME OF DRILLING** --- Not Encountered
METHOD SPT **LATITUDE** _____ **LONGITUDE** _____
NOTE: _____ **HAMMER TYPE** _____

SPT LOGS - GFA DATA TEMPLATE.GDT - 11/18/19 11:28 - P:\PROJECTS\2019\19-6475.00 - HIGHLANDS COUNTY FWQ 20-004 GEOTECH SERVICES FOR TRAFFIC OPS\APPENDICES NORMAL\SPT LOGS R 1-3.GPJ

DEPTH (ft)	SAMPLE	SAMPLE NUMBER	BLOW COUNTS	N VALUE	GRAPHIC LOG	MATERIAL DESCRIPTION	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)
1.0		1	4 3 3 4	6		Brown and gray fine sand, trace shell (SP)			
2.0						Light brown fine sand (SP)			
3.0		2	1 2 1 1	3		Orange fine sand (SP)			
4.0									
5.0		3	1 0 1 2	1					
6.0						Bottom of borehole at 6.0 feet.			



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LOG OF BORING R-3

CLIENT Highlands County Board of County Commissioners **PROJECT NAME** Highlands County Traffic Operations Building
PROJECT NUMBER 19-6475.00 **PROJECT LOCATION** 4500 Kenilworth Blvd, Sebring, Florida
DRILLING CONTRACTOR GFA International Inc. **HOLE DEPTH** 6 ft **HOLE DIAMETER** 3 in
DRILLER PM/CM **DATE STARTED** 11/13/19 **COMPLETED** 11/13/19
DRILL RIG GeoProbe **GROUND WATER LEVEL: AT TIME OF DRILLING** --- Not Encountered
METHOD SPT **LATITUDE** _____ **LONGITUDE** _____
NOTE: _____ **HAMMER TYPE** _____

SPT LOGS - GFA DATA TEMPLATE.GDT - 11/18/19 11:28 - P:\PROJECTS\2019\19-6475.00 - HIGHLANDS COUNTY FWQ 20-004 GEOTECH SERVICES FOR TRAFFIC OPS\APPENDICES NORMAL\SPT LOGS R 1-3.GPJ

DEPTH (ft)	SAMPLE	SAMPLE NUMBER	BLOW COUNTS	N VALUE	GRAPHIC LOG	MATERIAL DESCRIPTION	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)
1.0		1	5 3 4 7	7		Brown and gray fine sand, little shell (PS)			
2.0						Light brown fine sand (SP)			
3.0		2	3 3 2	5		Orange fine sand (SP)			
4.0									
5.0		3	1 0 1 1	1					
6.0									

Bottom of borehole at 6.0 feet.

Appendix E - Discussion of Soil Groups



DISCUSSION OF SOIL GROUPS

COARSE GRAINED SOILS

General. A soil is classified as coarse-grained if more than 50 percent of a representative sample of the material is retained on the No. 200 sieve.

GW and SW Groups. These groups comprise well-graded gravelly and sandy soils containing little or no plastic fines (less than 5 percent passing the No. 200 sieve). The low fines content does not noticeably change the shear strength characteristics of these soils and does not interfere with their free-draining characteristics.

GP and SP Groups. Poorly graded gravels and sands containing little or no plastic fines (less than 5 percent passing the No. 200 sieve) are in the GP and SP groups. The materials can be called uniform gravels, uniform sands, or non-uniform mixtures of very coarse materials and very fine sand, with intermediate sizes lacking (sometimes called skip-graded, gap-graded, or step-graded). This last group often results from borrow pit excavation in which gravel and sand layers are mixed.

GM and SM Groups. In general, the GM and SM groups comprise gravels or sands with fines (more than 12 percent passing the No. 200 sieve) having little or no plasticity. The plasticity index and liquid limit of soils in these groups plot below the “A” line on the plasticity chart. The gradation of the material is not considered significant and both well and poorly graded materials are included.

GC and SC Groups. In general, the GC and SC groups comprise gravelly or sandy soils containing fines (more than 12 percent passing the No. 200 sieve) having plasticity characteristics. The plasticity index and liquid limit of soils in these groups plot above the “A” line on the plasticity chart.

FINE GRAINED SOILS

General. A soil is classified as fine-grained if more than 50 percent of a representative sample of the material passes the No. 200 sieve.

ML and MH Groups. These groups comprise inorganic silts (ML) and elastic silts (MH) having either low (L) or high (H) liquid limits, respectively. ML soils have a liquid limit of less than 50 while MH soils have a liquid limit of 50 and greater. Silts and elastic silts can also contain varying amounts of sand and gravel. Also included in this group are loess sediments and rock flours.

CL and CH Groups. These groups comprise low plasticity (lean) clays (CL) and medium to high plasticity (fat) clays (CH) having either low (L) or high (H) liquid limits, respectively. CL soils have a liquid limit of less than 50 while CH soils have a liquid limit of 50 and greater. The low plasticity clays can also be sandy clays or silty clays. The moderate to high plasticity clays can also be sandy clays and include some volcanic clays.



OL and OH Groups. These groups comprise organic silts and clays. The soils are characterized by the presence of organic odor and/or dark color. The OL and OH soils are differentiated by determining and comparing their liquid limit values before and after oven drying representative soil samples.

HIGHLY ORGANIC SOILS

The highly organic soils are usually very soft and compressible and have undesirable construction characteristics. Particles of leaves, grasses, branches, or other fibrous vegetative matter are common components of these soils. They are not subdivided and are classified into one group with the symbol PT. Peat humus and swamp soils with a highly organic texture are typical soils of the group.



SECTION 02361 / SOIL POISONING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 02000 and other sections of this division.
- B. Soil poisoning shall be provided per Florida Building Code section 1816 Termite Protection specification standards.

PART 2 - NOTIFICATION AND PROCEDURES

- 2.01 Notify ARCHITECT and OWNER at least one (1) working day in advance when floor fill is completed and scheduled for soil poisoning.
- 2.02 Do not proceed with further work in the slab area until application has been completed.
- 2.03 CONTRACTOR will be required to re-treat as necessary due to washouts or disturbing soil after initial treatment.

PART 3 - EXECUTION AND APPLICATION

3.01 SURFACE PREPARATION

- A. Remove foreign matter which could decrease the effectiveness of treatment on areas to be treated. Loosen, rake and level soil to be treated, except previously compacted areas under slabs and foundations.
- B. Treated areas should be covered within two (2) hours of soil treatment. Unless agreed otherwise by treatment installer and OWNER, concrete must be poured within a twenty-four (24) hour period of soil treatment.
- C. Treatment should be reapplied if treated areas are disturbed by subsequent excavation or other construction activities. Reapply soil toxicant if treated areas are not properly covered within two (2) hours of treatment or if the area treated is soaked due to inclement weather.

END OF SECTION 02361

**SECTION 02751 / PORTLAND CEMENT CONCRETE PAVING, CURBS, SLABS
and WALKS, DETECTABLE WARNINGS**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 02000 and other sections of this division.

1.02 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 3:	Concrete
Section 02300:	Grading and Earthwork (for site outside building area)

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with Sections 345, 350, 520, and 522, Florida Department of Transportation Standard Specification for Road and Bridge Construction (latest edition).
- B. Obtain cementitious materials from same source throughout.

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable standards for paving work on public property.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not place concrete when base surface temperature is less than 40 degrees F or surface is wet.

PART 2 - PRODUCTS

2.01 Concrete Curbs

- A. Concrete curbs shall be constructed in conformity with the lines, grades, dimensions and notes as shown on the drawing and in accordance with Section 520 of the D.O.T. Standard Specifications.
- B. Materials and workmanship shall conform to Section 530 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, and to Division One of the Standard Specifications.

- C. Forms must be capable of providing curb and gutter true to alignment and grade and have sufficient divider plates to maintain the true cross section pattern. Hand rodding or vibrators shall be carefully employed to minimize “honeycomb” areas and such areas shall be patched as soon as possible after form stripping. Curb and gutters shall receive a steel trowel dressing, appropriate radius tooling, and be given a brush finish with a fine fiber brush.
- D. Curb and gutter work must be kept moist to provide proper curing and sufficiently protected to prevent damage during subsequent construction work. Drop curbs, radius sections, inlet warps, and other changing sections must be carefully formed and finished to provide a gentle pleasing appearance.

2.02 CONCRETE WALKS/SLABS

- A. All walks and slabs are to be placed over 10 mil polyethylene vapor barrier.
- B. Sidewalks and slabs shall be size, thickness and layout as detailed in architectural drawings.
- C. Accessories: Deck-O-Foam (zip-strip”) expansion joint filler, 1/4” to 1/2” thick (1/4” maximum at elevated slabs) x slab depth in continuous roll, non-staining, polyethylene, closed-cell foam, by W.R. Meadows or equivalent. Filler shall be pre-scored to allow for removable tape edge strip to create reveal for sealant.

2.03 DETECTABLE WARNINGS

- A. Curb ramps at medians and refuge islands, and locations where medians and refuge islands are cut through level with the street at crosswalks, shall have detectable warnings.
- B. Detectable warnings shall be 20” minimum in the direction of travel and extend the full width of the curb ramp or flush with the surface.
- C. The detectable warning shall be located so that the edge nearest the curb line or other potential hazard is 6 to 8 inches from the curb line or other potential hazard, such as a reflecting pool edge or the dynamic envelope of the rail operations.
- D. Truncated domes shall have a diameter of 0.9 inch at the bottom, a diameter of 0.4 inch at the top, a height of 0.2 inch and a center-to-center spacing of 2.35 inches measured along one side of a square arrangement.
- E. Domes shall be aligned on a square grid in the predominant direction of travel to permit wheel to roll between domes.
- F. There shall be a minimum of 70% contrast in light reflectance between the detectable warning and an adjoining surface or the detectable warning shall be “safety yellow”. The material used to provide visual contrast shall be an integral part of the detectable warning surface.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify base conditions before beginning construction.
- B. Verify compacted subgrade is acceptable and ready to support paving and imposed loads.
- C. Verify gradients and elevations of base are correct.

3.02 PREPARATION

- A. Notify ARCHITECT minimum 24 hours prior to commencement of concreting operations.

3.03 FORMING

- A. Place and secure forms to correct location, dimension, and profile.
- B. Forming and pour of side walks shall be in a checkerboard method.
- C. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- D. Joint filler material is not required nor shall be used between adjacent pours.

3.04 REINFORCEMENT

- A. Place reinforcement as indicated on architectural/structural drawings.
- B. Typical walks and curbs shall have steel mesh reinforcement. Use of fibermesh concrete shall have prior approval of the OWNER.

3.05 PLACING CONCRETE

- A. Place concrete in accordance with Division 3.
- B. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
- C. Place concrete continuously between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.

3.06 JOINTS

- A. Place construction joints at 12-foot intervals on curb. Place expansion joints at maximum 30-foot intervals and control joints at maximum 5-foot intervals on sidewalk, unless noted otherwise on drawings. Align curb and sidewalk joints.
- B. Provide tooled joints and edges. Tool joints 1 1/4" into depth of slab.
- C. Provide pre-manufactured joint filler cast-in-place between the sidewalk and curb or driveway, at fixed objects or buildings, where sidewalks intersect, change directions, and as otherwise indicated on the drawings. Joint filler shall be equal to Paragraph 2.02, C this section.

3.07 FINISHING

- A. Portland Cement Paving: Finish in accordance with Section 350, SSFR & BC.
- B. Sidewalk Paving: Light broom, radius edges to 1/2 inch radius.
- C. Curbs and Gutters: Light broom.
- D. Inclined Ramps: Light broom.
- E. Curb cuts and side flares: exposed river rock aggregate. Lightly wash top surface after partial curing to expose top surface of river rock aggregate, to produce smooth uniform appearance.
 - 1. Form and install as a separate pour.
- F. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.08 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 01400/Quality Control Services.

3.09 PROTECTION

- A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.

3.10 SCHEDULES

Concrete Curb: Shape as detailed.

Concrete Pavement/Sidewalk: As detailed on architectural/structural drawings.

END OF SECTION 02751

SECTION 02821 / CHAIN LINK FENCING AND GATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 02000 and other sections of this division.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All fabric and fittings to be regionally recognized manufacturer's standard items produced to construct the galvanized chain link fabric fences shown on the drawings, with galvanized posts, fittings, gates and rails, conforming to ASTM B-120 for weight and coating.

2.02 CONCRETE

- A. 2500 psi test premix, or jobsite mixed concrete.

2.03 FABRIC

- A. Weave in two (2) inch chain link diamond mesh, from #9 BWG copper bearing wire to withstand 1390 pound breaking load. Twist and barb top and bottom selvages, cutting each wire on the diagonal. Galvanize after wiring and barbing with 1.2 oz. zinc per sq. ft. complying with ASTM A392. **Top and bottom wire ends to be knuckle selvage at all locations (then galvanized) to eliminate sharp edges.**

2.04 GATES

- A. Fabricate perimeter frames of 2.0" O.D. tubular members at 2.717 pounds per lineal foot. Provide additional horizontal and vertical members to ensure proper gate operation and for attachment of fabric, hardware and accessories. Assemble gates by welding all joints. Galvanize after fabrication. Use same fabric as fence, installed with stretcher bars at vertical edges and tie wires at top and bottom edges. Attach stretcher bars to frame to maximum 15" o.c. Attach hardware with bolts or welding to provide security against removal or breakage. Provide diagonal cross bracing of 3/8" dia. adjustable length truss rods on gates of size required to prevent sag or twist.

1. Swing Gate Hardware

- a. Hinges: pressed steel or malleable iron to suit gate sizes, non-lift-off type, offset to permit 180 degree gate opening. One pair per leaf.

- b. Latch: forked or plunger bar type to permit operation from either side of gate. Provide padlock eye as integral part of latch, unless otherwise noted. Paired gates are to have appropriate keepers at meeting rails.

2. Rolling Gate Hardware

- a. Guide Rails: galvanized steel attached to gate and fence.
- b. Latch: none required.
- c. Tire: ± 12 " diameter pneumatic tire on steel wheel at leading edge of gate.

2.05 POSTS, RAILS AND BRACES

A. End, Corner and Terminal Posts

Shall be hot dip galvanized iron with zinc coating of not less than 1.2 ounces per square foot surface. Posts shall be 2.375 inches O.D. at 3.65 ounces per lineal foot. **(Schedule 40) (SS-40 IS NOT ACCEPTABLE.)**

- B. Line Posts: Shall be hot dip galvanized iron with zinc coating of not less than 1.2 ounces per square foot. Posts shall be 1.9 inches O.D. at 1.72 pounds per lineal foot. **(Schedule 40) (SS-40 IS NOT ACCEPTABLE.)**

- C. Gate Posts: Shall be hot dip galvanized, cleaned and painted with an approved zinc based paint. Posts for a single swing gate with a 6-foot maximum panel width shall be 3.0 inches O.D. at 5.79 pounds per lineal foot. Posts supporting gates with panel widths greater than 6 feet are to be increased in size proportionately to gate panel width increases as approved by ARCHITECT.

- D. Top Rail: 1.660" O.D. pipe 2.27 lbs./l.f. Hot dipped galvanized, furnished in manufacturer's standard lengths $\pm 21'-0$ " with couplings for jointing, to provide a rigid connection but allowing for expansion and contraction. **(Schedule 40) (SS-40 IS NOT ACCEPTABLE.)**

- E. Braces: All corner, terminal and gate posts shall be braced with 1.66 inch O.D. galvanized Schedule 40 pipe at 2.27 pounds per lineal foot and trussed with a 3/8" attached galvanized rod.

2.06 TENSION WIRE

- A. No. 7 gauge spring tension wire at bottom of all fabric, except on gates.

2.07 RODS

- A. Galvanized steel rod minimum 3/8" diameter, with threaded galvanized turnbuckle and positive attachment to each side post.

2.08 STRETCHER BARS

- A. Shall be 1/4" or 3/16" x 3/4" flat bar, hot dip galvanized.

2.09 TIE WIRE

- A. Shall be aluminum no. 6 gauge.

2.10 MISCELLANEOUS FITTINGS

- A. All fittings entering into the fence necessary to make a complete installation shall be pressed steel; all ferrous material shall be thoroughly galvanized by the hot dipped method.

2.11 SCOPE OF WORK

- A. Mechanical and Related Equipment Enclosures: 6'-0" high w/one 4'-0" wide gate
B. Site Perimeter (1'-0" inside property line): 8'-0" high, gates as indicated

PART 3 - EXECUTION

3.01 TOLERANCES

- A. Both top and bottom of fence to follow grade with a maximum 2" tolerance. Fence line is outside face of fabric. Unless otherwise indicated, fence line along property lines is to be set 1'-0" inside property line.

3.02 POSTS

- A. Set into concrete footings per following schedule. Top of footing to be crowned away from post to shed water.

<u>Type of Post</u>	<u>Hole Diameter</u>	<u>Hole Depth</u>	<u>Post Embedment in Concrete</u>
Line	8"	30"	27"
Terminal	12"	38"	36"
Corner	12"	38"	36"
Gate	Post dia. x 3	38"	36"

(Post embedment is minimum and shall be measured from bottom end of post to ground level.)

- B. Place all posts at maximum of 10 foot spacing, and spacing all posts between corners and gates (or ends) uniformly. Set brace posts 4'-0" above grade against each direction of all terminal, angle, and pull posts; and extend to grade at each adjacent line post. Securely fasten with galvanized steel fittings. Install matching rod and turnbuckle back from line posts to terminal, angle, and pull posts. Install bottom tension wire, pull

tightly, and secure.

- C. When fences are to be installed around equipment set on concrete slab, unless otherwise indicated fence posts are to be centered 4" inward from outer edge of slab, so that fence posts are fully embedded in slab.

3.03 TOP RAIL

- A. Provide manufacturer's standard fittings to fit with line posts. Provide means to attach rail securely and rigidly to each gate, corner, pull and end post. Top rail to form a continuous brace from end to end each run of fence.

3.04 FABRIC

- A. Attach fabric to stretcher bar. Attach bar to terminal posts with 1/8" x 1" galvanized steel bands at 1'-3" centers, fabricated to fit posts. Stretch fabric tightly between terminal, angle and pull poles.

3.05 GATES

- A. Install plumb and level, and so that swing gates will stand open in any position. Insure that all moving parts are well lubricated and operate smoothly.
- B. Construct 6" thick concrete pad beyond edge of paving as rolling surface for rolling gate.

3.06 PAINT (WHERE CALLED FOR)

- A. CONTRACTOR shall wire brush rusted areas. Apply Rustoleum primer. Apply 2 coats of a zinc-based paint.

END OF SECTION 02821

SECTION 03000 / CONCRETE, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 3. Provisions of this Section 03000 also apply to all sections of this Division 3. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 2:	Sitework
Division 4:	Masonry
Division 5:	Metals
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows
Division 9:	Finishes
Division 15:	Mechanical
Division 16:	Electrical

1.03 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of adjoining trades.
- B. Coordinate and install work in proper sequence with overall job and in cooperation with other related trades; particularly with bearing concrete masonry work.
- C. Assist other trades in setting their materials to be cast in concrete. Protect these items after setting. Insure they are not moved during concrete placement.

1.04 CONCRETE MIX

- A. Concrete must meet all requirements of ASTM C94 and those herein specified for materials, proportioning mixing and other details of manufacturer, quality and delivery.
- B. Mix Design: all mix designs shall be proportioned in accordance with 1.05 of this section. Each class of concrete shall be furnished in accordance with that scheduled in Part 2 of this section.
- C. The concrete design mix(es) of all concrete to be used during construction of the project shall be submitted to the ARCHITECT for approval prior to the placement of any concrete on the job. Only concrete of approved mix design shall be used during construction. Any concrete supplied which is not of an approved design mix shall be rejected.

1.05 APPLICABLE TECHNICAL CODES AND STANDARDS

Fabricators and CONTRACTORS are to abide by these codes:

- A. Florida Building Code requirements for reinforced concrete (ACI-318/Latest Edition).

1.06 WEATHER CONSIDERATIONS

- A. Cold Weather Requirements: Insure that all concrete materials and all reinforcement, forms, fillers, and ground with which concrete is to come in contact are free from frost. Whenever temperature of surrounding air is below 40 deg. F. all concrete placed in forms is to have a temperature of between 70 and 80 degrees F. and adequate means provided for maintaining temperature of not less than 70 deg. F. for three days or 50 deg. F. for seven days or for as much more time as is necessary to insure proper curing of concrete. Housing, covering or other protection used in connection with curing is to remain in place and intact at least 24 hours after artificial heating is discontinued. Use no salt or other chemicals for the prevention of freezing. No concrete shall be placed if it is 90° or higher or after 90 minute from the time the batch water is added.

- B. Hot Weather Placement: When hot weather conditions exist that would impair quality and strength of concrete, place concrete complying with ACI 305 and as specified.

1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg. F (32 deg. C). Mixing water may be chilled or chopped ice may be used to control temperature (at no cost to the OWNER), provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is CONTRACTOR'S option.
2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
3. Fog spray forms, reinforcing steel and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles or dry areas.
4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, as acceptable to ARCHITECT.

1.07 TESTING

- A. Cylinder Failures: If laboratory test cylinders fail to meet minimum strength required by these specifications, ARCHITECT has the right to order such changes in mix and water-cement ratio as he deems necessary to secure strength required. If job-cylinders fail to show minimum strengths required by these conditions, ARCHITECT may require such changes of conditions and/or curing as will satisfy him that concrete in job will be of proper strength. Changes of conditions may include removal and replacement of concrete in question and retesting, all at no cost to OWNER.

- B. Load Tests: ARCHITECT also has right to order load or core tests at no cost to OWNER on any portion of structure where test cylinders fail to show minimum strengths required. Changes of conditions referred to above may include removal and replacement of concrete in question, at no cost to OWNER. If members or portions of structure show evident failure, such changes or modifications as are necessary to make structure adequate for rated capacity shall be made by CONTRACTORS as determined by ARCHITECT. This may result in removal of and rebuilding of such portions of building by CONTRACTOR without cost to OWNER. Structure shall be considered to have failed to pass test if with 24 hours after removal of test load, the slabs, beams, etc., do not show a recovery of at least 75% of maximum deflection shown during 24 hours while under load.

1.08 CONTRACT DRAWINGS

- A. Contract drawings show dimensions and forms of concrete and sizes and arrangements of reinforcing. Additional details will be furnished by ARCHITECT where necessary to fully explain work required. In case of direct conflict between drawings and schedules in size and shape of concrete members or in size and number of reinforcing bars, schedules govern. For purpose of submitting bid price, structural sheets take precedence over architectural sheets with regard to concrete foundations, walls, columns, slabs, beams, and dimensions of structural features. In case of any conflict between structural and architectural drawings, bring conflict to attention of ARCHITECT, who will issue instructions as to required revisions.

PART 2 - PRODUCTS

2.01 CONCRETE INGREDIENTS

- 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/II.
 - a. Fly Ash: ASTM C 618, Class F (Maximum of 20% of the total cementitious materials).
 - b. Ground Granulated Blast-Furnace Slag: (NOT PERMITTED).
- B. Coarse Aggregate for Cast-In-Place Concrete: Conform to ASTM C-33 (3/4" max. size) latest edition, "Standard Specification for Concrete Aggregates".
1. Use 3/8" - 1/2" smooth brown river rock aggregate for concrete placed at curb cuts and side flares in exterior walkways.
- C. Aggregate for Precast Structural Concrete: ASTM C33 or C330.
- D. Fine Aggregate: Conform to ASTM C-33 latest edition, "Standard Specification for Concrete Aggregates". Free of materials with deleterious reactivity to alkali in cement.

- E. Water: ASTM C 94/C 94M and potable.
- F. 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. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 3. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.

2.02 CONCRETE MIXTURES

- A. Concrete Mix Designs: 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.

Class of Concrete Compressive Strength at 28 days, PSI (minimum)	Size of Aggregate in Normal Concrete	Water to Cement Ratio (maximum)	Slump (±1")
Floor Slabs & Misc. 3000 PSI for 4" slab	3/4" (min.)	.50	4"
Footings 3,000 PSI	3/4" (min.)	.55	4"
Columns & Beams and Elevated Slabs 4,000 PSI	3/8" (max.)	.48	4"
Concrete Block Grout (Chatt) 3,000 PSI	3/8" (max.)	.58	9-10"
Fiber Reinforced Concrete Exterior Sidewalks/ Covered Walks 3,000 PSI	3/8" (max.)	.55	4"

(All tests shall be taken at point of placement.)

1. Concrete shall achieve a minimum compressive strength as shown above in 28 days.
2. Maximum allowable entrapped air shall be 2% by volume. Maximum allowable air entraining admixtures shall be 3% by volume. Maximum allowable total air content shall be 5% by volume.

2.03 STEEL

- A. Reinforcing Bars: Conform to ASTM A615-68 (Grade 60, $F_y = 60,000$ psi), domestically produced. Bars to be free from flaws, cracks or other defects of rolling, true to size and shape, and free of loose scales of rust. A thin coating of firmly attached rust is not cause of rejection. Bars to be free from dirt, paint, grease, oil or other destroyers of bond. Reinforcing steel should be free of kinks and not-shop bends. Field bends should only be as directed by the architect.
1. Synthetic Fiber Reinforcing: Concrete Engineered Reinforcing Fibers shall be polypropylene, collated, fibrillated fibers by Fibermesh, Inc., Chattanooga, TN, CFP Fiber by Forta Corp, or approved equal. Only fibers designed and manufactured specifically for use in concrete from virgin polypropylene and so certified by manufacturer shall be acceptable. Fiber length shall be 3/4". Use at the rate of 1 1/2 pounds per cubic yard.
 2. **Reinforced concrete with synthetic fiber may be used only on exterior concrete slabs beyond building overhangs, covered walks and sidewalks, unless otherwise approved by the OWNER and ARCHITECT. Use of fiber reinforced concrete shall be in accordance with Section 02751.**
- B. Reinforcing Mesh: required at typical installations; where noted on drawings, conform to ASTM A-185 latest edition, "Welded Wire Fabric for Concrete Reinforcement". See architectural and structural drawings.
- C. Steel Plates, Inserts and Fasteners: Conform to ASTM A-7 latest edition, "Steel for Bridges and Buildings".
- D. Structural Steel: Conform to ASTM A-36, A-572, or as noted, latest edition.
- E. Accessory Supports: Use formed steel wire manufactured items, plastic tipped for all exposed concrete work. Concrete bricks may be used to support bottom bars in earth beams. Provide chairs at reinforcing placed over metal deck.

2.04 FORMWORK

- A. Footings: Use fabricated formwork for all work. **Earth forms will not be allowed.**

- B. Formwork, General: Conform to shape, lines and dimensions of members as called for on plans. Forms for concrete to be concealed may be plywood or dressed lumber. Build all forms substantially and sufficiently tight to prevent leakage. Properly brace or tie together to maintain position and shape. Provide feature strips between concrete and masonry where exposed to view. Provide chamfers at all outside corners/edges.

2.05 MISCELLANEOUS PRODUCTS

A. Vapor Retarder:

1. Vapor Retarder shall have the following qualities
 - a. Water Vapor Transmission Rate ASTM E96 / 0.04 Perms or lower
 - b. Water Vapor Retarder ASTM E1745 / Class C
 - c. Thickness ACI 302.1R-96 / Not less than 10 mils.
2. Lap seams 6" minimum, all joints to be taped per vapor retarder manufactures approved material.
(FOR RADON RESISTANT CONSTRUCTION, REFER TO PARAGRAPH 3.05,A,7(a) THIS SECTION).

- B. Construction Joint: Use asphalt felt or polyethylene film as a bond breaker in areas calling for construction joints.

- C. Floor Hardener: Use fluorosilicate base liquid hardener, Sika Hardener produced by Sika Chemical Corp., Solidus liquid hardener #219-2001 produced by Lambert; Protocrete-CDS or as approved by OWNER/ARCHITECT. Apply floor hardener to floor slab surface at interior locations where such slabs are scheduled to be left exposed with no other finish.

- D. Curing Compound: (Refer to part 3.08)

- E. Other: See drawings and subsequent Division 3 specification sections.

PART 3 - EXECUTION

3.01 CONCRETE PROPORTIONING

- A. Insure proportions of cement, aggregate, and water in mix are such as to produce a plastic and workable mass suitable for economical and uniform placement. Make one slump test at time cylinders are made for compression tests. Concrete test reports are to include slump tests, and state where concrete was used. **Slump to not exceed that specified in Paragraph 2.02.** Avoid excessive fluidity which may result in segregation of materials. Insure mix has no free water, clings to coarse aggregate and upper layer of set concrete is free from laitance.

- B. Base water-concrete ratio of mix on established relationships between water-cement and strength of concrete, such as to produce required strength of concrete with least amount of water, consistent with workability of fresh concrete. Include surface water contained on aggregate as part of mixing water in computing water content.
- C. Measure moisture in aggregate by method satisfactory to ARCHITECT which will result within one pound for each 100 pounds of aggregate. Moisture in aggregate shall be a portion of mixing water allowed.
- D. Adjust proportion of fine to coarse aggregates to produce maximum workability. In no instance shall fine to coarse ratio vary more than 1/2 to 1.
- E. If it is ARCHITECT'S opinion that subsequent concrete is not equal to first mixes established, he shall have the right to reject the material and/or request additional laboratory tests and confirmation at CONTRACTOR'S expense.

3.02 CONCRETE MIXING

- A. Order load size based on method of placement and amount of time available to place. Mix ready-mixed concrete and deliver in accord with requirement set forth in "Standard Specifications for Ready-Mixed Concrete", (ASTM designation C-94, latest edition). In addition, mix for a period of not less than 10 minutes at a peripheral drum speed of approximately 200 feet per minute. Continue mixing until discharge is completed. At least 3 minutes of mixing period to be at job site. **Concrete will be rejected if not placed in final position within 1-1/2 hours after water is first added to batch.** Concrete at time of placing, to be in such condition that it can be properly placed.

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.

- B. Addition of water to ready-mixed concrete at the jobsite is not recommended and such addition will be at the sole risk of the supplier and CONTRACTOR. Such addition shall be under direct supervision and authorization of on-site quality control representative of concrete supplier, OWNER, ARCHITECT or ENGINEER reserves the right to reject any such field modified concrete, if in their opinion the quality of the concrete has been jeopardized by such modifications.
- C. Concrete shall be deposited continuously so that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of seams of weakness within the section. If a section cannot be poured continuously (and no more than 30 minutes between pours), construction joints shall be located as indicated on the contract documents or as permitted. Placing shall be carried on at such a rate that the concrete which is being integrated with fresh concrete is still plastic.
- D. See Section 01400 for concrete testing.

3.03 FORMWORK, GENERAL

- A. Design and engineering of formwork, as well as its construction, is responsibility of CONTRACTOR.
- B. Conform to shape, lines and dimensions of concrete members as shown on drawings. Brace, tie and shore to maintain position and shape and to insure safety to workmen and passerby. Make sufficiently tight to prevent leakage. Design and construct to resist pressure to which they are subjected without sag or displacement and assembled in such manner that their removal will not damage concrete.
- C. Provide temporary clean-out openings at bottom of forms for walls, columns and deep beams to facilitate cleaning and inspection immediately prior to concrete placement. Openings to provide complete access to surface on which concrete is to be cast. Reinforcing bars in filled cells shall be sized for low lift grouting, with no more than 5'-0" lifts.
- D. Edges of columns, beams, and walls **to be built with no chamfers**, unless shown otherwise on drawings.
- E. Provide openings in concrete formwork to accommodate work of other trades, determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms.
- F. Construct formwork so as to insure that concrete surfaces conform to tolerances of Section 2.4, "Recommended Practice for Concrete Formwork" (ACI 347).

3.04 STEEL, GENERAL

- A. Shop Work
 - 1. Detail to conform to procedures of ACI 315 latest edition "Manual of Standard Practice for Detailing Reinforced Concrete Structures".
 - 2. Shop bend steel to shapes shown or scheduled on drawings, bend cold. **Field bend no steel except where specifically permitted by ARCHITECT.**
 - 3. Furnish bent steel to job, bundled and tagged to its proper location, as required by CONTRACTOR. Beam and column ties and stirrups are to be fabricated so that outside dimensions are small enough to insure that tolerances to all sides of forms are adhered to.
 - 4. Steel to be free from loose scale, flaking rust, oil, mud and other foreign substances when placed in forms and when covered by concrete. Steel which is not clean is to be cleaned of all foreign material, or is to be removed from forms and site.

B. Field Handling and Placing

1. CONTRACTOR is responsible for accurate placement of all reinforcement. Promptly inform ARCHITECT if any reinforcement does not fit into overall concrete configuration, with proper lap and/or coverage, who will consult with CONTRACTOR and issue equitable instruction for resolution.
2. Keep steel clean while placing concrete. Where any spilled concrete dries on steel, thoroughly clean steel before concrete is placed around it. Cleaning of steel may include sand blasting.
3. Place all metal reinforcement accurately, and hold in place to prevent displacement during placing of concrete. Mark location of vertical reinforcement on floor or blocks. All footing dowels or stubs shall be tied accurately in place before footing concrete is placed. Where steel as specified, scheduled or detailed does not provide top steel in areas where stirrups or web reinforcement is required, provide two #4 bars in top of member for support of stirrup or web reinforcement. Saddle ties are preferred. Use sufficient ties to maintain reinforcement in correct position. Set all column dowels and anchor bolts accurately by use of template.
4. Reinforcing Steel Cover: 3" for all concrete in contact with earth: 1 1/2" for all other concrete work except as shown on drawings.
5. Minimum clear spacing between parallel bars is one bar diameter. In no case shall clear spacing between bars be less than 1 inch nor less than 1 1/3 times the maximum size of the coarse aggregate used. Size of coarse aggregate determined by bar spacing. See paragraphs 2.01 B and 2.01 C of this section.
6. Support all beam and slab reinforcing on chairs as previously called for. No masonry supports will be allowed. Set chairs and spacers according to specifications for placing accessories in manual of Standard Practice of the Concrete Reinforcing Steel Institute. Max. chair spacing = 3'-0".
7. Tie all reinforcing steel firmly in place with not less than No. 18 wire or plastic ties.
8. Lap all bars at splices according to the ACI code requirements but not less than 48 bar diameters nor 24 inches. Bend all horizontal wall bars not less than 18 inches around corners. All column bars shall lap 48 diameters, 2'-6" minimum into column above.
9. At all inside corners a #5 x 6ft. bar shall be placed diagonally in the slab.

3.05 CONCRETE PLACEMENT, GENERAL

- A. Give ARCHITECT and OWNER sufficient advance notice, two working days, before starting any concrete pour, to permit inspection of forms and soil poisoning.
1. Scheduling of concrete pours shall allow one full working day after 100% completion of all form construction and steel placement prior to commencement of pour.

2. The ARCHITECT and OWNER'S inspector is to be notified at least one full working day prior to 100% completion of form construction and steel placement. The intent is to allow inspection as soon as possible after 100% completion and provide the CONTRACTOR with approximately one full working day to correct any discrepancies.
3. The testing laboratory is to be notified as soon as the concrete is scheduled or one full working day in advance, whichever is sooner.
4. Unless the CONTRACTOR is specifically notified otherwise, both the ARCHITECT and the inspector will inspect prior to each pour.
5. Pours for sidewalks and equipment pads at grade do not require testing by the laboratory or observation by the inspector or ARCHITECT provided form work and reinforcing are inspected prior to the pour.
6. **CONTRACTORS are requested to avoid scheduling any concrete pour other than those listed in item 5 above to begin later than 1:00 p.m. any day.**
7. Under-Slab Vapor Barrier: Install a single layer polyethylene vapor barrier **typically beneath all interior and exterior slabs (and sidewalks)** on grade or fill. Lap all joints six (6) inches minimum, and turn barrier up at walls to top of slab. Tape seal all joints and laps and seal all penetrations under all enclosed building areas.
8. Built-In Items: determine area to be poured: install and properly locate all conduits, pipes, sleeves, hangers, steel equipment, grounds, anchors, reglets, waterstops and other work required to be built into concrete work.
 - a. Anchor bolts and embeds shall be accurately located, set with templates, and securely held in position prior to and while casting concrete and shall be protected from construction activity until the structure above is in place. Inserting bolts into partially hardened concrete or straightening bent over bolts is prohibited.
 - b. Place dovetail slots aligned and fastened securely to formwork such that they will not be moved during placement of concrete.
9. Cleaning of Steel and Formwork: before depositing concrete, remove all water and debris from place of deposit. Thoroughly clean any reinforcement and forms coated with foreign material, or with concrete from previous operations.
10. Placement: deposit concrete as nearly as practicable to or not more than six (6) feet from its final position, to avoid segregation due to rehandling or flowing. Carry on at such rate that concrete is at all times plastic and flows readily into space between bars. Deposit no concrete partially hardened or contaminated by foreign material. Use no retempered concrete. Carry concrete placement on as continuous operation until placing of panel or section is completed. Top surfaces are to be level. If section cannot be placed continuously locate construction joints provided for in drawings or approved by ARCHITECT. Pour no concrete within twenty-five (25) feet of workmen placing or securing reinforcement. Free fall is not to exceed 5 feet.

11. Construction and Control Joints: locate as indicated on drawings. Make no other joints in any beams or cantilevers. Any control or construction joint required and not shown on plans will be as directed by, or require approval of ARCHITECT. All control jointing in floor slabs are to be field sawn to 30 percent of slab thickness as soon as workmen can work on slab and cutting operation will not damage finish or spall cut edges, and must be cut on same day of pour, maximum 10 hours after placement. Maximum joint spacing is 12'-0" each way, unless shown otherwise on drawings.
12. Control joints in all exterior slabs, walks, etc., are to be saw-cut. Cuts shall be straight and true with a deviation tolerance of 1/2" in 20'-0". Depth of saw-cut shall be a minimum of 3/8" or as detailed on structural drawings. Tooled joints may be used as shown on drawings and as approved by the OWNER.
13. Construction Joints: install bond breaker where noted on plans. If joint material is necessary (and only as approved by ARCHITECT), match profile section of adjoining concrete members and do not use material more than 1/4" thick.
14. Apply temporary protective cover to finish surfaces while placing concrete to guard against spattering.
15. Comply with ACI 304 Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.

3.06 COMPACTING CONCRETE, GENERAL

- A. Deposit concrete in horizontal layers not over 12 inches in depth and thoroughly work and compact by spading, rodding, or mechanical vibration into all parts of forms, until air pockets are worked out. Compact to insure dense, smooth concrete surfaces, the thorough filling of forms without voids or pockets, and embedment of all reinforcing and inserts, taking care to avoid vertical joints or inclined planes. Piling up of concrete in forms in such a manner as to permit escape of mortar or flow of concrete itself is not permitted.
- B. Vibrate by means of mechanical internal type concrete vibrators operating at not less than 5,000 pulsations per minute. Use at least one such vibrator for each 25 cubic yards of concrete being placed per hour. Hold vibrators in one position only until concrete has become plastic and has filled all holes or spaces but not long enough to create a pool of mortar. Do not hold vibrators against reinforcing steel, inserts or forms, but move about through mass of concrete itself until concrete has leveled out to fill thoroughly against forms and embedded steel and inserts.
- C. Externally vibrate thin walls and inaccessible sections by manual or mechanical means.
- D. Do not use mechanical vibrators as means of transporting concrete and not to move concrete horizontally in forms. Trucking, walking or handling of heavy materials over freshly placed concrete is prohibited.

- E. Revibration of concrete is not permitted.
- F. The CONTRACTOR shall have a standby vibrator on hand in case of failure.

3.07 REPAIR AND PATCHING, GENERAL

- A. Any concrete which is not formed as shown on plans, or for any reason is out of alignment or level or shows a defective surface is hereby considered as not conforming with intent of these specifications. Remove from job by CONTRACTOR at his expense and replace with concrete meeting these specifications at CONTRACTOR'S expense.
- B. Where damage or imperfection is minor, ARCHITECT/OWNER may permit repair or patching. In latter case, immediately after removing forms, inspect all concrete surfaces, interior and exterior. Patch all honeycombs, voids, stone pockets and holes at once, before concrete is thoroughly dry. Chip away defective areas to depth of not less than one (1) inch, with edges perpendicular to surface. Wet areas to be patched and a space at least 6 inches wide entirely surrounding it, to prevent absorption of water from patching mortar. Apply compatible bonding agent and allow to dry. Use patching material of same proportions as used for concrete, except omit coarse aggregate.

3.08 CURING AND PROTECTION

- A. General: protect all freshly placed concrete from elements and from damage or defacement due to building operations, or passerby.
- B. Top Surfaces: as soon as concrete has hardened sufficiently to prevent damage to it cover top surface with one of the following materials:
 - 1. A vapor barrier such as sisal kraft paper or polyethylene plastic.
 - 2. A liquid curing compound such as "Cure Seal" by Concrete Service Co., Sonosil (curing), or as approved, free from oil, paraffin, silicone, grease, or wax. The coating is to retain 95% of original mixing water after 7 days when tested in accordance with ASTM 156-40T. Apply at the rate of one gallon per 200 sq. ft. The coating is in no way to adversely affect subsequent painting, application of hardener, or flooring adhesive. If sand or a vapor barrier is used, keep continually wet by sprinkling with water for at least 7 days.
 - 3. Apply floor hardener on interior slabs scheduled to be left exposed with no other scheduled finish.
- C. Other Surfaces: leave forms in place and keep wet for as long as possible to aid in curing. As soon as they are removed, cure bottoms, tops and sides of all concrete surfaces by coating with an application of liquid curing compound as specified above.

3.09 WORK COORDINATION BETWEEN GENERAL CONTRACTOR AND DIVISION 15 & 16

- A. It is intended that the general CONTRACTOR will be responsible for providing and installing all concrete work including mechanical and electrical equipment bases, inertia blocks, gravity pads and the like, except as noted in paragraph 3.09, B hereinafter.

Unless specifically dimensioned or described in the plans and/or specifications, sizes of these items are to be verified and carefully coordinated with the trades providing and installing the equipment. Anchoring and fastening devices for the equipment are to be provided by the trades supplying such equipment and jointly set into the concrete work to assure accurate placement. Any necessary modifications to such concrete work caused by approved alternative equipment will be the joint responsibility of the general CONTRACTOR and related subcontractor as approved by ARCHITECT and at no additional cost to the OWNER.

- B. Concrete work for outside underground utility trades is assumed to be provided and installed by those respective trades where this work will be fully concealed. (Examples are manholes, grease traps and septic tanks, ductbanks, underground storage tank anchor pads, thrust blocks and the like.)
- C. Backfilling and compaction of all disturbed areas caused by these trades utility line installations under slabs and footings and beyond building lines shall conform to Division 2 requirements and shall be the responsibility of the trade involved as designated by the CONTRACTOR.

END OF SECTION 03000

SECTION 03300 / CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 03000 and other sections of this division.

PART 2 - PRODUCTS

- 2.01 All concrete shall develop a minimum ultimate strength of design mix in 28 days. This refers to concrete on the job, in the forms, at its final designated position.

PART 3 - EXECUTION

3.01 CONCRETE PROPORTIONING

- A. Refer to Section 03000/Concrete, General.

3.02 CONCRETE MIXING

- A. Refer to Section 03000/Concrete, General.

3.03 FORMWORK

- A. General

1. Refer to Section 03000/Concrete, General.
2. See drawings for configuration of cast-in-place concrete and provide exterior construction forms to produce this configuration.

- B. Foundations and Footings

1. Forming: all footings are to be formed to size shown on drawings. Earth forms will not be allowed.
2. Filling under Footings: should excavations be carried to uneven levels or deeper than called for, the CONTRACTOR shall fill same with concrete.
3. Footings Less Than Shown: if excavations have been ordered held at less depth than shown, give OWNER a credit for concrete and excavation saved.
4. Openings For Pipes: leave openings for all pipes, drains, etc., where shown or required. Later, caulk pipes in place at wall penetrations and grout slab penetrations.
5. Water In Footings: no standing water is permitted in excavations for footings when the concrete is placed. Keep water from excavation until concrete has attained initial set.

C. Form Construction

1. Set form lumber horizontal or vertical as conditions require. Lumber and plywood once used in forms to have loose nails withdrawn, and surfaces in contact with concrete to be thoroughly cleaned before reuse.
2. Before concrete is placed, thoroughly wet inside of forms (and earth at bottom of footings) with water, or coat with non-staining mineral oil or other material approved by ARCHITECT. Where any coating other than water is used, apply before reinforcement is placed.
3. Trade's Inserts Set Into Formwork: assist other trades to install their work, as Section 03000/Concrete, General. If placing of inserts disrupts proper placement, endangers shear or bearing areas, or otherwise impairs structural members, consult ARCHITECT for instructions.

D. Form Removal

1. Remove all forms and shoring completely and cut off or remove all form ties. Plug all holes resulting from form ties with appropriate matching manufactured plugs.
2. Have competent foreman in charge of form removal and do work in such manner that new concrete is not damaged by such removal or by dropping of heavy pieces of forms. Remove formwork not supporting weight of concrete, such as sides of beams, wall, columns and similar parts of work not less than 24 hours after placing concrete.
3. CONTRACTOR is fully responsible for removal of forms, but ARCHITECT'S or OWNER'S inspector has right to prohibit removal of any form or shoring when he considers it unsafe. In no case shall supporting forms or shoring be removed until members have acquired sufficient strength to safely support their weight and load thereon.
4. Removal of forms for beam soffits is prohibited unless concrete is 7 days old, has been properly cured, and is back shored for 14 additional days with minimum of 3 shores per span of beam and/or girder. At the CONTRACTOR'S option, he may pay for and obtain a cylinder to show the concrete meets the design strength after the 7 day period.
5. Removal of forms of beam soffits is prohibited unless concrete, as evidenced by compressive tests, has gained 75% of specified strength. Place back shores as specified above.
6. Formwork for columns, walls, sides of beams, and other parts not supporting the weight of concrete may be removed after 3 days, if concrete has hardened sufficiently to resist damage from removal operations, particularly when form ties will be bent by removal operations.
7. If no loads, construction or otherwise, are superimposed until after concrete gains its specified strength, back shoring may be omitted.
8. Should loads greater than design loads be superimposed, back shoring is required which is sufficient to carry superimposed loads.

9. All footing or other forms installed below grade are to be fully removed and form areas properly backfilled and compacted. Any wood grade stakes are to be removed.

3.04 STEEL HANDLING AND PLACING

- A. Refer to Section 03000/Concrete, General.

3.05 POLYETHYLENE VAPOR/MOISTURE BARRIER

- A. Install over compacted fill as outlined in Section 03000/Concrete, General. Place immediately after completion of soil poisoning, and not more than 2 hours thereafter under all floor slabs on earth.

3.06 CONSTRUCTION JOINTS

- A. Locate construction joints where anticipated stresses are low.
- B. Before placing new material against the completed side of the joint, clean the joint thoroughly and specify a bonding agent, mortar, lean grout, etc., as required to meet the definition and function of a construction joint.
- C. Structural reinforcing shall be 100% continuous across the joint.
- D. Where applicable, waterstops shall be provided for watertightness.
- E. General: make construction joints where shown on drawings. Where not shown or specified, place at points so as to least impair strength and appearance of structure. For floor slab construction joints, form edge true and level. Install smooth dowels through form as indicated, to control differential slab displacement between adjacent pours. ARCHITECT requires CONTRACTOR to jointly consult on placement, prior to concrete pours.
- F. Integral Pours: pour all beams in one pour with no joints, terminating only at a planned and approved control joint.
- G. Bonding Fresh and Hardened Cement: retighten forms before depositing fresh concrete on or against concrete which has set. Roughen surface of set concrete: clean of foreign matter and laitance thoroughly and place new concrete. Provisions of this article do not apply to joints designated as expansion and/or control joints at which locations no bond of old to new concrete is to be made.

3.07 CONTROL/EXPANSION JOINTS

- A. Control/Expansion joints in concrete shall be installed according to one of the following methods:

1. Refer to Section 03000/Concrete, General for additional requirements.
 2. Pre-manufactured joint filler cast-in-place. The joint filler shall be closed cell polyethylene foam construction "zip form" with easy tear off strip to create reveal for sealant. Refer to Section 07920/Sealants, Caulking and Seals for sealants.
 3. Saw-cutting. To be effective, saw-cutting must occur as soon as possible after concrete placement. Many factors influence the timing of saw-cutting, including weather conditions, concrete mix design, curing, and time of placement. However, the following general guidelines shall apply:
 - a. Hot/dry conditions. Saw-cut within 4- 12 hours.
 - b. Cool moist conditions. Saw-cut within 24 hours.
- B. Control/Expansion joints in concrete shall be provided at the following locations:
1. At major changes in wall heights.
 2. At changes in wall thickness.
 3. Where concrete wall abuts an exterior wall.
- C. Locate control/expansion joints to accommodate anticipated contraction, usually at a set spacing of between 15 - 30 feet.
- D. The spacing of joints is contingent on the material's capacity to sustain expansion without damage to the concrete or masonry (usually based on the amount of reinforcing).
- E. Maximum structural reinforcing shall be 50% continuous across the joint. Terminate non-continuous reinforcing a minimum of two (2) inches from the faces of the joint.
- F. Smooth reinforcing dowels properly detailed can be provided to prevent movement out of the plane of the vertical surface and for shear transfer across the joint if the normal reinforcing detailed is not adequate.
- G. The minimum control joint depth shall be 3/4 - 1 inch. Refer to Section 03000/Concrete, General.
- H. Control joints shall be sealed or as detailed in Architectural/Engineering drawings.
- I. Where applicable, waterstops shall be provided for watertightness.

3.08 CONCRETE PLACING

- A. Refer to Section 03000/Concrete, General.

- B. Cooperate with (OWNER'S) concrete testing laboratory during the concrete testing. Before beginning any concrete operation, proposed unit of pour is to be approved by ARCHITECT/OWNER, and entire unit is to be completed during concrete operation.
- C. Preparation: Place no concrete until steel has been inspected and approved by ARCHITECT/OWNER. Clean all forms free from shavings and other debris before placing concrete. Place no concrete until cleaning of forms has been inspected and approved by ARCHITECT. Prior to pour, insure that other trades' work set into concrete is accurately placed, and secured against movement during pour.

D. Interior Floor Slabs on Earth Fill

- 1. Refer to Paragraph 3.07 this section for Control/Expansion Joints.
- 2. Screed all floor slabs carefully and accurately to level, or to slopes and grades shown on drawings. Form all depressed slabs as shown on drawings. Locate so wall dimensions shown on architectural drawings will conform with edges of depression. Form all ridges and valleys to smooth plane and straight line. Curbs may be formed with slab pour if CONTRACTOR can conform to curb shape.

Set drain elevation depressed below finished slab elevation as listed below to provide proper slope to drain:

DEPRESSION	RADIUS OF AREA DRAINED
1/2"	5'-0"
3/4"	10'-0"
1"	15'-0"
1-1/4"	20'-0"
1-1/2"	25'-0"

E. Concrete Columns, Lintels and Bond Beams Poured Into/Onto Masonry

- 1. Insure all masonry work is complete, with all vertical and horizontal reinforcement properly extended into concrete space, and masonry cured sufficiently to bear stress of concrete pour without cracking of any masonry joints.
- 2. Noticeably cracked masonry joints adjoining concrete, either before or after pour, is cause for CONTRACTOR to replace work, if so directed in writing by ARCHITECT.
- 3. Take care to remove all evidences of pour from surrounding masonry walls and concrete floors.
- 4. Take extreme care during form removal not to spall or otherwise damage any work exposed as either interior or exterior finish.

F. Refer to Section 03000/Concrete, General for compacting requirements.

- G. Refer to Section 03000/Concrete, General for Repair and Patching. Insure all exposed patches conform to appearance of adjacent unpatched work, as judged by ARCHITECT.
- H. Where Welded Wire fabric is used, castle supports at 3'-0" O.C. minimum shall be provided.

3.09 CONCRETE FINISHING

- A. Screed topping and concrete to true level surface, with strike board, and work with wooden floats to thoroughly compact surface. Avoid such working as will bring water and fine particles to surface. Do no dusting of surface with cement or other material. Power floats permit use of stiffer mixes, produce better results, and are preferred. Surface grinding is required, in event rain causes damage to any floor finish. Refer to Section 09000/Finishes, General/Ledgend, to verify extent and locations of various finished concrete surfaces in building.

B. Floors

1. Slabs Covered with Resilient Tile and Carpet Flooring: screed top surface of concrete to true level. Finish with steel trowel. Troweling is to be sufficient to smooth surface without making it slick. All trowel marks to be erased and surface left level and true to horizontal plane, free of waves, humps, depressions and other irregularities.
2. Slabs after placement and finishing are to produce a uniformly true level surface which does not exceed 1/8" variation up or down in any 10 foot direction when tested with a straight edge or by instruments and the 1/8" allowable tolerance up and down shall not both occur in a single 10'-0" distance. In addition, a maximum deviation of 1/4" (up or down) from true level shall be allowed across any single building area.
Slabs found to exceed the level tolerance of 1/8" in 10'-0" are to have high spots ground down and low spots filled with an approved leveling compound. If in the opinion of the ARCHITECT tolerances are not met satisfactorily and that grinding and filling produce an unacceptable surface, the slab in question is to be removed and replaced properly, at no additional cost to the OWNER.
3. Exposed Slabs: finish to smooth uniform surface. Use light broom for all exterior surfaces, and smooth steel trowel finish for all interior surfaces. Fill all depressions and grind all fins or irregular surfaces.
4. Depressed Slabs Receiving Ceramic or Quarry Tile Finish: lightly scarify to bond to Portland cement setting bed.

END OF SECTION 03300

SECTION 04000 / MASONRY, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 4. Provisions of this Section 04000 also apply to all sections of this Division 4. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD MEASUREMENTS, COORDINATION AND SAFE PRACTICES

- A. Furnish location information for all required dowels to be set in foundations and verify location before concrete is placed.
- B. Verify all field dimensions to insure close fit with work of other trades.
- C. Coordinate and install this division's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.
- D. Check bearing surfaces for proper grade and lines before starting work. Report discrepancies to ARCHITECT for decision, prior to commencement of work.
- E. Obtain exact sizes and locations of openings required by other trades; and properly build around same.
- F. Build-in all required items as furnished by others.
- G. Safety during construction is the sole responsibility of the CONTRACTOR. Published standards (OSHA, etc.) and industry standards of good practices are to be followed.

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 3:	Concrete
Division 5:	Metals
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows
Division 9:	Finishes
Division 15:	Mechanical
Division 16:	Electrical

1.04 DELIVERY AND PROTECTION OF MATERIALS

- A. General: Handle all masonry units by competent careful workmen and by such methods as will prevent damage by chipping, mutilation or soiling. Avoid dumping from wheelbarrows and trucks and other rough handling.

- B. Veneer Masonry Units: Ship palletized. Break no pallets until each pallet is required for installation on building. Stack pallets neatly, on leveled supports. Covering of unbroken pallets is not required.
- C. Concrete Masonry Products: Stack on planking with cells placed horizontally, keeping units freely ventilated. Deliver all units in dry condition. Keep dry during storage on job, and until 24 hours after they are laid in wall. If covered storage space is unavailable in building, cover with layer of polyethylene waterproof covering. Covering with loose sheets of felt or sisalkraft paper is not permitted.
- D. Mortar Products: Deliver materials dry. Keep dry until mixed.

1.05 WEATHER CONDITIONS

- A. During rainy weather, do all work only under cover. Do no masonry work whenever temperature drops below 40 deg. F. Protect all newly laid masonry from below 40 deg. F. temperatures for 36 hours after installation by enclosing and heating.

1.06 WORK NOT IN PROGRESS

- A. When work is stopped, whenever possible, bring continuous portions of walls to same level before stopping work. Keep tops of walls covered with non-staining non-absorbing waterproof covering. Extend covering down over two courses, on both sides. When work is resumed, clean top surfaces of loose mortar. Wet brick units thoroughly before resuming work.

PART 2 - PRODUCTS

2.01 Mortar Materials: (Use products of domestic mfg.)

Portland Cement: Conform to ASTM C150, Type I or II

Masonry Cement: Conform to ASTM C91, Type II

Hydrated Lime: Conform to ASTM C-207, Type N

Sand: Conform to ASTM C-144, and pass a #16 mesh sieve

Water: Clean and fit to drink.

Waterproofing Admixtures: Use one of the following

- (1) Anti-Hydro Company "Anti-Hydro"
- (2) A. C. Horn "Hydratite Plus"
- (3) Toch Brothers "RIW Toxment"
- (4) Hydrocide "Powder"

2.02 STEEL REINFORCEMENT

- A. Joint Reinforcing shall be (Dur-O-Wal or equivalent products of AA Wire Products Co., Hohmann & Barnard, Inc., National Wire.): 9 gauge deformed welded wire. Truss type, or ladder type is approved for all single wythe masonry walls, width set individually for each wall width. Provide "Ladur-Eye" type for all cavity wall locations. Provide #6 rectangular (D/A 515) pintle tie sections sized for selected veneer wythes and cavity width. Use hot-dipped galvanized members ASTM A153 -Class B2, 1.50 ounce zinc coating.
1. Provide prefabricated corners and tee sections (or approved field made method) to provide continuity at corners and intersections as required by part 3.22 herein. Corners size 30" x 30", tee 30" x 30".
- B. Reinforcing Bars: conform to ASTM A-615 "Deformed Billet Steel Bars for Concrete Reinforcement" grade 60. Bars to be free from flaws, cracks or other defects of rolling, true size and shape, and free of loose scales of rust. Bars to be free from heavy dirt, paint, grease, oil, or other destroyers of bond.
- C. Steel stirrups shall conform to ASTM A82, FY-60 KSI minimum. Stirrups shall be 5/16" diameter smooth rod and be formed to manufacturer's standard profile.

2.03 PRECAST LINTELS

- A. Refer to Section 04200 / Concrete Masonry.
- B. Reinforcing and grouting shall be as detailed on structural drawings.

2.04 MASONRY WALL CLEANER

- A. "Sure-Kleen 600", or as approved.

2.05 MORTAR PREPARATION

- A. Mortar Types and Proportions: see other sections of this division.
- B. **Measuring and Mixing:** Measure ingredients accurately using measuring devices approved by the ARCHITECT.

Mix by machine, and as approved by ARCHITECT. Hand mixing is permitted only in small quantities. For grouting and pointing, mix as stiff as can be worked into joints.

1. Place one half of sand and water in mixer, then add cement, lime, remainder of sand and water. Mechanically mix ingredients in batch mixer for period of not less than three (3) minutes. Discard all mortar which remains unused 1 ½ hours after mixing time. Do not use materials containing lime where there is a possibility of "bleeding" thru finishes applied over masonry.

2.06 WALL CONTROL/EXPANSION JOINTS

- A. Refer to Section 07920/Sealants, Caulking and Seals.
- B. Provided are general guidelines for the locations and sizes of joints. However, jointing design is dependent on the materials selected, the makeup of the materials, environmental conditions, and the architectural/structural design and detailing. Factors to be considered are:
1. Temperature effects.
 2. Shrinkage effects.
 3. Creep.
 4. Stresses caused by the architectural/structural design.
 5. Moisture effects.
- C. All expansion and contraction joints shall be shown and detailed by the Engineer or Architect.
1. Expansion joints in masonry shall be provided at the following locations:
 - a. Below shelf angles or structural frames supporting masonry walls or panels.
 - b. Above masonry walls or panels abutting structural frames.
 - c. At major changes in wall heights.
 - d. Near wall intersections.
 - e. At regular intervals, not to exceed 25'-0."
 2. Contraction joints in masonry shall be provided at the following locations:
 - a. At major changes in wall heights.
 - b. At changes in wall thickness.
 - c. Above joints in foundations.
 - d. At columns and pilasters.
 - e. At one or both sides of wall openings.
 - f. Near wall intersections.
- D. Critical construction joints shall be planned for and shown on the drawings, with guidelines for other construction joints specified in Section 03300/Cast-In-Place Concrete, to be prepared as a part of the contract documents. Other proposed construction joints as specified in Section 03300 shall be submitted by the Contractor to the Engineer for review and approval during construction.

PART 3 - EXECUTION

3.01 LAYOUT

- A. Lay all masonry by workmen who are skilled in their trade. Lay in bonding required in other sections of this division with joints plumb and courses straight. Course interior wall out to match exterior wall coursing. Shim base course or cut if necessary to course out. Mark location of all reinforcing dowels (filled cells) plainly on floor or lowest course of block.

3.02 EXECUTION

- A. Lay-up: do not move masonry units after they are mortared in place. If adjustments are required, remove units and replace using fresh mortar. Lay all masonry units with 3/8" maximum width full head and bed joints in both horizontal and vertical joints.
- B. Pattern Bond: lay CMU wall units in common-running bond with vertical joints in each course centered on units in courses above and below unless otherwise indicated. Bond and interlock each course at corners and at intersections. Do not interlock bearing walls with non bearing partitions. Use special-shaped units where shown, and as required for corners, jambs, sash, control joints, lintels, bond beams and other special conditions.
- C. Maintain vertical continuity of cell cavities. Cells which are to be reinforced and grouted to provide minimum clear dimension indicated and to provide minimum clearance and grout coverage for vertical reinforcement bars. Keep cavities free of mortar. Solidly bed webs in mortar where adjacent to reinforced cores or cells.
- D. Where horizontal reinforced beams (bond beams) are shown, use special units or modify regular units to allow for placement of continuous horizontal reinforcement bars. Place cavity cups in mortar joints under bond beam courses over cells of non-reinforced masonry.
- E. Joint Reinforcing: set in all concrete masonry walls, 6" thick and thicker, including ties to all brick veneer. Lay at 16" o.c. vertical (unless noted otherwise on drawings) in all exterior and interior walls in continuous horizontal courses in full mortar beds, and to include joint reinforcing at 1st and 2nd masonry courses above and below wall openings, building in reinforcing as work progresses. Reinforcing shall extend a minimum of 24" into wall from edge of each opening. Lay in all horizontally-bonded masonry walls. Comply with Florida Building Code, using the specified prefabricated tees and corners for all intersections of wall and all inside and outside corners. Minimum end laps shall be as specified in the structural drawings.
- F. Setting Iron Work: set all loose lintels, anchors, sleeves, inserts, etc. in exact locations; true and level in full beds of mortar set as a part of masonry work, not before. Lay brick to bear against all anchors to prevent slippage. Completely cover all anchors and other similar work with mortar or grout.
- G. Setting Cavity/Veneer Flashings: refer to details on drawings and provide thru wall flashing continuous at all ledger angles, loose lintels, under all window sills and other locations as shown on drawings or required to expel moisture to outside. Coordinate installation of flashings with other trades to insure that top edge of flashing is fully sealed in a permanent manner. All laps and repairs shall be 6" lap and sealed with sealant.
- H. Setting Grounds: build all grounds and nailing blocks required for fastening of all trim and other finish, into wall. Install nailing blocks for fastening of grounds, wood trim, and other materials required to be fastened to walls.

- I. Metal Frames: set frames true, plumb, level and out of wind. Use a minimum of 4 wire type anchors on each side of the door frame. Anchors should be installed at hinge areas on frame. Anchors should be designed so that wire will be completely encased in the concrete grout and/or mortar joints. Fasten door frame to floor with two pins on each side. Build masonry tight to frames. Solidly fill all voids and grout all jambs and heads **including intermediate mullions**. Build frames into masonry as work progresses. Pieces shorter than 4 inches are not permitted. Rake all mortar joints at frames $\pm 1/2$ " deep, for caulked joint specified in other section(s).
- J. Cutting and Chases: avoid cutting of masonry units. Where it cannot be avoided, cut with a masonry saw in neat and regular manner, with all edges true, and no exposed faces chipped/spalled. Cut masonry carefully and accurately to fit and conceal all heating, plumbing and electrical pipes, conduits, and ductwork; and fit neatly around all openings, equipment, and access doors and panels. Coordinate all masonry work with respective trades. Leave chases in walls as required by other trades.
- K. Setting of Lintels: install precast and/or composite steel lintels over all openings. Set lintels in place with joints pointed to match adjacent work. Build in lintels, reinforce and fill with structural concrete grout as work progresses. Refer to Section 04200 / Concrete Masonry.
- L. Placing Grout: Refer to Section 04200 / Concrete Masonry.

M. MASONRY WALL CONTROL/EXPANSION JOINTS

- 1. Locate expansion joints to accommodate anticipated expansion at abrupt changes in the structure, where butting up to existing structures, and at least one corner of windows, doors, and other rectangular openings.
- 2. The spacing of joints shall be contingent on the material's capacity to sustain expansion without damage to the concrete or masonry (usually based on the amount of reinforcing).
- 3. Structural reinforcing shall be discontinuous across the joint. Terminate reinforcing a minimum of two (2) inches from the faces of the joint.
- 4. Smooth reinforcing dowels, properly detailed, shall be provided to prevent movement out of the plane of the vertical surface and to provide for shear transfer (as required).
- 5. The minimum expansion joint width shall be 1/4".
- 6. Expansion joints shall be sealed. Refer to Section 07920/Caulking.
- 7. Where applicable, waterstops shall be provided for watertightness.

3.03 POINTING AND CLEANING

- A. After jointing and pointing is completed and joints set up hard, clean all exposed concrete masonry surfaces with clear water and stiff fiber brushes. Leave concrete masonry clean, free of mortar daubs and with tight mortar joints throughout.

3.04 MASONRY WALL HEIGHTS

- A. Refer to wall sections, elevations and reflected ceiling plan and other drawings to verify all wall heights. Adequately brace and support walls in place.

3.05 JOINTS AT OVERHEAD STRUCTURE

- A. At all joints where non-bearing masonry walls are laid to underside or edge of any structural slab, joist, or beam allow 1/2" wide open unmortared joint for possible deflection. Firmly pack joint with oakum or glass fiber batt insulation material. At fire rated locations use an approved U.L. rated material.

END OF SECTION 04000

SECTION 04200 / CONCRETE MASONRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 04000 and other sections of this division.

1.02 APPLICABLE CODES AND STANDARDS

- A. Florida Building Code - latest edition.
Building Code Requirements for Masonry Structures (ACI 530 / ASCE 5 / TMS 402).
Specification for Masonry Structures (ACI 530.1 / ASCE 6 / TMS 602). Latest editions.

PART 2 - PRODUCTS

2.01 MORTAR MATERIALS

- A. Refer to Section 04000/Masonry, General.

2.02 STEEL REINFORCEMENT

- A. Refer to Section 04000/Masonry, General.

2.03 MASONRY WALL CLEANERS

- A. Refer to Section 04000/Masonry, General.

2.04 MASONRY WALL CONTROL EXPANSION JOINTS

- A. Refer to Section 04000/Masonry, General.

2.05 CONCRETE MASONRY UNITS

A. STANDARD WEIGHT CONCRETE MASONRY UNITS

1. Conform to ASTM C90-01a, grade "N", Type II, 8" x 16" modular units, thickness as indicated on the drawings, minimum 1" face shells. Units 8" or more thick must have minimum 1 1/4" face shells. Aggregate is to be gravel, air-cooled blast furnace slag, or crushed stone. Units are to be acceptable visually, structurally, and free from undesirable defects resulting from either manufacturer or handling, as judged by ARCHITECT.
The design compressive strength of the masonry, $f_m = 1500$ psi minimum (1900 PSI on net area).
2. Units which have not been subjected to an approved method of steam curing must be stored for 30 days prior to use.
3. Sound transmission loss through 4" unpainted unplastered wall, must not measure less than 36 decibels.

4. Linear drying shrinkage must not be greater than 0.04% when tested as prescribed by National Bureau of Standards.
5. Moisture content at time of delivery must not exceed 75% of relative humidity, as measured by approved methods of Portland Cement Association.
6. Standard brick sized units are to be solid, but otherwise conform to these paragraphs.

B. ACCESSORY UNITS

1. 8" x 16" x 8" thick header block at locations indicated.
2. 8" x 16" knock out cut-lintel units, thickness as indicated.
3. Furnish regular corner, half, and half corner units; and all lintel and half block units as required by conditions shown on architectural and structural drawings.

2.06 GROUT MATERIALS

- A. Refer to Sections 03000/Concrete, General and 03300/Cast-In-Place Concrete.

2.07 MORTAR PREPARATION

- A. Conform to ASTM C270 for procedures. Proportion as Florida Building Code, Type S, for concrete masonry, use the one bag mix as follows:
3 bags high strength masonry cement
63 shovels sand (21 shovels per bag)

2.08 PRECAST WINDOW SILLS

- A. "Thin Sill" configuration by Cast-Crete Corp. or approved equal.

2.09 PRECAST LINTELS

- A. High strength precast and prestressed concrete lintels designed to be used unfilled or filled to form a composite reinforced concrete beam using concrete masonry units equal to 'Cast-Crete'.

PART 3 - EXECUTION

3.01 GENERAL

- A. Refer to Section 04000/Masonry, General.
- B. Conform to referenced codes.
- C. No wetting of concrete masonry units is permitted. All openings in walls to have concrete-filled reinforced lintels, unless otherwise indicated on drawings.
- D. Refer to Section 04000/Masonry, General for sample panel requirement.

3.02 COURSING AND JOINTING

- A. Concrete Masonry - Lay all units plumb and true to line, with uniform 3/8" joints, and in running bond. Joints wider than 3/8" will be rejected.
Lay to course out at 8 inch centers.
- B. Strike all joints flush, after mortar has partially set, and sack or float walls head joints to give smooth uniform appearance and tool all horizontal joints concave where walls are to be left exposed. At stucco or hard tile locations delete tooling of joints.

3.03 LAYING MASONRY UNITS

- A. For bonding masonry to concrete foundation or floor slabs, concrete to be clean with laitance removed and aggregate exposed.
- B. Lay starting joint with full mortar coverage on the joint; except that areas where grout occurs are to be free of mortar so that grout will contact concrete.
- C. Units shall be laid to preserve vertical continuity of cells to be filled. The vertical alignment shall be sufficient to maintain a clean, unobstructed flue measuring not less than 3"x3". Place no units or cut pieces of masonry less than 4" nominal.
- D. In placing mortar in horizontal joints, completely cover the face shells of each unit with mortar. Solidly fill all head joints to the thickness of the face shell and shove units tightly in place. Solidly bed in mortar all head and cross web bed joints adjacent to cells to be grouted to prevent leakage of mortar.
- E. Lay designated walls in two separate wythes, with insulated cavity as indicated.
- F. Anchor and bond intersecting masonry walls with 50% masonry bond, except as noted otherwise on drawings.
- G. Install precast and/or composite steel lintels over all openings. Set lintels in place with joints pointed to match adjacent work. Build in lintels, reinforce and fill with structural concrete grout as work progresses.
 - 1. Steel lintels shall be provided with 4" minimum structural bearing each side of openings.
 - 2. Pre-cast concrete lintels shall be provided with 8" minimum structural bearing each side of openings.
 - 3. Typical steel and cut masonry lintels, even if not shown on structural or architectural drawings, shall be reinforced with a minimum of 1 #5 bar continuous (extend 12" minimum each end) and grouted solid.
 - 4. Concrete masonry work shall not proceed beyond the elevation of door and window headers until all vertical reinforced cells and reinforced horizontal lintels have been grouted.

- H. At hard tile locations take extra care in laying units such that wall will be suitable for thinset tile installation directly to wall. Grind any unevenness judged unacceptable by ARCHITECT.
- I. Install wall control/expansion joints at 20 ft. o.c. and/or as shown and detailed on architectural/engineering drawings. Refer to Sections 04000/Masonry, General and 07920/Sealants, Caulking and Seals for additional requirements.

3.04 CUTTING

- A. Do all cutting of block with carborundum or equivalent saw. To facilitate proper coursing, half blocks may be used to reduce amount of cutting. No masonry will be permitted to be used if not cut properly. Masonry broken by "blows" will be replaced, even if after the wall has been completed.

3.05 PLACING STEEL REINFORCEMENT

- A. Reinforcing steel to be straight, except for bends around corners and as detailed otherwise on drawings. **Lap reinforcing steel as shown on structural drawings.** Place vertical bars in exact center of cells, or as otherwise indicated, and hold in position at top and bottom and at intervals not to exceed 96 bar diameters. Vertical cavity rebars to be run in maximum possible lengths, 5'-0" minimum, **using low lift grouting procedures.**
- B. Completely embed joint reinforcement in mortar or grout. Lap splices 6 inches minimum at all locations.
- C. Lap dowels in footings to vertical steel in masonry columns by placing in aligned cells, then grouting cells to obtain bonded lap between wall and footings.
- D. Reinforce and grout all reinforced horizontal block courses as wall is built-up.

3.06 DOUBLE WYTHE MASONRY CAVITY WALL INSULATION

- A. Refer to Section 07210/Thermal and Sound Insulation.

3.07 PLACING GROUT

- A. Insure all walls are cured minimum of three (3) days, and are solid, or braced against movement, during grouting. No one is to "walk" the walls. Notify ARCHITECT minimum of 24 hours or one full working day before start of each grouting operation.
- B. **CONTRACTOR is to use only low-lift grouting procedure unless otherwise authorized by ARCHITECT and OWNER.**
 - 1. Grout lifts that exceed 5'-0" must have prior approval of the OWNER. Contractor shall neatly saw-cut cleanout/inspection holes or provide manufactured inspection blocks at the bottom of all reinforced vertical cells for grout lifts greater than 5'-0".

- C. Grouting of reinforced vertical cells shall occur at intervals to allow grouting of all composite steel and/or precast lintels. Concrete masonry shall not be installed above lintels prior to grouting of all lintels.
- D. Consolidate all grout at time of pouring by puddling or vibrating and then reconsolidate by again puddling later before plasticity is lost. Stop grout pour 1 1/2" below top unit to form construction joint for subsequent pours. Neatly sawcut and provide cleanout/inspection hole at the bottom of all cells to be filled with grout when pour, if authorized, exceeds 5'-0" in height.
- E. CONTRACTOR has sole responsibility of completing masonry and grouting operations necessary to construct a sound load-bearing crack-free wall.
- F. Properly cure grout placed in horizontal reinforced precast concrete lintels minimum seven (7) days.

3.08 **All masonry walls, if not receiving a formed and poured concrete beam at top and even if not shown on structural or architectural drawings, are to receive as a minimum a top knockout lintel block course, reinforced with 1 #5 bar continuous and filled with concrete grout.**

3.09 WATERPROOFING

- A. Refer to Division 7 for waterproof coating installed over concrete and masonry surfaces behind face veneer and elsewhere.
- B. Masonry CONTRACTOR is responsible for providing a uniformly regular surface prior to application of coating, with full and tight joints between concrete block units and around all brick ties or other embedded items. Remove projecting mortar and fill all joints and voids.

3.10 WALL FLASHING

- A. Refer to Section 04000/Masonry, General for installation of wall flashings.

3.11 PRECAST WINDOW SILLS

- A. Install in maximum available lengths, set in full mortar bed. Thin sills are prohibited.

3.12 POINTING AND CLEANING

- A. Refer to Section 04000/Masonry, General.

END OF SECTION 04200

SECTION 05000 / METALS, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 5. Provisions of this Section 05000 also apply to all sections of this Division 5. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades.
- B. Coordinate and install this division's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.
- C. Verify extent of all items to be furnished including incidental items related to or necessary for a complete installation, their required shapes and sizes, and sequence with which these items are to be furnished and installed. Furnish to jobsite sorted, tagged, and grouped according to use.

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 2:	Site Work
Division 3:	Concrete
Division 4:	Masonry
Division 6:	Wood and Plastic Laminates
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows
Division 9:	Finishes
Division 10:	Specialties
Division 11:	Equipment
Division 13:	Special Construction
Division 15:	Mechanical
Division 16:	Electrical

1.04 APPLICABLE TECHNICAL CODES AND STANDARDS

- A. Conform to applicable provisions of latest editions of following reference codes, except as specifically modified hereinafter.
 - 1. American Institute of Steel Construction "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings".
 - 2. American Institute of Steel Construction "Specification For The Design of Cold Formed Steel Structural Members".
 - 3. American Welding Society - D1.1 "Structural Welding Code".

4. American Welding Society - D1.3 "Structural Welding Code - Sheet Steel".
5. Steel Structures Painting Council.
6. Metal Roof Deck Technical Institute Specification and Load Tables for Three-Span Ribbed Deck, latest edition.
7. Steel Deck Institute, "Design Manual For Floor Decks and Roof Decks".
8. **Furnish affidavit to ARCHITECT certifying materials delivered to jobsite meet requirements specified. Certification does not relieve CONTRACTOR of responsibility of complying with all requirements herein.**

1.05 SPECIAL MATERIAL DELIVERY AND HANDLING INSTRUCTIONS

- A. Protect all materials from weather, prior to and during fabrication, and before erection. Do not store materials directly on ground at any time. Insure that all abrasions in shop painted work are immediately painted with identical prime paint to insure no rusting of steel work.
- 1.06 Submit shop drawings in accordance with Section 01330/Shop Drawings Requirements of this specification.

PART 2 - PRODUCTS

2.01 STEEL ITEMS

- A. Structural Steel Beams, Plates, Channels, Angles and Bars: conform to ASTM A992, "Structural Steel", latest edition.
- B. Steel for Galvanized Corrugated Metal Deck Units - ASTM A653, Grade A.
- C. Galvanizing - ASTM A525, G60.
- D. Round, Square and Rectangular Steel Tubing: conform to ASTM A-500, "Hot-Formed Welded and Seamless Carbon Steel Structural Tubing", latest edition.
- E. Sheet Steel: prime grade cold-rolled steel, properly annealed, process leveled, with smooth clean surfaces.
- F. Bolts, Nuts and Washers: conform to ASTM A-307, "Low-Carbon Steel Externally and Internally Threaded Standard Fasteners", latest edition. ASTM A-325, "High Strength Bolts for Structural Steel Joints", including suitable nuts and plain hardened washers.
- G. Anchors, Expansion Bolts and Shields and Strap: furnish and install all necessary items required for this contract which in judgement of ARCHITECT are required, whether or not each item is specifically described in contract documents. Expansion bolts and shields must be galvanized or of non-ferrous metals, sized suitable for work to be anchored, and used where built-in place anchors are not practicable. All bolts furnished with nuts and washers. Materials normally to be identical to material being fastened.
- H. Welding Electrodes: conform to ASTM A-233, Type E 70XX electrodes, or otherwise

required for joint condition.

- I. Other Steel Items: conform to ASTM A-36, "Steel for Bridges and Buildings", latest edition.

2.02 PRIMER PAINT

- A. Zinc chromate, iron oxide, rust inhibitive metal primer, meeting SSPC P-15-68T, Type I and TT-P-63C.
- B. Electrolysis Prevention Between Dissimilar Metals: aluminum-pigmented asphalt paint produced by regionally recognized producer.
- C. Primer at spray-applied fire protection locations shall have been tested and reported by Underwriters Laboratories to be in compatible compliance.

PART 3 - EXECUTION

- 3.01 Make and erect all work square, plumb, straight and true. Fit tightly, firm, and secure against designed stresses and weights of supported materials and building occupants.
- 3.02 Furnish all supplementary parts necessary to complete each item, even though such parts are not definitely shown or specified. Include all anchors, sockets, pipe sleeves, tabs, etc., for securing work.
- 3.03 FABRICATION
 - A. Insure all material has all surfaces cleaned per the AISC Code requirements. Remove all dirt, rust, grease, mill scale, etc. Prior to layout or being worked in any way, carefully inspect all pieces for straightness and level; and straighten and level without impairment of strength, all pieces requiring same. Neatly and accurately shear, clip, cut, drill, punch and/or weld all portions of work, whether or not normally exposed to view.
 - B. Accurately fabricate all members to insure that all parts fit together on jobsite without jobsite cutting.
 - C. Accurately punch and space all bolt holes. Size and align for firm connection and bearing.
 - D. Conform all steel welding to applicable provisions of referenced code by certified welders.

- E. After fabrication is complete, clean all surfaces of rust, scale, dirt and grease.
 - 1. Shop fabrication errors shall not be corrected in the field without prior written approval of the ARCHITECT and OWNER.
 - 2. The ARCHITECT and OWNER reserves the right to have his representative inspect the fabrication or erection at any stage of completion.
 - 3. The ARCHITECT'S and OWNER'S inspectors in no way will relieve the CONTRACTOR of his responsibility in meeting the codes and specifications.

3.04 ERECTION

- A. Provide all temporary bracing required for proper alignment and stability of all steel members during erection.
- B. Temporary bracing and/or shoring shall remain as long as necessary for the safety and stability of the structure.

3.05 SHOP PAINTING

- A. Prior to painting, all steel is to be cleaned to a SSPC-SP3 surface. Deliver all structural steel to project fully coated with specified primer paint, minimum of 1 mil. thickness per, A.I.S.C. latest edition, unless noted below.
 - 1. Areas Not to Receive Paint:
 - a. Areas within 2 inches of joints which are to be welded.
 - b. All non-ferrous surfaces not subject to electrolytic action.
 - c. All items to be embedded in concrete.
- C. Electrolysis Prevention - Dissimilar Metals and Metals In Contact With Masonry: apply one (1) coat of aluminum pigmented asphalt paint on contact surfaces of metal in contact with dissimilar metals.

3.06 JOB SITE TOUCH-UP PAINTING

- A. Clean and properly prepare all exposed surfaces after welding and paint with approved primer all welded and burned surfaces.
- B. Clean and repaint all shop painted areas after work is erected which are still accessible and which have been abraded sufficient to expose metal.
- C. All cut, drilled, burned or welded galvanized and/or painted surfaces shall be primed with approved primer.

3.07 HANDLING AND MARKING

- A. Clearly and neatly mark all members for identification and erection sequence. Bundle members as CONTRACTOR requires for erection. Deliver to jobsite without damage to members. Repair or refabricate all damaged members.

3.08 WELDING

- A. Only certified welders are to be employed on project. Submit current certificates, not over 2 years old. Welders to be qualified in accordance with Section 5 of the AWS D1.1 code, latest edition.

END OF SECTION 05000

SECTION 05120 / STRUCTURAL STEEL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Conform to Division 1, Section 05000 and other sections of this division.

1.02 Shop drawings for Structural Steel shall be submitted as required by Division 1 and Section 05000. Shop drawings shall be signed and impression sealed by a Florida Registered Professional ENGINEER responsible for all structural engineering done as part of shop drawing preparation.

PART 2 - PRODUCTS

2.01 STEEL ITEMS

A. Conform to Section 05000. See structural drawings for sizes.

2.02 PRIMER PAINT

A. Conform to Section 05000.

2.03 COLUMN SETTING GROUT

A. Master Builders Company "Embeco", Vibropruf #11 by Lambert Corp., or as approved.

2.04 FABRICATION

A. General: conform to Section 05000.

B. Connections

1. All steel beam connections are AISC standard bolted connections unless shown otherwise on drawings.
2. Detail and fabricate all connections to develop full capacity in shear, of all beam sections, unless otherwise shown in drawings. Except where shown otherwise, framed beam connections shall be capable of supporting a total shear equal to 60 percent of the total allowable uniform load as tabulated in part 2 of the AISC Handbook, Latest Edition.

2.05 SHOP PAINTING AND GALVANIZING

A. Conform to Section 05000.

2.06 HANDLING AND MARKING

- A. Conform to Section 05000.

PART 3 - EXECUTION

3.01 GENERAL

- A. Conform to Section 05000.

3.02 STRUCTURAL STEEL ERECTION

- A. Notify ARCHITECT immediately upon job site delivery, so he can inspect steel before erection.
- B. Accurately install with templates all anchor bolt assemblies set in concrete work, and verify by field measurement prior to fabrication of connecting steel work. Shim and level all column base plates to proper elevations and then grout solidly. Grout plates are prohibited. Trim grout outward at 45 degrees between column base plate and top of footing. Provide temporary erection guys to insure safety and alignment of structure until that part of structure has been completed and finally aligned.
- C. Make no permanent field connections until that part of structure has been permanently aligned. Bring assembled parts into close contact using drift pins only for positioning and not to enlarge hole.
Field connections by burning are prohibited.
Return all such members to shop for proper cutting.
- D. Burn and grind off smooth all temporary erection clips, plates and other erection aids. Upon completion of all other work, neatly touch up paint all abrasions, and paint all welded connections. Secure ARCHITECT'S approval of all work immediately upon jobsite completion of this section's work.
- E. Provide minimum 3" x 3" x 1/4" angle framing at miscellaneous deck openings not otherwise detailed as framed on the drawings. All deck openings over 6" x 6" are to be so framed.

END OF SECTION 05120

SECTION 05130 / MISCELLANEOUS METAL ITEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 05000 and other sections of this division.

PART 2 - PRODUCTS, GENERAL

2.01 STEEL AND SUNDRY ITEMS

- A. Conform to Section 05000.

2.02 CASTINGS

- A. Conform to ASTM A-48 for grey iron and A-47 for malleable iron castings.

2.03 PRIMER PAINT

- A. Conform to Section 05000.

2.04 FABRICATION

- A. Conform to Section 05000.

2.05 SHOP PAINTING

- A. Conform to Section 05000. Shop prime all items specified herein unless indicated to be galvanized.

2.06 HANDLING AND MARKING

- A. Conform to Section 05000.

PART 3 - EXECUTION

3.01 GENERAL

- A. Conform to Section 05000.

3.02 LOOSE LINTEL AND SHELF ANGLES

- A. Provide as indicated on the drawings, and in the judgement of the ARCHITECT, as required for openings which do not receive precast concrete or masonry lintels. Where loose lintels are indicated to bear onto masonry, size lintels to provide 1 inch of bearing on each jamb per foot of clear opening, but not less than 6 nor more than 12 inches

bearing. Set to course with masonry coursing. Provide bolts and nuts as required.
Hot dip galvanize.

3.03 ROOF OPENING AND EQUIPMENT SUPPORT FRAMING

- A. Steel angles as detailed. Minimum angle size 3" x 3" x 1/4" with angle provided on all four sides of openings over 6" x 6" size. Weld framing to roof structural members.

3.04 BOLLARD POST

- A. 6" dia. standard steel pipe welded assembly, galvanized, set in concrete footings as indicated. Fill with concrete, leaving top rounded and smooth. Painting by Division 9.

3.05 OVERHEAD DOOR SILL

- A. 1" x 1" x 3/16" galvanized angle including return to wall each end. Provide at exterior overhead doors. Include #3 rebar x 6" long hook anchor at 2'-0" o.c. Cast in edge of slab.

3.06 SUNDRY ITEMS

- A. Set in place, secure to this division's work, true level and out of wind; leave ready for surrounding work of other divisions.

END OF SECTION 05130

SECTION 06000 / WOOD AND PLASTIC LAMINATES, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1 and other sections of this division.

1.02 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades.
- B. Coordinate and install this division's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

- Division 3: Concrete
- Division 4: Masonry
- Division 5: Metals
- Division 7: Thermal and Moisture Protection
- Division 9: Finishes
- Division 10: Specialties

1.04 MATERIAL DELIVERY AND HANDLING INSTRUCTIONS

A. Lumber

1. Stack all lumber delivered to the jobsite, off ground or on slab in a manner to assure proper drainage, ventilation and protection from weather and damage. Store all interior wood items indoors, and protect as hereinbefore stated.

B. Millwork and Other Plastic Laminate Items

1. Deliver no material to project until building is dried in and millwork installation is ready to proceed, as verified by ARCHITECT and OWNER. Store all items inside building, completely covered by heavy gauge polyethylene sheets. Store out of way of construction operations and traffic. After installation, protect countertops with corrugated box board.

END OF SECTION 06000

SECTION 06100 / ROUGH CARPENTRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1 and other sections of this division.

PART 2 - PRODUCTS

2.01 FRAMING AND FURRING LUMBER

- A. Number 2 dimension, conforming to "Grading Rules for Southern Pine Lumber", latest edition, or equivalent grade West Coast Fir or Cedar. Show grade stamps on all lumber. Sizes are shown on drawings.
- B. Pressure treat all wood members which are installed in contact with masonry, concrete or steel with waterborne 0.40 lbs of CCA preservative per cu. ft., as manufactured by Hoover Treated Wood Products, Inc., Chemical Specialties, Inc., or approved equal in accordance with American Wood Preservers Bureau (A.W.P.B.) Standard LP-2.

2.02 NAILS AND OTHER FASTENERS

- A. Nails, bolts, lag screws and other fasteners to be standard products of types and sizes suitable for intended use. Use galvanized fasteners on all exterior work and for framing in toilet and bath areas. Use finishing nails where face nailing is required for all finish work.
1. Use expansion lead shields and screws or "Tapcon" concrete fasteners for wood-to-concrete and wood-to-masonry connections.
 2. Use cast-in bolts for wood-to-concrete connections, wherever shown on drawings.
 3. Use black iron bolts, nuts, and washers; or lag bolts; for all wood-to-steel connections.
4. Use power driven fasteners sized appropriate to material thickness for certain wood-to-concrete or masonry and wood-to-steel installations where approved by the ARCHITECT and OWNER.

PART 3 - EXECUTION

3.01 GENERAL

- A. Erect all work plumb and true to line. Securely fasten in place by means of nails, bolts, screws, straps, or other appropriate fasteners. Provide washers under heads of lag

screws and under both heads and nuts of bolts where both are in contact with wood. Attach wood to steel by means of bolts with heads and/or nuts countersunk where required. Neatly make joints. Carefully perform workmanship as judged by ARCHITECT. Refer to drawings for location and configuration of work.

3.02 BLOCKING, FRAMING AND FURRING

- A. Install miscellaneous framing lumber, furring, blocking, and grounds for other trades as indicated on drawings, and elsewhere as judged by ARCHITECT. This includes but is not limited to:
1. Blocking for fascia system and roof edge blocking, if required.
 2. Solid wood support framing minimum 2x8 in all framed wall systems for wall-hung millwork, chalkboards/tackboards, wall hung lavatories, water coolers, toilet room accessories, hardware items or other equipment.
 3. Plywood backboard for telephone/data equipment.
 4. Solid wood blocking behind door stops in stud walls.

END OF SECTION 06100

SECTION 06200 / FINISH CARPENTRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1 and other sections of this division.

PART 2 - PRODUCTS

2.01 NAILS AND OTHER FASTENERS

- A. Nails, bolts, lag screws and other fasteners to be standard products of types and sizes suitable for intended use. Use galvanized fasteners on all exterior work and for framing in toilet and bath areas. Use finishing nails where face nailing is required for all finish work.

PART 3 - EXECUTION

3.01 GENERAL

- A. Erect all work plumb and true to line. Securely fasten in place by means of nails, bolts, screws, straps, or other appropriate fasteners. Provide washers under heads of lag screws and under both heads and nuts of bolts where both are in contact with wood. Attach wood to steel by means of bolts with heads and/or nuts countersunk where required. Neatly make joints. Carefully perform workmanship as judged by ARCHITECT. Refer to drawings for location and configuration of work.

3.02 MISCELLANEOUS FINISH CARPENTRY

- A. Install shapes and profiles as detailed using galvanized finishing nails or other suitable fastener. Set nail heads, or countersink screws with wood plugs for finish by Division 9.

END OF SECTION 06200

SECTION 06402 / CUSTOM SHOP FABRICATED MILLWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1 and other sections of this division.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

- A. Section 12300/General Casework

1.03 SCOPE OF THIS SECTION'S WORK

- A. The CONTRACTOR has the option to provide project millwork fully under this section or in combination with Section 12300/General Casework. Some units in the documents do not lend themselves to mass-produced fabrication techniques and therefore must be covered in scope by this Section 06402.

1.04 QUALITY ASSURANCE

- A. All glazing required to be tempered, laminated or safety glass shall have etched identification.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Softwood Plywood: (not for exposed finish stain and varnish work).
Douglas Fir: Commercial Standard CS 45-48.
Western Softwoods: Commercial Standard CS 122-60.
Southern Pine: Commercial Standard CS 259-63.
- B. Particle Board: (not for exposed finish work)
High Density Type (47 lb. minimum): Commercial Standard CS 236-66, Fed. Spec LLL-B-800A, ASTM D-1037-87, ANSI A208.1, latest edition, Grade M-3.
- C. Plastic-Surfaced Work
 - 1. Countertops/Backsplash and Open Shelving: Countertops, except at cabinets with sinks, may have backup of 3/4" particle board per paragraph 2.01 B. Tops at sink locations to remain plywood.
 - 2. Other Exposed Surfaces: Interior surfaces of open cabinets without doors may be melamine product of manufacturer's standard color as selected by ARCHITECT.

3. Cabinet Interiors (behind doors and drawers): pressure fused laminate, surface laminated to core under pressure, to meet NEMA LD3, latest edition, CLS standards, 0.020 minimum thickness. This includes balancing sheet of laminate on backs of all doors.
- D. Cabinet Door Stock: As paragraph 2.01, C2, except all doors exceeding 9 square feet of area are of lumber core or minimum 1" thick particle board construction.
- E. Fasteners and Metal: All screws and nails are non-ferrous, or plated with countersunk or finished heads. Glue is "Weldwood Plastic Resin Glue", or as approved.
- F. Hardboard: Tempered moisture-resistant hardboard, by domestic producer, smooth both sides, Commercial Standard CS-251.
- G. **Structural Lumber: nominal 1X and 2X stock, #1 yellow pine or fir, pressure treated for bases.**
 1. Pressure treated plywood is acceptable for sub-base construction if suitably dried prior to installation.

2.02 SHOP FABRICATION

- A. General: Construct all items at shop and in field, in accord with approved shop drawings, and of highest quality consistent with accepted standards of trade. Fit joints accurately and tight. Form to conceal possible shrinkage. Secure by gluing and screwing. Use concealed screws where required for structural rigidity. No exposed fasteners are allowed. Sand smooth and set all nails to prepare for puttying and application of finish.
 1. Install all hardware specified herein, free from damage, accurately fitted and adjusted, and in good working condition.
- B. Shelving: Unless detailed otherwise on the drawings, all shelves are 3/4" plywood or 1" particle board, and uprights are 3/4" stock with solid edge stripping, plastic laminate finished, adjustable, with surface mounted adjustable shelf hardware. All six sides of shelves are to receive plastic laminate finish.
- C. Millwork: Exposed sides and backs are minimum 3/4" stock. Interior uprights are 3/4" stock. Concealed backs are minimum 1/2" stock, hardboard is permitted.
 1. Join fronts and exposed backs to sides with square shoulder joints, glued and nailed.
 2. House bottoms and concealed backs into fronts, backs, and sides: and nail. House uprights into body web frames.

3. Body web frames are stile-plowed, and of stub-tenon construction. Unless otherwise indicated on the drawings, surface mount doors and drawers, lapped over cabinet face frames, hung and aligned plumb and true, with + 1/4" space, horizontally and vertically aligned, between all doors and drawers. Cabinet doors up to 9 square feet area are 3/4" thick, mounted as above.
4. Doors over this size shall be 1" thick, minimum.
5. Drawer bottoms shall be 1/4 inch hardboard, smooth side up; side and back minimum 1/2 inch solid softwood; front 3/4 inch stock. Provide lock joints on front and sides, rabbet bottom into side perimeter frames. Use sliding drawer hardware, stops glued and screwed. Construct to close tolerances, glue and nail.
6. All millwork set on floor to be supported on pressure treated supports which are a full 4" height to receive full 4" vinyl base by Division 9 without trimming, unless detailed otherwise.
7. All countertop corners that are not captured by walls or other cabinets shall be radiused a minimum of the countertop thickness.

D. FINISHES

1. Laminate plastic: all exterior exposed-to-view surfaces, including interior of open cabinets, exposed finished ends/back/sides, all shelves (6 sides), bottom and tops of wall cabinets and undersides of projecting shelves.
2. Fused Laminate: see paragraph 2.01, C3.
3. Stain Finish: Exposed solid wood trim as detailed, then finish with polyurethane, minimum 3 coats.
4. Cabinet Backs and all unfinished surfaces: Shop apply one coat aluminum paint.

- E. Material Locations and Uses: Softwood plywoods or particle boards may be used for all fabrication items to receive 2.02, D1 & 2.02, D2 surface finishes as outlined above except: countertops, backsplashes, base cabinets with sinks, and freestanding counter supports to be plywood construction; and all shelves may be 3/4" plywood or 1" particle board.

2.03 MILLWORK HARDWARE

- A. General: All hardware hereinafter described refers to Knape and Vogt, unless specifically stated otherwise. All finishes are bright chrome or cadmium plate, unless specified otherwise by model number of item specified. Other items judged equivalent may be submitted to ARCHITECT for approval.
1. Drawer & Door Pulls: Epco 402-3.5 wire pull, 3 1/2" long, clear anodized aluminum, or as approved.
 2. Drawer Glides: #1428 full extension or Grant #328.
Drawer glides to be full extension for file drawers and shallow drawers, and 80 percent (minimum) extension for other drawers

3. Hinges: heavy duty, five knuckle 2 3/4 inch institutional type hinge shall meet ANSI/BHMA A156.9 Grade 1 requirements. Mill ground, hospital tip, tight pin feature with all edges eased. Hinge to be full wrap around type of tempered steel .095 inch thick. Each hinge to have minimum 9 screws, #7, 5/8 inch FHMS to assure positive door attachment.
 - a. One pair per door to 48 inch height. One and one-half pair over 48 inch in height. Hinge to accommodate 13/16 inch thick laminated door and allow 270 degree swing.
Finish to be brushed chrome, LH-301 ChromeCoat Powder Finish, LH-302 Black, or LH-303 White epoxy coated, as selected.
4. Gate Hinges: Roton/Hager #780-112 continuous geared hinge, all wood screws.
5. Bumper: Ives #401 rubber, concealed fastening.
6. Magnetic Catches: Provide one Stanley #SP41 magnetic catch per door (2 for doors over 9 SF).
7. Door & Drawer Locks: #986 or National Lock M4-7054 for doors and drawers up to 7/8" thick. Coordinate with Section 12300/General Casework locks.
8. Shelf Hardware: #255 steel recessed mounted standards and #256 clips.
9. Chain Bolts: Stanley #1055 complete with strike. Provide one at top of inactive leaf of pairs of doors with lock, for doors less than 9 SF. Provide one at each top and bottom of similar doors 9 SF and over.
10. Door/Drawer Bumpers: rubber type, adhesive set.
11. Grommets: molded plastic or metal, 2" I.D.

PART 3 - EXECUTION

3.01 Refer to configurations, details and specific requirements shown on drawings, for millwork items intended to be provided by this section.

A. Coordinate this section's work with that of Division 12 Casework type materials and equipment.

3.02 CABINET SUB-BASE

A. All are to be separate and continuous (no cabinet body sides-to-floor), of pressure treated solid stock or pressure treated exterior grade plywood with concealed fastening to cabinet bottom. Ladder-type construction of front, back and intermediates shall form a secure and level platform to which cabinets attach.

3.03 INSTALLATION

A. Install in locations shown on drawings. ARCHITECT will selectively approve and permit small-dimension solid lumber trim finished to match adjacent surfaces, to close joints with adjacent wall surfaces, otherwise a caulk joint is to be used. Firmly anchor with screws into solid wood blocking at top and bottom of all units secured to framed

walls. Set drilled-in lead shields into masonry walls, then use screws; or use "Tapcon" drilled anchors into masonry or concrete. Hang no units through drywall or plaster wall panels. See specification Sections 06100/Rough Carpentry and/or 06200/Finish Carpentry for wall-hung millwork support blocking.

1. See drawings for wall hung units supported by cleat attached to walls.
2. Provide resilient bumpers for all doors and drawers.

B. Workmanship:

1. Erect casework straight, level and plumb and securely anchor in place. Scribe and closely fit to adjacent work. Cut and fit work around pipes, ducts, etc.
2. Install all items complete and adjust all moving parts to operate properly.
3. Leave surface clean and free from defects at time of final acceptance.

C. Guarantee:

1. All materials shall be guaranteed for a period of 5 years from the date of substantial completion for defects and workmanship.

3.04 ADJUSTMENTS AND CLEANUPS

- A. Adjust all hardware to proper action. Clean all surfaces. Repair all blemishes, to match adjacent surfaces so that no blemish is visually apparent from one foot distance, as judged by ARCHITECT. Clean dust from all surfaces.

END OF SECTION 06402

SECTION 07000 / THERMAL AND MOISTURE PROTECTION, GENERAL

PART 1 - GENERAL

1.01 CONTRACT PROVISIONS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 7. Provisions of this Section 07000 also apply to all sections of this Division 7. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades.
- B. Coordinate and install this division's work in proper sequence, and in cooperation with all other trades. Insure that total work is completed within contract time schedule.

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 3:	Concrete
Division 4:	Masonry
Division 5:	Metals
Division 6:	Wood and Plastic Laminates
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows
Division 15:	Mechanical
Division 16:	Electrical

1.04 ACCEPTANCE OF SURFACES

- A. Prior to commencement of work, inspect all surfaces to receive work. Verify that work of other trades which penetrates roof deck or requires men and equipment to traverse roof deck has been completed. Examine surfaces for inadequate anchorage, foreign material, moisture, and unevenness which would prevent the execution and quality of application of roofing system as specified. Do not proceed with application of roofing system until defects are corrected.
- B. Notify ARCHITECT in writing of any conditions which in CONTRACTOR'S judgment prevent installation meeting all requirements of this specification. Beginning of work constitutes CONTRACTOR'S acceptance of surfaces.

1.05 PREFABRICATION

- A. Shop fabricate and assemble items to maximum extent possible and practicable; to permit installation with minimum amount of field assembly.

1.06 ELECTROLYSIS PREVENTION

- A. Give all portions of metals which come in contact with masonry or concrete two (2) coats of bituminous paint. When two dissimilar light metals come in contact, paint each contact surface with one (1) coat of bituminous paint.

1.07 QUALIFICATIONS

- A. Perform all work specified herein only by recognized firm regularly engaged in performing this type of work.

1.08 SPECIAL MATERIAL DELIVERY AND HANDLING INSTRUCTIONS

- A. Deliver materials in manufacturer's original, unopened containers and rolls with labels intact and legible. Deliver materials requiring fire resistance classification to the job with labels attached and packaged as required by labeling service.
- B. Deliver materials in sufficient quantity to allow continuity of work.
- C. Handle rolled goods so as to prevent damage to edge or ends. Select and operate material handling equipment so as not to damage existing construction or applied roofing.
- D. Store all roofing materials on clean raised platforms with weather protective covering when stored outdoors. Store rolled goods on end. Provide continuous protection of materials against wetting and moisture absorption. Protect materials against damage by construction traffic.
- E. Remove wet materials from project site.
- F. Store emulsions in temperature above 40 deg. F.

1.09 AFFIDAVIT AND GUARANTEE-WARRANTY

- A. Roofing and roof flashing subcontractor(s) jointly furnish OWNER affidavit signed by all parties, then notarized, stating that all products and execution meet standards specified in this division.
- B. Both CONTRACTOR and roofing subcontractor(s) responsible for this division's work; deliver separately and jointly three (3) copies of notarized letters to OWNER guaranteeing maintenance of complete:
(1) roof and roof flashing; (2) membrane, and; (3) caulking systems against leakage for two (2) years dating from OWNER'S official acceptance of building.

END OF SECTION 07000

SECTION 07210 / THERMAL AND SOUND INSULATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 07000 and other sections of this division.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 4:	Masonry
Divisions 9:	Finishes
Division 11:	Equipment

- 1.03 The intent of this specification is that all exterior walls adjacent to ventilated occupied and/or air-conditioned spaces and interior walls separating air conditioned space from non air conditioned space are to receive insulation from the lowest floor level, full height to insulation above. All insulation shall be Class 'A' and meet requirements of FBC 708.3.

PART 2 - PRODUCTS

2.01 FRAME WALL INSULATION

- A. Fiberglass batts (unfaced), 16" W and/or 24" W and roll goods, widths as required by maximum lengths available. Wall insulation shall be installed between metal studs and secured in place. Refer to Paragraph 3.02 this section.

Nominal 4" thick	-	R-11, Class "A"
Nominal 6" thick	-	R-19, Class "A"

- B. Refer to Architectural Drawings for R-Value required for this project.

2.02 EXTERIOR METAL FRAMED WALLS

- A. Roll type (vinyl faced) fiberglass batts shall be installed between metal wall girt framing and supporting structure. Refer to Section 13125 | Metal Building Systems.

2.03 CEILING INSULATION

- A. Fiberglass batts (unfaced), 16" & 24"W x 48"L and roll goods, widths as required by maximum lengths available. Refer to Paragraph 3.03 this section.

Nominal 6" thick	-	R-19, Class "A"
Nominal 9 1/2" thick	-	R-30, Class "A"

- B. Refer to Architectural Drawings for R-Value required for this project.

2.04 EXTERIOR WALL INSULATION

- A. Rigid Insulation Board – Dow Polyisocyanurate Insulation Board, Thermax sheathing, 1" thick, R = 6.5.

2.05 ROOF INSULATION

A. Metal Roofs

- 1. Roll Type (vinyl faced) fiberglass batts shall be installed between metal roof and supporting structure. Refer to Section 13125/Metal Building Systems.

2.06 SOUND ATTENUATION INSULATION

- A. CertainTeed, Owens-Corning Fiberglass Corp., or as approved, sound attenuation batts for metal framing, 2 1/2" & 3 1/2" thick x 96" long, width as required, for friction fit.

2.07 INJECTED FOAM

- A. Polymaster R-501 Tripolymer by C. P. Chemical Co., Class I, U.L. approved, plastic foam, R = 4.4/inch thickness minimum at 75 Deg. F., or as approved. (Corefill 500)
- B. Product is not to contain or emit CFC's or to contain any formaldehyde.

2.08 FASTENERS, CLIPS, SUPPORTS, ADHESIVE, ETC.

- A. Materials suitable for installation conditions to support insulation securely and permanently in place.

PART 3 - EXECUTION

3.01 GENERAL

- A. Building(s) shall be dried in prior to installation of insulation and insulation shall be kept dry at all times. Insulation which becomes wet shall be removed and replaced with new dry material.

3.02 FRAME WALL (BATT INSULATION)

- A. Install batts in walls, plenum closure studwork and ceilings where indicated on drawings. Securely fasten to studs with wire clip to prevent sagging. Batt's are not to be compressed. Size batts to suit framing spacing. Install similar unfaced material packed in voids of metal deck above concrete beams, stud walls and plenum dividers as indicated on drawings. Lay batts over ceiling areas where indicated, shoved tightly into place.

1. R-11 Batts: Install in nominal 4" or 6" metal stud/drywall partitions and metal stud/drywall framed plenum dividers/ barriers as shown on drawings.
2. R-19 Batts: Install in nominal 6" or greater metal stud/drywall framing partitions and plenum dividers/barriers as indicated on drawings.

3.03 CEILING (BATT INSULATION)

- A. Ceiling insulation shall **NOT** be loose laid directly on finish ceiling. Contractor shall have OWNERS prior approval for this installation.
 1. If approved, install nominal 24" W x 48" L batts over ceilings as indicated on drawings.

3.04 SOUND ATTENUATION BATTS

- A. Install in all metal stud framed walls unless specifically indicated otherwise. Install 2 1/2" batts in nominal 4" walls and 3 1/2" batts in 6" walls unless noted otherwise.

3.05 INJECTED FOAM

- A. Provide full height in all standard masonry walls with exterior exposure and interior walls adjacent to non-air conditioned spaces.

3.06 EXTERIOR WALL

- A. Install insulation boards according to manufacturer's recommendation. Spot attach to CMU With construction adhesive or power nailer. Tape and seal all joints and penetrations.

END OF SECTION 07210

SECTION 07214 / FOAMED-IN-PLACE MASONRY WALL INSULATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 07000 and other sections of this division.

1.02 SUMMARY

- 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. Foamed-in-Place masonry insulation for thermal, sound and fire resistance values

1.03 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Product and technical presentation as provided by the manufacturer.
- C. Certified Test Reports: With product data, submit copies of certified test reports showing compliance with specified performance values, including R-values, fire performance and sound abatement characteristics.
- D. Material Safety Data Sheet: Submit Material Safety Data Sheet complying with OSHA Hazard Communication Standard, 29 CFR 1910 1200.

1.04 QUALITY ASSURANCE

- A. Manufacturing Standards: Provide insulation produced by a single and approved manufacturer. The product must come from the manufacturer pre-mixed to ensure consistency.
- B. Installer Qualifications for Foamed-In-Place Masonry Insulation: Engage an experienced dealer/applicator who has been trained and licensed by the product manufacturer and which has not less than five years direct experience in the installation of the product used.
- C. Warranty: Upon request, a one year product and installation warranty will be issued by both the manufacturer and installer.
- D. 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 a testing agency acceptable to authorities having jurisdiction.

- E. Insurance: Insulation Subcontractor shall carry Products and Completed Operations Insurance with minimum liability limits of \$ 7,000,000.

Product must be classified by Underwriters Laboratory ® ("UL") as to Surface Burning Characteristics

Fire Resistance Ratings:	ASTM E-119
Surface Burning Characteristics:	ASTM E-84
Combustion Characteristics:	ASTM E-136

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the requirements of this specification, provide foamed-in-place masonry insulation equal to "**Core-Fill 500™**"- Tailored Chemical Products, P.O. Drawer 4186, Hickory, N.C. 28663, (800) 627-1687

Florida Distributor
Tailored Foam of Florida, Inc.
P.O. Box 520986
Longwood, FL 32752
Telephone: 407-332-0333 Fax: 407-830-9174

2.02 INSULATING MATERIALS

- A. General: Provide insulating materials which comply with requirements indicated for materials, compliance with referenced standards, and other characteristics.
- B. Foamed-in-Place Masonry Insulation: Two component thermal insulation produced by combining a plastic resin and catalyst foaming agent surfactant which, when properly ratioed and mixed, together with compressed air produce a cold-setting foam insulation in the hollow cores of hollow unit masonry walls.
1. Fire-Resistance Ratings: Minimum four (4) hour fire resistance wall rating (ASTM E-119) for 8" and 12" concrete masonry units when used in standard two (2) hour rated CMUs.
 2. Surface Burning Characteristics: Maximum flame spread, smoke developed and fuel contributed of 0, 5 and 0 respectively.
 3. Combustion Characteristics: Must be noncombustible, Class A building material.
 4. Thermal Values: "R" Value of 4.91/inch @ 32 degrees F mean; ASTM C-177.

5. Sound Abatement: Minimum Sound Transmission Class ("STC") rating of 53 and a minimum Outdoor Indoor Transmission Class ("OITC") rating of 44 for 8" wall assembly (ASTM E 90-90)

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

- A. Application Assemblies:

Block Walls: 6", 8", 10" or 12" concrete masonry units

3.02 INSTALLATION OF FOAMED-IN-PLACE INSULATION

- A. General: Install foamed-in-place insulation from interior, or as specified, prior to installation of interior finish work and after all masonry and structural concrete work is in place; comply with manufacturer's instructions.
- B. Installation: 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 finish to match existing surface.

END OF SECTION 07214

SECTION 07620 / METAL FLASHINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 07000 and other sections of this division.
- B. Where "SMACNA Manual" is referred to in this specification, it shall mean the "Architectural Sheet Metal Manual", Latest Edition, as published by the Sheet Metal and Air Conditioning Contractors, National Associations, Inc. Conform also to the National Roofing Contractors Associations (NRCA) Roofing & Waterproofing Manual, latest edition.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

- Division 3: Concrete
- Division 4: Masonry
- Division 6: Wood and Plastic Laminates

1.03 COORDINATION

- A. Fabricate and install this section's work as a coordinated part of other Division 7 moisture protection work, to insure leak-free installation of this section's work and its joints and connections to adjoining surfaces.

1.04 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Submit producers' data sheets and material samples (minimum 3 x 5 inch size) for each type of sheet metal CONTRACTOR proposes for this work, together with schedule of materials, thicknesses and application locations for each metal type.

1.05 GUARANTEE

- A. Guarantee metal flashing work watertight, to OWNER, for two years.

PART 2 - PRODUCTS

- 2.01 Sheet Metal Flashings: Stainless steel, Type 304-2B, (17% chrome, 7% nickel). Use 24 gauge unless indicated otherwise on drawings or herein.

- A. Eave Flashing
 - 1. Drip Edge and Rake Edges: specified in Section 07715/Metal Fascia and Soffit System or Section 13125/Metal Building Systems.
- B. Expansion Joints and Counterflashing: 22 gauge, configurations as detailed.
- C. Sheet Lead: 4 lb. roofer's type.
- D. Gutters and Downspouts: Refer to Section 13125/Metal Building Systems.
- E. Flashing at Louvers
 - 1. Wall Louvers: sill flashing by Section 13125/Metal Building Systems.
- F. Wall Flashing at Window Sills: comply with Section 04000/Masonry, General.
- G. Fasteners: nails, rivet's and sheet metal screws, sized appropriately for application, all stainless steel.

PART 3 - EXECUTION

3.01 GENERAL

- A. Insure that surfaces over which sheet metal is applied are smooth and free from defects. Make any roughness in joints and surfaces smooth, leaving no sharp edges. Field lap all exposed counterflashing joints which are a part of continuous waterproof or tight sheet metal work, a minimum of six (6) inches. Install only after caulking work on flashings, specified in Section 07920/Sealants, Caulking and Seals is completed. Insure all completed exterior installations are watertight.

3.02 SHEET METAL FABRICATION

- A. Execute work by skilled mechanics, in accord with best methods accepted within craft. Form all lines, molding and edges sharp and true, reinforce all points to obtain required stiffness. Seam all edges which will be exposed after installation, except lapped end-to-end flashing joints. Allow for expansion and contraction of underlying construction and continuous runs of sheet metal work. Form and finish all joints and seams neatly, all surfaces free from waves and buckles, and all exterior work watertight.

3.03 FLASHINGS

- A. Provide where shown on drawings, and elsewhere as required, for water-tight job. Use concealed fastenings wherever practicable. Expose fasteners only when approved to do so. Run metal flashings in 8 feet minimum lengths unless construction conditions necessitates shorter pieces. Carefully install Division 15's roof flashings for plumbing vents and drains penetrating roof. Install counter-flashings to 4" minimum cover over all upturned edges of roofing. Coordinate at wall conditions where counterflashings are to be installed under fascia system or gable ends.

3.04 ROOF MOUNTED EQUIPMENT AND RELATED CURBS

- A. Refer to details on drawings and as otherwise required to insure a watertight installation. Fabricate flashing to profiles indicated of 22 gauge sheet.

3.05 COUNTERFLASHING

- A. Shall be sized for a 4" minimum vertical leg overlapping base flashing such that a bottom hemmed edge extends to within 1" of top of cant. The top edges shall be securely fastened and sealed against moisture penetrations. Corners are to be mitered and soldered.

3.06 WALL FLASHING

- A. Refer to details on drawings. Build into wall as work progresses with all joints sealed to divert moisture to exterior. Wall flashing shall be installed with strict adherence to approved sample wall panel. Refer to Section 04000/Masonry, General, Paragraph 3.01, B.

END OF SECTION 07620

SECTION 07840 / FIRESTOP SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 07000 and other sections of this division.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Section 07210:	Thermal and Sound Insulation
Division 15:	Mechanical
Division 16:	Electrical

1.03 COORDINATION

- A. Fabricate and install this section's work as a coordinated part of Division 7 moisture protection work, to insure smoke tight installation of this section's work and its joints and connections to adjoining surfaces.

1.04 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Submit producers' data sheets and material samples for type of material.

PART 2 - PRODUCTS

2.01 POKE THRU PROTECTION

- A. Hilti Firestop Systems FS605 Sealant and FS611A Intumescent Wrap or equivalent UL labeled product.

2.02 SLAG-WOOL-FIBER BOARD SAFING INSULATION

- A. Semi-rigid boards designed for use as fire stop at openings between edge of walls and adjacent construction, produced by combining slag-wool fibers with thermosetting resin binders to comply with ASTM C 612, Type IA and IB; nominal density of 4 lb/cu. ft. passing ASTM E 136 for combustion characteristics; thermal resistivity of 4 deg F x h x sq. ft./Btu x in. at 75 deg. F.

1. Caulking Compound: Material approved by manufacturer of safing insulation for sealing joint between foil backing of safing insulation and adjacent material against penetration of smoke.
2. Safing Clips: Galvanized steel safing clips approved by manufacturer of safing insulation for holding safing insulation in place.

PART 3 - EXECUTION

3.01 GENERAL

- A. All penetrations of and voids in fire rated walls and ceilings will receive the appropriate application of poke-thru protection to provide a smoke tight penetration and/or preserve the fire rated integrity of the system being penetrated.

3.02 POKE-THRU PROTECTION

- A. Seal all penetrations of fire rated walls and ceilings using FS605 sealant (and FS611A where required) in accordance with manufacturer's instruction to prevent fire, smoke and water from passing through penetrations to maintain fire rating of system.

3.03 INSTALLATION OF SAFING INSULATION

- A. Install safing insulation to fill voids in fire-rated assemblies, smoke barriers, and similar conditions as indicated on drawings; with safing clips spaced as needed to support insulation. Cut safing insulation wider than gap to be filled to ensure compression fit and seal joint between insulation and adjacent construction with caulking approved by safing insulation manufacturer for this purpose. Leave no voids in completed installation.

END OF SECTION 07840

SECTION 07920 / SEALANTS, CAULKING AND SEALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 07000 or other sections of this division.

PART 2 - PRODUCTS

2.01 EXTERIOR PACKING

- A. Closed cell continuous strip sponge neoprene rubber, "Williams EVERPLASTIC Panel Seals" produced by Williams Products, Inc., 1750 Maplelawn Road, Troy, Michigan 48084; or approved equal. Use #5 profile for concrete joint widths 5/8" and larger and #13 profile for joint widths less than 5/8".

2.02 INTERIOR PACKING

- A. Braided soft white cotton rope cording.

2.03 PRIMER

- A. Product made by manufacturer of Thiokol-Based Caulking Compound.

2.04 EXTERIOR CAULKING

- A. "Tremco Dymeric" multi-part urethane sealant or approved equal by Pecora or Sika Chemical.
 - 1. Color(s) will be selected for location to match adjoining materials.

2.05 INTERIOR CAULKING (GENERAL USE)

- A. Synthetic acrylic base, "Tremco Mono 555", or as approved.
 - 1. Use 2.4 material at all thru-wall masonry control joints.

2.06 INTERIOR FLOOR JOINTS

- A. Two part epoxy joint compound, "Master Builders" Brutem 93, or as approved, for exposed joints in concrete slabs.
- B. "Tremco THC-901" for control joints in ceramic/quarry tile floors.

2.07 MASONRY WALL CONTROL/EXPANSION JOINTS

A. Single Wythe Masonry Wall

1. Install sealant with backer on interior and exterior face of wythe.

B. Joint Sealant

1. Unless otherwise required for specialized conditions, joint sealant shall be a moisture-cured, single- or multi-component (depending on the application and required expansion/contraction capabilities), polyurethane-base, non-sag, elastomeric sealant.
2. Sealant depth-to-width ratio at the center of the joint shall be 1:2.
3. Allowable expansion/contraction of the joint shall be $\pm 25 - 50\%$ of joint width, depending on the product capabilities.
4. Where applicable, provide a compatible sealant primer.

C. Backer

1. Joint sealant backer is required for all applications.
2. Unless otherwise required for specialized conditions, joint sealant backer shall be a closed-cell, polyethylene rod.
3. Where limitations prevent the use of a backer rod, specify a polyethylene, selfadhesive, bond-breaker tape shall be used.

D. Filler

1. Joint filler shall be specified to provide filling of the gap and to prevent displacement and improper location of the backer.
2. Joint filler shall be a continuous, non-bleeding material compatible with the joint conditions.

PART 3 - EXECUTION

3.01 AREAS RECEIVING WORK

- A. Exterior and interior joints surrounding all louver, door, and window frames; and all other exterior wall penetrations. Leave weep holes in caulking at 2'-0" centers under all sills.

- B. All interior joints where masonry abuts structural steel columns.
- C. Vertical joints each side of interior intersections of framed interior drywall with masonry walls.
- D. Millwork and casework joints against walls.
- E. Embed all exterior door thresholds in caulking.
- F. All laps of sheet metal work.
- G. Penetrations through attic air barriers occurring between suspended ceiling system and overhead structure.
- H. Sill flashings at windows.
- I. Exterior and interior thru-wall control joints. Refer to Section 04000/Masonry, General.
- J. Intersections of interior masonry partitions with exterior walls.
- K. Perimeter ceiling joints where plaster casing bead abutts wall surface.
- L. Glazing set in hollow steel, wood and metal glazing stops.
- M. Control joints in hard tile floors.
- N. Saw cut control joints in all interior floor slabs which are designated to receive a sealed or painted finish or which are to remain exposed concrete.
- O. All other areas indicated on drawings; or as necessary, determined by ARCHITECT, required to seal interior and exterior joints. All exterior and interior joints between dissimilar materials are to be caulked.

3.02 PREPARATION

- A. Insure that all surfaces to be worked are completely dry. Thoroughly clean and scrape all joints. Rake mortar and other foreign materials smoothly from joints. Tape, and otherwise protect from damage, all exposed surfaces adjacent to caulking.

3.03 APPLICATION

- A. Prime joints with approved primer following manufacturer's printed directions, and using a brush that will reach all recesses to be caulked. Where joints are

excessive, wedge packing into joint and pack tightly to a point approximately 1/2" back of the finish face. Drive caulking compound into joint with proper caulking gun, or knife, which has sufficient pressure to fill all recesses. Caulking gun heads must be of proper size to fit all openings. Butter inside of masonry openings, or surface of frames to be set, with thin neat line of caulking compound. No manufactured caulking beads are permitted. Tool all caulking joints slightly concave and uniformly smooth.

3.05 POINTING

- A. At completion, neatly point all joints, and remove all excess materials. Neatly cove internal angles of all caulked joints. Clean all surfaces of adjacent construction, of all excess materials and/or soiled areas resulting from work.

END OF SECTION 07920

SECTION 08000 / DOORS AND WINDOWS, GENERAL/LEGEND

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 8. Provisions of this Section 08000 also apply to all sections of this Division 8. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades.
- B. Coordinate and install this work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.
- C. Verify that glazing systems and glass thicknesses conform with producer's recommendations and/or specification.
- D. Coordinate all sections of this division's work to produce complete system, caulked and glazed, meeting this division's specification sections.
- E. Caulking between openings and concrete and masonry surrounding material is specified in Division 7.
- F. Threshold and Floor Finish Door Undercuts:
 - 1. Carefully undercut all doors to meet thresholds and clear floor finishes. Verify exact undercut depth against actual threshold and floor finish heights. Unless otherwise specified no undercut (clear open gap with door closed) is to exceed 3/4".

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 4:	Masonry
Division 6:	Wood and Plastic Laminates
Division 7:	Thermal and Moisture Protection
Division 9:	Finishes
Division 12:	Furnishings

1.04 APPLICABLE CODES AND STANDARDS

- A. Glass: conform to Federal Specification DD-G-451C, Florida Building Code and CPSC Standards.

- B. Hollow Steel Doors and Frames conform to:
Steel Door Industry standards SDI-100, recommended "Specifications, Standard Steel Doors and Frames", latest edition and Hollow Metal Manufacturers Association Standards:

HMMA 802 - Manufacturing
HMMA 810 - Doors
HMMA 820 - Frames

Each of the above referenced standards as modified and supplemented herein.

- C. Wood Door Construction: conform to Architectural Woodwork Institute, specification 5, "Flush Doors", latest edition.
- D. Exterior door and window assemblies shall comply with Missile Impact Criteria of SBC/SSTD 12/99.

1.05 STRUCTURAL DESIGN REQUIREMENTS

- A. Fabricate and install all this division's opening systems and assemblies to meet these performance design conditions unless modified by 1.05, B of this section. See architectural drawings.
1. Wind Pressure (shall include positive and negative wind pressure): design system components and assemblies to with-stand applied wind loads as defined in the latest editions of ASCE-7 and Florida Building Code, Chapter 16. See structural and architectural drawings for wind speed design and exposure criteria. Deflection shall be limited to 1/175 of clear unsupported span. Every exterior wall/assembly must be capable of withstanding the load, acting either inward or outward.
 2. Thermal Expansion: design system components to provide for expansion and contraction due to 120 deg. F. ambient temperature range without causing any buckling, joint opening, undue stresses on fasteners or other detrimental effects.
 3. Deflections: vertical or horizontal deflection in any member not to exceed 75% of design clearance dimension between the edge of any glazing panel and its frame.
- B. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:
1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.05, C of this section.

- C. Wind Speed design shall be as noted on structural and architectural drawings. Building Envelope shall comply with SBCCI/SSTD-12 for large missile impact criteria. Refer to architectural drawings for building envelope path and location.

1.06 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Shop drawings shall state that the above criteria is met, include all fastening/installation details and include a certified statement signed, dated and sealed by a Florida registered structural ENGINEER.
- C. **All products installed in the building envelope shall have product approval number indicated on the submittal.**

1.07 HARDWARE MOUNTING HEIGHTS AND LOCATIONS

- A. Locks, latches, push-pulls 38 to 41 13/16 inches from center line to floor for panic devices, and similar items.
Deadlock 48 inches above floor to top of lock (max.)
Bottom Hinge to manufacturer's standard but not more than 12" above door bottom.
Top Hinge to manufacturer's standard but not more than 8" below door head.
Intermediate Hinge centered between top and bottom hinge.
- B. Special heights as indicated on Architectural drawings.

1.08 APPROVED PRODUCERS

- A. Producer's products referred to, and materials and performance characteristics specified in this division establish the required quality of performance for this work.

1.09 SUPPLEMENTARY PARTS

- A. Provide all supplementary parts to complete, attach, and anchor all items if such parts are necessary for the complete installation and operation of the opening, whether or not indicated on design drawings or specified herein.

1.10 METALS PROTECTION

- A. Electrolysis Prevention: paint dissimilar metals, except stainless steel, white, bronze and/or solid zinc, with one heavy brush or spray coat of zinc-chromate primer and one coat of aluminum paint; or paint with one heavy brush coat of alkali-resistant bituminous paint; or separate from aluminum by heavy coat of mastic caulking compound or non-absorptive tape or gasket. Include dissimilar metals used in locations where drainage from them passes over aluminum.

- B. Ferrous Metals Protective Coating: after assembly, clean all surfaces, phosphate coat and give one coat of rust inhibitive/ preventive baked-on primer. Include all ferrous metal work, particularly pressed steel doors, frames and door louvers.
- C. Products to be used for the foregoing are to be checked for and certified to be compatible with finish paint coats.
- D. Refer to other specific sections in this Division for additional finish and protection requirements.

1.11 SPECIAL HANDLING INSTRUCTIONS

- A. Storage and Stacking: store in covered, dry area, in upright position, and minimum of 4 inches above floor or grade. Provide minimum 1/4 inch between units to permit air circulation. Do not permit cardboard wrappers to wet metal work. If cardboard gets wet, remove it immediately. After installation, field prime as soon as surrounding construction permits prime painting, then protect during subsequent construction operations.
- B. Installed Work Protection: carefully protect against disfiguration, contamination, or damage by mechanical abuse or contact with harmful materials. Install protective barriers whenever exposed to damage is deemed critical by ARCHITECT.
- C. Correction of Damaged Work: work which can be corrected so that no visible damage is evident from a 1'-0" distance for interior and a 4'-0" distance for exterior work, may be corrected without replacement. Where this cannot be done, remove damaged work and replace with undamaged work at no additional cost to OWNER.

1.12 CLEANING

- A. Clean surfaces of all members, both inside and outside, of all mortar, plaster, dirt, paint and other foreign matters to present a neat appearance and prevent fouling of weathering surfaces, weather-stripping, or operation of hardware. In addition, wash frames with stiff-fiber brush, soap and water and thoroughly rinse with clear water.

PART 2 - DOOR SCHEDULE LEGEND

2.01 CONTRACT PROVISIONS

- A. Conform to Division 1 and Section 08000.

2.02 SCHEDULE OF ABBREVIATIONS

CS	=	Counter Shutter
CT	=	Clear Tempered
GT	=	Grey Tempered

HS = Hollow Steel
OH = Overhead Acting (C = Coil-Up) (M = Motorized)
SF = Aluminum Storefront
U/C = Undercut (3/4")
WD = Solid Core Wood
4 = Thickness 1 3/4"

A. Door abbreviations are referenced in schedule shown on the drawings.

2.03 STEEL DOOR INSTITUTE STANDARD NOMENCLATURE

A. Door types are referenced in Schedule are shown on the drawings.

B. See Schedule for louver size.

C. See Glazing Section for types of glass and tint.

D. For full or partially louvered exterior doors provide interior mounted insect 16 mesh screen set in frame and held in place by means of easily removable clips/fasteners.

END OF SECTION 08000

SECTION 08100 / HOLLOW STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 08000 and other sections of this division.
- B. See drawings for all frame configurations and locations.
- C. See door schedule for door sizes.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Section 04000:	Masonry, General
Section 06200:	Finish Carpentry
Section 08200:	Solid Core Wood Doors
Section 08711:	Door Hardware and Schedule
Section 08800:	Glass Products
Section 09910:	Painting

1.03 REFERENCES

- A. Steel Doors and Frames in this section must meet all standards as established by the following listing.
 - 1. Door and Hardware Preparation ANSI 115.
 - 2. Life Safety Codes NFPA-101 (Latest edition).
 - 3. Fire Doors and Windows NFPA-80 (Latest edition).
 - 4. Steel Door Institute ANSI/SDI-100 (Latest edition)
 - 5. UL10C and UBC 7 – 2 Positive Pressure fire testing.

1.04 STRUCTURAL DESIGN REQUIREMENTS

- A. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:
 - 1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.04, B of this section.
- B. Wind Speed design shall be as noted on structural and architectural drawings and shall comply with ASCE-7, latest edition. Building Envelope shall comply with SBCCI/SSTD-12 for large missile impact criteria. Refer to architectural drawings for building envelope path and location.

1.05 SUBMITTALS

- A. Coordinate approved shop drawings with all other trades and manufacturers whose products are used in conjunction with the Steel Doors and Frames under section 08100.
- B. Finish hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. The steel door and frame supplier will furnish to the architect (4) complete copies of the proposed steel door and frames schedule and/or shop drawings. Using the same reference number for details and openings as those on the contract drawings. After receipt of the approved door schedule the steel door and frame supplier will make any corrections and resubmit to the architect (6) sets of corrected schedules.
- D. Upon request of the ARCHITECT and OWNER or for any substitution to this specification, (4) copies of the steel door & frame manufacturers catalog cut sheets are to be submitted to the ARCHITECT and OWNER before any material is placed on the job site.
- E. **All products installed in the building envelope shall have product approval number indicated on the submittal. Products shall conform to the Florida Building Code, latest edition.**

1.06 QUALITY ASSURANCE

- A. Provide Steel Doors and Frames complying with the Steel Door Institute recommended specifications for Standard Steel Doors and Frames ANSI/SDI 100 (Latest edition).
- B. Steel Doors and frames shall be manufactured to high quality standards in manufacturing facilities with annual certified conformance to ISO9001.

1.07 DELIVERY, STORAGE AND HANDLING

- A. All steel doors and frames being supplied must be properly marked with door opening mark number corresponding with the door schedule.
- B. Deliver all steel doors cartoned and properly stored on planks or dunnage to provide protection during transit and job storage.
- C. Inspect doors and frames for damage upon delivery. Minor damage may be repaired, provided the finish items are equal in all respects to new work and acceptable to the ARCHITECT and OWNER, otherwise remove and replace damaged items as directed.
- D. Store doors and frames at the building site under cover. Place units on at least 4 inch high wood sills or on the floor in a manner that will prevent rust and damage. Avoid the use of non-vented plastic or canvas shelters which could create a humidity chamber. If

the cardboard wrapper on the door becomes wet, remove the carton immediately. Provide a minimum 1/4" space between stacked units to promote air circulation.

1. Non-galvanized stock (ref. 2.04, B2) must be stored in a trailer or equivalent.

1.08 WARRANTY

- A. All steel door and frame products shall be warranted from defects in workmanship for a period of one (1) year from date of shipment.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Subject to meeting the design requirements specified herein, the following manufacturers have prior approval:

Fleming Door
CECO Door Products
Curries Companies
Steelcraft Manufacturing Company
Metal Products, Inc.
Other SDI or NAAMM members that conform to the specific requirements of this specification.

2.02 CLEARANCES

- A. Coordinate undercuts at door locations to suit design conditions. Note that typical thresholds are handicapped type, rising only 1/4" above floor which will allow only 3/8" undercut.
 1. At door sills where no threshold is used, undercut door 3/4" maximum unless otherwise shown on drawings. Verify undercut on fire rated doors.
 2. At door sills where a threshold is used, 1/4" maximum between door and threshold. Note: Threshold at exterior doors is Pemko #2005 (or equivalent) which is 1/2" maximum height to top of bumper. Threshold base is 1/4" height, therefore bottom of door is to be prepared so that it is approximately 1/8" above base.
- B. Edge clearances shall be as follows: Between doors and frames, at head and jambs - 1/8".
- C. Between meeting edges of pairs of doors 1/8".

2.03 MATERIAL

- A. Use prime quality carbon steel; free from scale, pitting and surface defects.
- B. Steel doors and frames shall be fabricated from tension leveled steel to ASTM A924-97 (M-97), galvanized to ASTM A653-97 (M-97), Commercial Steel (CS), Type B, coating designation A40 (ZF120), known commercially as paintable Galvanneal.

2.04 FRAME FABRICATION

- A. **No knock-down frames** are to be used unless specifically authorized by the OWNER.
- B. Fabricate from 16 gauge steel sheets, unless otherwise called for, conforming to ASTM A366. Exterior frames and interior frames to be hot-dip galvanized conforming to ASTM A-526 (A60) with coating weight of not less than 0.30 ounces per S.F., per side. Material to be free from scale, pitting, rust and other surface defects, to producer's standard configurations which most closely match, in ARCHITECT'S judgment, configurations shown on drawings. All doors with closers shall have reinforcement in frame. All doors over 3'-0" shall have top pin reinforcement.
 - 1. Provide concealed hardware reinforcements in accordance with HMMA 820 & 861. Note that certain doors are to receive continuous hinges. Prepare frame appropriately.
 - 2. Interior frames installed in metal stud walls may delete galvanizing and be provided with full factory prime coat if buildings are dried in prior to frame installation. Refer to 3.02, H this section.
 - 3. All frames installed in walls 8" or less thick are to be wrap around configuration.
- C. Continuous equal face dimension profile: construct all door frames with corners saw-mitered and full (continuously) welded through the throat per HMMA 820 configuration "A", with all exposed welds ground and finished smooth.
- D. Faces of unequal widths (4" head - 2" verticals and other horizontals): construct frames with 2" faces machine mitered and stops butted with head overlapping jambs and with jamb tabs interlocking slots in head member. Weld miters continuous, with all exposed welds ground and finished smooth. Filler caps, if required, to close end gaps at 4" head member, for all wrap-a-around frame locations are to be neatly sized and positioned and securely fastened in place. Any open joints in faces and returns which will be visible after installation are to be welded, ground and finished smooth, at the shop.
- E. Frames shall be factory prep to receive 3 door silencers on strike side of jamb and one additional silencer for each leaf on heads of double doors.
- F. Provide glazing stops for fixed glazing application. At exterior locations place removable stop on inside of building. At interior locations place removable stop on side of smallest room or as instructed. Removable glazing stops shall be of cold rolled

steel, not less than 20 gauge thickness galvanized as 2.04 B, butted at corner joints and secured to the frame with countersunk cadmium-or zinc-plated screws.

- G. Jamb, heads, mullions, sills and center rails shall be straight and uniform throughout their lengths.
- H. Factory assembled frame product shall be square, free of defects, warps or buckles.
- I. Corner joints shall be accurately mitered and tightly fitted with integral door stops mitered or butted when assembled.
- J. Corner joints shall be:
 - 1. Welded on the inside of the profiles, returns and faces for set-up and welded frames.
 - 2. Provided with 20 gauge steel reinforcing plates and/or jamb with integral tabs.
- K. Joints at mullions, transom bars, sills or center rails shall be coped accurately, butted and tightly fitted with faces securely welded, matching corner joint faces.
- L. Frames shall be fabricated with integral door stops having a minimum height of 5/8".
- M. On factory assembled frames, each door opening shall be provided with two (2) temporary steel jamb spreaders welded to the base of the jamb of mullions to maintain proper alignment during shipping and handling. Spreaders shall be removed by the contractor responsible for installation prior to anchoring of frame to floor and wall.

2.05 DOOR FABRICATION

- A. All doors to have flush surface configuration upon fabrication completion. All seams to be located on door edges. Face sheets shall be fabricated from 18 gauge steel, unless otherwise called for, welded with internal reinforcement. Use galvanized material conforming to ASTM A-526, coating weight as 2.04 above. Continuously weld and grind all seams smooth.
- B. Exterior and Interior door cores shall be as listed below:
 - 1. Fire door cores shall be rigid extruded polystyrene chemically bonded to all interior surfaces, fire retardant, closed cell board, Type 1, Density: 1 to 2 PCF, thermal values: R 6.0 minimum, conforming to ASTM C578.
 - 2. Typical insulated door cores shall be rigid foam polyisocyanurate chemically bonded to all interior surfaces, closed cell, faced board, thermal value: R 12.3 minimum, conforming to ASTM C1289.
- C. Door faces of all steel doors shall be fabricated without visible seams, free of scale, pitting, coil rakes, buckles and waves.

- D. Formed edges shall be true and straight with a minimum radius for the thickness of steel used.
- E. Lock and hinge edges shall be beveled 1/8" in 2" unless builders' hardware or door swing dictates otherwise.
- F. Provide shop installed integral flush 16 gauge closing channels on tops and bottoms of all doors, welded to each face sheet at 6" o.c. maximum. Top and bottom closures shall be fully sealed. For acoustic doors, end channels shall be fabricated from 12 gauge steel.
- G. Louver Style - Zee Type.
 - 1. Provide removable insect screens in aluminum frame on inside faces of all louvers in exterior doors.
- H. Exterior doors shall be provided with factory installed flush PVC top caps. Fire labeled exterior doors shall be provided with factory installed flush steel top caps.
- I. Exterior doors shall meet Large Missile Impact Criteria as provided in SBC/SSTD 12/99.

2.06 ANCHORAGE

- A. Frames shall be provided with anchorage appropriate to floor, wall and frame construction in accordance with HMMA 820 & 861.
- B. Each wall anchor shall be located immediately above or below each hinge reinforcement on the hinge jamb and directly opposite on the strike jamb, except as indicated below. Refer to 3.02, F (1) of this section.
- C. Frames installed in unit masonry partitions shall be provided with .156" diameter steel wire anchors, 18 gauge steel adjustable stirrup and strap or "T" type anchors as conditions dictate.
- D. All frames shall be installed with each jamb secured with 16 gauge steel floor anchors. Each anchor shall be provided with two (2) factory prepared holes for mounting to the floor and shall be securely welded to the inside of the jamb profile.
 - 1. Provide fixed mullion anchors each side of mullion.
- E. Frames installed in steel stud and drywall partitions shall be provided with 20 gauge steel snap-in or "Z" type stud type anchors.
- F. Jambs of frames in previously placed concrete, masonry or structural steel shall be punched and dimpled to accept machine bolt anchors, 1/4" diameter, located not more

than 6" from the top and bottom of each jamb. Anchor preparations and guides shall also be located immediately above or below the intermediate hinge reinforcements and directly opposite on the strike jamb. Each preparation shall be provided with 16 gauge anchor bolt guides.

1. After sufficient tightening of the anchor bolt, the head shall be welded so as to provide a non-removable application. Welded bolt and dimple shall be filled and ground to present a smooth uniform surface by the contractor responsible for installation, prior to finish painting.
- G. All anchor bolts and expansion shields for the above preparations shall be provided by the contractor responsible for installation.

2.07 DOOR SILENCERS

- A. GJ-64 or equal, Single Stud rubber/neoprene type. Refer to 2.04, D this section.

2.08 HARDWARE PREPARATIONS

- A. Doors shall be factory blanked, reinforced, drilled and tapped for **fully** templated mortised hardware, in accordance with the final approved schedule and templates provided by the hardware supplier.
- B. Doors shall be factory blanked and reinforced for mortised hardware that is **not fully** templated.
- C. Doors shall be factory reinforced for surface mounted hardware.
- D. Templated holes 1/2" diameter and larger shall be factory prepared, except mounting and through bolt holes, which shall be by the contractor responsible for installation on site, at the time of application. Templated holes less than 1/2" diameter shall be factory prepared only when required for the function of the device (for knobs, levers, cylinders, thumb or turn pieces) or when these holes over-lap function holes.
- E. Drilling and tapping for surface mounted hardware or mortised hardware that is not fully templated shall be by the contractor responsible for installation on site, at the time of application.
- F. Hinge and pivot reinforcements shall be 10 gauge steel minimum high frequency type reinforcing.
- G. Doors in excess of 96" rabbit height shall be prepared for 4 1/2" heavy weight hinges minimum.
- H. Hinge reinforcements for acoustic doors shall be 10 gage minimum with each cutout provided with 4 1/2" heavy weight high frequency type reinforcements.

- I. Lock, strike and flush bolt reinforcements shall be 16 gage steel minimum.
- J. Reinforcements for concealed closers and holders shall be 12 gage steel minimum.
- K. For surface mounted hardware, reinforcements shall be 16 gage steel minimum.
- L. All pairs of fire labeled doors shall be provided with 12 gage steel surface mounted flat bar astragal, shipped loose for application on site, by the contractor responsible for installation.
- M. Acoustic doors shall be reinforced for and provided with surface mounted adjustable automatic door bottoms, shipped loose for application on site, by the contractor responsible for installation.
- N. Pairs of acoustic doors shall be provided with surface mounted over-lapping acoustic astragal and where fire labeled assemblies are specified, an additional 12 gage steel over-lapping flat bar astragal, each shipped loose, for application on site, by the contractor responsible for installation.

2.09 SHOP FINISHING

- A. All tool marks, abrasions and surface blemishes shall be filled and sanded to present smooth uniform surfaces.
- B. Note that frame and door stock is specified in 2.04 and 2.05 above to be hot-dip galvanized conforming to ASTM A-526 & A-653 (A60)(0.60) ounces/SF total wt.). Modifications to this galvanized finish such as welds, end shears and the like are to be fully shop coated with a high quality zinc-rich paint minimum 2.0 mil thickness to insure against rusting while products are left exposed prior to finish painting.
- C. Doors and frames are to be thoroughly cleaned and chemically treated to insure maximum paint adhesion. All surfaces of the door and frame exposed to view before installation shall receive a factory applied coat of rust inhibiting primer, either air-dried or baked-on. The finish shall meet the requirements for acceptance stated in ANSI A224.1 "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces". The prime finish is not intended to be the final layer of protection from the outside elements. Field painting shall be performed in accordance with the recommendations of the door and frame manufacturer. For specialty types of finished coatings, the paint supplier should also be consulted.
- D. All surfaces, front and back, are to arrive at the project site fully and durably coated with its appropriate shop finish.

2.10 FRAME GROUT

- A. Standard masonry cement mortar for frames installed in metal studs, concrete or masonry.

2.11 UNDERWRITER LABELED CONSTRUCTION

- A. See Section 08000 / Door Schedule for UL-rated doors and frames. Construct those doors and frames in accord with UL requirements and affix label.

2.12 PRODUCER'S QUALIFICATIONS

- A. Door and frame manufacturer is required to submit evidence that products furnished are in compliance with the most stringent requirements of S.D.I. 100, "Recommended Specifications for Standard Steel Doors and Frames", or National Association of Hollow Metal Manufacturers (NAAMM), as supplemented or modified herein, and **further comply with requirements specified which are above and beyond SDI and NAAMM standards.** (Examples are: joint assembly method, welding, finish, etc.)

PART 3 - EXECUTION

3.01 SITE STORAGE AND PROTECTION OF MATERIALS

- A. No frame or door is to be installed with any rust. Prior to installation, any visible rusted areas are to be properly prepared by removing rust and reprimed with an approved primer which will be compatible with finish paint. After installation, doors and frames shall be periodically checked for rust and if found, rework as above.
- B. The contractor responsible for installation shall remove wraps or covers from door and frame product upon delivery at building site.
- C. All materials shall be thoroughly inspected upon receipt and all discrepancies, deficiencies and/or damages shall be immediately reported in writing to the supplier. All damage shall be noted on the carriers' Bill of Lading.
- D. Contractor responsible for installation shall ensure all materials are properly stored on planks or dunnage in a dry location. Product shall be stored in a vertical position, spaced with blocking to permit air circulation between them. Materials shall be covered to protect them from damage from any cause.
- E. Contractor shall notify the supplier in writing of any errors or deficiencies in the product itself before initiating any corrective work.

3.02 FRAME INSTALLATION

Frames shall be set in place at locations shown on architectural drawings prior to wall construction. Masonry and frame walls are to be built around pre-installed frames.

- A. Set frames plumb, square, aligned, without twist at correct elevation in accordance with NAAMM-HMMA 840.
- B. Frame Installation Tolerances:
 - 1. Plumbness tolerance, measured through a line from the intersecting corner of vertical members and the head to the floor, shall be 1/16".
 - 2. Squareness tolerance, measured through a line 90° from one jamb at the upper corner of the frame, to the opposite jamb, shall be 1/16".
 - 3. Alignment tolerance, measured on jambs, through a horizontal line parallel to the plane of the wall, shall be 1/16".
 - 4. Twist tolerance, measured at face corners of jambs, on parallel lines perpendicular to the plane of the wall, shall be 1/16".
- C. Fire labeled frame shall be installed in accordance with NFPA-80.
- D. Brace frame rigidly in position while building-in. Remove temporary steel shipping jamb spreaders prior to securing floor anchors. Install wood spreaders at mid-point of frame rabbet height to maintain frame widths. (Spreaders shall not be used as a gauge during construction).
- E. Provide vertical support at center of head for openings exceeding 48" in width.
- F. Secure anchorages and connections to adjacent construction as specified below. (Also refer to 2.06 for frame anchor requirements.)
 - 1. All door and door height glazed frames are to receive minimum 4 anchors each jamb. Less than door height glazed frames are to receive minimum 2 anchors per jamb. Refer to 2.06.
 - 2. Anchor all frame bottoms to floor with two 1/4" galvanized expansion bolts set into expansion shields or drilled-in "Tapcon" anchors. Install plumb and level insuring that doors when installed will stand open, in any position, without bind.
 - 3. Provide UL-approved anchors for UL-rated installations.
- G. Frames shall be fully grouted in place as directed below.
 - 1. Perimeter of all interior and exterior door and window frames are to be grouted solid when in contact with concrete/masonry.
 - 2. Perimeter of all door and window frames are to be grouted solid when in exterior frame walls.
- H. Coat throat (inside of jamb) continuously from bottom of jamb legs up to 18" A.F.F. with bituminous coating at all wet locations and where the floor finish shall be VCT.

3.03 DOOR INSTALLATION

- A. Install doors in accordance with NAAMM-HMMA 840, maintaining clearances outlined in Section 2.02.
- B. Install builders' hardware in accordance with ANSI A115.IG-1994, manufacturers' templates and instructions.
- C. Install louvers and vents.

3.04 FINAL ADJUSTMENTS/CLEAN-UP

- A. Adjust operable parts for correct clearances and function.
- B. Steel surfaces shall be kept free of grout, tar or other bonding materials or sealers.
- C. Any grout or other bonding material shall be cleaned from products immediately following installation.
- D. Prior to site touch-up, exposed surfaces of galvanized steel to be finished with latex paints shall be cleaned with soap and water to remove foreign matter. When alkyd paints are specified, turpentine or paint thinners shall be used. Refer to paint manufactures recommendations for additional information.
- E. Exposed field welds shall be finished to present a smooth uniform surface and shall be touched-up with a rust inhibitive primer.
- F. Exposed surfaces that have been scratched or otherwise marred during shipment, installation or handling shall be touched-up with a rust inhibitive primer.
- G. Finish paint in accordance with Section 09910.
- H. Install glazing materials and door silencers.

END OF SECTION 08100

SECTION 08200 / SOLID CORE WOOD DOORS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 08000 and other sections of this division.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Section 06200:	Finish Carpentry
Section 08100:	Hollow Steel Doors and Frames
Section 08711:	Door Hardware and Schedule
Section 08800:	Glass Products
Section 09910:	Painting

1.03 SUMMARY

- A. This Section specifies the minimum materials, workmanship and performance standards for flush wood doors.
- B. This section includes the following types of doors:
1. Solid core unfinished flush wood doors.
 2. Factory-finished flush wood doors.
 3. Solid core flush wood doors with plastic laminate faces.
 4. Factory pre-fitting to frames and factory pre-machining for hardware for wood doors.
 5. Metal door frames for flush wood doors are specified in Section 08100.

1.04 STRUCTURAL DESIGN REQUIREMENTS

- A. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:
1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.04, B of this section.

1.05 SUBMITTALS

- A. Product Data: The CONTRACTOR shall provide door manufacturer's technical data for each type of door, including details of core and edge construction, trim for openings and louvers and factory-finishing specifications.

- B. Shop Drawings: The CONTRACTOR shall provide shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for factory finishing and other pertinent data. The CONTRACTOR shall correlate location, designations and reference numbers, details and other applicable information with drawings.
1. For factory premachined doors, drawings shall indicate dimensions and locations of cutouts for locksets and other cutouts adjacent to light and louver openings.
- C. Samples: The CONTRACTOR shall provide samples, 1'-0" square or as indicated, for the following:
1. Metal Frames for Door Light Openings: Metal light frames in 6" lengths; for each material, type and finish required.
 2. Factory pre-finished and unfinished doors.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of AWI Quality Standard Section 1300, Premium Grade, and NWWDA I.S. 1 "Industry Standard for Wood Flush Doors." Where conflicts occur the AWI Quality Standard shall govern.
- B. Installed Doors and Panels: Conform to NFPA 80 for fire-rated doors as indicated. Test fire-rated door assemblies in accordance with ASTM E152. Provide doors labeled by UL.
- C. Destructive Testing: One solid core wood door may be randomly selected by the ARCHITECT for destructive testing to determine if the manufacturer has complied with the specifications. The cost of the door will be borne by the manufacturer, provided there are at least 50 doors on the Project.
- D. National Wood Window and Door Association, (NWWDA).
- E. Architectural Woodwork Institute.
- F. Window and Door Manufacturers Association: WDMA I.S. IA, "Architectural Wood Flush Doors."
- G. Fitting tolerances:
1. 1/8" clearance at jambs, heads and meeting stiles.
 2. 1/2" clearance at bottom. (Verify with other requirement of this section and Architectural details).
 3. Fit UL labeled doors to UL requirements.

- H. Manufacturer: The CONTRACTOR shall obtain doors from a single source and manufacturer.

1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Doors shall be protected during transit, storage and handling to prevent damage, soiling and deterioration. The CONTRACTOR shall comply with requirements of referenced standards and recommendations of NWWDA pamphlet "How to Store, Handle, Finish, Install and Maintain Wood Doors", as well as with manufacturer's instructions.
- B. The CONTRACTOR shall identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames and hardware, using temporary, removable or concealed markings.

1.08 PROJECT CONDITIONS

- A. Conditioning: The CONTRACTOR shall not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period.
1. AWI Quality Standard Section 100-S-11 "Relative Humidity and Moisture Content".

1.09 WARRANTY

- A. Door Manufacturer's Warranty: The CONTRACTOR shall provide copies of written agreement in door manufacturer's standard form signed by Manufacturer, Installer and the CONTRACTOR agreeing to repair or replace defective doors that have warped (bow, cup or twist) or that show telegraphing of core construction in face veneers, or do not conform to tolerance limitations of referenced quality standards.
1. Warrant doors in writing for life of installation against defects including:
 - a. De-lamination.
 - b. Warp or twist of 1/4" or more.
 - c. Telegraphing of core through face veneer.
 - d. Surface variation exceeding 0.01" or more in 3" span.
 - e. Other defect that may impair or affect performance of door for purpose intended.
 2. Remove and replace defective doors; include cost of removal of defective units, re-hanging and refinishing of replacement units.
- B. The CONTRACTOR'S Responsibilities: The CONTRACTOR shall replace or refinish doors where its work contributed to rejection or to voiding of manufacturer's warranty.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Algoma Hardwoods, Inc.
- B. Eggers Industries
- C. Graham Doors
- D. Marshfield Door Systems

2.02 MATERIALS

- A. Doors: AWI "PC-5 ME" type, solid particleboard core with solid stiles. Provide mineral core doors with fire-rating as scheduled.
- B. Faces: AWI AA Premium Grade plain sliced red oak or birch veneers, both sides. Match existing, adjacent veneers in remodel work.
 - 1. Face veneer: Plain sliced red oak or birch veneer, both faces.
 - a. Flat cut (plain sliced)
 - b. Book-matched.
 - c. Matching solid hardwood edges.
 - d. Minimum veneer thickness of 0.02".
 - e. Veneer from certified sustainable forest.
 - 2. Thickness: 1-3/4".
- C. Edge Stiles: Solid hardwood to match face veneers without finger jointing.
- D. Adhesives: NWWDA I.S. 1.5 Type I.
- E. Glazing Stops: 20 gage cold-rolled steel channel. For fire-rated doors, provide glazing stops with UL label.

2.03 PREFITTING AND PREPARATION FOR HARDWARE

- A. Prefit and premachine fire-rated and 20-minute wood doors at the factory or at a labeling agency licensed machiner.
- B. Comply with the tolerance requirements of AWI for prefitting.

2.04 FABRICATION

- A. Factory machine doors for application of hardware.
- B. Factory bevel vertical edges, 1/8" in 2".

C. Cutouts:

1. Make cutouts accurately and neatly.
2. Provide two sets of veneer applied metal or composite stop moldings for openings. Install per manufacturer's specifications.
 - a. Neatly miter stops at corners.
 - b. Finish to match door.
3. Furnish and factory install glass and glazing in non-rated wood doors.

PART 3 – EXECUTION

3.01 INSPECTION

- A. Verify suitability of opening to accept installation.
- B. Installation constitutes acceptance of responsibility for performance.

3.02 INSTALLATION

- A. Do not hang damaged, warped, or stained doors.
- B. Condition doors to prevailing humidity prior to hanging.
- C. Fit doors to frames and machine for hardware, to extend not previously worked at factory.
- D. Install doors in accordance with manufacturer's instruction.
- E. Adjust for proper fit and uniform clearance.

END OF SECTION 08200

SECTION 08310 / ACCESS DOORS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 08000 and other sections of this division.

1.02 STRUCTURAL DESIGN REQUIREMENTS

- A. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:
1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition adopted by D.O.E. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.02, B of this section.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Products specified herein are those of Milcor or as noted. Equivalent products of Bar-Co, Cesco or J.L. Industries will be acceptable. Submit other manufacturer's data for approval.
1. Gypsum Board Walls and Ceilings (Non-Rated)
No. 3203 Series, 16" x 16" minimum size, 16 gauge frame, 18 gauge door, both factory prime painted, galvanized steel drywall bead and one (1) flush lock.
 - a. Attic Access: provide 24" x 30" size units for installation into suspended attic closure barrier, installed at locations as directed. Provide units as shown on Architectural Plans.
 3. Masonry Walls
No. 3202 Series, 16" x 16" minimum size, 16 gauge frame and 18 gauge door, prime painted, flush cam lock.
 4. Fire Rated Type
No. 3208 Series, 18" x 18" minimum size, 16 gauge frame, 20 gauge door, both factory prime painted, 1 key operated flush latch. Provide with UL 1 1/2 hour B-Label.

PART 3 - EXECUTION

- 3.01 Carefully locate doors to be positioned to allow access to all valves, boxes, devices and service points which will be concealed behind non-accessible walls or ceilings. Size doors greater than minimum specified to provide full access as necessary.

Securely attach to perimeter framing, aligned true and set so that door will be flush with wall surface.

- 3.02 Not all required access locations are shown on the plans. It will be the responsibility of each trade to review the requirements and make allowance for access doors.
- 3.03 If not acceptably finished, finish paint doors and frames to match color of field in which placed.

END OF SECTION 08310

SECTION 08361 / OVERHEAD DOORS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 08000 and other sections of this division.
- B. Related Work in Other Divisions/Sections:

Section 08330: Counter Shutter

1.02 SCOPE OF WORK

- A. Operation: Overhead Rolling (Coil-Up) Service Doors, interior face mounted, chain hoist manual.

1.03 STRUCTURAL DESIGN REQUIREMENTS

- A. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:
 - 1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition adopted by D.O.E. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.03, B of this section.
- B. Essential Facility Wind Speed design shall be as noted on structural and architectural drawings. See architectural drawings for the requirements to comply with the Essential Facilities category.
 - 1. The Essential Facilities Building Envelope shall comply with SBCCI/SSTD-12 for large missile impact criteria.

1.04 SUBMITTALS

- A. **All products installed in the building envelope shall have product approval number indicated on the submittal. Products shall conform to the Florida Building Code, latest edition.**

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. The Raynor Mfg. Company model numbers are shown. Equivalent products of Overhead Door Company, Cookson, Kinnear, A.R.D., American Roll-Up Door, Omega, will be acceptable.

2.02 NON-RATED OPENINGS

A. Curtain

1. Slats (Insulated): shall be Type IF, 22 gauge, hot-dipped galvanized (G-90) baked-on primed steel. Back cover shall be 24 gauge galvanized baked-on primed steel. Slat system to have a 3/4" thick expanded polystyrene core applied between the slat and back cover.
U = .24 / R = 4.1 (minimum).
 2. Endlocks: shall be used on alternate slats with wind locks adequate to meet a design wind load of 35 p.s.f. minimum.
Curtains at exterior locations shall be designed and installed to meet or exceed a wind load of 35 PSF. Manufacturer shall submit details and other design data to verify conformance.
 3. Bottom Bar: shall be two (2) galvanized steel angles to reinforce curtain and equipped with loop type weatherseal.
- B. Guides: shall be three (3) galvanized "Z Type" structural steel angles, 1/4" minimum thickness and equipped with full door height PVC weatherseals contacting the exterior and interior curtain surfaces. Equip guides with windlock bars to meet wind load specified above.
- C. Brackets: shall be minimum 1/4" galvanized steel plate to support the barrel, counter balance and hood.
- D. Counter Balance: shall be Helical Torsion Springs housed in a steel pipe barrel, supporting the curtain with a deflection limited to 0.03" per foot of width. It shall be adjustable by means of an external adjusting tension wheel.
- E. Hood: shall be minimum 24 gauge galvanized steel, prime painted. Internal baffle shall be included to retard air infiltration.
- F. Finish: manufacturer's power coated paint finish. All non-galvanized, exposed, ferrous surfaces to receive factory applied rust inhibitive primer.
Finish field painting by Division 9.
- G. Operation: shall be chain hoist, right jamb, inside, unless indicated otherwise.

- H. Locking: provide doors with interior slide bolts for padlocks provided by OWNER.
- I. Weather Seal: (Exterior Locations) for guide and hood.
- J. Location and Size: As shown on Architectural Drawings.

PART 3 - EXECUTION

- 3.01 Field verify all opening sizes. Install doors to masonry/reinforced concrete walls using 3/8" minimum diameter expansion bolts (UL rated where required), Hilti Kwik Bolt or equal. Adjust all doors for smooth and easy operation and weathertight closure to wall opening.
- 3.02 Coordinate with other sections in placing/providing access panels at required access/service locations.

END OF SECTION 08361

SECTION 08520 / ALUMINUM WINDOWS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 08000 and other sections of this division.

1.02 WORK INCLUDED

- A. Furnish and install aluminum architectural windows complete with hardware and related components as shown on drawings and specified in this section.
- B. All windows shall be projected-out top hinged with integral fixed transom at top of window. Egress windows, as required, shall be casement in the same configuration as the projected-in window with integral transom above. Windows shall conform with all requirements of AAMA P-HC-65 specifications. Manufacturers requesting approval to bid their product must submit the following information ten days prior to close of bidding as directed in Section 01000.
 - 1. A sample window, 3'-0" x 2'-0" single unit, as per requirements of ARCHITECT.
 - 2. Test reports documenting compliance with requirements of Section 1.03.
- C. Subframes/Receptors: Provide subframes with anchors for window units as shown, of profile and dimensions indicated but not less than 0.125-inch (1/8") thick extruded aluminum. Miter or cope corners, and weld and dress smooth with concealed mechanical joint fasteners. Sub-sill configuration shall be approved by ARCHITECT and OWNER. Finish to match window units.
- D. Glass and Glazing
 - 1. All units shall be factory glazed.

1.03 STRUCTURAL DESIGN REQUIREMENTS

- A. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:
 - 1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.03, B of this section.

- B. Wind Speed design shall be as noted on structural and architectural drawings and shall comply with ASCE-7, latest edition.

1.04 TESTING AND PERFORMANCE REQUIREMENTS

A. Test Units

1. Air, water, and structural test unit shall conform to requirements set forth in AAMA/NWWDA 101/I.S.2-97.

B. Test Procedures and Performances

1. Windows shall conform to all AAMA/NWWDA 101/I.S.2-97 requirements for the window type referenced in 1.02 B. In addition, the following specific performance requirements shall be met.
2. Air Infiltration Test
 - a. With ventilators closed and locked, test unit in accordance with ASTM E 283 at a static air pressure difference of 6.24 psf.
 - b. Air infiltration shall not exceed .10 cfm per foot of crack.
3. Water Resistance Test
 - a. With ventilators closed and locked, test unit in accordance with ASTM E 331/ASTM E 547 at a static air pressure difference of 12 psf.
 - b. There shall be no uncontrolled water leakage.
4. Uniform Load Deflection Test
 - a. With ventilators closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 65 psf positive and negative pressure.
 - b. No member shall deflect over L/175 of its span.
5. Uniform Load Structural Test
 - a. With ventilators closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 97.5 psf, both positive and negative.
 - b. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanisms, nor any other damage that would cause the window to be inoperable.
6. Condensation Resistance Test
 - a. With ventilators closed and locked, test unit in accordance with AAMA 1503.1.
 - b. Condensation Resistance Factor (CRF) shall not be less than 49.
7. Life Cycle Testing
 - a. Test in accordance with AAMA 910. There shall be no damage to fasteners, hardware parts, support arms, activating mechanisms, or any other damage that would cause the window to be inoperable. Air infiltration and water resistance tests shall not exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Installers Qualifications: Engage an experienced Installer who has completed installation of aluminum windows similar in material, design and extent to those required for this project and with a record of successful in-service performance.
- B. Provide test reports from AAMA accredited laboratories certifying the performance as specified in 1.03.
 - 1. Testing Agency Qualifications: To qualify for approval, an independent testing agency must demonstrate to ARCHITECT'S satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the work.
 - 2. Test reports shall be accompanied by the window manufacturer's letter of certification, stating the tested window meets or exceeds the referenced criteria for the appropriate AAMA/NWWDA 101/I.S.2-97 window type.
- C. Single-Source Responsibility: Obtain aluminum windows from one source and by a single manufacturer.
- D. Product Options: The drawings indicate sizes, profiles, dimensional requirements and aesthetic effects of aluminum windows and are based on the specific window types and models indicated. Other aluminum window manufacturers whose products have equal performance characteristics may be considered provided deviations in size, profile and dimensions are minor and do not alter the aesthetic effect. For substitutions, refer to Section 01000/Supplementary Special Conditions.

1.06 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Contractor shall submit shop drawings; finish samples, test reports, and warranties.
 - 1. Samples of materials as may be requested without cost to OWNER, i.e., metal, glass, fasteners, anchors, frame sections, mullion section, corner section, etc.
 - 2. Contractor shall submit manufacturer's installation instructions for each specific window opening type.
- C. Product Data for each type of window required, including the following:
 - 1. Construction details and fabrication methods.
 - 2. Profiles and dimensions of individual components.
 - 3. Data on hardware, accessories, and finishes.

4. Recommendations for maintaining and cleaning exterior surfaces.
 5. Warranties
- D. Shop Drawings showing fabrication and installation of each type of window required including information not fully detailed in manufacturer's standard Product Data and the following:
1. Layout and installation details, including anchors.
 2. Elevations at 1/4 inch = 1 foot scale and typical window unit elevations at 3/4 inch = 1 foot scale.
 3. Full-size section details of typical composite members, including reinforcement and stiffeners.
 4. Manufacturers installation instructions for each specific window opening type.
 5. Hardware, including operators.
 6. Glazing details.
 7. Accessories.
- E. Samples for initial color selection on 12 inch (300 mm) long sections of window members. Where finishes involve normal color variations, include sample sets showing the full range of variations expected.
- F. Samples for Verification: The ARCHITECT reserves the right to require additional samples that show fabrication techniques, workmanship, and design of hardware and accessories.
- G. Test reports from a qualified independent testing agency indicating that each type, grade, and size of window unit complies with performance requirements indicated based on comprehensive testing of current window units within the last 5 years. Test results based on use of down-sized test units will not be accepted.
- H. **All products installed in the building envelope shall have product approval number indicated on the submittal. Products shall conform to the Florida Building Code, latest edition.**

1.07 PROJECT CONDITIONS

- A. Field Measurements: Check window openings by field measurements before fabrication and show recorded measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.
1. Where field measurements cannot be made without delaying the work, guarantee opening dimensions and proceed with fabricating aluminum windows without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to guaranteed dimensions.

1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Store and handle windows, mullions, panels, hardware and all related items in strict compliance with the manufacturer's instruction and protect from damage.

1.09 Warranties

A. Total Window System

1. The responsible contractor shall assume full responsibility and warrant for one year the satisfactory performance of the total window installation which includes that of the windows, hardware, glass (including insulated units), glazing, anchorage and setting system, sealing, flashing, etc., as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.
2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible contractor at his expense during the warranty period.

- B. General Warranty: The special warranty specified in this article shall not deprive the OWNER of other rights the OWNER may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

- C. Special Warranty: Submit a written warranty signed by aluminum window manufacturer agreeing to repair or replace window components that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
2. Faulty operation of sash and hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

- D. Warranty Period: 5 years after date of substantial completion.

- E. Warranty Period for Metal Finishes and Glass: 10 years after date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Aluminum

1. Extruded aluminum shall be 6063-T6 alloy and tempered.

B. Hardware

1. Locking handles shall be cam type and manufactured from a white bronze alloy with a US25D brushed finish.
2. Operating hardware shall be 4-bar stainless steel arms or equal.

C. Weather Strip

1. All weather strip shall be Santoprene® or equal.

D. Thermal Barrier

1. All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. For purposes of this specification, a structural thermal barrier is defined as a system that shall transfer shear during bending and, therefore, promote composite action between the exterior and interior extrusions.
2. The thermal barrier shall be INSULBAR® by ENSINGER, INC. or equal, consisting of two glass reinforced polyamide nylon 6/6 struts, mechanically crimped in raceways extruded in the exterior and interior extrusions.
3. Poured and debridged urethane thermal barriers shall not be permitted.

E. Glass

1. Tinted Impact resistance glass.

2.02 FABRICATION

A. General

1. All aluminum frame and vent extrusions shall have a minimum wall thickness of 0.125-inch (1/8").
2. Mechanical fasteners, welded components, and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all frame and vent corners.
3. Depth of frame and vent shall not be less than 2".
4. All frame and vent members shall be able to accommodate separate interior and exterior finishes and colors.

B. Frame

1. Frame components shall be mechanically fastened.

C. Ventilator

1. All vent extrusions shall be tubular.
2. Each corner shall be mitered, reinforced with an extruded corner key, hydraulically crimped, and "cold welded" with epoxy adhesive.
3. Each vent shall be pressure equalized utilizing two rows of Santoprene® weather stripping installed in specifically designed dovetail grooves in the extrusion.
4. The vent shall present a flush appearance with the exterior and interior of the main frame when in the closed position.

D. Muntins

1. Muntins shall be shop attached (non-removable), exterior grid designed to replicate steel, putty-glazed sash.

E. Screens

1. Screen frames shall be extruded aluminum.
2. Screen mounting holes in the window frame shall be factory drilled.
3. Screen mesh shall be stainless steel.

F. Glazing

1. All units shall be glazed with butyl tape, silicone cap seal, and extruded snap-in aluminum glazing bead, with vinyl gasket.

G. Finish

1. Windows shall be capable of having separate interior and exterior finishes and/or colors.
2. Selection of one of the following shop finishes shall be determined by specific job requirements and have OWNER approval:
 - a. AA-M10-C22-A41 or A31, AAMA611, Architectural Class I, Clear Anodic Coating.
 - b. AA-M10-C22-A44 or A34, AAMA611, Architectural Class I, Color Anodic Coating. Color as selected from Manufacturer's colors.
 - c. AA-M12-C42-R1X, Kynar 500® / Hylar 5000® Fluoropon®, AAMA Guide Spec. 2605. Color as selected from Manufacturer's colors.

PART 3 – EXECUTION

3.01 INSPECTION

A. Job Conditions

1. Verify that openings are dimensionally within allowable tolerances, plumb, level, clean, provide a solid anchoring surface, and are in accordance with approved shop drawings.

3.02 INSTALLATION

- A. Use only skilled tradesmen with work done in accordance with approved shop drawings and specifications.
- B. Plumb and align window faces in a single plane for each wall plane, and erect windows and materials square and true. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.
- C. Adjust windows for proper operation after installation.
- D. Furnish and apply sealants to provide a weather tight installation at all joints and intersections and at opening perimeters. Back (bead) caulk continuously subframes (receptors) and window frames. Continuously caulk all interior and exterior joints to ensure watertightness. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

3.03 FIELD TESTING

- A. Windows shall be field tested for air infiltration and water resistance in accordance with AAMA 502 in the presence of the OWNER'S representative with a water hose.

3.04 ANCHORAGE

- A. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.

3.05 PROTECTION AND CLEANING

- A. After completion of window installation, windows shall be inspected, adjusted, put into working order and left clean, free of labels, dirt, etc. Protection from this point shall be the responsibility of the general contractor.

END OF SECTION 08520

SECTION 08711 / DOOR HARDWARE AND SCHEDULE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 08000 and other sections of this division.
- B. See Section 08000 Door Schedule to "key" hardware to doors.
See architectural floor plan drawings for door locations.

1.02 FIELD MEASUREMENTS AND COORDINATION

- A. Coordinate and furnish work in proper sequence with overall job, and in cooperation with other related trades.
- B. Check all details such as wall trim clearance, bevels, rabbets, backsets, strikes, spindles, hand of locks, closers, or other items required to assure that hardware shall fit and operate properly.
- C. Insure that all hardware installation data is supplied as required by the various materials suppliers.
- D. Approved submittal is required six (6) months prior to the installation of locksets and total delivery of material ninety (90) days prior to completion date.
- E. The hardware manufacturer of locks, exit devices and door closers shall supply both a pre-installation class as well as a post-installation inspection. This is to insure proper installation and provide for any adjustments or replacements of hardware as required.

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 4:	Masonry
Division 6:	Wood and Plastic Laminates
Division 9:	Finishes
Division 12:	Furnishings
Division 16:	Electrical

1.04 STRUCTURAL DESIGN REQUIREMENTS

- A. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:

1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.04, B of this section. Building envelope shall comply with SBCC/SSTD-12 for large missile impact criteria. Refer to architectural drawings for building envelope path and location.

1.05 MATERIALS FURNISHED TO OTHER SECTIONS FOR INSTALLATION

- A. All hardware specified herein.

1.06 CHECKING

- A. It is intended that this section include all required door hardware items. Check plans and this schedule and advise ARCHITECT during bid period of any suspected omissions or discrepancies. Should such report be made during bid period, proper addendum will be issued for correction. Failing to notify ARCHITECT during bid period does not relieve CONTRACTOR of responsibility to furnish complete hardware required, and CONTRACTOR is required to furnish any and all necessary items to satisfactorily complete work as per plans and details whether or not listed herein.

1.07 TEMPLATES

- A. Make hardware for application to all metal frames to standard template. Furnish proper templates to frame fabricator, door supplier, and to other trades as required, in order that they cut, reinforce, and/or otherwise shop prepare their materials for proper application of hardware at job site.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Insure hardware is new and free from defects affecting serviceability and appearance: with working parts well fitted, smooth working and without unnecessary play; made of material denoted by manufacturer's plate number listed in schedule and of finish specified by finish code number.

2.02 APPROVED SUPPLIERS

- A. Manufacturers' numbers in following schedule indicate OWNER'S and ARCHITECT'S standard of quality.
- B. Unless otherwise noted, the schedule plate numbers are taken from current catalogs of the following firms:

Hinges	Hager / Stanley/Ives
Continuous Hinges	Roton/Pemko Hinge/ Ives
Locksets, latchsets & other locking devices.....	Schlage

Push/Pull Plates & Handles, Kickplates.....	Rockwood/Ives
Exit Devices	Precision/Von Duprin
Pull On Doors with exit device	Precision/Von Duprin
Closers	LCN4041/Norton PR7500
Thresholds & Weatherstripping	Pemko/National Guard
Bumpers, Stops, Holders, Flush	H.B.Ives/Rockwood
Bolts & Miscellaneous Overhead Holders	Glynn Johnson/Rixson
Lock Box – Fire Marshal	Knox Box 3200 Series

C. When a single source manufacturer is called for, it shall be used throughout the project.

2.03 FASTENINGS

- A. Furnish complete with proper fastenings suitable for items to be installed as recommended by manufacturer. Match fastenings finish to item with which they are used.
- B. Furnish template butts for wood doors having metal frames with one-half machine screws and one-half wood screws. Fasten closer arm, feet and brackets with machine screws to template and closer body properly located and fastened on all doors with thru bolts and grommet nuts. Use machine screws for all strikes for locksets, flush bolts, etc., when used with metal frames and doors. Mount overhead holders on door with thru bolts and grommet nuts. When using continuous hinges, allow for a space between the grout and frame throat to ensure the capability of installing the hinge screws.

2.04 CLOSERS

- A. All door closers shall be of one domestic manufacturer to provide for proper installation and servicing after installation. All closers shall be inspected at start of, and at finish of installation and 6 months after Substantial Completion by a factory representative to ensure proper adjustment and operation. Written confirmation of proper installation, adjustment, and operation is to be provided to OWNER prior to substantial completion and after 6 month inspection. Closer shall carry a manufacturer's ten year warranty against manufacturing defects and workmanship. All door closers shall be tested to ANSI/BHMA A156.4 test requirements by a BHMA certified testing laboratory. A written certification showing successful completion of a minimum of 1,500,000 cycles must be provided.
1. Acceptable Units:
LCN 4041
Norton PR7500/7500BF (refer to Schedule for variations)
 2. All closers wherever possible shall be parallel arm and shall incorporate one piece solid forged steel arms with bronze bushings, with 1 9/16" x 1/2" steel stud shoulder bolts. All other closers if specified to have forged steel main arms.
 3. For all closers provide thru bolts for mounting on door.

2.05 LOCKSETS

- A. All locksets and deadlocks to have armored scalps or fronts. All locksets are to be cylindrical type with 2 3/4" backset. Design to be **Schlage D-Series Rhodes**.
- B. Interior door locks to be **Schlage D-series**.
- C. All deadbolts and locking devices shall be operated from room side without a key, with the exception of deadbolts installed on exterior gates.

2.06 EXIT HARDWARE

A. Exit Devices

1. Acceptable Manufacturers and Products:

Standard device:

Precision 2103 x 1702A and 2103 x 1703A

Alternate: Von Duprin 98NL x 990NL-R/V and 98DT x 990DT

Hurricane Device:

Precision HC2103 x 1702A and HC2103 x 1703A

Alternate: Von Duprin HH98NL x 990NL-R/V and HH98DT x 990DT

- a. Rim type exit device with allen/hex key dogging feature.

B. Mullions

1. Acceptable Manufacturers and Products:

Standard Mullion: Precision KR822

Alternate: Von Duprin KR4954

Hurricane Mullion: Precision HCKR822

Alternate: Von Duprin KR9954

Fire Rated Mullion: Precision FLKR822

Alternate: Von Duprin KR9954

- 2. Provide **Interchangeable Core (IC) Schlage Classic** keyway cylinder 1 1/4" in length.
- 3. Mullion cylinders are to be keyed to the opening.
- 4. Mullion shall be of the same manufacturer as the exit devices.
- 5. No substitutions will be approved.

C. Verify locations requiring fire rated exit devices.

- D. All exit devices shall be inspected at start of and at finish of installation and 6 months after Substantial Completion by a factory representative to ensure proper adjustment and operation. Written confirmation of proper installation, adjustment, and operation is to be provided to OWNER prior to substantial completion and after 6 month inspection.

2.07 BUTT HINGES

- A. Furnish with flat buttontips of material and finish called for. Where projection of door trim prevents clearance with butt specified, provide butt hinge with leaves sufficient to clear trim. Out-swinging exterior doors to have loose pin butts modified to make pin non-removable (NRP) when door is closed.
- B. Acceptable Manufacturers and Products:
- | | | |
|----------------|------------|--|
| Hager | - Exterior | BB1191 x size x finish
BB1279 x size x finish |
| | Interior | 1279 x size x finish |
| Ives | - Exterior | 5BB1 x size x finish |
| | Interior | 5BB1 x size x finish |
| Roton | - Exterior | 780HD series x size x finish |
| | Interior | 780HD series x size x finish |
| Stanley | - Exterior | FB191 x size x finish
FB179 x size x finish |
| | Interior | F179 x size x finish |
1. Full mortise template hinges, five knuckle type, plain-bearing except at doors with closers or doors over 40 inches width furnish ball-bearing type.
 2. Non-removable pin hinges at exterior doors.
 3. Except at continuous hinge locations, furnish quantity of hinges per door as follows:
 - a. Doors up to 3'-0": 4 1/2" x 4 1/2"
 - b. Doors 3'-0" wide to 3'-4" wide: 5" x 4 1/2"
 - c. Doors over 3'-4" wide: extra heavy 5" x 4 1/2"
 4. Continuous Hinges - at specified locations of high use and wide doors provide continuous geared hinges.

2.08 MISCELLANEOUS

- A. Plates, bumpers, stops, hooks, flush bolts, door holders, closers, and thresholds to be as scheduled both as to class and finish properly applied and fastened.
- B. Install rubber door silencers in all metal frames. Use three (3) along single door jambs. Use two (2) at double door heads.
- C. Furnish wrought box strikes for all door latches.

2.09 KEYING

- A. All exterior and interior locks and cylinders shall be keyed to a Grandmaster restricted keyway, as approved by the owner.
 - 1. Removable cylinders are to be furnished for exit devices with rim/mortise cylinders.
- B. The rest of the hardware is to be sent to the CONTRACTOR including change keys and construction keys. Construction locks are only required on exterior doors. CONTRACTOR is responsible for securing interior rooms as needed during construction. CONTRACTOR may use his own temporary locks or use temporary core system. CONTRACTOR to change out to permanent locks after punchlist inspection.
- C. Fabricate no cylinders prior to receipt of written approved keying schedule.
- D. Furnish the following keys:
 - 1. Four (4) cut master keys per building.
- E. Provide and install one Knox Box, mount per manufacturer's recommendations. Location shall be as directed by ARCHITECT/OWNER. Contractor to coordinate with the fire marshal having jurisdiction for location, keying and ordering information.

2.10 HARDWARE SCHEDULE

A. Hardware Groups

Hardware Group 1 – Exterior – Single – Impact Resistant

1 ½	Pair Hinges	FB191
1	Lockset	ND10S
1	Deadbolt	B663P
1	Closer	LCN 4041
1	Threshold	2005AT

Hardware Group 2 – Exterior – Pair – Impact Resistant

3	Pair Hinges	FB191
1	Lockset	ND10S
1	Deadbolt	B663P
1	Closer	LCN 4041
1	Threshold	2005AT
1	Weatherstripping	S88
1	Drip	346

Hardware Group 3 – Interior – Storage

1 ½	Pair Hinges	F179
1	Lockset	ND 80PD Storeroom
1	Closer	LCN 4041
1	Wall Stop	408
1	Overhead Stop	OH1001M (Door 115) Push Side Installation

Hardware Group 4 – Interior – Passage

1 ½	Pair Hinges	F179
1	Lockset	ND 10S Passage Function
1	Closer	LCN 4041

Hardware Group 5 – Interior – Office

1 ½	Pair Hinges	F179
1	Lockset	ND 50 PD Office Function
1	Closer	LCN 4041

Hardware Group 6 – Interior – Toilet Privacy

1 ½	Pair Hinges	F179
1	Lockset	ND 40S Privacy Function
1	Closer	LCN 4041

Hardware Group 7 – Pair – Passage

3	Pair Hinges	F179
1	Lockset	ND 10S Passage
1	Bolts	
1	Closer	LCN 4041
1	Threshold	151 - Saddle

B. General Notes - Hardware Schedule and Door Schedule

1. Provide appropriate quantity of cylinders for exit device function and dogging feature key (typical of all exit device locations). One cylinder per group of doors.
2. Furnish closer drop/corner bracket to clear overhead holder where applicable.
3. Certain locations will require floor stop 436. Verify in field.
4. At fire rated door locations, provide equivalent fire rated hardware.
5. Provide head drip at exterior doors without overhang or cover of at least 4'-0".

PART 3 - EXECUTION

- 3.01 Furnish all hardware, packaged and labeled as directed by CONTRACTOR. No hardware is to be installed until the manufacturers have provided a **pre-installation class**. This is to insure the proper installation of the specified products.
- 3.02 Install all hardware neatly cut into doors and frames; aligned so doors stand open in any position; adjusted so that all doors swing easily; and adjusted so that all operable hardware operates smoothly, latches and lock securely. Set all door stops and/or hooks with epoxied rod into masonry or concrete.
- 3.03 Pad locks will be furnished by OWNER.

END OF SECTION 08711

SECTION 08800 / GLASS PRODUCTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 08000 and other sections of this division.
- B. Coordinate this section's work with Sections 08100/Hollow Steel Doors and Frames and 08200/Solid Core Wood Doors which have certain doors furnished with factory cutouts and stops and frames receiving glazing. Conform to the Latest Editions adopted of the Florida Building Code for Wind Loading, "Safety Standard for Architectural Glazing Materials", U.S. Consumer Product Safety Commission and Florida law.

1.02 STRUCTURAL DESIGN REQUIREMENTS

- A. Wind Speed design shall be as noted on structural and architectural drawings: typical all areas except as modified by 1.02, C of this section. See architectural drawings.
- B. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:
 - 1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.02, C of this section.
- C. Wind Speed design shall be as noted on structural and architectural drawings and shall comply with ASCE-7, latest edition. Building Envelope shall comply with SBCCI/SSTD-12 for large missile impact criteria. Refer to architectural drawings for building envelope path and location.

1.03 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Shop drawings shall state that the above criteria is met, include all fastening/installation details, and include a certified statement signed, dated and sealed by a Florida registered structural ENGINEER.
- C. **All products installed in the building envelope shall have product approval number indicated on the submittal. Products shall conform to the Florida Building Code, latest edition.**

PART 2 - PRODUCTS

2.01 GLAZING CLIPS

- A. Use glazing clips and other miscellaneous positioning devices of standard product of type best suited for purpose. Install as required by normal good glazing practices at all glazed openings in metal frames.

2.02 GASKETS AND SPACERS

- A. Use flexible gaskets or tape and spacers for use with metal stops.

2.03 EXTERIOR GLAZING COMPOUND

- A. Use clear silicone-based glazing sealant, produced by General Electric or Dow Corning, or as approved.

2.04 INTERIOR GLAZING COMPOUND

- A. Conform to current issue Federal Specifications TT-P-781A for sash; of type best suited for purpose, as manufactured by Armstrong, Pecora or as approved and recommended by manufacturer for that installation.

2.05 GLASS TYPES AND LOCATIONS

- A. Exterior locations:
 - 1. All storefronts, exterior doors and windows, interior doors and windows shall be impact resistant tempered glass unless located in a fire rated wall or assembly.
- B. All interior glazed lights in doors and fixed frames shall be 1/4" Clear Tempered Glass in non-rated partitions.
- C. All glazing required to be tempered, laminated or safety glass shall have etched identification.

2.06 MIRRORS

- A. 1/4" Clear float glass, q3 glazing quality with chemically deposited silver and copper coating and a protective coating. Include a safety mat backing. Seal all edges with manufacturer's recommended edge sealer, after cutting to size and polishing the edges.
- B. Plywood backing and finish perimeter trim – by Division 6.
- C. Adhesive: construction adhesive.

PART 3 - EXECUTION

3.01 GLAZING SYSTEMS

- A. All Hollow Steel Doors and Frames: glazing compound, in pressed steel bead stops.
 - 1. Windows: are factory pre-glazed. Refer to Section 08520/Aluminum Windows.
 - 2. Door Lights: wood stops finished to match wood doors.
Painted steel stops in UL rated doors and corridor doors. All set in glazing compound.

3.02 EXECUTION

- A. Glass sizes indicated on drawings are nominal or approximate only. Determine actual sizes by measuring frames which are to receive glass, or from frame manufacturer, then fit glass to openings with an even clearance all around. Conform to glazing procedures published in Flat Glass Jobber's Association Glazing Manual, for specified glazing systems. Do not do glazing work when ambient temperature is below 40 deg. F. or when rain, fog, mist or detrimental amounts of airborne dust are present.

3.03 CLEANING

- A. After installation and before OWNER'S acceptance, clean labels, soil and excess glazing compound from glass and adjacent work with cleaning materials recommended by manufacturer, then wash glass clean.

3.04 MAINTENANCE AND PROTECTION

- A. Maintain all glass, replace all broken or permanently impaired glass, until building is accepted by OWNER.

END OF SECTION 08800

SECTION 09000 / FINISHES, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 9. Provisions of this Section 09000 also apply to all sections of this Division 9. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD COORDINATION

- A. Verify all field dimensions to insure close fit with work of adjoining trades.
- B. Coordinate and install this section's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 3:	Concrete
Division 4:	Masonry
Division 5:	Metals
Division 6:	Wood and Plastic Laminates
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows
Division 10:	Specialties
Division 11:	Equipment
Division 12:	Furnishings
Division 15:	Mechanical
Division 16:	Electrical

1.04 SINGLE SOURCE OF FINISH MATERIALS

- A. Furnish for each trade, all materials visible after completion of work, from single producing source.

1.05 OTHER APPROVED PRODUCERS

- A. Products referred to and materials and performance characteristics specified herein, establish the required quality of performance for this work. Other products which in CONTRACTORS experienced judgment offer equivalent quality, may be submitted for approval as per Division 1.

1.06 SPECIAL MATERIAL DELIVERY AND HANDLING INSTRUCTIONS

- A. Deliver all materials to jobsite in undamaged original containers with manufacturer's labels thereon. Keep dry and soil free. Store above grade in clean dry place. Take care to prevent damage during storage and handling. Insure temperature of storage areas stays within 45 deg. F. to 85 deg. F. temperature range at all times.
- B. Protect all ferrous materials from rusting.
- C. Carefully stack all sheet goods to insure they do not deform during storage.

1.07 INFLAMMABLE MATERIAL

- A. Take extra ordinary care to prevent fire. Open inflammable material only as needed. Keep rubbing cloths and oily rags in tightly closed metal containers, or remove from building at close of each day's work. Where inflammable materials are used and building's ventilation is inadequate, provide safety spark-proof fans, and prohibit smoking.

1.08 CLIMATE PRIOR TO INSTALLATION

- A. Exterior "Wet-Trades" Work: all work shall cease when weather drops below 45 deg. F. or during periods of rainfall.
- B. Exterior "Dry-Trades" Work: all work shall cease during damp weather or below 50 deg. F. or until surfaces have thoroughly dried from effect of such weather. Do not commence work when excessive dust or insects are present.
- C. Interior "Wet-Trades" Work: all work shall cease when interior building temperature drops below 45 deg. F.
- D. Interior "Dry-Trades" Work: do not begin installation work until all "wet-trades" work is completed, and building is dried out and completely enclosed. Insure that minimum room temperature is 60 deg. F. Provide sufficient ventilation to remove excess moisture.
- E. Atmospheric and moisture conditions shall also be in conformance with guidelines established by manufacturer of each finish product.

1.09 ACCEPTANCE OF SURFACES

- A. Prior to commencement of work, inspect all surfaces to receive work. Notify ARCHITECT in writing of any conditions, which in CONTRACTOR'S judgment prevent installations meeting all conditions of this specification. Beginning of work constitutes CONTRACTOR'S acceptance of sub-surfaces. This includes assurance that exterior and interior walls are complete, roofs are properly dried in and otherwise building components are thoroughly dry prior to exterior and/or interior finish wall work.

1.10 CLEANING OF INSTALLED AND SURROUNDING WORK

- A. Each Trade's Own Work: following erection, clean all work and leave free of defects. Refinish all surfaces judged damaged or defective by ARCHITECT, to match adjacent approved finishes. Remove units which are damaged or improperly applied, and replace as directed by ARCHITECT. Remove all debris and surplus materials promptly from site as work progresses.
- B. Other Trade's Work: at completion of work, remove all materials spilled, splashed, splattered, sprayed, smeared or spotted on all surfaces, including glass, light fixtures, other finished and unfinished surfaces, furniture, equipment, fittings, hardware, etc. Promptly and completely repair all damage done. Remove all scaffolding, rags, debris and containers from site. Satisfactorily repair and/or replace damage done to other trade's work through lack of adequate protection, accident or carelessness incidental to painting work, as directed by ARCHITECT.

1.11 PROTECTION

- A. Each trade is to protect existing and newly finished surfaces from damage during its work. Cover with a non-staining Kraft paper or polyethylene sheet, etc. Maintain protection in place during work. Remove when work is completed. Correct any damage to existing and/or newly finished surfaces of other trades, caused as result of each working trades' work.
- B. Protect all floors from traffic until floor finish has set up.
- C. Then protect all finish work from soil and damage until OWNER accepts building for beneficial occupancy.

1.12 EXTRA MATERIALS

- A. Upon completion of work, deliver any useable broken cartons of finish materials to OWNER. Refer to specific sections for required excess material to be furnished.

PART 2 - FINISH SCHEDULE LEGEND

2.01 GENERAL NOTES

- A. "Exposed Concrete" listed in Finish Schedule means integrally hardened concrete, cured and sealed in accord with specifications Section 03000. Excluded from this note are all exterior concrete walks listed in Schedule as numbered spaces. Refer to Division 2 for requirements.
- B. "Exposed Concrete With Sealer" shall mean the application of a pigmented sealer in accordance with Specification Section 09910.

PART 3 - EXTERIOR FINISH NOTES

- 3.01 Exposed Concrete or Block Masonry: painted, color as selected.
- 3.02 Exposed Flashing, Gutters, Downspouts: no field applied finish required, unless noted otherwise
- 3.03 Site Area Light Poles & Bases: painted color as selected, if not factory finished.
- 3.04 Cement Stucco: painted, color as selected unless integrally colored.
- 3.05 Roof Mounted Equipment: mfg. prefinished items, no field finishing required, touch-up damaged surfaces to match existing. Manufactured items not finish painted in shop will require field finish painting. Roof curbs to be painted.
- 3.06 Exposed Ferrous Metal Items: painted, color as selected.
- 3.07 Aluminum Walkway System: no field applied finish required, unless noted otherwise.
- 3.08 Wall/Ceiling Louvers/Access Panels: paint to blend with adjacent surface or color as selected, if not suitably factory finished.
- 3.09 Metal Protection Posts: painted, color as selected.
- 3.10 Metal Fencing: no field applied finish required, unless noted otherwise.
- 3.11 Overhead Doors: painted, color as selected.
- 3.12 Hollow Steel Doors, Frames: painted, color as selected.
- 3.13 Steel Railings (if included): no field applied finish required, unless noted otherwise.
- 3.14 Metal Fascia and Soffit Panels: factory finished.
- 3.15 Aluminum Windows: no field applied finish required, unless noted otherwise.

END OF SECTION 09000

SECTION 09220 / PORTLAND CEMENT PLASTER/METAL LATHING AND FURRING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division.
- B. See drawings to determine conditions where material is applied to masonry, and/or to metal lathing and furring systems.
- C. Conform to "Specification for Metal Lathing and Furring" published by the Metal Lath Association.

PART 2 - PRODUCTS

2.01 STANDARD CEMENT PLASTER

A. MATERIALS

Portland Cement: ASTM C150-59, Type I, domestically produced.

Hydrated Lime: ASTM C206-49, Type S (\pm 92% hydrated).

Sand: ASTM C35-57T.

Water: clean and fit to drink.

B. PROPORTIONING (by volume)

1 part Portland Cement

3 parts Sand

10% to 20% lime putty per bag of cement.

C. MIXING

Mix no lumpy, caked, or partially set materials. Mix stucco ingredients to smooth even mixture. Use only machine mixers, hand mixing not permitted. Mix only amount that can be applied within one (1) hour of mixing. Dump entire batch at one time. Immediately clean mixer and all tools thoroughly when not in continuous use.

2.02 EXECUTION

A. THICKNESS

1. Finished stucco work on metal lath totals 3/4" thickness (minimum).

2. Work applied to exterior standard concrete/masonry totals 1/2" thickness (minimum).

B. ALL BASE COATS ON METAL LATH

Apply in two operations, totaling \pm 5/8" thick. Apply scratch coat in full coat with sufficient pressure to force it through and completely embed metal lath. Double back and apply brown coat with sufficient pressure to form a good bond, rod level and

left rough, using broom, if necessary. After set, moisture cure for proper period of time before applying finish coat.

C. **BASE COAT ON MASONRY RECEIVING PORTLAND CEMENT PLASTERED FINISH**
Apply in one operation, 3/8" thick, as brown coat specified in paragraph 2.02 A, hereinbefore.

D. **EXTERIOR FINISH COAT**
Do not apply finish until brown coat has seasoned properly. Just before application of finish coat, wet brown coat evenly with fog spray. Evenly apply to uniform 1/8" thickness. Use carpet float finish for all work from approved field sample panel. "Cut-in" joint around all metal frames occurring in finished surface. Insure finish coat is free of hair cracks, checks or other imperfections.

E. **INTERIOR FINISH COAT**
Apply as paragraph 2.02 D, hereinbefore, except use smooth trowel finish.

F. **ACCEPTANCE AND PATCHING**

1. Plaster containing cracks, blisters, pits, checks or discoloration is not acceptable. Remove and replace such plaster with approved plaster. Patching of defective work will be permitted only when approved by ARCHITECT and must match accepted work.
2. Keep control joints clean of stucco for caulking by others.

G. **FIRE RATED CEILINGS**
Provide assembly adequate to meet U.L. rating(s) indicated.

PART 3 - METAL LATHING AND FURRING

3.01 PRODUCTS

A. **GENERAL FRAMING**

Runner Channels: 2" x 17/32", 16 gauge, galvanized, cold rolled.
Furring Channels: 3/4" x 1/2", 16 gauge, galvanized, cold rolled.
Galvanized Studs: 3 5/8" & 6", 18 & 20 gauge with matching runner.
Furring Channel: DWC-20 hat shape
Resilient Channel: RC-1

B. **LATH AND ACCESSORIES**

Lath, Metal: paper backed, galvanized lath, expanded metal, weighing minimum of 3.4 lbs./sq.yd. Furnish with corner lath and strip lath pieces. Use self furring lath over solid substrates.

Resilient Furring Channel: RC-1

Casing Bead: as Unimast 1/2" and 3/4" square nose galvanized with expanded wings, sized appropriate to material thickness. At specified locations furnish

similar unit without expansion wing.

Corner Bead: as Unimast No. 1-A expanded corner bead, galvanized.

Inside Corners: Cornerite, 3" x 3".

Suspension Wire, Tie Wire and Clips: use galvanized #8 gauge wire, to support channels, and #16 gauge wire for all lath assemblies. Use case-hardened steel nails for nailing into masonry.

Control Joints: Unimast Double V expansion joint sized to material thickness (1/2" and 3/4")

Screw Fasteners: Type "S", bugle head, pan head or other selected for type of installation, lengths as required, all galvanized.

Bullnose Corner Beads: (3/4" R.) with expanded wings.

C. ACCESS DOORS

Specified in Section 08310.

D. EXTERIOR PRIMING

Shop coat all exterior-use furring and lathing materials with galvanized dip-coat, applied after lath fabrication.

3.02 EXECUTION

A. GENERAL

Conform with all lathing procedures of referenced specification, applicable to jobsite conditions, as judged by ARCHITECT.

B. SUSPENDED SYSTEM (GYPSUM BOARD)(NON-RATED)

1. Install main runner channel at 4'-0" centers at right angles to framing above, for horizontal areas, and vertical at 4'-0" centers for vertical areas. Support main channels at maximum 5'-0" centers with #8 suspension wires supported from structure above.
2. Install hat shape furring channels at 24" o.c. at right angles to main channels and tie at each intersection with double 18 gauge wire. Lap splices 12".
3. Screw attach to perimeter wall framing at maximum 4'-0" o.c.

END OF SECTION 09220

SECTION 09250 / INTERIOR WALL FRAMING/CEILING FRAMING/PLENUM DIVIDERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Section 05410:	Light Gauge Metal
Division 6:	Wood and Plastic Laminates
Division 8:	Doors and Windows
Section 09220:	Portland Cement Plaster/Metal Lathing and Furring
Section 09253:	Gypsum Drywall
Division 10:	Specialties
Division 11:	Equipment
Division 12:	Furnishings
Division 13:	Special Construction

- 1.03 Refer to drawings for locations and extent of all stud/drywall work and for specific location of rated partitions. Refer to reflected ceiling plans for heights thereof and for partitions penetrating ceiling and plenum divider locations.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Metal stud system herein is U.S. Gypsum's USG Steel Framed Drywall System SA-923 with framing spaced typically 16" o.c. except as noted otherwise. Equivalent systems produced by Kaiser, National Gypsum, or other nationally recognized producer will be approved by ARCHITECT.

2.02 FRAMING AND MATERIALS

- A. Studs: galvanized steel, standard "C" studs, 3 5/8" and 6" width, 22 gauge minimum (typical unless otherwise shown on drawings or specified herein). Follow manufacturer's data for limiting wall heights for each assembly, and increase material gauge to suit height conditions.
- B. Metal Stud Runners: matched to stud width, galvanized, minimum 1 1/4" flange for floor and ceiling runners.
- C. Metal Stud Fasteners: 3/8" USG brand screws, pan head Type S for typical work. Use 1/2" Type S-12 pan head screws for steel studs to door frame anchors.
- D. Jamb Anchor Clips: standard USG galvanized units sized to stud width.

- E. Furring Channel: DWC-20, hat shape, 7/8" & 1 1/2".
- F. Resilient Channel: RC-1.
- G. Suspension Wire / Tie Wire: No. 8 & 18 gauge, galvanized.

2.03 TOP-OF-STUD BRACES

- A. Refer to paragraph 2.02, Framing and Materials.

2.04 ACCESS DOORS

- A. Refer to Section 08310.

PART 3 - EXECUTION

3.01 STUD SYSTEM ERECTION

- A. Attach metal runners at floor (& ceiling if called for) each end and typically 16" o.c. For typical walls position studs vertically at 16" o.c., engaging floor and ceiling runners. When necessary, splice studs with 8" nested lap and one positive attachment per stud flange. Place studs in direct contact with all frame jambs, abutting partitions, partition corners and existing construction elements. Anchor all studs for shelf/cabinet-walls and those adjacent to door and window frames, partition intersections, and corners to ceiling and floor runner flanges with USG metal lock fastener tool. Securely anchor studs to jamb and head anchor clips of door or borrowed-light frames by bolt or screw attachment. Over interior metal door and borrowed-light frames, not exceeding 5'-0" in width, place horizontally a cut-to-length section of runner, with a web-flange bend at each end, and secure with one positive attachment per flange. Position a cut-to-length stud (extending to ceiling runner) at vertical panel joints over door frame header.
- B. Install a continuous double stud each side of all door openings with or without borrowed lites from floor to top of wall. Stitch studs together at 16" o.c. maximum. Install a double member header across such openings that exceed 5'-0" in width.
- C. Refer to reflected ceiling plans for walls and plenum dividers extending thru ceiling. Position top runner minimum 1 1/2" above ceiling finish plane, except as otherwise indicated to extend higher.
- D. Where shown on reflected ceiling plan, extend wall framing to underside of overhead structure/deck. Refer to details for allowance for roof framing movement. Where possible run studs full length. Install 16 gauge stabilizing clips at 3'-0" o.c. maximum spacing secured to metal deck or structure but not to stud wall. Fire rated closures above ceilings are to extend to close gaps between deck and framing as tightly as

possible, allowing for structural movement. If fire rated closures occur under a steel beam or joist, framing shall be offset (but continuous) to the side of beam or joist up to the deck.

- E. Comply with Florida Building Code, latest edition, and local ordinances to provide fire stops in wall assemblies. Generally this includes fire stops at floors, ceilings and roofs.
- F. Where framed walls terminate at underside of attic barrier, cut studs so that top track is set 1" to 1 1/2" maximum below suspended system hat channels. Attach wall track to suspension system at 4'-0" o.c. maximum after wall at underside of attic has been installed. Fill void between top of wall and barrier with insulation as a noise stop.
- G. Where metal studs are used for soffit or ceiling support, space studs no greater than 24" o.c. (U.L. rated ceilings spaced 16" o.c.). Provide back-to-back double studs as called for and securely screw fasten stud work to building structure and each other to comply with the most stringent code(s), ASCE-7, SREF, latest edition adopted by D.O.E. and the Florida Building Code for wind loading.
- H. Chases for Vertically & Horizontally Traversing Services: Coordinate with other trades such as mechanical, plumbing and electrical and provide stud space to accommodate such services, whether or not specifically indicated on drawings. Provide space by increasing stud width, double stud wall and/or widened offset chases at services if approved by ARCHITECT.

3.02 FIRE RATED BARRIERS

- A. Location(s) as shown on Architectural Drawings.
- B. Closures are to be complete fully to roof deck, ceilings, walls, building exterior walls to establish required one hour rating to full extent of space/volume each side of fire rated barrier. Work around structural elements and other building features as necessary to maintain rating integrity.

3.03 TOP OF WALL BRACES

- A. Set braces at 4 foot centers (maximum) along top of all walls, and also one centered over each door jamb framing stud. Attach to top runner with screw fasteners, extend at ± 45 deg. upward to structure and secure there with appropriate fasteners.

3.04 WALL-HUNG SUPPORT AND OTHER BLOCKING

- A. Install 2x solid blocking (Division 6) in stud space for securely mounting wall hung/ supported items. Provide other special blocking as required by millwork and casework configurations and other equipment supports as required or otherwise called for.

3.05 DOOR AND GLAZED VIEW FRAMES

- A. Coordinate framing with scheduled sizes of doors and glazed frames.
Follow manufacturer's instructions for securing frame anchors to studs.

3.06 ACCESS DOORS

- A. Provide as required for access to concealed equipment and valves, etc.

END OF SECTION 09250

SECTION 09253 / GYPSUM DRYWALL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Section 05400:	Cold-Formed Metal Stud Framing
Section 09300:	Ceramic and Quarry Tile
Section 09511:	Suspended Ceiling System
Section 09910:	Painting

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications and installation instructions with Project conditions and materials clearly identified or detailed for each required system.

1.04 SYSTEM REQUIREMENTS

- A. Performance Requirements: Fabricate and install systems as indicated but not less than that required to comply with ASTM C754 under the following conditions:

1. Gypsum board partitions

- a. Standard systems: Maximum deflection of $l/240$ of partition height.
- b. Systems to receive water resistant gypsum board or backer board: Maximum deflection of $l/360$ of partition height.
- c. Cavity shaftwall systems: Withstand minimum positive and negative pressure of 5 psf.
- d. Interior suspended ceilings and soffits: Maximum deflection of $l/360$ of distance between supports.

- B. Fire Resistance Ratings: Where fire resistance classifications are indicated, provide materials and application procedures identical to those listed by UL or tested according to ASTM E119 for type of construction shown.

- C. Acoustical Ratings: Where sound ratings are indicated, provide materials and application procedures identical to those tested by manufacturer to achieve Sound Transmission Class (STC) scheduled or indicated in accordance with ASTM E90.

1.05 QUALITY ASSURANCE

A. Reference Standards

1. Applicable requirements of ASTM C754 for installation of steel framing.

2. Install gypsum board in accordance with applicable requirements and recommendations of Gypsum Association GA 216, "Recommended Specifications for the Application and Finishing of Gypsum Board", except for more stringent requirements of manufacturer.
3. Apply acoustical sealant in accordance with applicable requirements of ASTM C919.

1.06 DELIVERY, STORAGE AND HANDLING

A. Delivery

1. Deliver material to site promptly without undue exposure to weather.
2. Deliver in manufacturer's unopened containers or bundles, fully identified with name, brand, type and grade.

B. Storage

1. Store above ground in dry, ventilated space.
2. Protect materials from soiling, rusting and damage.
3. Store board to be directly applied to masonry walls at 70°F for 24 hours prior to installation.

1.07 PROJECT CONDITIONS

A. Environmental Requirements

1. Do not install gypsum board when ambient temperature is below 40°F.
2. For adhesive attachment of gypsum board if approved by OWNER, and for finishing of gypsum board, maintain ambient temperature above 55°F from one week prior to attachment or joint treatment, and until joint treatment is complete and dry.

PART 2 - PRODUCTS

2.01 PRODUCTS AND MANUFACTURERS

- A. Panels specified herein refer to U.S. Gypsum Products. Equivalent systems produced by Kaiser, National Gypsum, or other nationally recognized producer will be approved by ARCHITECT. Reference systems is SA 923, USG Steel Framed Drywall System.
- B. Gypsum Board and Accessories: Listed products establish standard of quality and are manufactured by United States Gypsum Company (USG), Chicago, IL.
- C. Steel Framing and Furring: Company acceptable to Owner and Installer.
- D. Drywall Grid Suspension Assemblies: Listed products establish standard of quality and are manufactured by United States Gypsum Company (USG), Chicago, IL.

2.02 BOARD MATERIALS

- A. Gypsum Panels: Minimum size 48" x 5/8" thick, sheetrock panels with tapered edge joints, lengths as required for work to be performed.
- B. Moisture Resistant Panels: Minimum size 48" x 5/8" thick sheetrock (MR) panels with tapered edge joints, lengths as required for work to be performed.
- C. Fire Rated Panels: Minimum size 48" x 5/8" thick, Type "X", sheetrock panels with tapered edge joints, lengths as required for work to be performed.
- D. Cement Backer Board: Aggregated portland cement board with woven glass fiber mesh facing complying with ANSI A118.9, 5/8 inch thickness equal to Durock Cement Board by USG.
- E. Exterior sheathing shall be cementitious sheathing. Product shall be "Durock" or approved equal, 5/8" thick. See Item E above.
- F. Exterior Gypsum Sheathing **is not** approved for any application without prior written approval from the OWNER.

2.03 CORNER AND CASING BEADS/CONTROL JOINTS

- A. Metal Trim for Gypsum Board
 - 1. USG Dur-A-Bead corner bead No. 103 (1 1/4" x 1 1/4")
 - 2. USG Dur-A-Bead 200A and 200B metal trim.
 - 3. USG #093 control joints.
- B. Paper-Faced Metal Trim for Gypsum Board
 - 1. USG Paper Faced Metal Outside Corner No. B2XW.EL
 - 2. USG Paper Faced Metal "J" Trim No. B9J and "L" Trim No. B4

2.04 FASTENERS

- 1" Minimum Type "S" bugle head screws to metal studs and wood blocking.
- 1 1/4" Minimum Type "S" bugle head screws for attachment of panels to ceiling furring.

2.05 JOINT REINFORCEMENT

- A. Cross-fibered paper roll tape equal to USG Sheetrock Joint Tape. 1 31/32" minimum width.
- B. Self-adhesive open weave fiberglass tape **is not** approved for any application without prior written approval from the OWNER.

2.06 JOINT COMPOUND

- A. One-material bedding and joint compound, powdered or premixed.

2.07 ADHESIVE

- A. USG Durabond per manufacturer's recommendations for each application or as approved.

2.08 ACOUSTICAL SEALANT

- A. USG Sheetrock Acoustical Sealant, or as approved.

2.09 ACCESS DOORS

- A. As specified in Section 08310/Access Doors.

PART 3 – APPLICATION

3.01 BOARD INSTALLATION

- A. Single Layer Gypsum Board on Metal Studs:

1. Apply gypsum board with long dimension at right angles to framing and/or furring channel.
2. Stagger joints on opposite sides of partitions.
3. Cut openings in gypsum board to fit electrical outlets, plumbing, light fixtures and piping snugly and small enough to be covered by plates and escutcheons. Cut both face and back paper.
4. Screw board in place securely with screws spaced according to manufacturer's instructions and/or code requirements.

- B. Single Layer Gypsum Board on Furring:

1. Apply gypsum board with long dimension at right angles to framing and/or furring channel.
2. Center end joints over channel web; stagger end joints from those in adjacent rows of board.
3. Fasten boards to framing with screws spaced according to manufacturer's instructions and/or code requirements.

- C. Double Layer Gypsum Board

1. Fasten base layer to studs or furring with screws, and attach face layer using laminating adhesive and screws, applied according to manufacturer's instructions and/or code requirements.
2. Offset face-layer joints at least 10 inches from parallel base-layer joints.
3. Screw both layers to metal supports at double layer ceiling applications and where required for fire-rated construction.

D. Water-Resistant Gypsum Board

1. Fasten boards to framing with screws spaced according to manufacturer's instructions and/or code requirements.
2. Complete plumbing rough-in before gypsum board panels are erected.
3. Separate gypsum panels from rough-in and fixtures by 1/4 inch space.
4. Make necessary cut-outs and seal cut or exposed panel edges with thinned-down ceramic tile adhesive or with waterproof flexible sealant, as recommended by gypsum board manufacturer.
5. Install water-resistant board horizontally.
6. Do not place water-resistant board directly over vapor retarder.
7. Prior to tile application, fill openings around pipes, fittings, fixtures, interior angles and other penetrations with waterproof flexible sealant, as recommended by gypsum board manufacturer. Do not fill 1/4 inch gap at bottom of panels.

E. Cementitious Backer Board Installation

1. Install as indicated to comply with ANSI A108.11 and in accordance with manufacturer's instructions and/or code requirements.
2. Complete plumbing rough-in before boards are erected.
3. Separate board from rough-in and fixtures and fill space as recommended by manufacturer.
4. Securely fasten boards to substrate as required.
5. Follow manufacturer's instructions for treatment of edge terminations.
6. At joints and corners, embed fiberglass tape in skim coat of mortar.

F. Ceilings

1. Install gypsum base sheets with long direction at right angles to framing and/or furring channels with end joints occurring over channels.
2. Stagger end joints.
3. Install ceiling boards prior to adjoining partition boards where feasible.
4. Apply wallboard with its long dimension at right angles to the Furring Channels. Locate wallboard butt joints over the center of furring channels. Attach wallboard with 1" self-drilling drywall screws 12" o.c. in the field of the board and 8" or 12" o.c. at butt joints, located not less than 3/8" or more than 1/2" from edges.
5. Double layer applications:
 - a. Apply base layer prior to base layer application on adjoining partitions; apply face layers in same sequence.
 - b. Apply gypsum base layer and face layer with long dimension parallel to supports. Offset joints of face layer at least 16 inches from base layer joints.
 - c. Fasten both base and face layers separately to supports.
 - d. Stagger and space fasteners in accordance with gypsum base manufacturer's instructions and/or code requirements.

3.02 CORNER AND CASING BEADS

- A. Install at all outside corners and joints with other materials.

1. Control Joints: install drywall control joints at all through-wall control joints in exterior walls.
Bed edges in drywall compound, keeping "V" clean.
Caulk "V" joint before painting or installing wall covering.
2. Refer to details for treatment of intersections at masonry walls to develop reveal locations.

3.03 ACCESSORY INSTALLATION

A. Trim

1. Use same fasteners to anchor trim accessory flanges as required to fasten gypsum board to supports, unless otherwise recommended by trim manufacturer.
2. Install metal or paper-faced metal corner beads at external corners.
3. Install metal or paper-faced metal casing bead trim whenever edge of gypsum board would otherwise be exposed or semi-exposed.

B. Control Joints

1. Install control joints at junction of gypsum board partitions with walls or partitions of other finish material.
2. Install control joints within long runs of partitions, ceilings or soffits at approximately 30'-0" on center or as indicated.
3. Where gypsum board is vertically continuous, as at stairwells, provide horizontal control joints at each floor level.

- C. Special Trim: Install as indicated on Drawings and in accordance with manufacturer's instructions.

3.04 DOOR FRAMES

- A. Refer to details and follow manufacturer's instructions.

3.05 JOINTS

- A. Joint compound may need a slight amount of mixing before use, and in any case should be lightly mixed before any water is added. Mixing may be done with a potato-masher-type tool or by use of a low-speed drill. Use directly from the container for treating fasteners and corner beads or for taping and finishing joints. Care should be taken when water is added to thin to a desired consistency.

- B. A uniformly thin layer of joint compound should be applied over the joint approximately 4" wide. The tape is then centered over the joint and embedded into the compound, leaving sufficient joint compound under the tape to provide proper bond. A thin coat of compound should cover the tape to minimize wrinkling or curling. Ceiling, wall angles and inside corner angles are reinforced with the tape folded to conform to the angle and embedded into the compound.

- C. After the compound is thoroughly dry (approximately 24 hours) the tape is covered with a coat of all-purpose or topping compound spread over the tape approximately 3" on each edge. After this coat is thoroughly dry, another coat of all-purpose or topping compound is applied with a slight, uniform crown over the joint. This coat should be smooth and the edges feathered approximately 3" beyond the preceding coat.
- D. Where gloss, semi-gloss enamel or nontextured flat paints are specified or where severe lighting conditions occur, a thin skim coat of joint compound, or a material manufactured especially for this purpose, shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges.
 - 1. Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of finish paint. See painting specification.
- E. All inside corners are coated with at least two coats of compound with the edges feathered out.
- F. All nail or screw head dimples should receive three coats. These coats may be applied as each coat is applied to the joints.
- G. Finishing: sand entire bedding surfaces to smooth uniform finish, except that plenum barriers and attic barrier above ceiling do not need sanding.
- H. Textured Finish: for all painted gypsum board walls and ceilings, after sanding and finishing procedure, overspray and provide a **"light orange peel"** texture finish.
- I. Joints for non-fire rated plenum barriers and attic barrier to have joints bedded and taped, but no other finishing is required.

3.06 CLEANING AND PROTECTION

- A. Clean finished application of all soil, protect finish surfaces from damage and leave ready for Section 09000/Finishes, General/Legend applied finish.

3.07 FIXTURE ATTACHMENT

- A. Support fixtures from primary framing or blocking.

3.08 BASE AND CEILING TRIM

- A. Install base and ceiling trim over all wall panels, after this section's work is complete.

PART 4 - EXECUTION

- 4.01 Use producer's printed instructions for application to metal studs and furring. Assure blocking or studs fall at all edges of panels. Follow spacing requirements of screws for rated vs. non-rated partitions.
- A. Loosely butt gypsum board joints together and neatly fit.
 - B. Do not place butt ends against tapered edges.
 - C. Maximum allowable gap at end joints: 1/8 inch.
 - D. Apply ceiling boards first where gypsum board ceilings and wall occur.
- 4.02 Wallboard shall be cut to allow 1/8" minimum to 1/4" maximum clearance between board and floor to prevent potential wicking.
- 4.03 Locations of differing installations over metal stud framing: (Refer to wall sections, details, finish schedule and ceiling plans for varying installations and finish schedule for applicable finish.) Panels shall be installed horizontally on walls – all finished surfaces.
- A. Typical walls - 1 layer 5/8" gypsum board each side.
 - B. Plenum Divider (Interior) - 1 layer 5/8" gypsum board each side
 - C. Perimeter Plenum Closure - 1 layer 1/2" exterior gypsum sheathing one side.
 - D. Ceilings
 - 1. Provide, as a minimum requirement, 1 layer 5/8" moisture resistant (MR) board in the following spaces. Refer to Architectural Drawings.
 - Toilet Room with Shower
 - E. Interior headers and soffits are to receive one layer 5/8" gypsum board.
 - F. Fire rated walls/plenum barriers - 1 layer 5/8" Type "X" gypsum board each side (including ceilings).
- 4.04 Caulk perimeter intersections. Penetrations in fire rated walls/dividers shall be sealed appropriately to maintain rating. (Ductwork to receive fire dampers.)
- 4.05 Penetrations through non-rated plenum dividers need not be fully sealed or caulked as long as plenum construction is held reasonably tight to penetrating item (i.e. 1/2" maximum gap).

END OF SECTION 09253

SECTION 09300 / CERAMIC AND QUARRY TILE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division. See Section 09000 finish schedule for colors.

1.02 QUALITY GRADE

- A. Conform to Standard Specifications for Ceramic Tile TCA 137.1 (latest edition) for tile types.

1.03 APPLICABLE TECHNICAL CODES AND STANDARDS

- A. Conform to all applicable provisions, as judged by ARCHITECT, of American National Standards Institutes following specification:
 - 1. Glazed ceramic wall tile, ceramic tile pavers, and ceramic tile base installed with dry-set portland cement mortar: ANSI A108.5 (latest edition).
 - 2. Ceramic mosaic floor tile, ceramic floor tile and glazed wall tile installed in portland cement mortars: ANSI A108.1 (latest edition).
 - 3. Conform to the general standards for installation as included in the latest edition of the "Handbook for Ceramic Tile Installation" published by The Tile Council of America.
 - 4. TCA installation method as:
 - Floor: F111 Cement Mortar, Cleavage Membrane
 - F112 Cement Mortar Bonded
 - F113 Latex-Portland Cement Mortar
 - Wall: W223 Organic Adhesive - Solid Backing

PART 2 - PRODUCTS

2.01 CERAMIC MOSAIC FLOOR TILE

- A. Standard grade, unglazed dust-pressed porcelain type 2" x 2" size, minimum 1/4" thick with cushion edges. Pattern to be solid color field. ARCHITECT reserves right to choose any colors from Grade 3 price level manufactured by Florida Tile, American Olean, Dal-Tile, or approved.

2.02 CERAMIC BASE TILE

- A. Standard grade, matte glazed porcelain type, 4 3/8" x 4 3/8" minimum by 5/16" thick flush cove with cushioned edges. Provide sanitary cove where wall tile occurs and bull-nose (round top) where no wall tile occurs, as manufactured by Florida Tile, American Olean, or Dal-Tile.

2.03 CEMENTITIOUS MATERIALS

Portland Cement: ASTM C150-59 Type I, domestically produced.
Hydrated Lime: ASTM C206-49, Type S.
Aggregate: Sand conforming to ASTM C144-66T for mortar and grout. Fine sand must pass 16-mesh screen.
Water: clean and fit to drink.
Sand: ASTM C-144.

2.04 DRY-SET PORTLAND CEMENT MORTAR

Conform to ANSI A118.1 (latest edition).
Organic Adhesive: ANSI 136.1, Type I.

2.05 GROUT

Portland cement, as recommended by tile manufacturer for installation of ceramic mosaic floor tile and grout for glazed base and wall tile.
ANSI A118.6 Latex-Portland Cement (walls).
ANSI A108.10 floor.
Color to be selected by ARCHITECT from manufacturer's standard pre-mixed grout colors.

2.06 MARBLE THRESHOLD

- A. Domestic white marble nominal 2 1/2" x 3/4" section with 1/4" chamfered edges (except at tile to tile locations) full width of each opening at bed-set floor locations. Use 1/2" thick threshold at thin set floor tile locations.

2.07 MARBLE WINDOW SILLS

- A. Marble, natural or cultured, white color, minimum 5/8" thick x width as required to extend 1/2" minimum to 3/4" maximum beyond face of wall. Ease all exposed areas.

2.08 INSTALLATION MATERIALS

Install according to manufacturer's instructions.

A. Edge and Transition Strips

1. Tile edge and transition strips shall be roll-formed stainless steel edge strips 1/8" wide at top edge; height shall be as required by setting bed depth. Strip shall have integral perforated anchoring leg for setting the strip into the setting material.
 - a. Strip shall be equal to Schluter – SCHIENE-E (stainless steel).

B. Materials for mortar bed methods

1. Materials:
 - a. Portland cement complying with ASTM C150 Type I and II
 - b. sand complying with ASTM C144
 - c. cleavage and/or waterproof membrane as specified above
 - d. reinforcing materials as specified above
 - e. hydrated lime complying with ASTM C206 or ASTM C207 Type SF.
Clean potable water
2. Where used on floors, provide a job-mix of:
 - a. one part Portland cement
 - b. five parts damp sand
 - c. not more than 1/10 part hydrated lime by volume
3. Dry-mix the ingredients, add water and blend to produce a stiff mix.

PART 3 - EXECUTION

3.01 SCOPE OF WORK

- A. Thin Set Tile
- floor in single user toilet rooms except around floor drains
 - all base tile

3.02 THIN SET FLOORS

- A. Prepare floor slab with steel trowel finish in accordance with Division 3 tolerances, filling, patching or grinding as necessary to achieve tolerances. Install tile with approved adhesive so that all tiles are fully supported and embedded with no hollow spots.
- B. Prepare walls to receive tile so that a solid and uniformly smooth surface is provided to meet tolerances established in TCA referenced standards. Masonry walls are to be prepared so that no humps occur. Fill any voids and grind any wall projections. If deemed necessary by ARCHITECT, provide a leveling coat of cement plaster to achieve a satisfactory condition.

Note that the top edge of coved base tile is to be flush and aligned with top of floor tile.

3.03 LAYOUT AND FITTING

- A. Layout all tile areas so field patterns center on areas, and with no tiles cut less than half size. Provide all trim pieces herein specified and as required for complete

installation. Grind and carefully fit around all equipment, trim and accessories. Wet cure all tile floors and grout.

- B. This requirement is for all tile locations (floors, walls, etc.) and deviations if necessary due to job conditions must have prior approval of ARCHITECT, before installation. Failure to follow these requirements, if installation is determined to be in violation, will require removal and replacement.
- C. Tile shall be cut accurately such that grout joint between base and floor tile is equal to a typical field joint.
- D. At full height wall installations, review procedure with ARCHITECT prior to installation to determine cut tiles at base and/or ceiling.
- E. All cut tile edges shall be filed or ground smooth to eliminate sharp edges.
 - 1. Base tile and floor tile are to meet so that top edge of base cove is aligned with top edge of floor tile, for a continuous and smooth, coved transition.

No top set or thin lip base will be accepted. Acceptance of an alternate tile manufacturer does not relieve this requirement.

- 2. Expansion/Control Joints
 - a. Floors: Layout and locate as called for on drawings. Rake joints clean, full depth, then pack and caulk joints with approved material. Coordinate with floor slab placement to make certain floor slab control (sawn or formed) align with intended tile expansion/control joints. Each location where a floor slab joint occurs shall also include a tile expansion/control joint. In the event this placement requirement is not practical, then reinforce/bridge floor slab joint with an approved mesh.
 - b. Walls: If tile occurs at wall expansion/control joints, then joint is to extend through tile, with joint neatly prepared and caulked. Where interior tile walls meet exterior walls, corner joint is to be raked clean and caulked.
 - c. Use factory tile edge each side of joint wherever possible.

3.04 MARBLE THRESHOLD

- A. Run in one piece from jamb to jamb. Bed set with floor tile. Center under door. Thinset (topset) type will not be accepted.

3.05 GROUTING

- A. Grout all joints in tile work with specified type with no voids or irregularities.

3.06 MARBLE WINDOW SILLS

- A. Install in single piece, with mastic, then caulk perimeter. Must obtain prior approval from OWNER to use multiple pieces. Set to project 1/2" to 3/4" beyond finish wall surface. Make butt joints only as approved. Caulk all such joints and perimeter joints at windows, including under projecting lip at wall. Obtain approval of butt joint locations at long sill conditions.
1. Marble sills are required at all window locations at exterior walls. All sills are to extend 1/2" minimum underneath the window frame.

3.07 CLEANING

- A. Clean tile thoroughly after grouting is finished. Use acid only as recommended by referenced ASA specifications.

3.08 ADDITIONAL TILE REQUIREMENTS

- A. Provide OWNER with additional tiles of each type, style and color at substantial completion. Provide tile as listed below:
1. 1/2 box of floor tile
 2. 5 linear feet of base and cap tile

3.09 PROTECTION

- A. Protect from all traffic while tile sets. Protect from damage thereafter.

END OF SECTION 09300

SECTION 09511 / SUSPENDED CEILING SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division.
- 1.02 Do not begin work until all painting or wall coating work is completed.
- 1.03 Prior to start of work verify with ARCHITECT that he has viewed and approved all above ceiling installations.
- 1.04 This section includes typical suspended ceilings.

PART 2 - PRODUCTS

2.01 SUSPENSION SYSTEM

- A. Acceptable Systems:
 - Armstrong – “Prelude XL”
 - Chicago Metallic Corp. – 200 System
 - USG – Donn Brand DX
 - BPB Celotex – Classic Tab System

Main Tees: (1 1/2" depth minimum)

Armstrong - #7300
Donn/USG - DX 24
CMC - 211
BPB Celotex - C12-12-15

4'-0" Cross Tees: (1 1/2" depth minimum)

Armstrong - # XL7340
Donn/USG - DX 424
CMC - 214
BPB Celotex - CS4-12-15

2'-0" Cross Tees: (1" depth minimum)

Armstrong - # XL7128
Donn/USG - DX 216
CMC - 229
BPB Celotex - CS2-12-08

- B. Wall Mould: Matching angle shape with 1" exposed face.

- C. Hanger Wire
 - 1. Suspended Finish Ceiling Grid: AWG steel wire, #12.
- D. Fasteners: Self tapping sheet metal screws and masonry nails.
- E. Clips: Hold down clips for acoustical panels, fabricated by suspension system manufacturer.

2.02 ACOUSTICAL PANELS: (ALL CLASS A FLAME SPREAD RATING)

- A. Regular Panels: (SUSP. 1) Armstrong World Industries, Inc., No. 1728/1729, (Celotex Vantage 10, USG Interiors, Radar, No. 2110/2310) 24" x 24" & 48" x 5/8" lay-in. CAC allowable range 35-39, light reflectance value not less than 82%, NRC minimum absorption of .50 and maximum of .60 sabins per square foot at 500 CPS, flame spread 0-25, and white vinyl latex paint finish, fine fissured texture, non-directional, mineral fiber, .70 lb./SF.
- B. Moisture Resistant: (SUSP. 2) Armstrong #605 Plain Ceramaguard, 24 x 48 x 5/8" thick, white vinyl plastic paint over ceramic and mineral fiber composite, square cut lay-in, RH100 performance.
- C. Wall Mould Caulking: gun grade polymerized non-staining caulking compound formulated to minimum requirements of Federal Specification TT-C-598B; A.C. Horn "Volcatex" or as approved.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install acoustical materials only by authorized applicators of materials used. Do all work in strict accord with manufacturer's printed instruction covering handling, care, and installation of his products.

3.02 SUSPENSION SYSTEMS

A. Ceiling System

- 1. Lay out each room to conform to reflected ceiling plans. Also see drawings for coordination with Division 15 and 16 work.
- 2. Attach hanger wires to the additional insulation barrier grid (at the hanger wire not grid) or roof structure. Hangers shall have a minimum spacing of 4 feet each way. Securely loop and twist to each fastener and main tee. Standard clips for fastening hanger wires to metal deck and/or bar joists are permitted. Insure each main hanger track piece has a minimum of two (2) hanger wires. Suspension wires shall not exceed 1:6 out of plumb unless countersloping wires

or horizontal bracing is provided. Suspension wires shall be arranged such that ducts, pipes, etc. do not press against wires.

3. Main tee members shall be one piece without seams/joints of any kind in rooms/spaces 12 feet or less. Main tee members shall be a minimum of 6 feet in length regardless of room/space dimension. Deviations to these instructions shall have the approval of the OWNER/ARCHITECT prior to installation.
4. Insure that all HVAC and electrical fixtures (including all lights, exit lights, speakers, exhaust grills, A/C diffusers, etc.) in ceiling system are supported on two main tee members, and that each item penetrating ceiling support is supported with two hanger wires, one at each diagonal corner of each fixture. Frame around all HVAC and electrical fixtures occurring in ceiling system, tied/from structure above, not grid support. Comply with National Electric Code, Article 410, for additional light fixture attachment. Wire slopes as above.
5. Install all cross tees to true lines to accommodate ceiling tile panels, at spacing as indicated
6. Install all wall moulds with continuous caulking bead applied to wall mould prior to erection. Also continuously caulk crack between wall and wall mould after mould is installed. Erect to wall, true and level with nails or screws at 2'-0" centers, minimum 3/4" long.
7. Install special ceiling closures to cover all vertical changes in ceiling planes and/or where shown on drawings.
8. Fit ceiling grid and tile tight to HVAC ducts penetrating the ceiling.

3.03 CLEANING AND PROTECTION

- A. Following erection, clean all dirty or discolored tile and leave free of defects. Use clips to hang finish grid from sub-grid. Remove units which are damaged along edge or in panel, or improperly applied and replaced as directed by ARCHITECT.

3.04 EXCESS MATERIALS

- A. Provide one full unbroken carton of each type of tile.

END OF SECTION 09511

SECTION 09651 / RESILIENT FLOORING AND BASE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division.
- B. Manufacturer of flooring products shall provide product specifications, performance warranties and maintenance guidelines.
- C. Colors will be selected from manufacturer's full standard color line (multiple colors for each floor material with no limitation on quantities of each color) upon approval of submittals during construction period. **Asbestos bearing materials will not be approved.**

PART 2 - PRODUCTS

2.01 LUXURY VINYL TILE (LVT) – Commercial Grade Enhanced Dryback Resilient Tile

- A. Manufacturer and color selection shall be limited to the following:
 - 1. Mohawk Group: Chromascope, Terrazzo or Matuto Plus Stone.
 - 2. Armstrong: Natural Creations Spectra w/ Diamond 10.
 - 3. Shaw Contract: Joy Squared
- B. Feature Strips: 1" wide x 1/8" Thick (match LVT thickness), solid color as selected.
- C. Reducer Strips: Mohawk Group CRA07 or equivalent, 1/8" x 1 1/2" wide.

2.02 BASE

- A. Mohawk Group 'Elemental Edges', Mercer Products Co. 'Rubbermyte', or equivalent rubber cove base; 1/8" Gauge, 4 inch height, 4 ft. lengths, topset configuration, matte finish. Color to be selected from manufacturer's full standard product line.

2.03 STAIR TREADS & RISERS

Not Used

2.04 PRIMERS AND ADHESIVES

- A. Primers, if required, and adhesives as recommended by tile or matting manufacturer as best suited for use with their materials for this particular installation. Coordinate with Division 3 concrete sealers to make certain products are compatible. Use no products which will bleed through joints and be visible on surface of floor.
- B. Adhesives: use only manufacturer approved adhesives that are fully warranted by and recommended for use by the manufacturer. Adhesives shall consist of water based

acrylic and have moisture tolerance level up to 95% RH according to ASTM F2170.
2.05 SEALERS AND CLEANERS

- A. Field applied finish is not required. Clean per manufacturer's recommendations.

2.06 EXCESS MATERIALS

- A. All useable scraps of materials supplied shall be stored and left for use by the Owner, as well as the following quantities of uncut goods for each color used:

1. Luxury Vinyl Tile: 1 full box
2. Cove Base: minimum 20 lineal feet

- B. All materials shall be bundled and labeled per color and pattern, ready for storage. In the event multiple colors are selected, Architect will designate which color(s) to provide.

PART 3 - EXECUTION

3.01 GENERAL

- A. Start no work in areas until work of other trades, including painting, glazed wall coatings and work which goes through resilient flooring has been completed. Broom clean and well ventilate areas being worked. Use methods of installation as recommended by manufacturer of material. Perform only by qualified installers approved by resilient floor manufacturer. Solvent based adhesives are not acceptable and shall not be used.

1. Flooring material is not required under fixed millwork, casework or equipment with full base closure.
2. Install LVT flooring as a typical field color with an accent pattern/ border color in rooms as indicated on drawings.
3. Submit pattern layout for all spaces for approval by Architect prior to commencement of work.

3.02 SUB-FLOOR PREPARATION

- A. Completely cure and dry concrete slab. Clean it free from paint, oil, grease, curing compounds not approved by adhesive manufacturer, and other foreign materials. Fill rough spots, cracks, joints, surfaces varying more than 1/8" per 10 feet and/or 1/16" per running foot, and other surface defects with approved rubber latex filler material and sand smooth. Use of chemical based material shall not be used to clean sub-floor areas.

3.03 ADHESIVE APPLICATION

- A. Follow adhesive manufacturer's directions for mixing and applying adhesive. Cover surface evenly with adhesive. Do not exceed maximum working areas recommended by manufacturer for area covered by one application of adhesive. Install flooring within time limits recommended by manufacturer. If adhesive "films

over" or dries, remove using scraper and recoat areas.

3.04 LUXURY VINYL TILE

- A. Acclimate vinyl composition tile to suggested manufacturer methods. Condition room to a temperature of 72°-76° for 24 hours.
- B. Layout all rooms so that field centers on room and so that cut tiles at walls are no less than 1/2 tile width. Neatly trim tile around perimeters of rooms and fixed millwork and equipment items, such that base cover will fully cover tile edge.
 - 1. Feature Strips: Install 1" strip centered under door at locations where two adjoining rooms receive luxury vinyl tile. Feature strip is not required where approved by Architect.
 - 2. Let flooring under all metal thresholds.
 - 3. Neatly fit and glue around metal cleanout and electrical outlets cover plates. Factory finished covers are to be set with top aligned with top of floor finish.
 - 4. Neatly trim and fit to door frames and the like and then caulk such joints (with color matching caulk).
 - 5. Provide reducer edge strip centered under door where resilient flooring meets exposed concrete floor.

3.05 BASE INSTALLATION

- A. Firmly cement base to dried wall. Fit to pre-formed external corners. Scribe base accurately to trim and plinths. Include base around all millwork and casework units and shelving cabinets secured to wall and floor, as well as free standing units. Brace corners as required until adhesive has firmly set. Install no base piece less than 12" long. Do not make any joint within 12" of a corner.

3.06 CLEANUP

- A. Remove all debris and surplus materials promptly from site as work progresses. After completion and before acceptance of work, clean all installed surfaces of adhesive, dirt, and all other foreign materials.

3.07 FINISHING

- A. Clean and rinse flooring per manufacturer's recommendations, and allow to dry.

3.09 PROTECTION

- A. Protect all resilient flooring from damage until building is accepted by Owner. Replace all loose or damaged work, and tile with trapped debris under same prior to acceptance of building by Owner.

END OF SECTION 09651

SECTION 09910 / PAINTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division.
- B. Refer to Section 01230/Alternate(s), which affects the scope of this section's work.
- C. This section includes surface preparation, painting and finishing of exposed interior and exterior items and surfaces.
 - 1. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming and surface treatment specified under other sections.

- 1.02 Paint all exposed surfaces, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. *If color or finish is not designated, the ARCHITECT will select from standard colors or finishes available for approval by OWNER.

- A. Painting includes but is not limited to field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work and primed metal surfaces of mechanical and electrical equipment, exposed conduit, exposed flashing and sheet metal. The following are representative items to be field painted:

- Door grilles.

- All roof-top equipment, not factory finished.

- Electric panel covers not located in equipment rooms or janitors closets.

- Wall louvers, interior and exterior.

- Sidewall HVAC registers and grilles.

- Vents at exterior.

- Exposed metal decking and structure.

- Outdoor equipment.

- Safety striping/markings on floor around equipment.

- Interior wall areas behind fixed wall mounted items such as millwork, chalk and tackboards, mirrors, etc.

- All exposed pre-engineered steel building components including but not limited to columns, beams, girts, purlins, and inside surfaces of wall/ roof panels.

- B. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

- 1. Pre-finished Items not to be painted include the following factory-finished components:
 - Toilet and shower enclosures
 - Acoustic materials

Light fixtures
Switchgear
Distribution cabinets
Metal Roof, Fascia & Soffit
Aluminum Walkway Covers
Exterior Synthetic Stucco (Integral Color) Over AAC
Interior Acrylic Coating (Integral Color) Over AAC

C. Finished Metal Surfaces not to be painted are:

Anodized aluminum
Stainless steel
Chromium plate
Copper
Bronze
Brass

D. Operating Parts not to be painted include moving parts of operating equipment such as:

Valve and damper operators
Linkages
Sensing devices
Motor and fan shafts

E. Labels: Do not paint over Underwriter's Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

1.03 MATERIAL, EQUIPMENT AND LABOR

A. The Painting CONTRACTOR shall furnish all labor, materials, tools, equipment, scaffolding and/or other structure, and supervision, required for the cartage, unloading, storage, surface preparation, application, and cleanup of the paint and allied products covered by the Specification.

B. All work shall be done in strict accordance with these Specifications and the Design Drawings. Any deviations from this Specification shall be written into the Scope of Work or issued as an addendum to this Specification.

1.04 MINIMUM SPECIFICATIONS

A. If instructions contained in this Specification, bid documents or the Painting Schedule are at variance with the paint manufacturer's instructions or the applicable standards and codes listed herein, surfaces shall be prepared and paint applied to suit the higher standard as determined by the ARCHITECT.

1.05 RESOLUTION OF CONFLICTS

- A. The ARCHITECT/OWNER shall be responsible for requesting prompt clarification when instructions are lacking, conflicts occur in the specification and/or paint manufacturer's literature, or the procedure specified is not clearly understood.

1.06 MATERIAL SELECTION

- A. The paint materials and systems approved for work detailed in the paint schedule shall be as specified herein.

1.07 SAFETY

- A. CONTRACTORS performing work specified herein shall abide by all safety and environmental rules and laws as prescribed by governing agencies. Full compliance shall be the sole responsibility of the CONTRACTOR.

1.08 APPLICABLE STANDARDS AND CODES

SSPC - Steel Structures Painting Council
4400 Fifth Avenue
Pittsburgh, PA 15213

OSHA - Occupational Safety and Health Administration
Department of Labor
Washington, D.C.

ANSI - American National Standards Institute
1430 Broadway
New York, NY 10018

NACE - National Association of Corrosion Engineers
P. O. Box 1499
Houston, TX 77001

1.09 COORDINATION OF WORK

- A. The CONTRACTOR shall be responsible for coordination of his work with other crafts and CONTRACTORS working on the same job and with the ARCHITECT and OWNER.

1.10 FIELD SAMPLES

- A. On wall surfaces and other exterior and interior components, duplicate finishes of prepared samples. Provide full-coat finish samples on at least 4'-0" x 4'-0" of surface until required sheen, color and texture are obtained; simulate finished lighting conditions for review of in-place work.

1. Final acceptance of colors will be from job-applied samples.
2. The ARCHITECT will select one room or surface to represent surfaces and conditions for each type of coating and substrate to be painted. Apply coatings in this room or surface in accordance with the schedule or as specified. After finishes are accepted, this room or surface will be used for evaluation of coating systems of a similar nature.
3. Material Quality: Provide the manufacturer's best quality paint material for the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

1.11 SUBMITTALS AND SUBSTITUTIONS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. All bid submittals must be based upon a brand of paint listed herein or accepted by addendum. No substitution will be allowed after bid opening.

1.12 SUBSTITUTIONS

- A. A substitute paint system other than as specified may be used if:
 1. CONTRACTOR satisfactorily proves and documents that they are equivalent to the specified (Porter Paint Co.) items in (1) quality, (2) durability, (3) suitability for the intended surfaces, (4) resistance to abrasion and physical damage, (5) efficient in protecting the substrate from corrosion for extended periods, (6) life expectancy, (7) recoating cycles, (8) solids content per volume, (9) dry film thickness per coat, (10) mil square feet per gallon, (11) compatibility with other coating, (12) resistance to chemical attack, (13) submersion limitation, (14) temperature limitations in service and during application, (15) recommended surface preparation for maximum coating life, (16) type and quality of recommended undercoats and topcoats, (17) generic type, and (18) other pertinent criteria.
 2. The CONTRACTOR shall submit to the ARCHITECT and OWNER 10 days prior to bid date notarized certificates on the letterhead of the firm manufacturing the proposed substitution certifying (1) that the proposed substitution is the equivalent of the specified material in the qualities specified above, (2) that the list of compared equivalency qualities is accurate, and (3) that the proposed substitution is for the intended use. The CONTRACTOR shall also submit to the ARCHITECT and OWNER on the letter-head of the firm manufacturing the proposed substitution a list of at least five installations similar to the installation for which the products are being proposed, at which installations the proposed products have performed reliably in similar service for at least five years. This list shall include the name, address, and telephone number of the OWNER of each installation, and the name of that OWNER'S employee who is responsible for the maintenance and construction.
 3. If the proposed coatings have not been used at the number of installations and for the number of years specified above, the CONTRACTOR shall submit to the ARCHITECT and OWNER on the letterhead of the firm manufacturing the

proposed substitution, a statement that the manufacturer will guarantee to furnish a bond from an acceptable surety guaranteeing that the manufacturer of the proposed substitution shall, in case of failure by the proposed substitution within a five year period, promptly pay all costs for material and labor for (1) removal of unsuitable coats, (2) re-preparation of the substrate, (3) recoating with all the cost of the originally specified products.

4. If the proposed substitution requires alteration to the contract work, the CONTRACTOR shall bear all such costs involved and the costs of allied trades affected by the substitution.
5. The CONTRACTOR shall submit to the ARCHITECT and OWNER, the paint manufacturer's current printed information and recommendations and product data sheets both for the proposed substitutions and specified products, and shall submit a list comparing the difference between the proposed substitution and the specified hereinbefore and between the two paint manufacturer's printed information, recommendations, and data sheets.
6. No proposed substitution shall be incorporated in the work until all above submission requirements have been reviewed and accepted by the ARCHITECT and OWNER. No substitutions will be accepted following the submission deadline stated above. All submittal information must be complete to be considered.
7. Accepted alternate producers will be included in an addendum. Failure to be listed shall be interpreted as not being found acceptable.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS LISTING

PAINT SYSTEM 1- PREVIOUSLY PAINTED SURFACES- EXTERIOR

MANUFACTURER	MASONRY PRIMER FINISH FINISH	WOOD PRIMER FINISH FINISH	METAL PRIMER FINISH FINISH
PORTER	6015 619 619	515 619 619	296 2710 2710
ICI	3010-1200 2406-XXX 2406-XXX	2406-XXX 2409-XXX	4160-XXX 4308 SERIES 4308 SERIES
SHERWIN- WILLIAMS	A24-100 84A SERIES 84A SERIES	B-42W41 A84 SERIES A84 SERIES	B50 SERIES B54 SERIES B54 SERIES
PPG Pittsburgh Paints	6-808 52-110 52-110	6-609 52-110 52-110	6-204 7-282 7-282

System 2 (PREVIOUSLY PAINTED SURFACES-INTERIOR)

MANUFACTURER	WALLS PRIMER FINISH FINISH	WOOD PRIMER FINISH FINISH	METAL PRIMER FINISH FINISH
PORTER	9545 9545	832 858 858	296 2710 2710
ICI	1030-1200 1030-1200	1030-1200 1030-1200	4160-XXX 4308 SERIES 4308 SERIES
SHERWIN- WILLIAMS	B-70W B-70W	A-48 A-67 A-67	B-50 B-54 B-54
PPG Pittsburgh Paints	16-551/16-599 16-551/16-599	77-560 77-5 77-5	6-204 7-282 7-282

SYSTEM 3 (NEW PAINTED SURFACES-EXTERIOR)

MANUFACTURER	STUCCO/ CONC PRIMER FINISH FINISH	BLOCK PRIMER FINISH FINISH	WOOD PRIMER FINISH FINISH	METAL PRIMER FINISH FINISH	GALV MET PRIMER FINISH FINISH
PORTER	6015 619 619	896 619 619	515 619 619	296 2710 2710	215 DTM DTM
ICI	41983 2440-100 2407- 0100	3010- 1200 2440-100 2407- 0100	19529 2407- 0100 2407- 0100	4160- XXX 4308 SERIES 4308 SERIES	
SHERWIN- WILLIAMS	A24-100 A84 SERIES A84 SERIES	B-42W41 A84 SERIES A84 SERIES	B42W41 A84 SERIES A84 SERIES	B-50 SERIES B-54 SERIES B-54 SERIES	B66W1 B66 B66
PPG Pittsburgh Paints	6-808 52-110 52-110	16-90 52-110 52-110	6-609 52-110 52-110	6-204 7-282 7-282	90-712 90-374 90-374

- A. For exterior structural steel columns provide Rust-OLEum C9578 coal tar epoxy where steel is encased in concrete, one coat 8-10 mil DFT.
- B. For exterior structural steel columns provide Rust-OLEum #9800 urethane mastic on exposed steel columns and extend 4" minimum behind concrete encasement, 8 mil DFT.

SYSTEM 4-(NEW PAINTED SURFACES-INTERIOR)

MANUFACTURER	STUCCO/ CONC PRIMER FINISH FINISH	BLOCK PRIMER FINISH FINISH	DRYWALL PRIMER FINISH FINISH	WOOD PRIMER FINISH FINISH	METAL PRIMER FINISH FINISH
PORTER	1129 9545 9545	896 9545 9545	1129 9545 9545	832 858 858	296 2710 2710
ICI	3010-1200 4418-0100 4418-0100	3010-1200 4418-0100 4418-0100	1030-0100 4418-0100 4418-0100	1916 1902 1902	4160-XXX 4308 SERIES 4308 SERIES
SHERWIN/ WILLIAMS	B28W200 B-70W B-70W	B42W46 B-70W B-70W	B28W200 B-70W B-70W	A-88 A-67 A-67	B-50 B-54 B-54
PPG Pittsburgh Paints	6-2 16-551/16- 599 16-551/16- 599	16-90 16-551/16- 599 16-551/16- 599	6-2 16-551/16- 599 16-551/16- 599	77-560 77-5 77-5	6-204 7-282 7-282

2.02 PREVIOUSLY PAINTED SURFACES (EXTERIOR)

- A. Exterior Masonry and Stucco:
 - 1. Pretreatment-pressure clean and Fungicide.
 - 2. Pretreatment-treat all cracks, voids and cavities as specified.
 - 3. First coat-Acrylic sealer
 - 4. Finish coats-Gloss Acrylic House paint
- B. Exterior wood
 - 1. Pretreatment-pressure clean and Fungicide.
 - 2. Scrape and sand all loose and scaling paint to smooth, sound substrate
 - 3. First coat-Acrylic Bonding primer.
 - 4. Finish Coats- Gloss acrylic House paint.

C. Exterior Metals

1. Pretreatment-pressure clean and Fungicide.
2. Pretreatment-Remove loose paint, mil scale, rust, etc. by hand tool cleaning (SSPC-SP2) or power tool cleaning (SSPC-SP3).
3. First coat-Rust Inhibitive primer
4. Finish coats-Gloss Alkyd Industrial Enamel.

2.03 PREVIOUSLY PAINTED SURFACES (INTERIOR)

A. Drywall, Plaster, Concrete, & Block

1. Pretreatment: Remove loose and failing paint by hand scraping or power tool cleaning and sand edges smooth. Fill holes and gouges with filler appropriate for the substrate (such as joint compound, spackling paste, concrete patch, mortar, etc. Sand or tool patched areas smooth as necessary before priming areas and patches.
2. First coat-Acrylic Primer
3. Finish coats-Acrylic Water based Epoxy Finish Semi-Gloss.

B. Wood (Doors, shelves & misc. wood with stained or natural finish.)

1. Pretreatment- Remove loose and failing coating by hand or power tool cleaning and lightly sand sound varnish to degloss and profile the surface. Fill holes and gouges with wood patch. Sand or tool patched areas smooth as necessary before staining or varnishing.
2. Pretreatment-Repair scratches or damaged areas with wiping stain or colored putty and touch up with varnish.
3. Finish coats- Apply Polyurethane Gloss Varnish or other matching finish.

C. Interior Ferrous Metals

1. Pretreatment- Treat all bare metal with #79 Metalprep.
2. Rust inhibitive Metal Primer
3. Finish coats-Gloss Alkyd Industrial Enamel.

2.04 NEW PAINTED SURFACES (EXTERIOR)

A. Exterior concrete and stucco

1. First coat-Acrylic Sealer
2. Second coat-Elastomeric coating
3. Finish coat-Gloss Acrylic House Paint

B. Exterior Concrete block

1. First coat- Acrylic block filler
2. Finish coats-Gloss Acrylic House paint.

- C. Exterior Wood
 - 1. Alkyd primer
 - 2. Finish coats-Gloss Acrylic House Paint.

- D. Exterior Ferrous Metals (Prep metal frames and doors as per Hollow Steel door and frame specification.)
 - 1. Pretreatment- Treat all bare metal with #79 Metalprep.
 - 2. Rust inhibitive Metal Primer
 - 3. Finish coats-Gloss Alkyd Industrial Enamel.

- E. Exterior Galvanized Metals (Prep metal frames and doors as per Hollow Steel door and frame specification.)
 - 1. Pretreatment- Treat all bare metal with #79 Metalprep.
 - 2. Rust inhibitive Metal Primer
 - 3. Finish coats-DTM Acrylic Gloss Enamel.

- 2.05 NEW PAINTED SURFACES (INTERIOR)

- A. Drywall and Plaster/Stucco
 - 1. First coat- Acrylic primer
 - 2. Finish coats- Acrylic Water Based Epoxy semi Gloss.

- B. Concrete and Concrete block
 - 1. Heavy duty Acrylic Block filler.
 - 2. Finish coats- Acrylic Water Based Epoxy semi Gloss.

- C. Wood (Doors, shelves & Misc. wood with stained or natural finish.)
 - 1. Repair construction defects as necessary. Fill openings and nail holes with wood Putty or filler. Lightly sand all surfaces prior to first coat of stain or varnish.
 - 2. Wood stain
 - 3. Second coat- Gloss Urethane Varnish thinned 1-2 oz 5132 thinner per gallon.
 - 4. Third coat- Gloss Urethane Varnish.

- D. Interior Metal (Doors, frames, and miscellaneous metals) (Prep metal frames and doors as per Hollow Steel door and frame specification.)
 - 1. Pretreatment- Remove loose paint, mil scale, rust by hand tool cleaning (SSPC-SP2) or power tool cleaning (SSPC-SP3).
 - 2. First Coat- Rust Inhibitive metal primer
 - 3. Finish coats- Gloss Alkyd Industrial Enamel.

2.06 PAINT SYSTEM 6 - CONCRETE SEALER SYSTEM

- A. Refer to Finish Schedule: floor slabs scheduled as “concrete with sealer” to receive pigmented sealer specified herein.
- B. Materials
1. Silicone acrylic concrete sealer as manufactured by H&C Concrete Coatings. Color selected from full Standard Color Palette.
 2. Cleaner: H&C De-Greaser or as approved by Manufacturer.
 3. Etching Solution: H&C Concrete Etching Solution or as approved by manufacturer.
 4. Sealant: elastomeric type compatible with sealer material.
- C. Execution
1. Remove all loose dirt, grease or other deleterious materials and prepare all joints and cracks in concrete slab to provide Radon-Resistant Construction as specified in Section 07920. Patch all pock marks.
 2. Etch slab surface with Etching Solution per manufacturer’s recommendations. Rinse thoroughly and allow to dry completely, minimum 24 hours. If necessary, etch a second time to “open surface pores” to insure proper penetration and bond of the concrete sealer.
 3. Seal all cracks and joints as specified in Section 07920 with compatible elastomeric sealant to provide Radon-Resistant Construction.
 4. Apply two (2) coats concrete sealer with brush and roller, allowing minimum 12 hour dry time between coats. Apply second coat perpendicular to first coat.

PART 3 - EXECUTION

3.01 GENERAL SURFACE PREPARATION PROCEDURES

- A. Coordinate with CONTRACTOR timely removal of hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Following completion of painting operations in each space or area CONTRACTOR is to have items reinstalled by workers skilled in the trade involved.
- B. Steel and Iron Surfaces
1. The surface of all steel and iron shall first be cleaned and inspected by the CONTRACTOR to insure that all weld spatter, weld slag, grease and oil and other foreign materials have been removed. Final surface preparation shall be as outlined in Steel.
Prime all steel doors and frames immediately after they are installed into concrete masonry work, both interior and exterior.
 2. Wet locations coat with a bituminous coating.
 3. Steel Structures Painting Council Surface Preparation (SSPC-SP)

<u>Specification Number</u>	<u>SSPC Specifications</u>
SSPC-SP 1	Solvent Cleaning
SSPC-SP 2	Hand Tool Cleaning
SSPC-SP 3	Power Tool Cleaning
SSPC-SP 4	Flame Cleaning of New Steel
SSPC-SP 5	White Metal Blast Cleaning
SSPC-SP 6	Commercial Blast Cleaning
SSPC-SP 7	Brush-Off Blast Cleaning
SSPC-SP 8	Pickling
SSPC-SP 9	Weathering Followed by Blast Cleaning
SSPC-SP 10	Near-White Blast Cleaning

4. The CONTRACTOR shall refrain from making final surface preparations to steel and iron surfaces when the relative humidity is above 85% or when the relative humidity is expected to exceed 85% before the prime coat of paint is applied. The CONTRACTOR shall, at his own expense, rework the steel and iron surfaces in the event the 85% maximum relative humidity is exceeded.

C. Cementitious Materials

Coordinate with CONTRACTOR timely preparation of concrete, concrete masonry block and cement plaster surfaces to be painted, by removing efflorescence, chalk, dust, dirt, grease, oils, and release agents prior to start of painting operation. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

1. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.
2. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
3. For concrete floors receiving pigmented floor sealer, in addition to the above, verify that slab surface is uniformly smooth and straight. Fill/patch all defects and joints with appropriate material.

D. Wood

Clean surfaces of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper as required. Sand surfaces exposed to view smooth and dust off.

1. Scrape and clean small, dry, seasoned knots and apply a thick coat of white shellac or other recommended knot sealer before application of primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dry.
2. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of such wood including cabinets, counters, cases, and paneling.

3. When transparent finish is required, use urethane varnish.
4. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.
5. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of polyurethane immediately upon delivery.

E. Galvanized Surfaces

1. **ALL** galvanized products that are to have finish coats are to be field prepped and primed.
2. Clean galvanized surfaces with non-petroleum based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods. Top coat with D.T.M. Acrylic Semi-Gloss- two coats, B-66 series.

3.02 PREPARATION OF MATERIALS

- A. Mixing and Blending: Mechanical mixers, capable of thoroughly mixing the pigment and vehicle together, shall be used to mix the paint prior to use where required by manufacturer's instructions. Pressure pots shall be equipped with mechanical mixers to keep the pigment in suspension, when required, by manufacturer's instructions, and these pots shall be equipped with two pressure regulators; one for the fluid and one for the air. Otherwise, intermittent hand mixing shall be in accordance with SSPC Volume I, Chapter 4, "Practical Aspects, Use and Application of Paint", supplemented with the manufacturer's recommendations. Hand mixing is allowed for small amounts.
- B. Catalysts and Thinners: Catalysts, thinners and other additives shall be used only as recommended by the coating manufacturer.
- C. Minimum Temperature: Paint shall be prepared in strict accordance with manufacturer's recommendations, and proper reacting time shall be observed for epoxies. Failure to comply with this requirement will be cause for rejection of work.

3.03 APPLICATION

- A. Personnel: All work shall be accomplished by skilled workmen, under competent supervision, familiar with and trained to do this type of work.
- B. Condition of Application: All paint and protective coatings shall be applied in strict accordance with the manufacturer's recommendations. Paint shall be applied only on thoroughly clean, dry surfaces and during periods of favorable weather unless otherwise allowed by ARCHITECT. Painting is prohibited when ambient temperatures are below 50 degrees F, or when freshly painted surfaces may be damaged by rain, fog, dust, snow or condensation, or when it can be anticipated that these conditions will prevail during the drying period.

- C. Dew Points: No applications shall be made when the dew point and the ambient temperature are within 5 degrees F of each other, or when the surface temperature of the surface to be painted is within 5 degrees F of having moisture condense on it. The CONTRACTOR shall have proper equipment for checking this condition on the job site at all times. A daily log of temperature, humidity and general weather conditions is required.
- D. Workmanship: Materials shall be applied evenly and free of runs, sags and pin holes. When sprayed, the paint shall be applied with a minimum 25% overlap criss-cross pattern, or as recommended by manufacturer, and then backrolled.
- E. Intercoat Contamination: The CONTRACTOR shall take precautions to avoid surface damage and intercoat contamination. In the event surfaces are damaged or contaminated, they shall be cleaned and recoated at the CONTRACTOR'S expense. Recoating time as specified by the manufacturer's printed instructions shall be adhered to.

All coatings applied shall be tinted with contrasting color (half tints) between coats to facilitate inspection.

- F. Damaged Prime Coat: Shop primed surfaces which have damaged areas shall be repaired by the shop fabricator prior to the application of the intermediate or final coat.

3.04 PROTECTION

- A. General: Proper care and caution shall be followed during the field surface preparation and painting operation to protect equipment and machinery adjacent to the areas being painted.
 - 1. The CONTRACTOR shall exercise care in the painting of all operable equipment so that the proper functioning of the equipment will not be affected.
 - 2. The CONTRACTOR shall be responsible for adequately protecting all machinery and plant property from damage due to paint overspray and sandblasting. Overspray damage is the responsibility of the CONTRACTOR.

3.05 CLEANUP

- A. Defaced Surfaces: At the completion of the work, the CONTRACTOR shall remove all spilled or splashed paint from surfaces which have been defaced. This requirement shall include excessive overspray.
- B. Trash and Debris: The CONTRACTOR shall be responsible for keeping trash and debris from collecting or being spread across the job site during the course of the job. Oil and solvent soaked rags shall not be allowed to accumulate.
- C. Material and Debris Removal: At completion of the work, the CONTRACTOR shall remove from the job site all painting equipment, scaffolding, surplus materials and debris resulting from his work.

3.06 STORAGE

- A. Materials: Painting materials shall be fresh and delivered to the job site in the original packages with seals unbroken and with legible unmutilated labels attached. Packages shall not be opened until they are required for use. Rusty or severely damaged containers are not permitted.
- B. Storage Conditions: All painting materials shall be stored in a clean, dry, well-ventilated place, protected from sparks, flame, direct rays of the sun, and excessive heat or cold. The CONTRACTOR shall be solely responsible for the protection and safety of the materials stored by himself at the job site.
- C. Inspection
 - 1. Access: The CONTRACTOR shall provide access to the job site and areas of work at all times during normal working hours for the ARCHITECT, OWNER or representatives thereof. This requirement includes both shop and field work.
 - 2. Equipment: The coating thickness shall be determined by the use of a properly calibrated "Nordson-Mikrotest" or "Elcometer" Dry Mil thickness gauge. The CONTRACTOR shall keep one of these instruments on the job at all times, with calibration equipment, for the use by the OWNER or his representative as well as the CONTRACTOR'S foreman. This instrument shall be used frequently to maintain good control on film thickness. The School Board inspector and their appointed representative will utilize a tooke gauge to determine thickness per coat on all surfaces. The CONTRACTOR shall spot repair these defects at no additional cost. CONTRACTORS are encouraged to use wet film gauges to assure proper film application is achieved per coat.
 - 3. The CONTRACTOR shall have a sling psychrometer or wet and dry bulb thermometers on the job for purposes of checking relative humidity.
 - 4. The OWNER reserves the right to invoke the following test procedure at any time and as often as the OWNER deems necessary during the period when paint is being applied.
 - a. The OWNER will engage the services of an independent testing laboratory to sample the paint material being used. Samples of material delivered to the project will be taken, identified, sealed, and certified in the presence of the CONTRACTOR.
 - b. The testing laboratory will perform appropriate tests for the following characteristics as required by the OWNER:
 - Quantitative materials analysis
 - Abrasion resistance
 - Apparent reflectivity
 - Flexibility
 - Washability
 - Absorption
 - Accelerated weathering
 - Dry opacity

Accelerated yellowness
Recoating
Skinning
Color retention
Alkali and mildew resistance

- c. If test results show material being used does not comply with specified requirements, the CONTRACTOR may be directed to stop painting, remove non-compliant paint, pay for testing, repaint surfaces coated with rejected paint, and remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are noncompatible.
5. Rejection: Failure to comply with these specifications in any manner shall be sufficient cause for rejection of the work and final payment may be withheld until the cause for rejection is corrected.

END OF SECTION 09910

SECTION 10000 / SPECIALTIES, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 10. Provisions of this Section 10000 also apply to all sections of this Division 10. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades. Coordinate and install this section's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.

1.03 FINISHES

- A. Unless specified otherwise, all items receive manufacturer's standard finish.

1.04 OTHER APPROVED MANUFACTURERS

- A. Manufacturer's products referred to and material and performance characteristics specified herein, establish the required quality of performance for this work. Other products which in CONTRACTOR'S experienced judgment offer equivalent quality may be submitted for approval as per Division 1.

1.05 LOCATIONS

- A. As described herein and/or keyed on drawings.

END OF SECTION 10000

SECTION 10110 / LIQUID MARKERBOARDS AND TACKBOARDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Conform to Division 1, Section 10000 and other sections of this division.

1.02 Colors, if not indicated, will be selected from manufacturer's standard, upon return of shop drawings.

1.03 Lengths, configurations and locations are indicated on Architectural Plans.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Reference herein is to Alliance Ceramicsteel Products, Multi-Use Ceramic Steel Writing Surfaced boards, and establishes the required standard of quality for this work. Subject to meeting requirements the following manufacturers have prior approval:

Peninsular Slate Co.
Greensteel
Nelson Adams
Claridge Products and Equipment, Inc.

B. See Section 06100 and Section 06200 for necessary blocking.

2.02 MARKER BOARDS

A. Porcelain/Ceramic-on-steel. All panels to be 24 gauge steel sheet with multi-use finish fused to the sheet, minimum 7/16" thick core of particle board and 0.002 inch thick aluminum backing sheet. The finish surface shall be non-glare type, alliance with medium gloss white porcelain surface, designed for use with dry erase markers, easily cleanable and washable with household detergents, solvent or lacquer thinner. Surface shall be dent and crush resistant and colorfast.

1. Vertical joints between boards and adjacent tackboards are to be narrow profile mullion trim, slip-on type.
2. Chalk rail to be continuous at bottom of boards and full length of writing surface.
3. Furnish mounting clip angles for securing to wall without wood grounds.

2.03 TACKBOARD WITH PERIMETER FRAMES

- A. Tackboard to be composition cork backing (1/4" cork over 1/4" fiber board) with vinyl cover, total thickness 1/2". Perimeter frame to match chalkboard.

2.04 LIQUID MARKER BOARDS

- A. Construction and accessories as 2.02 with Alliance medium gloss white porcelain marker surface.

PART 3 - EXECUTION

- 3.01 Locate and size all assemblies as indicated on drawings. Mount boards, true and level, typically directly to masonry wall using masonry screw type fasteners and in certain locations at metal stud framed walls screw through to backup blocking installed as a part of Section 06100 and Section 06200 work. Use manufacturer's standard concealed brackets. Spot adhesive as recommended, then set board assemblies in place, rolling soundly into adhesive.
- 3.02 Leave assemblies securely installed in place, free of damage or imperfections and void of any overflow adhesive.
- 3.03 Wall finish as specified is to be continuous behind all assemblies.

END OF SECTION 10110

SECTION 10200 / LOUVERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 10000 and other sections of this division.

1.02 Related work in other divisions/sections

Division 3:	Concrete
Division 4 :	Masonry
Section 05400:	Cold-Formed Metal Stud Framing
Section 07715:	Metal Fascia and Soffit System
Section 09910:	Painting
Division 15:	Mechanical

1.03 STRUCTURAL DESIGN REQUIREMENTS

- A. Design, engineer, fabricate and install units capable of withstanding the effects of loads and stresses from wind and normal thermal movement without evidencing permanent deformation of components, metal fatigue or noise from louver blade rattle or flutter, and permanent damage to fasteners or anchors.

1. Wind Load: Uniform pressure of 35# per sq. ft., acting inwards and outwards.
2. Normal thermal movement from ambient temperature changes (range) of 100 deg. F. (55.5 deg. C) and its effect on metal surfaces due to both solar heat gain and night time sky heat loss.

- B. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:

1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition. See structural and architectural drawings for wind speed design and exposure criteria, except as modified by 1.02, C of this section.

- C. Wind Speed design shall be as noted on structural and architectural drawings and shall comply with ASCE-7, latest edition.

- D. Units shall be resistant to large missile impact.

1.04 FIELD MEASUREMENTS

- A. Verify size, location and placement of louver units prior to fabrication.

1.05 PREASSEMBLY

- A. All units shall be preassembled in shop to greatest extent possible.

1.06 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.

- B. In addition to manufacturer's product data, submit the following:

1. Shop drawings for all assemblies.
2. Samples of each type of metal finish.
3. Certified statement relative to free area of louvers.

- C. **All products installed in the building envelope shall have product approval number indicated on the submittal. Products shall conform to the Florida Building Code, latest edition.**

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Basis of design is Airline Products Co., Model XB-4, 45°, 4" blade spacing (baffle type), 4" frame depth, 41% minimum free area. Subject to compliance with design and free area requirements, products of the following are acceptable:
Airlite Co., Model K638
Airstream Products Div., Penn Ventilator Co., Inc., Model SA4
Construction Specialties, Inc., Model ESK-402.

2.02 MATERIALS

Extruded aluminum 6063, 081" minimum thickness.

2.03 FABRICATION, GENERAL

- A. Fabricate louvers and accessories to comply with requirements indicated for design (blade angle, blade profile, blade spacing), metal type and form, sizes, depth, arrangement, and metal thicknesses indicated or required for performance and use intended.
1. Fabricate frames, including sills, to suit adjacent construction, with mullions at spacing indicated but not further apart than recommended by manufacturer.
 2. Join frame members to one another and to blades with fillet welds, concealed from view.
 3. Provide vertical mullion matching batten plates each end.

2.04 FINISH

- A. Kynar 500 paint finish or galvalume plus - color to match fascia panels or as selected by ARCHITECT and OWNER. All flashings to match.

2.05 SCREENS

- A. Provide removable screens on back sides of all louvers with galvanized 1/4" mesh bird fabric, set in galvanized frame.

2.06 SILL FLASHING PANS

At all exterior exposures provide 0.050 inch aluminum sill flashing pan to direct any wind driven moisture to exterior. Finish to match louver.

PART 3 - EXECUTION

- 3.01 Install screens in a removable fashion for maintenance and replacement.

- 3.02 Repair finishes damaged by cutting, welding, soldering, and grinding operations required for fitting and jointing. Restore finishes so there is no evidence of corrective work. Return items which cannot be refinished in field, to shop, make required alterations and refinish entire unit, or provide new units.

- 3.03 Protect dissimilar metal surfaces from corrosion or galvanic action by application of a heavy coating of bituminous paint on surfaces which will be in contact with concrete, masonry, or dissimilar metals.

3.04 INSTALLATION

- A. Locate and place louver units plumb, level, and in proper alignment with adjacent work.
- B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
- C. Form closely fitted joints with exposed connections accurately located and secured.
- D. Install louvers with interior clip angles at 16" maximum centers secured to both louver and framing.
- E. Caulk continuous perimeter of each louver behind exterior flange.

3.05 FIRE DAMPERS

- A. Coordinate with Division 15 for provision and installation of fire dampers on backsides of louvers set in all fire rated walls.

END OF SECTION 10200

SECTION 10350 / FLAGPOLE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 10000 and other sections of this division.
- B. Conform to Division 3 for flagpole concrete footing.
 - 1. Footing Size: 30" minimum at bottom, 36" minimum at top, depth 48" minimum.

1.02 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Submit certified statement with shop drawings that flagpole (without flag) will withstand 138 mph wind force.

PART 2 - PRODUCTS

2.01 FLAGPOLE

- A. Reference herein is to Concord Industries, Inc. Equivalent products of American Flagpole, Baartol, Eden Flagpole Co., Morgan-Francis Co. will be acceptable. Submit others for approval.
- B. Fabricate from one piece seamless cone tapered extruded aluminum tube, comply with ASTM B-241, alloy 6063-T6, having a minimum wall thickness of 0.188 inches, tensile strength not less than 30,000 psi and a yield point of 25,000 psi. Heat treat and age harden flagpole after fabrication.
 - 1. Concealed Halyard System
 - Exposed Height - 35'-0"
 - Overall Height - 38.5'-0" (tapered length 25'-0"/ straight length 13'-6")
 - Butt Diameter - 7"
 - Top Diameter - 3.5"
 - Flag Size - 5'-0" x 8'-0" (flag N.I.C.)
 - Finish - satin anodized aluminum
- C. Deliver flagpole and accessories securely wrapped and protected in hard fiber tube.
- D. One flagpole required as shown on Architectural Site Plan.
- E. Collar: spun aluminum, type FC-11, 14" diameter, 2 1/2" height, finished to match flagpole shaft.

2.02 FLAGPOLE MOUNTING

- A. Ground set concrete surrounding minimum 10" diameter sleeve. Sleeve 16 gauge galvanized steel with steel base plate sized 4" greater than sleeve inside diameter.
- B. Provide a ground spike 3/4" diameter at least 6" below base plate and not less than 18" long.

2.03 FITTINGS

- A. Truck: cast aluminum internal Halyard type, revolving, non-fouling, complete with stainless steel sealed ball bearings and one (1) 2 1/2" plated steel sheave.
- B. Halyards: 1/8" stainless steel aircraft cable, with attachment ends crimped over 1/8" steel yokes and joined by stainless steel quick-links. Halyard to be a two piece joined by a stainless steel swivel at mid-point. Flag arrangement sized to accommodate flag size and shall be complete with two chrome swivel snaps, neoprene coated counterweight and beaded nylon retainer ring.
- C. Winch: stainless steel, direct drive; mounted on a rotatable plate inside the shaft. Winch shall be accessible for operation and maintenance only through a single reinforced access opening, which shall be covered by a removable door finished to match shaft, containing a six tumbler cylinder lock. Winch shall be gearless, operable only by a removable crank handle through the access opening, and shall lock in any position upon removal of crank handle.

PART 3 - EXECUTION

- 3.01 Excavate foundation hole to neat, clean lines in well compacted soil. Provide forms if soil will not hold shape, however the top 12" is to be neatly formed. Compact bottom of excavated hole.
- 3.02 Set top of footing 4" above finish grade elevation and slope up uniformly to center 2" from corners. Concrete to be finished with light float. Tool outside edges with \pm 1/2" radius. See drawings for additional slab to be placed around flagpole.
- 3.03 Set sleeve in position with ground spike fully impeded below bottom of prepared foundation hole. Properly align sleeve and brace in position. Then pour concrete and cure per Division 3 instructions.
- 3.04 After concrete is fully cured, install flagpole as indicated and in compliance with final shop drawings and manufacturer's instructions. Align flagpole plumb and securely wedged in position.

END OF SECTION 10350

SECTION 10425 / SIGNAGE/GRAPHICS AND PLAQUES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 10000 and other sections of this division.
- B. Refer to Divisions 15 & 16 for sign requirements at valves and switches.

PART 2 – PLASTIC SIGNS

2.01 "MP" PLASTIC SIGNS (GRAPHIC BLAST)

- A. Plastic Signs shall be equal to Best's HC300 ADA System as manufactured by Best Manufacturing Sign Systems with a four-in-one construction style having the following characteristics:
 - 1. Tactile characters/symbols shall be raised 1/32" from sign plate face. Signs shall be of one-piece construction; **added-on and/or engraved characters and glue on signs are not acceptable.**
 - 2. Text shall be accompanied by domed Grade 2 braille.
 - 3. All letters, numbers and/or symbols shall contrast with their background - either light characters on a dark background or dark characters on a light background. Characters and background shall have matte finish.
- B. Plaque material shall consist of melamine plastic laminate, approximately 1/8" thick (1/4" thick for Slot signs), with core painted a contrasting color and rated non-static, fire-retardant and self-extinguishing. Plastic laminate shall be impervious to most acids, alkalies, alcohol, solvents, abrasives and boiling water.
- C. Lettering style shall be Standard Medium, upper case, or other sans serif or simple serif typeface.
- D. Sizes of letters and numbers shall be as follows:
 - 1. Room numbers shall be 5/8" high.
 - 2. Lettering for room usage and directional identification shall be 5/8" high.
 - 3. Lettering for restroom identification shall be 5/8" high, corresponding symbols shall be 3" high.
 - 4. Letters and numbers shall be centered on sign.
- F. Domed Grade 2 braille shall be placed directly below last line of letters or numbers, except for room number signs, where they shall be placed directly behind the last number.

1. Raised Letter Signs: Domed Braille style numbers and letters raised minimum 1/32", thin profile. Colors will be selected from manufacturer's standard line with "Graphic Blast" background to create letter, number and Braille text. Include male/female pictogram at all toilet rooms.

G. Radius corners: 1/2".

H. Sign sizes:

1. Length of sign shall be the sum of the letters (numbers) plus 1/2" each end. Long signs may require 2 lines and use 1/2" high letters.
2. Letters and numerals shall be proportioned in overall size, width-to-height ratio, style and stroke, finish and contrast per Americans With Disabilities Act (ADA) requirements.

I. Provide graphic blast raiser plastic signs as listed below and in keying schedule in Division 8.

1. Handicap Signs: Provide \pm 6" x 8" pictogram signs, Style HC300A, corner/border Style "R", blue color with white engraved wheel chair symbol. Provide 2 signs.

2.02 "MP" PLASTIC SIGNS (ENGRAVED)

A. Sign specifications shall comply with 2.01 A thru 2.01 H above.

B. Provide the following engraved signs:

1. Signage at each door location shall be located on strike side and shall denote room name. Sign shall include Braille symbol of room name. Also include male/female pictogram with handicapped symbol is required at all toilet rooms.

2.03 EXECUTION

A. General: Locate sign units and accessories where indicated on drawings. Use mounting methods of the type described and in compliance with the manufacturer's instructions.

1. Install signs level, plumb, and at heights indicated.

B. Plastic Signs

1. Install on wall adjacent to door at 60" above finish floor to the center line of the sign, or as instructed. All plastic signs to be mounted with

manufacturer's double face tape. Verify actual locations and mounting heights with ARCHITECT prior to installing.

C. Surface Mounted Items

1. Verify locations with ARCHITECT. Use screws into expansion shields in masonry walls, or long wood screws into blocking in stud walls as appropriate to the wall to which items are attached.

PART 3 - SPECIAL SIGNAGE

3.01 Building Identification Numbers (address)

- A. 8" high cast aluminum numbers with baked enamel finish. Color as selected. Stud mount to masonry. Helvetica Medium. Provide four numbers.

- 3.02 Provide a Maltese cross roof truss ® signage at the front door. 48" AFF.

END OF SECTION 10425

SECTION 10540 / ALUMINUM WALL HUNG CANOPY**PART 1 - GENERAL****1.01 SUMMARY**

- A. Section includes: design, fabrication, and installation of welded extruded aluminum canopy systems.

1.02 REFERENCES**A. The Aluminum Association (AA):**

1. The Aluminum Design Manual 2000, Specifications & Guidelines for Aluminum

B. American Architectural Manufacturers Association (AAMA):

1. AAMA 611, Voluntary Specification for Anodized Architectural Aluminum.
2. AAMA 2603, Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2605, Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

C. American Society of Civil Engineers (ASCE):

1. ASCE 7, Minimum Design Loads for Buildings and Other Structures.

D. American Society for Testing and Materials (ASTM):

1. ASTM B 209, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
2. ASTM B 221, Specification for aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
3. ASTM C 150, Specification for Portland Cement.
4. ASTM C 404, Specification for Aggregates for Masonry Grout.

E. American Welding Society (AWS):

1. ANSI/ AWS D1.2, Structural Welding Code – Aluminum.

1.03 SYSTEM DESCRIPTION**A. Design Requirements:**

1. Design Walkways in accordance with The Aluminum Design Manual 2000.
2. Comply with the wind requirements of ASCE 7.
3. Provide an all welded extruded aluminum canopy system complete with internal drainage. Non-welded systems are not acceptable.
4. Provide expansion joints to accommodate temperature changes of 120 deg. F. Provide expansion joints with no metal-to-metal contact.

1.04 SUBMITTALS

- A. Product Data: manufacturer's product information, specifications, and installation instructions for canopy components and accessories.
- B. Shop Drawings: include plan dimensions, elevations, and details.
- C. Samples:
 - 1. Selection: manufacturer's standard range of colors for the finishes selected.
 - 2. Verification: 2-inch square samples of each finish selected on the substrate specified.
- D. Design Data: design calculations bearing the seal of a registered Professional Engineer, licensed in the state where the project is located. Design calculations shall state that the canopy system design complies with the wind requirements of ASCE 7, the stability criteria of applicable building code, and all other governing criteria.
- E. Unit shall have Florida Product Approval.

1.05 QUALITY ASSURANCE.

- A. Manufacturer Qualifications: at least ten years of experience in the design, fabrication, and erection of extruded aluminum canopy systems.
- B. Installer Qualifications: have canopy installed by manufacturer; third party installation is not acceptable.

PART 2 – PRODUCT

2.01 MANUFACTURERS

- A. The design is based on products fabricated by Peachtree Protective Covers Inc., 1477 Rosedale Drive, Hiram, GA 30141, 770-439-2120, fax 770-439-2122.
 - 1. Comparable products by the following manufacturers also will be acceptable:
 - a. Dittmer Architectural Aluminum
 - b. Avadek Walkway Cover Systems.
 - 2. Substitutions: comparable products of other manufacturers will be considered under standard substitution procedures.

2.02 MATERIALS

- A. Aluminum Members: extruded aluminum, ASTM B 221, 6063 alloy, T6 temper.
- B. Fasteners: aluminum, 18-8 stainless steel, or 300 series stainless steel.
- C. Protective Coating for Aluminum Columns Embedded in Concrete: clear acrylic.
- D. Gaskets: dry seal santoprene pressure type.

E. Aluminum Flashing: ASTM B 209, Type 3003 H14, 0.040 inch, minimum.

2.03 FABRICATION

A. General:

1. Shop Assembly: assemble components in shop to greatest extent possible to minimize field assembly.
2. Welding: in accordance with ANSI/ AWS D1.2.
3. Gutter Frame Construction: factory assemble gutter fascia frames to form a one-piece welded frame. Make welds smooth and uniform using an inert gas shielded arc. Perform suitable edge preparation to assure 100% penetration. Grind welds only where interfering with adjoining structure to allow for flush connection. Field welding is not permitted. Gutter frames constructed by mechanically fastening components together are not acceptable.
4. Deck Construction: fabricate from extruded modules that interlock in a self-flashing manner. Positively fasten interlocking joints creating a monolithic structural unit capable of developing the full strength of the sections. The fastenings must have minimum shear strength of 350 pounds each.

B. Beams: where applicable, provide open-top tubular extrusion, top edges thickened for strength and designed to receive deck members in self-flashing manner.

C. Deck: extruded self-flashing sections interlocking into a composite unit.

D. Gutter Fascia: where applicable, provide "j-shaped" gutter fascia capable in manufacturer's standard sizes.

E. Fascia: where applicable, provide manufacturer's standard fascia in standard sizes.

F. Hanger Assemblies: provide extruded aluminum hanger rods in manufacturer's standard shapes and sized to meet the loads seen by canopy.

G. Factory Finishing: finish designations prefixed by AA comply with system established by the AAMA for designating aluminum finishes.

1. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish, nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.4 mils to 0.7 mils thick), complying with AAMA 611.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: verify that all concrete, masonry, and roofing work in the vicinity is complete and cleaned.

3.02 ERECTION

- A. Erect canopy true to line, level, and plumb.
- B. Provide hairline miters and fitted joints.

3.03 CLEANING

- A. Clean all canopy components promptly after installation.

3.04 PROTECTION

- A. Protect materials during and after installation.

END OF SECTION 10540

SECTION 10801 / TOILET ROOM AND RELATED ACCESSORIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 10000 and other sections of this division.
- B. All items refer to Bobrick. Equivalent items of A & J Washroom Accessories, Miami Carey, McKinney Parker and Bradley are approved.

1.02 RELATED WORK

- A. Waste receptacles are by OWNER.

PART 2 - PRODUCTS

2.01 SOAP DISPENSER

- A. Surface mount #B-2112, satin finish stainless steel for liquid soaps and detergents. Provide one in each single user toilet room; one per sink in each gang toilet; and one in each H/C toilet stall/room, and as shown on drawings.

2.02 TISSUE DISPENSER

- A. Double roll type surface mounted heavy duty cast aluminum, satin finish #B-2746 controlled delivery. Mount one in each toilet stall and in single toilet rooms.

2.03 MIRROR

- A. #B-1658-1836, 18"W x 36"H stainless steel framed, with tempered mirror glass. Mount with bottom at 40" AFF.

2.04 GRAB BARS FOR ACCESSIBLE LOCATIONS

- A. Grab bars shall comply with the latest edition of The Florida Building Code.
- B. Bars shall be 1 1/2" outside diameter, satin finish, concealed mounting with set screws.
Provide configurations as follows and as indicated on drawings.
 - 1. Individual H/C toilet rooms and combination stall shall have two grab bars. Mount all bars at 33".
 - 2. Accessible Shower and grab bars are specified in plumbing section.

2.05 FEMININE NAPKIN DISPENSER

- A. #B-2800 x 2 double coin surface mount. Mount unit with coin slot at 44" above floor. Provide one each in Women's Restrooms. Verify coin value before manufacturing.

2.06 FEMININE NAPKIN DISPOSAL

- A. Bobrick #254 single, surface mounted unit. Provide at each toilet/toilet stall in Women's Restrooms.

2.07 TOWEL BAR

- A. #B-530 stainless steel, 1" diameter stainless steel with concealed mounting. Locate adjacent to shower.

2.08 ROBE HOOK

- A. #B-672 double. Provide as follows:
- One on room side of door in **all** single user Toilet Rooms.
 - One adjacent to the shower.

2.09 PAPER TOWEL DISPENSER

- A. #B-262 surface mounted, 400 towel capacity, single fold; Type 304 stainless steel finish. Provide one at each sink.

2.10 MOP RACK

- A. #B-233x24, provide one in each custodial closet. Locate as indicated on plans, 60" to top.

PART 3 - EXECUTION

3.01 GENERAL

Verify all mounting heights and locations with ARCHITECT prior to making provisions for installations. Note that many items require special handicapped positioning.

3.02 ALL SURFACE-MOUNTED ITEMS

Secure all wall mounted items with screws into wood blocking or other fasteners into concrete masonry wall. Install all items to withstand 250 pound pull.

END OF SECTION 10801

SECTION 11000 / EQUIPMENT, GENERAL**PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 11. Provisions of this Section 11000 also apply to all sections of this Division 11. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 QUALITY ASSURANCE

- A. All glazing required to be tempered, laminated or safety glass shall have etched identification.

1.03 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades. Coordinate and install this section's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.

1.04 FINISHES

Unless specified otherwise, all items receive manufacturer's standard finish.

1.05 LOCATIONS

As described herein and/or keyed on drawings.

END OF SECTION 11000

SECTION 12000 / FURNISHINGS, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 12. Provisions of this Section 12000 also apply to all sections of this Division 12. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 QUALITY ASSURANCE

- A. All glazing required to be tempered, laminated or safety glass shall have etched identification.

1.03 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades. Coordinate and install this section's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.

1.04 FINISHES

- A. Unless specified otherwise, all items receive manufacturer's standard finish.

1.05 OTHER APPROVED MANUFACTURERS

- A. Manufacturer's products referred to and material and performance characteristics specified herein, establish the required quality of performance for this work. Other products which in CONTRACTOR'S experienced judgment offer equivalent quality may be submitted for approval as per Division 1.

1.06 LOCATIONS

- A. As described herein and/or keyed on drawings.

END OF SECTION 12000

SECTION 12491 / HORIZONTAL LOUVER BLINDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 12000 and other sections of this division.

1.02 SUMMARY

A. RELATED WORK IN OTHER SECTIONS/DIVISIONS:

Section 04000:	Masonry, General
Section 04200:	Concrete Masonry
Section 08100:	Hollow Steel Doors and Frames
Section 08520:	Aluminum Windows

1.03 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Product data for each type of horizontal louver blind specified. Include printed data on physical characteristics.
- C. Shop drawings showing location and extent of blinds. Show installation details at and relationship to adjoining work. Include elevations indicating blind units. Indicate location of blind controls.
- D. Product Sample: submit one 16" x 24" long fully functional sample blind in color selected by OWNER.
- E. Schedule of horizontal louver blinds using same room designations indicated on drawings.
- F. Maintenance data for horizontal louver blinds to include in the operation and maintenance manual specified in Division 1. Include the following:
 - 1. Methods for maintaining horizontal louver blinds and finishes.
 - 2. Precautions for cleaning materials and methods that could be detrimental to finishes and performance.

1.04 QUALITY ASSURANCE

- A. Single-Source Responsibility: Obtain each type of horizontal louver blind from one source and by a single manufacturer.

1.05 PROJECT CONDITIONS

- A. Field Measurements: Check actual horizontal louver blind dimensions by accurate field measurements before fabrication, and show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.
- B. Space Enclosure and Environmental Limitations: Do not install horizontal louver blinds until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient temperature and humidity conditions are and will be continuously maintained at values near those indicated for final occupancy.

PART 2 - PRODUCTS

2.01 HORIZONTAL LOUVER BLINDS

- A. Color to be selected from manufacturer's standard full range of colors.
- B. Manufacturer
Subject to compliance with requirements, provide products by one of the following:
 - 1. Graber
 - 2. Hunter Douglas, Inc.
 - 3. Levolor Corp.
 - 4. Bali
- C. Product Description:
 - 1. Steel Channel Headrail: "U"-shaped 1-inch by 1 1/4-inch deep channel, fabricated from 0.024-inch thick (before coating) phosphate treated steel with rolled edges at top with a prime coat of vinyl primer and finished coat of polyester baked enamel to match bottomrail and end support brackets and to coordinate with slats. Headrail shall be roll-formed after coating.
 - 2. Head Channel Hardware: Hardware shall be acetal low friction thermoplastic and guide lift cords and ladders in the head channel preventing wear and discoloration. Operating hardware shall be mechanically locked into head channel, by means of snap-in fittings with no mechanical cleats visible from underside of headrail.
 - 3. Enclosed Metal Bottomrail: Completely enclosed tubular shape, 0.024 -inch thick (before coating) phosphate treated steel with prime coat of vinyl primer and finished coat of polyester baked enamel matching headrail and coordinating with slate color. Bottomrail shall be roll-formed after coating with locking groove to receive dust cover. Thermoplastic protective caps in bottom of rail shall be used to secure ladder ends and assure windowsill protection. Hold-down bracket pins shall be available.

4. **Slats:** Slats shall be aluminum alloyed for maximum strength, flexibility and resistance to corrosion. Slats shall be nominally 1-inch wide, actual .991-inch (plus .004-inch or minus .000-inch). Standard thickness is 0.006" optional, 0.008" is available. Slats shall have a pre-coating treatment to bond the polyester baked enamel finish coat that features out Advance Finishing Technology (AFT) which provides a smoother, harder, less porous surface that provides anti-static performance to help repel dust and anti-microbial qualifies to help resist fungal and bacterial growth.
5. **Tilt Rod Support:** Tilt rod support shall be acetal low friction thermoplastic and shall support tilt rod. It shall provide a smooth bearing and center the ladder drum over ladder hold. Incorporated with tilt rod support shall be a grommet guide to guide lift cord and braided ladder through bottom of headrail. Acetal grommet shall have beveled edges to prevent cord and braided ladder wear and discoloration.
6. **Ladder Drum:** Shall be injection molded thermoplastic with smooth hold edges to position ladder. Ladders will be securely attached by means of a snap down top, eliminating the need for braided ladder clips.
7. **Cord Lock:** Cord lock shall be of a snap-in design and incorporate a stainless steel wear guard over which cords pass and a floating shaft type locking pin. Locking pin shall be free of abrasive teeth and offer minimum wear to cord. Cord lock shall incorporate a "crash proof" safety feature that shall lock blind automatically upon release of cord. End of lift cords shall be treated with plastic tassels.
 - a. **Cord Guide:** Cord guide shall be nickel plated steel and will guide and center lift cords into cord lock opening.
 - b. **Ring Pull:** When supplied with a standard nominal 4" cord length a single ring will be attached to 2 and 4 cord blinds. Non-standard lengths of 8" or greater will have a joiner ball located nominally 4" from the headrail and will have two separate cords coming down from the joiner ball, each with a separate ring, to the specified non-standard length.
 - c. **Top-Locking Cord Lock:** An optional top-locking cord lock shall be available which provides for locking the blind in the fully raised position only with no intermediate locking positions other than fully lowered. The crash-proof feature is not available with a top-locking cord lock.
8. **Shaft Type Tilter:** The tilter shall be of a worm and gear arrangement in a totally enclosed gear case (housing). The worm (tilter shaft) shall be a clear polycarbonate, the gear of nylon and the gear housing of acetalthermoplastic. The tilter shall be designed for smooth low friction operation and shall incorporate a clutch mechanism to eliminate damage due to over tilting. Tilter shall be a snap-in component allowing for field removal if required.

- a. Tilt Wand: The tilt wand shall be a clear polycarbonate hollow rod, with a hexagonal shape measuring approximately 1/4-inch across the points, providing a positive, comfortable grip. The wand shall hang vertically by its own weight and should be of sufficient length for easy access and operation. Wand shall be attached to the tilter shaft by means of a spring clip and shall be easily detached and reattached in the field.
 - b. Tilt Ring: An optional tilt ring shall be attached to the tilter shaft in lieu of a wand via the liter shaft link with field provision of a pole-hook for operation.
 - c. Tilt Limiter: An optional single-range tilt limiter shall allow a select range of slat tilting operation including a fixed angle is so specified.
9. Cord Type Tilter: The tilter shall be a direct drive system. The direct drive system will utilize a hex tile rod ladder drum in place of the shaft type tilter with lit cord attached to the ladder drum by means of braided ladder clips. The tilt cords shall be equipped with plastic tassels. The tilter shall be designed for smooth operation and shall hold the slates at any angle.
10. Hexagonal Tilt Rod: Tilt rod shall be electro-zinc coated solid steel. Tilt rod shall be hexagonal in cross-section measuring 1/4-inch at its widest points. Tilt rod shall limit torsional deflection to 6 degrees in a 30-inch test length with a torque application of one-foot pound.
11. Braided Ladders (Slat Supports): Bali Classics shall have braided ladder which will assure proper control with adequate overlap of slats in the closed position. Distance between end latter and end of slats will not exceed 6 inches; distance between braided ladders shall not exceed 23 inches.
 - a. Braided Ladder Material: Material shall be 100% high tenacity polyester yarn. Vertical component shall be not less than 0.045-inch diameter nor greater than 0.066-inch diameter, and shall provide maximum strength and flexibility with minimum stretch. Horizontal component, or rungs, shall be not less than two threads and shall be approximately 31.0 mm long. Ladders shall be of sufficient length for bottom of blind to hang with a tolerance of plus one-half/minus zero inches of the specified length. Standard ladder will provide 21.5 mm of distance between the slats. Optional 20mm and 22.5 mm spacing is available. Ladders shall be dyed to Bali color standard.
12. Lift Cords: Lift cords shall be braided with polyester jacket and center core or an approved equal construction. Size of cord shall be 1.44 mm. Cords shall be detachable, if required, and shall be of sufficient length to properly control the raising or lowering of the blind. Lift cords shall be equipped with plastic tassels, or optional ring pull with a 4-inch cord. Cord ends shall be securely anchored to the bottomrail and it shall be possible to detach and attach cords. Cording arrangements shall comply with assembly standards

set for the size and weight of the blind. Cords shall be dyed to color standard.

13. Cord Lock and Tilter Operation Locations:
 - a. Bali Classics shall be made with the following cord lock and tilter location options when viewed from within the room;
 1. Tilter at left, cord lock at right (standard).
 2. Cord lock at left, tilter at right (reverse).
 3. Tilter and cord lock at left (both left).
 4. Tilter and cord lock at right (both right).
 - b. On blinds less than 13 7/8 inches wide, only options 1 and 2 above apply.
14. End Support Brackets: Standard hinged cover end support brackets of phosphate treated steel with prime coat of vinyl primer and finished coat of polyester baked enamel in color to match headrail. Brackets shall be marked left and right to facilitate installation and shall have 1 1/4-inch extra wide top to accommodate power screwdriver. Brackets shall facilitate easy removal of head channel. Optional headrail reveal brackets for recessed pocket installation shall be electroplated. Optional turn clip pivot brackets shall be provided for mounting headrail of blind within extruded aluminum blind pockets.
15. Intermediate Support Brackets: Brackets shall be furnished for blinds over 60 inches wide. Maximum spacing for intermediate support brackets shall be 48 inches.
16. Extension Brackets: Optional extension brackets are available.
17. Hold-Down Brackets: Optional universal hold-down brackets for sill or jamb installations are available.
18. End Stiffeners:
 - a. To add rigidity to the headrail, electroplated steel end stiffeners shall be inserted at each end of the headrail.
 - b. To eliminate lateral movement and to center the blind in the window, each end stiffener shall have a lateral adjustment tab.
19. Accent Channels: Optional side channels and bottom channels are available in any solid stat color, except Aluminum Texture and Brushed Aluminum.
20. General: The blind shall be free of sharp edges, burrs or other defects which might be harmful. When other materials result in improved specification, they may adopted.

21. Size Limitations:
 - a. Standard widths: 12-43 3/4 inches (single blind on one headrail). Blinds up to 192 inches are available as two blinds on one headrail. Narrow blinds between 5 1/2" and 11 available with engineering approval and normal limitations on performance and control locations.
 - b. Maximum drop: For blinds 12-35" wide, the standard drop is 126". For blinds wider than 35", the standard drop is 150". Longer drops up to 240" available with engineering approval and normal performance limitations.
22. Color: Color of headrail, bottomrail, ladder, cord and plastic accessories shall coordinate with slats.
23. Each blind unit shall have UL label certifying that blind meets requirements of NPPA-701.

2.02 FABRICATION

- A. Prior to fabrication, verify actual opening dimensions by on-site measurement. Calculate blind dimensions to fit within specified tolerances.
- B. Fabricate blinds to fill openings from head to sill and jamb to jamb. The minimum clearance blind-to-blind shall be 1/4-inch. Locate blind divisions at mullions.
- C. Fabricate blinds to fill all exterior window openings except at doors, door sidelights and transoms unless noted.
- D. Fabricate interior blinds to fit within H.M. frames and have bottom rail clips when on doors.

2.03 EXECUTION

- A. Inspection: Verify that the work area in which the blinds will be installed is free of conditions that interfere with blind installations and operations. Begin blind installation only when unsatisfactory conditions have been corrected.
- B. Install blinds in accordance with manufacturer's procedures except as otherwise specified herein.
- C. Install intermediate support brackets and extension brackets as needed to prevent deflection in headrail.
- D. Install blinds with adequate clearance to permits smooth operation of blinds and any sash operators. Hold blinds 1/4-inch clear from each side of window opening on inside mount unless other clearance is indicated.

E. Set tilt and lift controls. Demonstrate blinds to be in smooth, uniform working order.

2.04 CLEANING

A. Clean soiled blind surfaces with a mild soap solution. Do not use steam, hot water, bleach or any abrasive or solvent-based cleaners. Do not wash metallic colors.

B. To ensure proper drying, provide adequate ventilation for blinds, remove bottomrail plastic end caps, and tip headrail and bottomrail to drain water.

2.05 HORIZONTAL MINI BLIND SCHEDULE

A. Provide blinds at all windows and borrowed lites as shown on Architectural drawings.

END OF SECTION 12491

SECTION 13000 – SPECIAL CONSTRUCTION, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1 and other sections of this division.

1.02 DESCRIPTION OF WORK

- A. **Contract Provisions:** Refer to Division 1, which applies to all sections of this Division 13. Provisions of this Section 13000 also apply to all other sections of this Division 13.
- B. **Field Measurements and Coordination:** Verify all field dimensions to insure close fit with work of other trades. Coordinate and install this section's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.
- C. **Finishes:** Unless specified otherwise, all items receive manufacturer's standard finish, with color selected from standard line of colors.
- D. **Other Approved Manufacturers:** Manufacturer's products referred to and material and performance characteristics specified herein, establish the required quality of performance for this work. Other products which in CONTRACTOR'S experienced judgment offer equivalent quality may be submitted for approval as per Division 1.
- E. **Locations:** As described herein and/or keyed on drawings.

END OF SECTION 13000

SECTION 13125 - METAL BUILDING SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1 and other sections of this division.

1.02 DESCRIPTION OF WORK

- A. Extent of pre-engineered metal building systems as indicated on drawings and by provisions of this specification sections defined to include the following:

1. Hot rolled structural steel rigid frames and columns including extensions to support roof overhangs.
2. Cold formed metal "Z" **galvanized** purlins and eave and gable/rake members used to support roof panels and building components.
3. Cold formed metal sub-purlins used as subframing at roof penetrations and other locations as needed.
4. Standing seam metal roof panels including clips, fasteners and panel end seam supports.
5. Pipe penetration flashing.
6. Flashings and trim related to the pre-engineered metal roof system including ridges and eaves.
7. Panels, closures, sealants, fasteners and accessories related to the pre-engineered metal roof system.
8. Vinyl faced roof insulation.
9. All other items as indicated or required for a complete water tight roof system.
10. Manufacturer's standard building components and accessories may be used, provided components, accessories, and complete structure conform to design indicated and specified requirements.

- B. Related work In Other Divisions/Sections

Division 3: Concrete
Division 5: Metals
Division 7: Thermal and Moisture Protection
Division 9: Finishes
Division 10: Specialties

1.03 SYSTEM PERFORMANCE REQUIREMENTS

- A. General
ENGINEER, design, fabricate and erect the pre-engineered metal building system to withstand loads from winds, gravity, structural movement including

movement thermally induced, and to resist in-service use conditions that the building will experience, including exposure to the weather, without failure.

1. Design each member to withstand stresses resulting from combinations of loads that produce the maximum allowable stresses in that member as prescribed in MBMA's "Design Practices Manual."

B. Minimum Design Requirements

Basic design loads, as well as auxiliary and collateral loads are indicated on the drawings and as specified herein, unless modified by 1.03, C of this section. See architectural drawings.

1. Basic design loads include live load, wind load, and seismic load, in addition to the dead load.
2. Collateral loads include additional dead loads over and above the weight of the metal building system such as sprinkler systems and roof-mounted mechanical systems.
3. Top of all concrete beams and concrete masonry walls to be continuously braced to structural steel metal building. Design, details and installation to be by metal building manufacturer.
4. Metal building manufacturer to design, detail and furnish horizontal wind bracing of exterior masonry sidewalls.
5. Masonry bracing or wind beams shall be spaced and sized to resist a lateral force, positive or negative, applied to the face of the masonry. Steel beam to be supplied by metal building manufacturer.
6. Wind uplift: The main wind force resisting system for a pre-engineered metal roof system shall be designed to withstand 21.4 PSF interior zone and 30.8 PSF end zone wind uplift pressure and shall be a system that has been tested and approved by Underwriter's Laboratory as Class 90.
7. Wind load: Comply with ASCE-7, latest edition.
 - a. Wind velocity: ASCE-7, latest edition.
 - b. Risk Category IV: "Essential Facility".
 - c. Total wind velocity design criteria shall be as noted on structural and architectural drawings (except as modified by 1.03, C of this section.)
 - d. Stability Criteria: Comply with Florida Building Code, latest edition, Chapter 22.
 - e. Design loads to be as follows:
 - 15 PSF total gravity dead load which is to include metal building structure.
 - For wind loading calculations, only gravity dead load of metal building structure to be used.
 - 20 PSF live load.

The building shall be manufactured by an AISC certified manufacturer (classification MB).

8. All exterior metal stud and CMU walls to be braced by metal building system. Deflection requirement of metal building system to be L/240.

C. Structural Framing, Roof and Siding Panels

Design primary and secondary structural members and roofing materials for applicable loads and combinations of loads in accordance with the Metal Building Manufacturers Association's (MBMA) "Design Practices Manual".

1. Structural Steel: Comply with the American Institute of Steel Construction's (AISC) "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" for design requirements and allowable stresses.
2. Light Gage Steel: Comply with the American Iron and Steel Institute's (AISI) "Specification for the Design of Cold Formed Steel Structural Members" and "Design and Light Gage Steel Diaphragms" for design requirements and allowable stresses.
3. Welded Connections: Comply with the American Welding Society's (AWS) "Standard Code for Arc and Gas Welding in Building Construction" for welding procedures.

1.04 STRUCTURAL DESIGN REQUIREMENTS

- A. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:

1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition. Design wind velocity shall be as noted on structural and architectural drawings.
2. Building Envelope shall comply with SBCCI/SSTD-12 for large missile impact criteria. Refer to architectural drawings for building envelope path and location.

1.05 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Product data consisting of metal building system manufacturer's product information for building components and accessories.
- C. Shop drawings for metal building structural framing system, roofing and panels, and other metal building system components and accessories that are not fully detailed or dimensioned in manufacturer's product data.
1. Structural Framing: Furnish complete erection drawings prepared by or under the supervision of a professional ENGINEER legally authorized to practice in the State of Florida. Include details showing fabrication and

- assembly of the metal building system. Show anchor bolts settings, roof framing and other information as outlined in the drawings. Include transverse cross-sections.
2. Roofing Panels: Provide layouts of panels on roofs, details of edge conditions, joints, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details. Include transverse cross-sections.
 3. Building Accessory Components: Provide details of metal building accessory components to clearly indicate methods of installation.
- D. Professional Engineer's Certificate prepared and signed by a Professional ENGINEER, legally authorized to practice in the State of Florida, verifying that the structural framing and covering panels meet indicated loading requirements and codes of authorities having jurisdiction.
- E. Submit certification verifying that pre-engineered metal building system has been tested and approved by Underwriter's Laboratory as Class 90.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications
Engage an experienced Installer to erect the Pre-engineered metal building who has 5 years minimum successful experience in the erection and installation of types of metal building systems similar to that required for this project so as not to void warranty. References shall be provided to the OWNER and ARCHITECT as requested.
- B. Manufacturer's Qualifications
Provide pre-engineered metal buildings manufactured by a firm experienced in manufacturing metal buildings systems that are similar to those indicated for this project and have a records of successful in-service performance.
- C. Single-Source Responsibility
Obtain the metal building system components, including structural framing, wall and roof covering, and accessory components, from one source from a single manufacturer.
- D. Design Criteria
The drawings indicate size, profiles, and dimensional requirements of the pre-engineered metal buildings and are based on the specific type indicated. Metal building systems having equal characteristics by other manufacturers may be considered provided that deviations in dimensions and profiles are minor and do not change the design concept or intended performance as judged by the ARCHITECT. The burden of proof of equality is on the proposer.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver prefabricated components, sheets, panels, and other manufactured items so they will not be damaged or deformed. Package roof panels for protection against transportation damage.
- B. Exercise care in unloading, storing, and erecting roof covering panels to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal roof panels so that water accumulations will drain freely. Do not store panels in contact with other materials that might cause staining, denting or other surface damage.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

- A. Subject to compliance with specified requirements, provide metal building systems provided by one of the following:
 - 1. Gulf States Manufacturers, Inc.
 - 2. Kirby
 - 3. Varco-Pruden Buildings
 - 4. American
 - 5. Butler Manufacturing
 - 6. Whirlwind Building Systems

2.02 MATERIALS

- A. Hot rolled Structural Steel Shapes
Comply with ASTM A 36 or A 529.
- B. Steel Tubing or Pipe
Comply with ASTM A 500, Grade B, ASTM A 501, or ASTM A 53.
- C. Steel Members Fabricated from Plate or Bar Stock
Provide 42,000 psi minimum yield strength. Comply with ASTM A 529, ASTM A 570, or ASTM A 572.
- D. Steel Members Fabricated by Cold Forming
Comply with ASTM A 607, Grade 50.
- E. Cold-Rolled Carbon Steel Sheet
Comply with requirements of ASTM A 366 or ASTM A 568.

- F. Hot-Rolled Carbon Steel Sheet
Comply with requirements of ASTM A 568 or ASTM A 569.
- G. Structural Quality Zinc-Coated (Galvanized) Steel Sheet
Comply with ASTM A 446 with G90 coating complying with ASTM A 525. Grade to suit manufacturer's standards.
- H. Bolts for Structural Framing
Comply with ASTM A 307 or ASTM A 325 as necessary for design loads and connection details.
- I. Paint and Coating Materials
Comply with performance requirements of the federal specifications indicated and Division 9. Unless specifically indicated otherwise, compliance with compositional requirements of federal specifications indicated is not required.
 - 1. Shop Primer for Ferrous Metal: Fast-curing, lead-free, universal primer, selected by manufacturer for resistance to normal atmospheric corrosion and compatibility with substrates.
 - 2. Shop Primer for Galvanized Metal Surfaces: Zinc dust-zinc oxide primer selected by the manufacturer for compatibility with substrate.

2.03 STRUCTURAL FRAME

- A. Rigid Frames
Fabricate from hot-rolled structural steel shapes. Provide factory-welded, shop-painted, built-up "I-beam" shape frames consisting of tapered or parallel flange beams and tapered columns. Furnish frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly.
 - 1. Provide length of span and spacing of frames indicated.
- B. Secondary Framing
Provide the following secondary framing members:
 - 1. Roof Purlins: "Z" shaped sections fabricated from **galvanized** roll-formed steel, maximum spacing 36" o.c.
 - 2. Secondary Structural Members: Provide not less than 16-GA. shop painted rolled formed sections for the following secondary framing members:
 - Purlins (Pre-punched for insulation support bands)
 - Eave Struts
 - Flange Bracing
 - Sag Bracing
 - Roof Opening Framing

3. Provide not less than 14-GA. cold-formed galvanized steel sections for the following secondary framing members:

Base Channels
Sill Angles
Purlin Spacers

C. Bolts

Provide Manufacturer's standard bolts, except where structural framing components are in direct contact with roofing and siding panels. Provide zinc-plated or cadmium-plated bolts where structural framing components are in direct contact with roofing and siding panels.

D. Shop Painting

Clean surfaces to be primed of loose mill scale, rust, dirt, oil, grease, and other matter precluding paint bond. Follow procedures of SSPC-SP3 for power tool cleaning, for brush-off cleaning, and SSPC-SP1 for solvent cleaning.

1. Prime structural steel primary and secondary framing members with the manufacturer's standard rust-inhibitive primer.
2. Prime galvanized members after phosphoric acid pretreatment, with manufacturer's standard zinc dust-zinc oxide primer.

2.04 ROOFING PANELS

A. General

1. The system to be provided shall be standing seam equal to MBCI 16" Max Superlok, 24 gauge, fully concealed fastener, mechanically seamed after erection to close the joint at the high rib. Furnish trim and accessories in maximum lengths to minimize the number of joints. Panels shall be a single sheet from roof ridge to eave with no spliced joints.
2. Provide roofing sheets roll formed to profile indicated and specified. Panels specified in this section shall be produced in a factory environment (**not job site roll formed**) with fixed-base roll forming equipment assuring the highest level of quality control. A letter from the manufacturer certifying compliance will accompany the product material submittals. Provide flashings, gutters, downspouts, closures, fillers, metal expansion joints, ridge covers, roof panel mounting clips, and other sheet metal accessories factory formed and finished. Material and finish shall be as specified.
 - a. Refer to Section 07714/Gutters and Downspouts.
3. Refer to Section 07100/Wall Dampproofing/Waterproofing, paragraph 2.04 for Roofing Membrane Underlayment as required. See Architectural Drawings.
4. Roof panels and support system shall comply with Large Impact Resistance Criteria per the Florida Building Code.

- B. Roof panel finish shall be Galvalume substrate with Kynar 500 finish. Color to be chosen from manufacturer's standard colors (minimum 20 standard colors).
- C. Allowances for thermal expansion
Pre-engineered metal roof system shall be designed, fabricated and installed to allow relative movement between roof panels and purlins, gables and ridges due to thermal expansion and contraction without causing damage to the system or permanent deformation to any of the system components. Roof panel end laps shall allow panels to expand and contract without damage to end lap seams.
- D. Roof Panel Side Laps
Panels shall be designed to provide double lock (Pittsburgh) seam side laps when installed. Lapped seams, or friction fit seams will not be acceptable.
- E. Roof Panel End Laps
Panel end laps are not acceptable and shall not be used without prior written approval from the OWNER. Where prior written approval for end lap condition has been provided by the OWNER, roof panels shall be pre-punched or pre-drilled and pre-notched where end splices occur. Panels shall be pre-punched or pre-drilled at panel end to match pre-punched or pre-drilled holes in eave structural member. Pre-punching or pre-drilling and pre-notching may be performed in field provided hole locations are carefully controlled to assure accurate modular spacing of roof panel side laps and accurate alignment of holes at end lap seams and at panel to eave strut connections.
- F. Standing Seam Roof Panel Mounting Clip
Galvanized steel clip with stainless steel sliding clip tab. Galvanized clip shall be pre-punched or pre-drilled for mounting to roof purlins. Sliding clip tab shall be designed to lock into and become an integral part of roof panel double lock seam. Provisions shall be incorporated into mounting clip assembly to keep sliding clip tab centered on mounting clip during installation of roof panels.
- G. Fasteners
Self-tapping screws, bolts, nuts, self-locking rivets, self-locking bolts, end-welded studs and other suitable fasteners designed to withstand design loads. Use non-exposed fasteners where possible.
 - 1. Provide metal backed neoprene washers under heads of fasteners bearing on weather side of panels.
 - 2. Use steel fasteners for exterior application and galvanized or cadmium-plated fasteners for interior applications.
 - 3. Locate and space fastenings in true vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.
 - 4. Provide fasteners with heads matching color of roofing or siding sheets by means of factory-applied coating.

H. Accessory Items (unless otherwise noted)

1. All exposed to view parts to be steel, minimum 24 gauge, color as selected from Manufacturer's standard. Manufacturer's standard shapes include but are not limited to:

- Rake trim, eave trim (at buildings without gutters)
- Foam closures
- Fillers
- Sealants
- Eave flashing
- Drip flashing at bottom of fascia
- Corner flashing
- J-Trim at soffits
- Miscellaneous flashings
- Clips Ridge cap
- Roof jacks

2. Coordinate with Division 15 for roof penetrating items and provide roof jacks compatible with roof system fully supported and watertight.

I. Flexible Closure Strips

Closed cell, expanded cellular rubber, self-extinguishing flexible closure strips. Cut or premold to match configuration of roofing sheets. Provide closure strips where indicated or necessary to ensure weathertight construction.

1. Pre-engineered roofing system manufacturer's fabricated metal closures shall be used in conjunction with flexible closures.

J. Sealing Tape

Pressure sensitive 100 percent solids grey polyisobutylene compound sealing tape with release paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2" wide and 1/8" thick.

K. Joint Sealant

One-part elastomeric polyurethane, polysulfide or silicone rubber sealant as recommended by the building manufacturer.

L. Seam Panel Finish

For roof panels and all accessories provide corrosion-resistant, Galvalume finish with clear acrylic finish equal to "Galvalume Plus" by Bethlehem Steel.

M. Building Envelope

Shall comply with SBCCI SSTD 12-99 for large missile impact criteria. Refer to architectural drawings for building envelope path and location.

2.05 WALL/FASCIA PANELS

- A. Seam Panel General
Provide vertical seam wall panels at fascia and gable areas as indicated on drawings. Wall panels shall be equal to MBCI 16" LokSeam, 24 gauge with concealed fasteners. Standing seams shall align with roof panel standing seam. End lap joints shall not be allowed without prior written approval of the OWNER.
- B. Seam Panel Finish
Galvalume substrate with Kynar 500 finish. Color to be chosen from Manufacturer's standard colors (minimum 20 standard colors.)
- C. Building Envelope
Shall comply with SBCCI SSTD 12-99 for large missile impact criteria. Refer to architectural drawings for building envelope path and location.

2.06 SOFFIT PANELS

- A. General
Provide horizontal soffit panels at location as shown on drawings. Soffit panels shall be equal to MBCI Artisan Series Flush Panel System, 24 gauge with concealed fasteners. Refer to Division 7. End lap joints shall not be allowed without prior written approval of the OWNER.
- B. Ventilation
25% of soffit area shall be vented (every fourth panel shall be fully perforated). Provide full perforated panels for "attic" ventilation as required to meet vented area percentage. Refer to specification Section 07715/Metal Fascia and Soffit System, paragraph 2.03, B.
- C. Seam Panel Finish
Galvalume substrate with Kynar 500 finish. Color to be chosen from Manufacturer's standard colors (minimum 20 standard colors.)
- D. Building Envelope
Shall comply with SBCCI SSTD 12-99 for large missile impact criteria. Refer to architectural drawings for building envelope path and location.

2.07 SHEET METAL ACCESSORIES

- A. General
Provide coated steel sheet metal accessories with coated steel roofing and siding panels.

2.08 FIBERGLASS BLANKET INSULATION

- A. The fiberglass blanket shall be laminated to a white taffeta vinyl vapor barrier leaving a 2" TAB on each side. The vinyl vapor barrier shall have a nominal thickness of 4 mils.
- B. The composition material of facing, adhesive and glass fiber blanket shall have a flame spread index (FSI) of 25 or less as classified by Underwriters Laboratories Standard UL 723.
- C. The density of the fiberglass blanket shall be 0.60 pounds per cubic foot.
- D. Insulation shall be provided in rolls, cut to the specific lengths required for proper installation. Rolls for the roof shall be of continuous lengths for buildings up to 120'-0" wide, while the rolls for the walls shall be multiple increments of necessary lengths to be cut to proper length in the field. All rolls shall be individually protected in clear poly bags.
- E. The thickness of the fiberglass blanket shall be 3" (R-10) or 4" (R-13).
- F. Wire mesh, if required, shall be 20 gauge galvanized wire with 2" hexagonal mesh.

2.09 FABRICATION

- A. General
Design prefabricated components and necessary field connections required for erection to permit easy assembly.
 - 1. Clearly and legibly mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams and instruction manuals.
- B. Structural Framing
Shop-fabricate framing components to indicated size and section with base plates, bearing plates and other plates required for erection, welded in place. Provide holes for anchoring or connections shop-drilled or punched to template dimensions.
 - 1. Shop Connections: Provide welded shop connections.
 - 2. Field Connections: Provide bolted field connections.

2.10 WARRANTY

- A. Roofing Panel Warranty:
Furnish the roofing manufacturer's written, no-perforation, full non-limited warranty, covering failure of the metal panels with the warranty period. This

warranty shall be in addition to and not a limitation of other rights the OWNER may have against the CONTRACTOR under the Contract Documents.

1. Warranty period is Twenty (20) years after the date of Substantial Completion.
- B. Roofing Weathertightness Warranty:
Provide manufacturer's written full non-limited weather tightness warranty for Twenty (20) years against leaks in roof panels arising out of or caused by ordinary wear and tear under normal weather and atmospheric conditions. Warranty shall be signed by both the manufacturer and the CONTRACTOR.
- C. Panel Finish Warranty:
Provide 20-year manufacturer's full warranty against fading, cracking, blistering and peeling.

PART 3 - EXECUTION

3.01 ERECTION

- A. Framing
Erect framing true to line, level, plumb, rigid, and secure. Level base plates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use a nonshrinking grout to obtain uniform bearing and to maintain a level base line elevation. Moist cure grout for not less than 7 days after placement.
- B. Purlins and Girts
Provide rake or gable purlins with tight-fitting closure channels and fascias. Secure purlins and girts to structural framing and hold rigidly to a straight line by sag rods.
- C. Bracing
Provide diagonal rod or angle bracing in roof as required.

3.02 ROOFING

- A. General
Install roof panels in lengths without end lap seams. Apply panels and associated items for near and weathertight enclosure. Protect factory finishes from damage.
1. Provide weatherseal under ridge cap. Flash and seal roof panels at eave and rake with rubber, neoprene, or closures to exclude weather.
 2. Roof ridge to be vented with low profile continuous ridge vent, or off-ridge venting, 20 L.F. per structural bay.

- B. Standing Seam Roof Panels System
Fasten roof panels to purlins with concealed raised sliding clip in accordance with the manufacturer's instructions.
1. Install clips at each support with self-drilling fasteners.
 2. At end laps of panels, install tape caulk between panels.
 3. Install factory caulked cleats at standing seam joints. Machine seam cleats to the panels to provide a weathertight joint.
- C. Panel seams shall be full double-lock field-formed using manufacturer's standard 3 stand minimum power driven forming machine. Cracking or splitting of metal or cracking, peeling, blistering or other damage to panel coating shall not be acceptable. Panels shall be securely fastened to eave strut and sealed watertight.
- D. Panel end splices, if any, shall consist of pre-punched and pre-notched roof panels bolted together with a back-up plate or stiffener and sealed weathertight. At least one stiffener strap shall be incorporated as part of end splice assembly. End splices shall be staggered across field of roof so that in no event shall end lap seams occur together in adjacent panels. End lap seams shall be tight and flat. Birdmouthing between fasteners is not acceptable. Locate end lap seams so as to not fall directly over roof purlin.
- E. Sheet Metal Accessories
Install ventilators, louvers, and other sheet metal accessories in accordance with manufacturer's recommendations for positive anchorage to building and weathertight mounting.
- F. Cleaning and Touch-Up
Clean component surfaces of matter than could preclude paint bond. Touch-up abrasions, marks, skips, or other defects.

END OF SECTION 13125

HIGHLANDS COUNTY BOARD OF COUNTY COMMISSIONERS CONSTRUCTION PLANS FOR NEW TRAFFIC OPERATIONS BUILDING HIGHLANDS COUNTY PROJECT NO. 19007

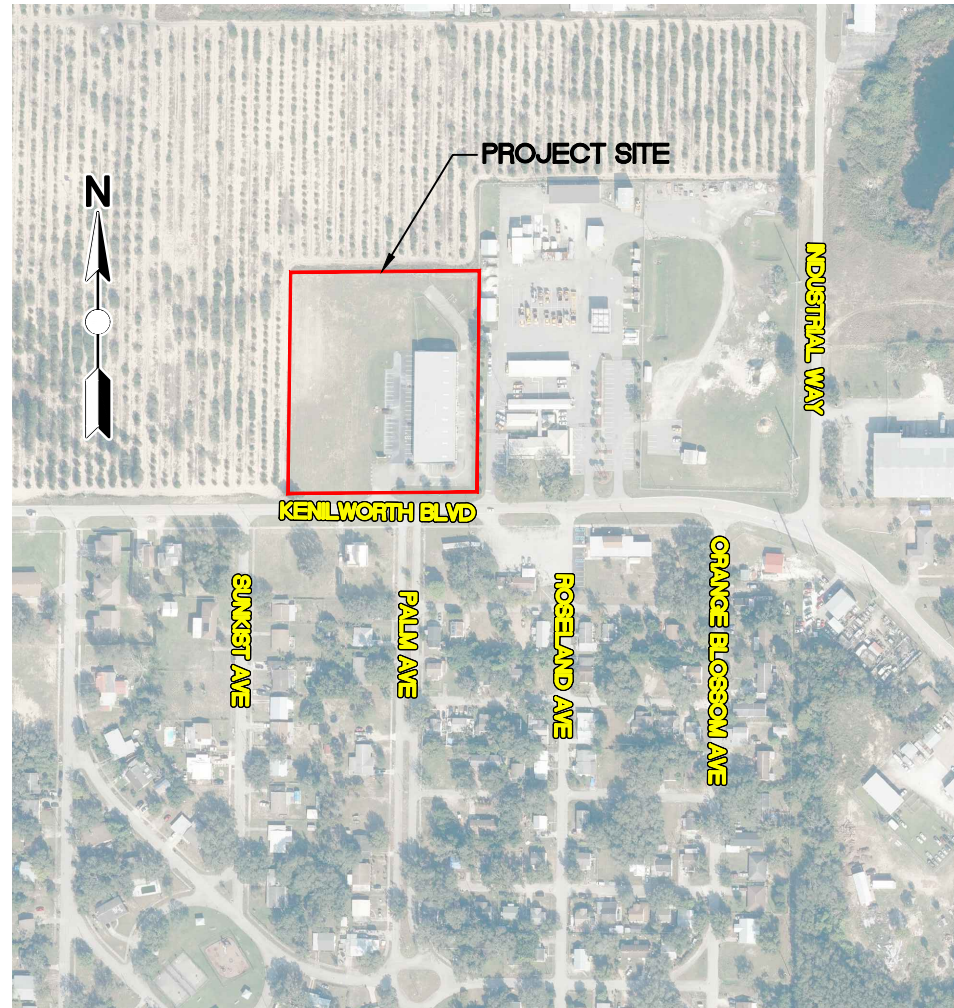
SHEET DESCRIPTION

- 1 COVER SHEET
- 2 GENERAL NOTES
- 3 TYPICAL SECTIONS
- 4 SITE PLAN
- 5 GRADING & DRAINAGE PLAN
- 6 UTILITY PLAN
- 7 DETAILS
- 8 LANDSCAPE PLAN
- 9 IRRIGATION PLAN

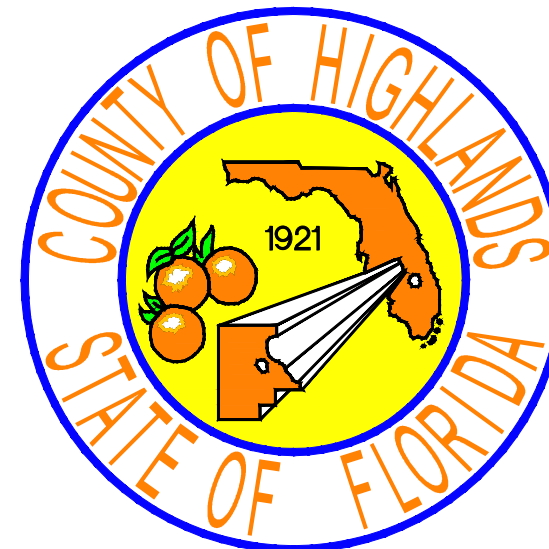
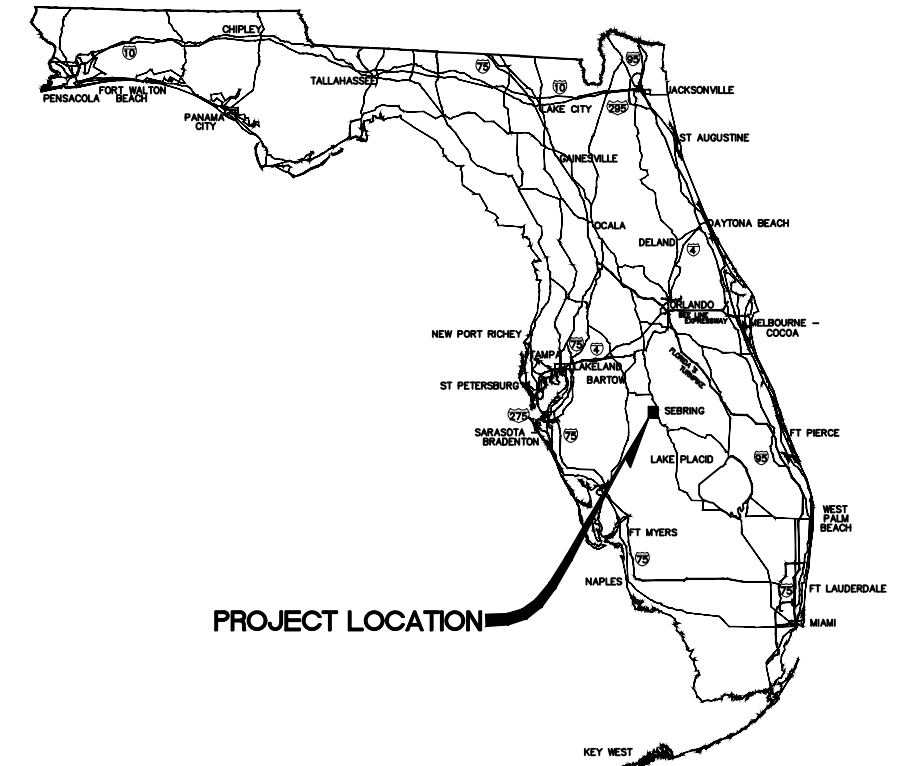
sunshine state
ONE CALL 811
of Florida

DIAL 811
Local No. 1-800-432-4770
Notification # _____
Call 48 hours before you dig.

STATE LAW REQUIRES EXCAVATORS TO CALL 811 BEFORE DIGGING PER THE "UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" CHAPTER 556, FLORIDA STATUTES. FAILURE TO CALL CAN RESULT IN FINES FROM \$250 TO \$5,000.



**PROJECT LOCATION MAP
(NOT TO SCALE)**



CLINTON HOWERTON, JR., P.E.
COUNTY ENGINEER

ENGINEER OF RECORD
J.D. LANGFORD, P.E.

APPENDIX "B"

GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY2021-22 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website:
<http://www.fdot.gov/design/standardplans>

GOVERNING SPECIFICATIONS:

Florida Department of Transportation, January 2022 Standard Specifications for Road and Bridge Construction at the following website:
<http://www.fdot.gov/programmanagement/implemented/SpecBooks>
City of Sebring Municipal Code

PLANS PREPARED BY HIGHLANDS COUNTY ENGINEERING DEPARTMENT

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

REVISIONS			STATUS	DESIGNED BY: J.D. LANGFORD, P.E.	HIGHLANDS COUNTY ENGINEERING DEPARTMENT 505 S. COMMERCER AVENUE SEBRING, FLORIDA 33870		HIGHLANDS COUNTY NEW TRAFFIC OPERATIONS BUILDING COVER	SCALE:	
DATE	BY	DESCRIPTION						HORIZ. N/A	VERT. N/A
			FOR BID	CHECKED BY: J.D. LANGFORD, P.E.	APPROVED BY: JAMES D. LANGFORD, JR., P.E. FLORIDA REGISTRATION NO.: 78402	DATE:	PROJECT NO. 19007	REV. 0	SHEET 1 OF 9
				IN CHARGE: J.D. LANGFORD, P.E.					

SURVEY & STAKEOUT NOTES:

- EXISTING SECTION CORNERS AND 1/4 SECTION CORNERS, AND OTHER LAND MARKERS OR MONUMENTS LOCATED WITHIN PROPOSED CONSTRUCTION ARE TO BE REFERENCED PRIOR TO CONSTRUCTION AND RESET AFTER CONSTRUCTION. THE CONTRACTOR SHALL HAVE THIS WORK DONE BY A REGISTERED PROFESSIONAL LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE (FLORIDA REGISTRATION). ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHOULD NOTIFY THE COUNTY SURVEYOR, WITHOUT DELAY, BY TELEPHONE.
- BENCHMARK DATA IS NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD 88).
- IF PROVIDED, AND UNLESS OTHERWISE SPECIFIED, THE CONTROL POINT COORDINATES SHOWN ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD'83), 2007 ADJUSTMENT.
- GRADES SHOWN ARE THE FINISHED GRADES.

UTILITY & DRAINAGE NOTES:

- EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNLESS NOTED OTHERWISE.
- THE APPROPRIATE UTILITY COMPANY SHALL BE NOTIFIED BY THE CONTRACTOR 48 HOURS IN ADVANCE OF ANY EXCAVATION INVOLVING THEIR UTILITIES SO THAT A COMPANY REPRESENTATIVE CAN BE PRESENT.
- THE CONTRACTOR IS TO USE CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD TRANSMISSION LINES OR UNDERGROUND UTILITIES.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES TO REMAIN IN PLACE.
- THE CONTRACTOR SHALL CALL 811 FOR FIELD LOCATIONS NO LESS THAN 48 HOURS IN ADVANCE OF DIGGING NEAR UNDERGROUND UTILITIES.
- PRIOR TO COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS PIPELINES.
- THE LOCATION OF THE EXISTING UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY IF "OTHER" UTILITIES (NOT SHOWN IN THE PLANS) EXIST WITHIN THE AREA OF CONSTRUCTION. SHOULD THERE BE UTILITY CONFLICTS, THE CONTRACTOR SHALL INFORM THE ENGINEER AND NOTIFY THE RESPECTIVE UTILITY OWNERS TO RESOLVE UTILITY CONFLICTS AND UTILITY ADJUSTMENTS, AS REQUIRED.
- ALL VALVES WITHIN AREA OF CONSTRUCTION OR DISTURBED BY CONSTRUCTION TO BE ADJUSTED TO FINISHED GRADE. REPLACE VALVE COLLARS AND BOXES AS NECESSARY.

PAVEMENT MARKING & SIGNAGE NOTES:

- CROSSWALKS SHALL BE 12" WHITE STRIPES UNLESS NOTED OTHERWISE.
- STOP BARS SHALL BE 24" WHITE STRIPES AND SHALL BE A MINIMUM OF 4' FROM CROSSWALKS AT THE CLOSEST POINT. THE CLOSEST EDGE OF STOP SIGNS SHALL BE 6' FROM EDGE OF PAVEMENT AND PLACED DIRECTLY ADJACENT TO THE STOP BAR.

CLEARING, GRUBBING & LANDSCAPING NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING BRUSH & VEGETATION WITHIN R/W.
- ALL DISTURBED AREA WITHIN THE RIGHT-OF-WAY SHALL BE SODDED WITH "LIKE KIND" SOD. THE AREAS ON WHICH SOD IS TO BE PLACED SHALL BE THOROUGHLY WETTED PRIOR TO AND AFTER PLACEMENT IS COMPLETE. NO ADDITION OF TOP SOIL MATERIAL IS REQUIRED PRIOR TO PLACEMENT.
- ALL SOD MATERIALS SHALL BE SUBJECT TO INSPECTION BY THE ENGINEER PRIOR TO PLACEMENT. ANY SOD WITH NOXIOUS WEEDS AND GRASSES, INCLUDING TROPICAL SODA APPLE SHALL BE REJECTED FOR USE ON THIS PROJECT.

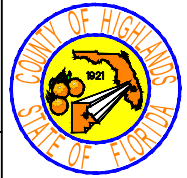
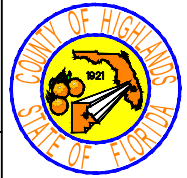
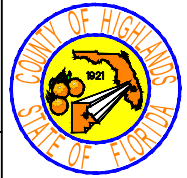
MISCELLANEOUS NOTES:

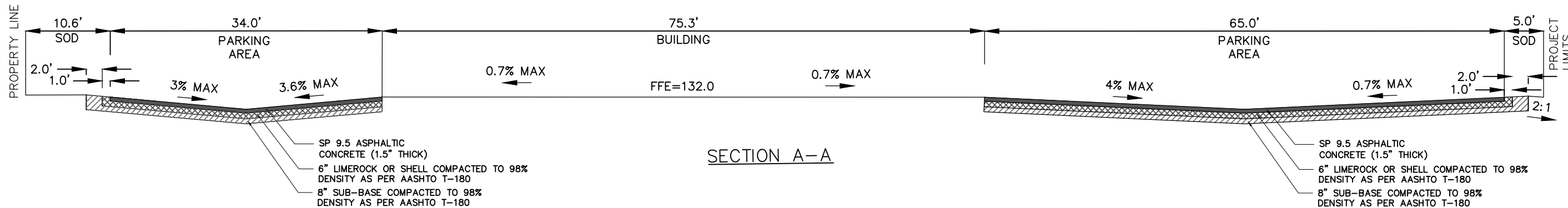
- CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE TO THE ENGINEER, IN CONJUNCTION WITH THE HIGHLANDS COUNTY ENGINEERING DEPARTMENT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- PROPOSED CONCRETE SIDEWALKS SHALL MEET ADA STANDARDS. IT IS RECOMMENDED THAT ALL CROSS SLOPES ARE CONSTRUCTED AT 1.5%.
- EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT ARE TO BE REPLACED AT THE SAME LOCATION AND WIDTH, UNLESS OTHERWISE SHOWN IN THE PLANS.
- THE CONTRACTOR SHALL REMOVE SURVEY STAKES AND EROSION CONTROL ITEMS PRIOR TO THE COMPLETION OF THE CONTRACT.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL CONSTRUCTION PERMITS AND LICENSES. COUNTY SHALL ASSIST CONTRACTOR, WHEN NECESSARY, IN OBTAINING SUCH PERMITS AND LICENSES.
- CONTRACTOR WILL BE REQUIRED TO PROVIDE AND INSTALL POURED CONCRETE PEDESTALS AT ALL GATE CONTROL DEVICES.

UTILITY COMPANIES

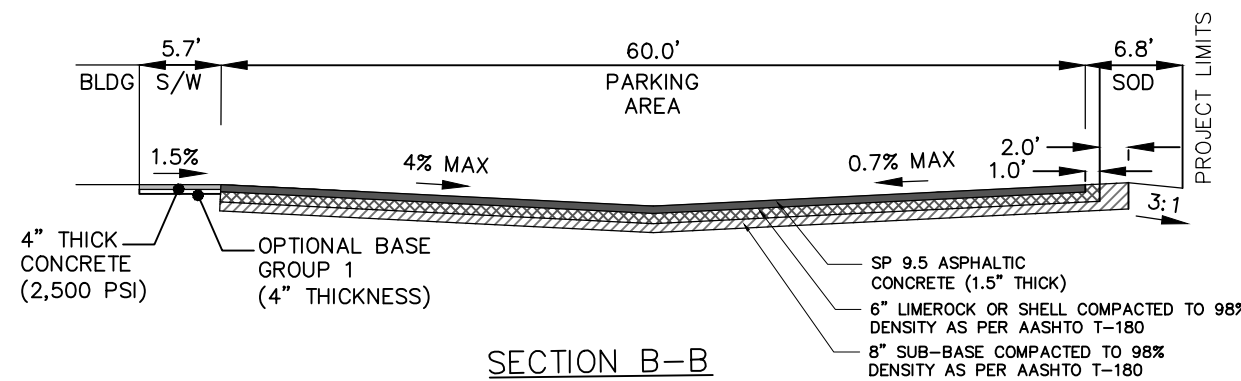
COMCAST 12600 WESTLINKS DR. SUITE #4 FORT MYERS FL, 33913 LYNN DUNDAS CONSTRUCTION SPECIALIST II CELL 239-896-6328	LEVEL 3 COMMUNICATIONS 1025 ELDORADO BLVD, BLDG 13C04 BROOMFIELD, CO 80021 JUDY HENRY 720-888-2061	NETWORK RELATIONS CENTURYLINK 1025 ELDORADO BLVD. BROOMFIELD, CO 80021 877-366-8344 Ext: 2
TECO-PEOPLES GAS 445 KATHLEEN ROAD LAKELAND, FL 33815 JENNIFER LOWERS 863-603-2226	HIGHLANDS COUNTY TRAFFIC 505 SOUTH COMMERCE AVE. SEBRING, FL 33870 EDWARD CARDONA 863-402-6536 Ext:6536	CITY OF SEBRING 368 S. COMMERCE AVE. SEBRING, FLORIDA 33870 BOB BOGGUS (863)471-5100
CENTURY LINK 924 MEMORIAL DRIVE AVON PARK, FL 33825 KEN LUTZ 863-452-3185	DUKE ENERGY 4728 KENILWORTH BLVD SEBRING, FL 33870 MARK MANNER (863) 678-4476	SEBRING GAS SYSTEMS, INC. 3515 U.S. HIGHWAY 27 SEBRING, FLORIDA KATHY SNYDER (863) 385-0194

NEW TRAFFIC OPERATIONS BUILDING HIGHLANDS COUNTY PROJECT NO. 19007			
BASE BID			
TASK NO.	ITEM DESCRIPTION	QUANTITY	UNIT
1	MOBILIZATION	1	LS
2	CONSTRUCTION SURVEY STAKING INCLUDING AS-BUILT	1	LS
3	TESTING	1	LS
4	MAINTENANCE OF TRAFFIC	1	LS
5	SEDIMENT BARRIER TEMPORARY	1,354	LF
6	REGULAR EXCAVATION	56.62	CY
7	EMBANKMENT (IN-PLACE)	1,508	CY
8	OPTIONAL BASE GROUP 1 (4" THICKNESS)	85	SY
9	OPTIONAL BASE GROUP 8 (6" THICKNESS)	2,216	SY
10	4" THICK CONCRETE FOR SIDEWALK, BACKFLOW PREVENTOR PAD (2,500 PSI) & GATE CONTROL DEVICES	86	SY
11	6" THICK CONCRETE FOR GENERATOR, BAY ENTRIES, DUMPSTER PAD (4,000 PSI)	78	SY
12	TYPE B STABILIZATION (8" COMPACTED THICKNESS)	3,220	SY
13	TYPE B STABILIZATION (12" COMPACTED THICKNESS)	473	SY
14	SUPERPAVE ASPHALTIC CONCRETE, SP 9.5, 1 1/2" THICK, RAP 30% MAXIMUM	198	TN
15	15" REINFORCED CONCRETE PIPE (RCP)	612	LF
16	18" REINFORCED CONCRETE PIPE (RCP)	121	LF
17	18" MITERED END SECTION	1	EA
18	TYPE "C" INLET	6	EA
19	BACKFLOW PREVENTOR	1	EA
20	1-1/2" PVC (UTILITY PLAN WATER SERVICE) INC. SERVICE TAP	156	LF
21	3/4" PVC (UTILITY PLAN WATER SERVICE)	137	LF
22	PVC TEE (UTILITY PLAN WATER SERVICE)	1	EA
23	4" PVC (INCLUDING CORING OPERATIONS AND CLEAN-OUT)	65	LF
24	8' CHAINLINK FENCE (INCLUDING 24' AUTOMATED GATE AND PEDESTRIAN GATE)	142	LF
25	DETECTABLE WARNING, YELLOW, EMBEDDED	10	SF
26	SINGLE POST SIGN, F & I, R7-8-FL (12" X18") HANDICAP PARKING SIGN	2	AS
27	SINGLE POST SIGN, F & I, R1-1 (30" X30"), STOP SIGN	1	AS
28	CONCRETE PARKING BUMPER	22	EA
29	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID, 6"	453	LF
30	PAINTED PAVEMENT MARKINGS, STANDARD, BLUE, SOLID, 6"	72	LF
31	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE HANDICAP SYMBOL	2	EA
32	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID, 24"	12	LF
33	YELLOW CONCRETE BOLLARDS	3	EA
34	LANDSCAPING	1	LS
35	IRRIGATION	1	LS

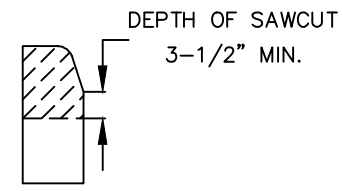
<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>		REVISIONS		DATE	DESCRIPTION									<table border="1"> <thead> <tr> <th>STATUS</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; color: red; font-weight: bold;">FOR BID</td> </tr> </tbody> </table>	STATUS	FOR BID	<table border="1"> <tr> <td>DESIGNED BY: J.D. LANGFORD, P.E.</td> <td rowspan="5" style="text-align: center;"> HIGHLANDS COUNTY ENGINEERING DEPARTMENT 505 S. COMMERCE AVENUE SEBRING, FLORIDA 33870 </td> <td rowspan="5" style="text-align: center;">  </td> <td rowspan="5" style="text-align: center;"> HIGHLANDS COUNTY NEW TRAFFIC OPERATIONS BUILDING GENERAL NOTES </td> <td>SCALE: HORIZ. N/A VERT. N/A</td> </tr> <tr> <td>DRAWN BY: STACEY MAHONEY</td> <td>PROJECT NO. 19007</td> <td>REV. 0</td> </tr> <tr> <td>CHECKED BY: J.D. LANGFORD, P.E.</td> <td>APPROVED BY: JAMES D. LANGFORD, JR., P.E. FLORIDA REGISTRATION NO.: 78402</td> <td>DATE:</td> </tr> <tr> <td>IN CHARGE: J.D. LANGFORD, P.E.</td> <td colspan="2" style="text-align: center;">SHEET 2 OF 9</td> </tr> <tr> <td>DATE: 3/30/2023</td> <td colspan="2"></td> </tr> </table>	DESIGNED BY: J.D. LANGFORD, P.E.	HIGHLANDS COUNTY ENGINEERING DEPARTMENT 505 S. COMMERCE AVENUE SEBRING, FLORIDA 33870		HIGHLANDS COUNTY NEW TRAFFIC OPERATIONS BUILDING GENERAL NOTES	SCALE: HORIZ. N/A VERT. N/A	DRAWN BY: STACEY MAHONEY	PROJECT NO. 19007	REV. 0	CHECKED BY: J.D. LANGFORD, P.E.	APPROVED BY: JAMES D. LANGFORD, JR., P.E. FLORIDA REGISTRATION NO.: 78402	DATE:	IN CHARGE: J.D. LANGFORD, P.E.	SHEET 2 OF 9		DATE: 3/30/2023		
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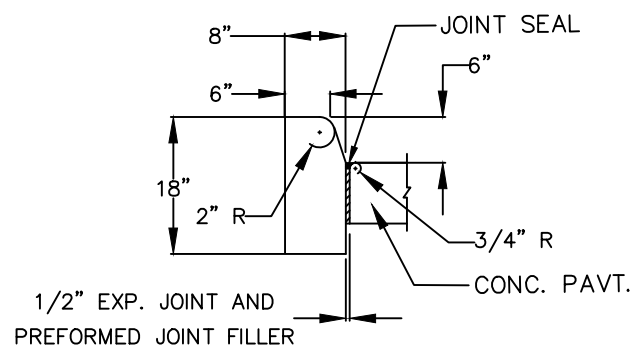
SECTION A-A



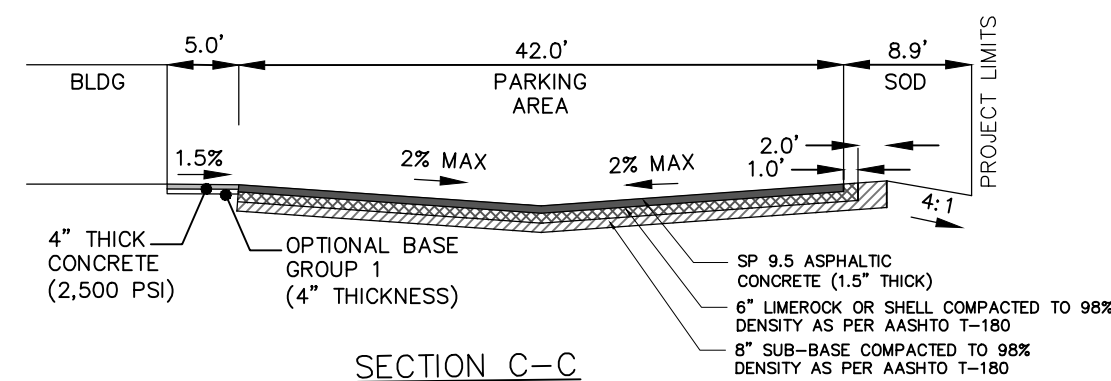
SECTION B-B



CONTRACTION JOINT IN CURB

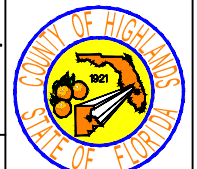


TYPE D CURB



SECTION C-C

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.

REVISIONS			STATUS	DESIGNED BY: J.D. LANGFORD, P.E.	DRAWN BY: STACEY MAHONEY	CHECKED BY: J.D. LANGFORD, P.E.	IN CHARGE: J.D. LANGFORD, P.E.	DATE: 3/30/2023	APPROVED BY: JAMES D. LANGFORD, JR., P.E. FLORIDA REGISTRATION NO.: 78402	DATE:	SCALE: HORIZ. N/A VERT. N/A	PROJECT NO. 19007	REV. 0
DATE	BY	DESCRIPTION											
			FOR BID	HIGHLANDS COUNTY ENGINEERING DEPARTMENT 505 S. COMMERCE AVENUE SEBRING, FLORIDA 33870						HIGHLANDS COUNTY NEW TRAFFIC OPERATIONS BUILDING TYPICAL SECTIONS			

PROJECT:

PROJECT AREA = 4,879 S.Y.
 IMPERVIOUS AREA = 3,311 S.Y.
 PERVIOUS AREA = 1,568 S.Y.
 WETLANDS = 0.0 AC.

BUILDING SIZE:

4,696 GFA CONDITIONED SPACE
 5,650 GFA WAREHOUSE/UNCONDITIONED

PARKING CALCULATIONS:

OFFICE ADMIN. SERVICES 1 PER 400 SF GFA
 WAREHOUSE 1 PER 600 SF GFA

OFFICE SPACE:

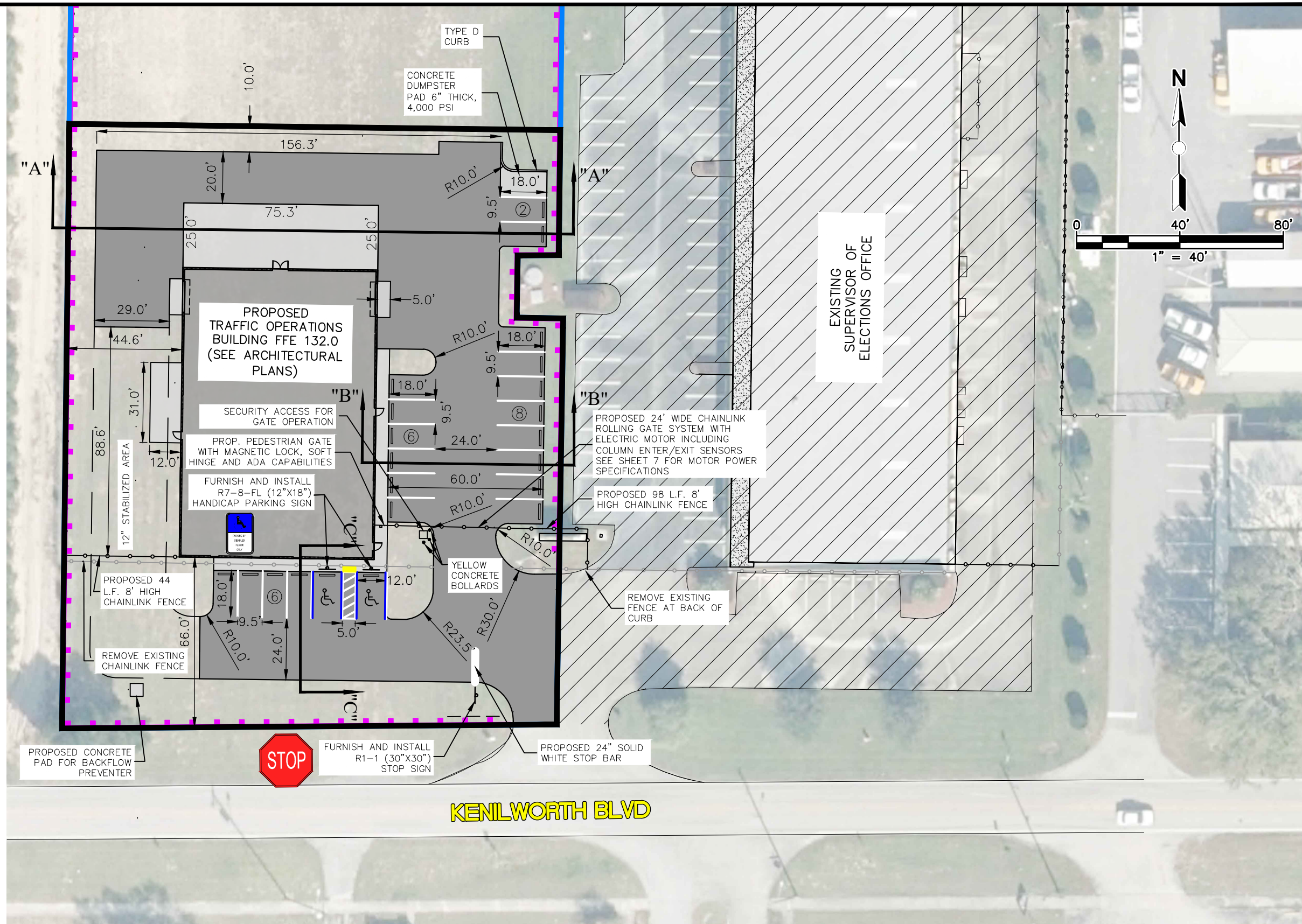
4,696/400 = 11.74 OR 12 SPACES

WAREHOUSE:

5,650/600 = 9.42 OR 10 SPACES
 PARKING SPACES REQUIRED = 22 SPACES
 PARKING SPACES PROVIDED = 22 SPACES

NOTE:

CONTRACTOR TO INSPECT EXISTING ROLLING & PEDESTRIAN GATES AT EASTERN ENTRANCE OF THE SITE TO GAIN A BETTER UNDERSTANDING OF THE POWER, SENSOR, HARDWARE AND MECHANIC NECESSITY FOR THE PROPOSED WESTERN ENTRANCE PRIOR TO BID SUBMISSION.



PROPOSED ASPHALT PAVING
 PROPOSED 5' CONCRETE SIDEWALK AND CONCRETE PADS
 PROP. DETECTABLE WARNING, YELLOW, EMBEDDED
 TEMPORARY SEDIMENT BARRIER

REVISIONS		
DATE	BY	DESCRIPTION

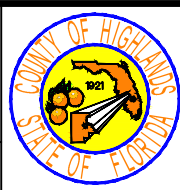
FOR BID

DESIGNED BY:
J.D. LANGFORD, P.E.
 DRAWN BY:
STACEY MAHONEY
 CHECKED BY:
J.D. LANGFORD, P.E.
 IN CHARGE:
J.D. LANGFORD, P.E.
 DATE:
3/30/2023

**HIGHLANDS COUNTY
 ENGINEERING DEPARTMENT**
 505 S. COMMERCE AVENUE
 SEBRING, FLORIDA 33870

APPROVED BY: JAMES D. LANGFORD, JR., P.E.
 FLORIDA REGISTRATION NO.: 78402

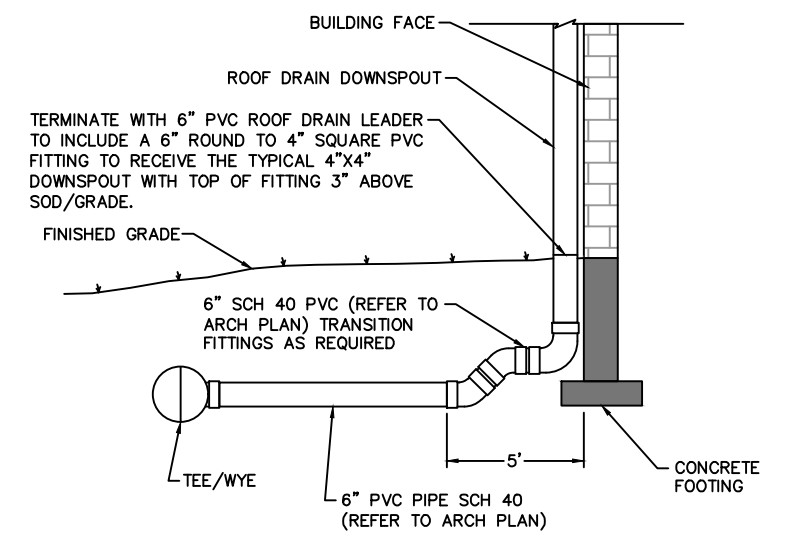
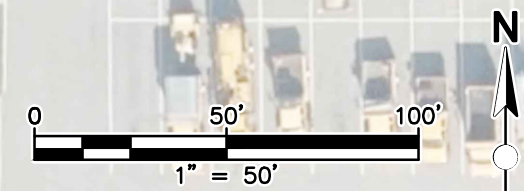
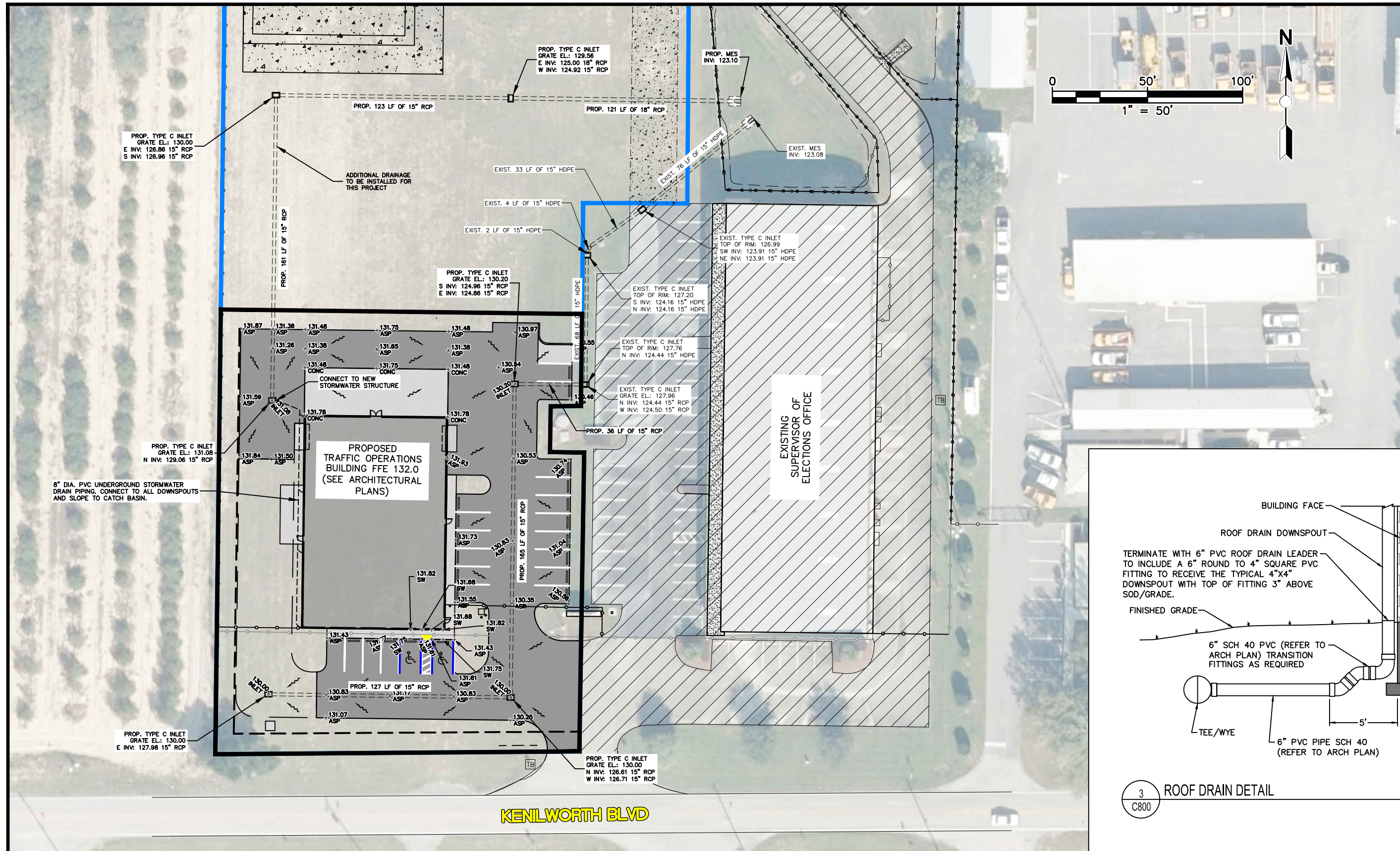
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**HIGHLANDS COUNTY
 NEW TRAFFIC OPERATIONS BUILDING
 SITE PLAN**

SCALE: HORIZ. 1"=40' VERT. N/A	
PROJECT NO. 19007	REV. 0
SHEET 4 OF 9	

G:\PROJECTS\2019\19007 New Traffic Operations Building\All Drawings\19007 New Traffic Operations Building.dwg, 4 SITE, Mahoney, Stacey Colors As Black Except Gray Colors.ctb



3 ROOF DRAIN DETAIL
C800 N.T.S.

REVISIONS		
DATE	BY	DESCRIPTION

STATUS
FOR BID

DESIGNED BY: J.D. LANGFORD, P.E.
 DRAWN BY: STACEY MAHONEY
 CHECKED BY: J.D. LANGFORD, P.E.
 IN CHARGE: J.D. LANGFORD, P.E.
 DATE: 3/30/2023

**HIGHLANDS COUNTY
 ENGINEERING DEPARTMENT**
 505 S. COMMERCE AVENUE
 SEBRING, FLORIDA 33870

APPROVED BY: JAMES D. LANGFORD, JR., P.E.
 FLORIDA REGISTRATION NO.: 78402

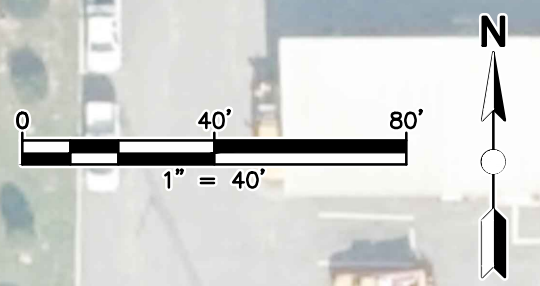
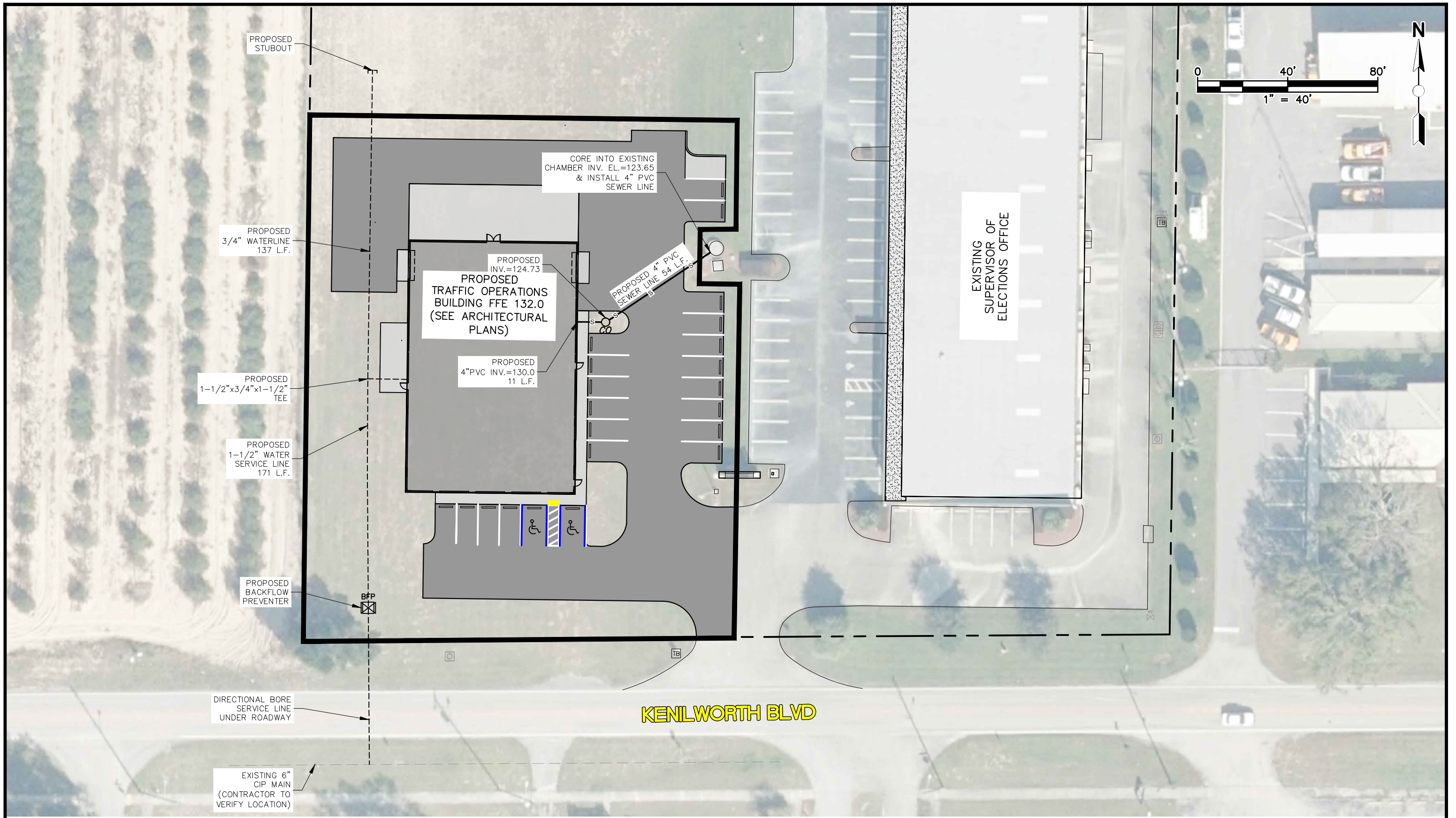
DATE: _____



**HIGHLANDS COUNTY
 NEW TRAFFIC OPERATIONS BUILDING
 GRADING & DRAINAGE PLAN**

SCALE: HORIZ. 1"=50' VERT. N/A	
PROJECT NO. 19007	REV. 0
SHEET 5 OF 9	

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KENILWORTH BLVD

REVISIONS		
DATE	BY	DESCRIPTION

STATUS

FOR BID

DESIGNED BY:
J.D. LANGFORD, P.E.

DRAWN BY:
STACEY MAHONEY

CHECKED BY:
J.D. LANGFORD, P.E.

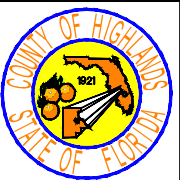
IN CHARGE:
J.D. LANGFORD, P.E.

DATE:
3/30/2023

**HIGHLANDS COUNTY
ENGINEERING DEPARTMENT**
505 S. COMMERCE AVENUE
SEBRING, FLORIDA 33870

APPROVED BY: JAMES D. LANGFORD, JR., P.E.
FLORIDA REGISTRATION NO.: 78402

DATE:



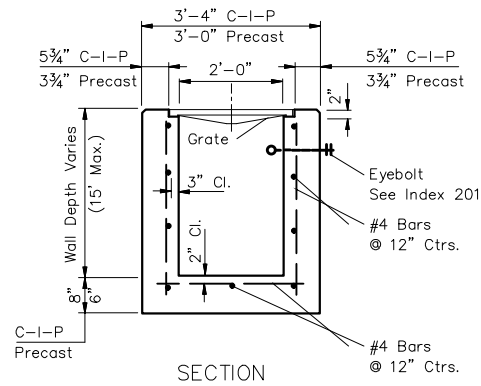
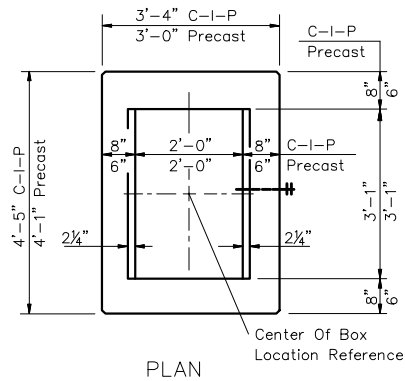
HIGHLANDS COUNTY
NEW TRAFFIC OPERATIONS BUILDING
UTILITY PLAN

SCALE:
HORIZ. 1"=40'
VERT. N/A

PROJECT NO. 19007	REV. 0
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SHEET 6 OF 9

G:\PROJECTS\2019\19007 New Traffic Operations Building\All Drawings\19007 New Traffic Operations Building.dwg, 6 UTILITY, Mahoney, Stacey Colors As Black Except Gray Colors.ctb



HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 1)

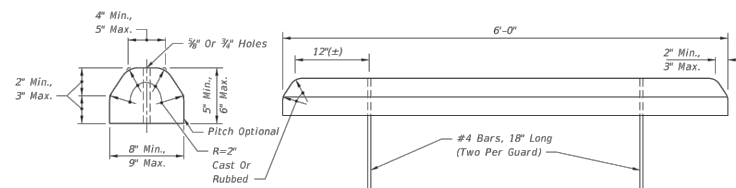
WALL DEPTH	SCHEDULE	AREA (in. ² /ft.)	MAX. SPACING	
			BAR	WWF
0'-15'	A12	0.20	12"	8"

TYPE C

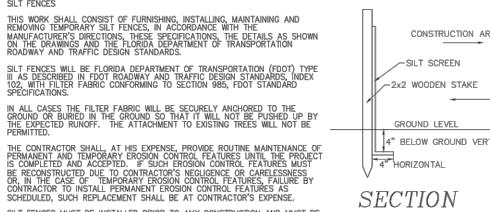
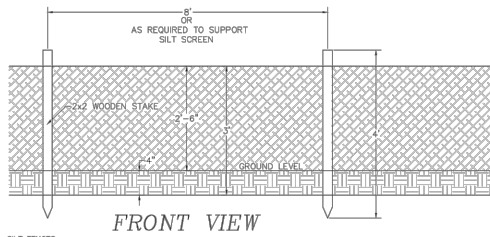
Recommended Maximum Pipe Size:

- 2'-0" Wall - 18" Pipe
- 3'-1" Wall - 24" Pipe (18" where an 18" pipe enters a 2'-0" wall)

TYPE "C" INLET



CONCRETE BUMPER GUARD



SILT FENCES
THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING TEMPORARY SILT FENCES, IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS, THESE SPECIFICATIONS, THE DETAILS AS SHOWN ON THE DRAWINGS AND THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS.

SILT FENCES WILL BE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) TYPE II AS DESCRIBED IN FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 100, WITH FILTER FABRIC CONFORMING TO SECTION 985, FOOT STANDARD SPECIFICATIONS.

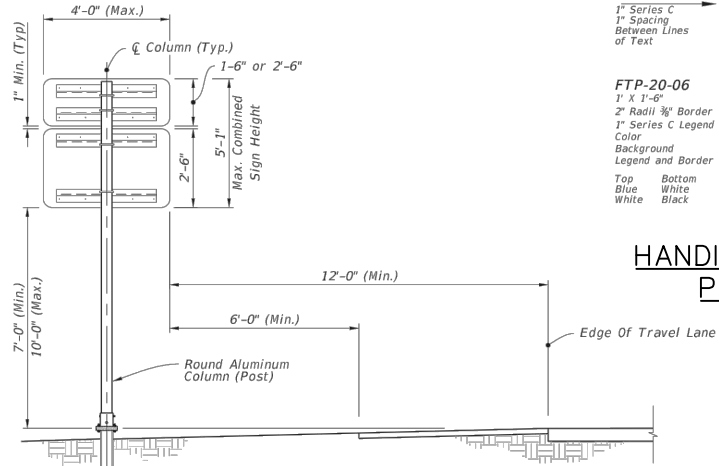
IN ALL CASES THE FILTER FABRIC WILL BE SECURELY ANCHORED TO THE GROUND OR BURIED IN THE GROUND SO THAT IT WILL NOT BE PUSHED UP BY THE EXPECTED RUNOFF. THE ATTACHMENT TO EXISTING TREES WILL NOT BE PERMITTED.

THE CONTRACTOR SHALL, AT HIS EXPENSE, PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETED AND ACCEPTED. IF SUCH EROSION CONTROL FEATURES FAILURE BY CONTRACTOR TO INSTALL PERMANENT EROSION CONTROL FEATURES AS SCHEDULED, SUCH REPLACEMENT SHALL BE AT CONTRACTOR'S EXPENSE.

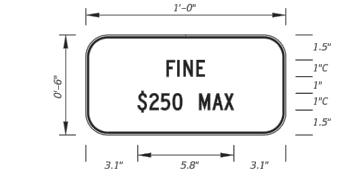
SILT FENCES MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION AND MUST BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

LOCATIONS SHOWN ARE APPROXIMATE. FIELD FITMENT OF SILT SCREENS MAY BE REQUIRED TO GET AROUND OBSTACLES NOT SHOWN ON PLANS.

SILT FENCE



SINGLE COLUMN GROUND SIGN



FTP-22-06
1" X 6"
1" Radii 3/8" Border
1" Series C Legend
White Background
Black Legend and Border

Supplemental Panel for the FTP-20-06 and FTP-21-06 signs

All Letters
1" Series C
1" Spacing
Between Lines
of Text

FTP-20-06
1" X 1'-0"
2" Radii 3/8" Border
1" Series C Legend
Color
Background
Legend and Border
Top Bottom
Blue White
White Black



HANDICAP ACCESSIBLE PARKING SIGN

VIKING Vehicular Gate Operator (OR EQUIVALENT) Model H-10

Volts (VAC)	Freq (Hz)	Amps	Phase	Max Gate Weight (lbs)	VOLTS (VAC)
120	50-60	6.00 *	1	2,200	75 40 (1)
240	50-60	1.5	1	2,200	75 40 (1)

Max Duty Cycle	Max Speed
100%	12 in/sec

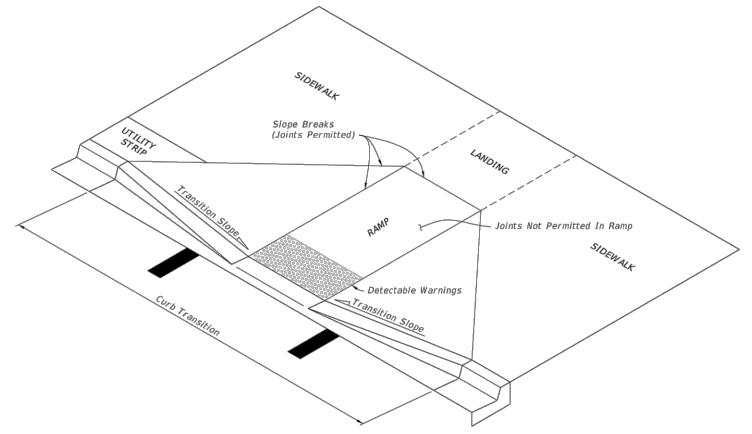
* Includes 3 amp load on receptacle

MAIN GATE & SINGLE GATE CONDUIT NOTES

- 11-1/4" schedule 40 PVC pipe from the IT Communication Room to a 10"x8"x6" hinged enclosure to be mounted on the outside of the building and provided by the IT Department.
- 11" schedule 40 PVC raceway from the 10"x8"x6" hinged enclosure to the new motor pad provided by the general contractor.
- 11" schedule 40 PVC raceway from the 10"x8"x6" hinged enclosure to the exist single gate pedestal pad provided by the general contractor. The pedestal and switch devices for exist will be provided by the IT Department.
- 11" schedule 40 PVC raceway from the 10"x8"x6" hinged enclosure to the entrance pedestal pad provided by the general contractor. The pedestal and main gate FOB readers will be provided by the IT Department.
- 11" schedule 40 PVC raceway from the 10"x8"x6" hinged enclosure to inside the latch post of the single gate. The placement of the pipe in the post will be provided by the general contractor. The magnetic lock and FOB reader device for the single gate will be provided by the IT Department.

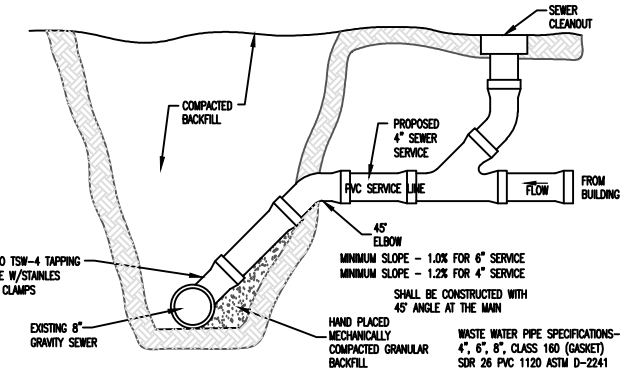
GENERAL NOTES:

- Cross Slopes and Grades:**
 - Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
 - Landings must have cross-slopes less than or equal to 0.02 in any direction.
 - Maintain a single longitudinal slope along each side of the curb ramp.
 - Ramp slopes are not required to exceed 15 feet in length.
 - Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.
- Curb, Curb and Gutter and/or Sidewalk:**
 - Refer to Index 522-001 for concrete thickness and sidewalk details.
 - Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
- Curb Ramp Alpha-Identification:**
 - Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
 - Alpha-identifications CR-I and CR-J are intentionally omitted.
- Detectable Warnings:**
 - Install detectable warnings in accordance with Specification 527.
 - Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
 - If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.

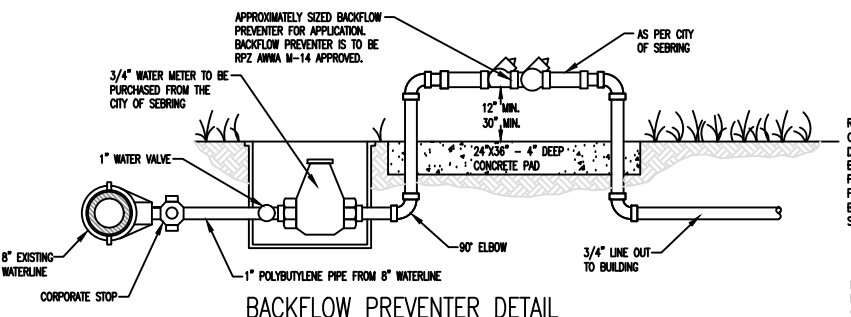


CURB RAMP NOMENCLATURE

LAST REVISION: 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX: 522-002	SHEET: 1 of 7
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DEEP SERVICE CONNECTION



BACKFLOW PREVENTER DETAIL

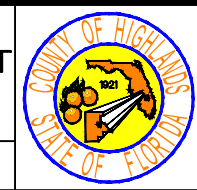
REDUCED PRESSURE BACKFLOW PREVENTERS SHOULD BE INSTALLED WITH A SUGGESTED MINIMUM CLEARANCE OF 12" BETWEEN PORT AND FLOOR GRADE. THEY MUST BE INSTALLED WHERE ANY DISCHARGE WILL NOT BE OBJECTIONABLE AND CAN BE POSITIVELY DRAINED AWAY. THEY SHOULD BE INSTALLED WHERE EASILY ACCESSIBLE FOR TESTING AND MAINTENANCE AND MUST BE PROTECTED FROM FREEZING. LARGER SIZES SHOULD HAVE SUPPORT BLOCKS TO PREVENT FLANGE DAMAGE. THERMAL WATER EXPANSION AND/OR WATER HAMMER DOWN STREAM OF THE BACKFLOW PREVENTER CAN CAUSE EXCESSIVE PRESSURE. EXCESSIVE PRESSURE SITUATIONS SHOULD BE ELIMINATED TO AVOID POSSIBLE DAMAGE TO THE SYSTEM AND ASSEMBLY.

NOTE: BACKFLOW PREVENTER SHOWN IS TYPICAL. OWNER, CONTRACTOR, OR ARCHITECT DISCRETION NEEDED ON ACTUAL TYPE OF PREVENTER FOR SITE. BACKFLOW SHALL BE RPZ ANNA M-14 APPROVED.

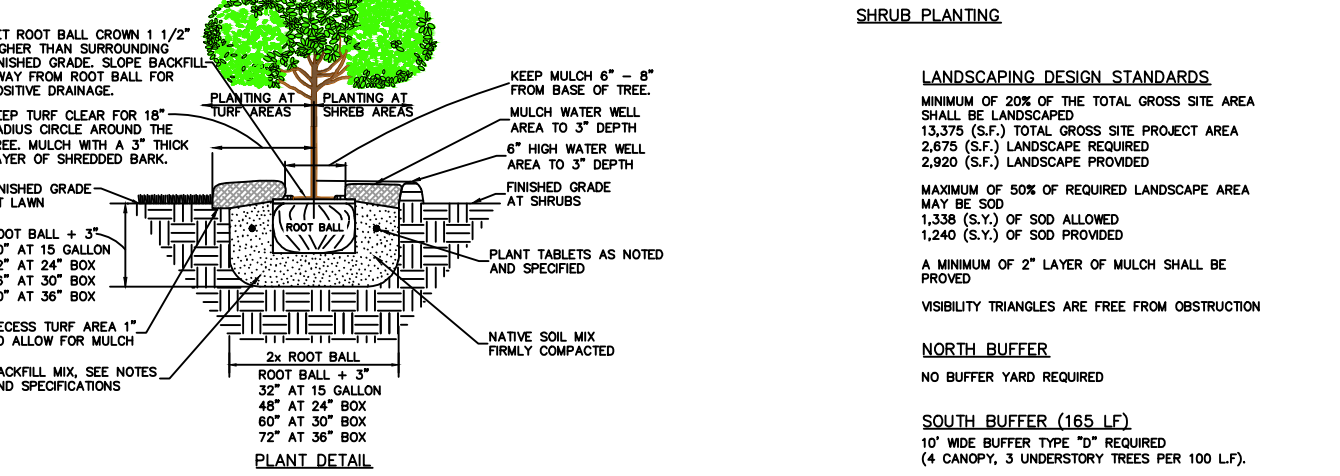
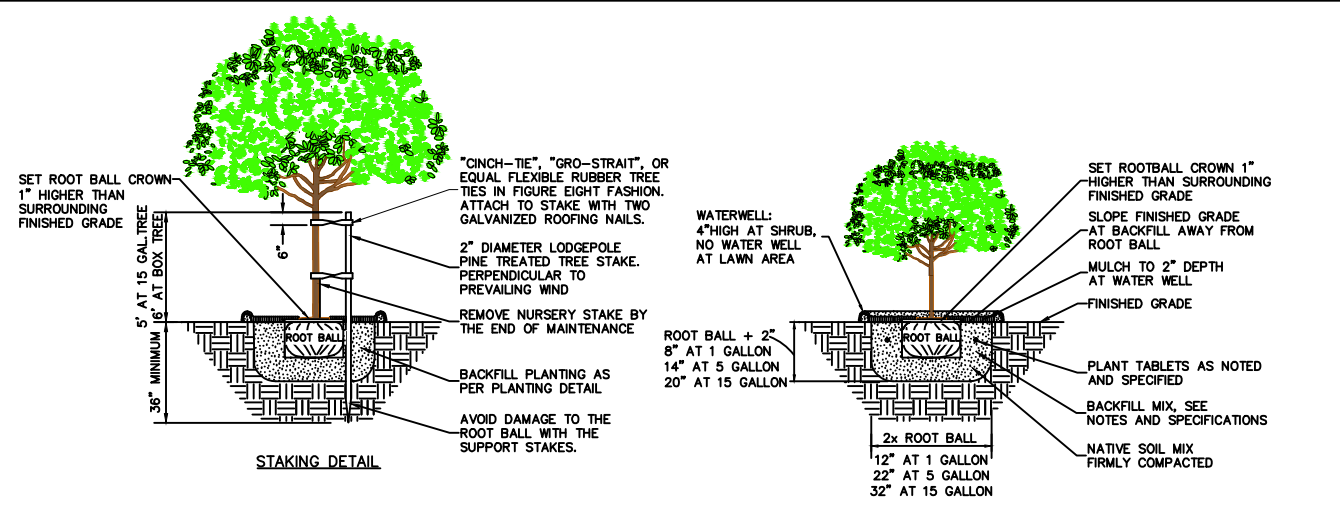
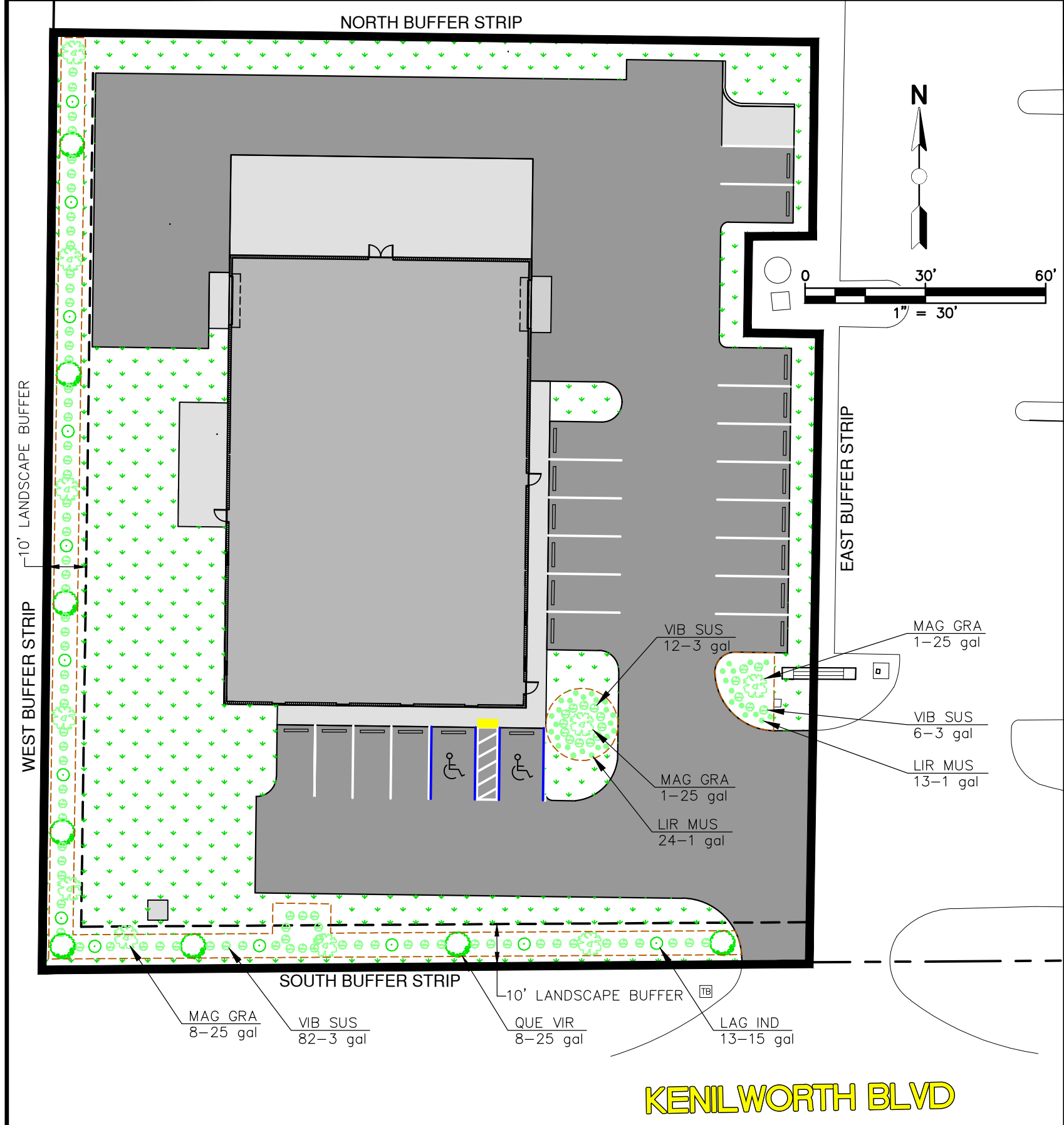
REVISIONS			STATUS
DATE	BY	DESCRIPTION	
			FOR BID

DESIGNED BY: J.D. LANGFORD, P.E.	HIGHLANDS COUNTY ENGINEERING DEPARTMENT 505 S. COMMERCE AVENUE SEBRING, FLORIDA 33870
DRAWN BY: STACEY MAHONEY	
CHECKED BY: J.D. LANGFORD, P.E.	
IN CHARGE: J.D. LANGFORD, P.E.	
DATE: 3/30/2023	

APPROVED BY: JAMES D. LANGFORD, JR., P.E. FLORIDA REGISTRATION NO.: 78402	DATE:
--	-------



HIGHLANDS COUNTY NEW TRAFFIC OPERATIONS BUILDING DETAILS	
SCALE: HORIZ. N/A VERT. N/A	PROJECT NO. 19007
	REV. 0
SHEET 7 OF 9	



PLANT SCHEDULE

TREES	BOTANICAL NAME/COMMON NAME	CONT.	CAL.	SIZE	SPACING	QTY.
	QUERCUS VIRGINIANA/SOUTHERN LIVE OAK	25 GAL.	2" CAL.	10' OA	25'	8
	MAGNOLIA GRANDIFLORA/SOUTHERN MAGNOLIA	25 GAL.	2" CAL.	10' OA	25'	10
UNDER STORY TREES						
	LAGERSTROEMIA INDICA/CAPE MYRTLE	15 GAL.	1.75" CAL.	8' OA	33'	13
SHRUBS						
	VIBURNUM SUSPENSUM/SANDANKWA VIBURNUM	3 GAL.		18"		100
	LIRIOPE MUSCARI 'EMERALD GODDESS'/LIRIOPE	1 GAL.		12"	36" O.C.	37
SOD						
	PASPALUM NOTATUM 'ARGENTINE'/BAHIA GRASS SOD					1,240 SY

LANDSCAPING DESIGN STANDARDS

MINIMUM OF 20% OF THE TOTAL GROSS SITE AREA SHALL BE LANDSCAPED
 13,375 (S.F.) TOTAL GROSS SITE PROJECT AREA
 2,675 (S.F.) LANDSCAPE REQUIRED
 2,920 (S.F.) LANDSCAPE PROVIDED

MAXIMUM OF 50% OF REQUIRED LANDSCAPE AREA MAY BE SOD
 1,338 (S.F.) OF SOD ALLOWED
 1,240 (S.F.) OF SOD PROVIDED

A MINIMUM OF 2" LAYER OF MULCH SHALL BE PROVIDED

VISIBILITY TRIANGLES ARE FREE FROM OBSTRUCTION

NORTH BUFFER
 NO BUFFER YARD REQUIRED

SOUTH BUFFER (165 LF)
 10' WIDE BUFFER TYPE "D" REQUIRED
 (4 CANOPY, 3 UNDERSTORY TREES PER 100 L.F.)

6.60 CANOPY TREE REQUIRED
 4.95 UNDERSTORY TREES REQUIRED
 CONTINUOUS HEDGE REQUIRED

7 CANOPY TREES PROVIDED
 (4 SOUTHERN LIVE OAK, 3 SOUTHERN MAGNOLIA)
 5 UNDERSTORY TREES REQUIRED
 (5 GRAPE MYRTLES)
 CONTINUOUS HEDGE PROVIDED

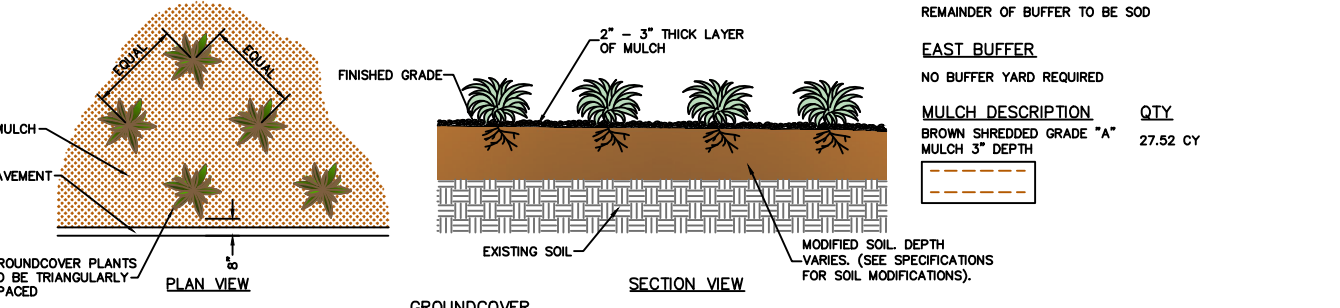
REMAINDER OF BUFFER TO BE SOD

WEST BUFFER (215 LF)
 10' WIDE BUFFER TYPE "D" REQUIRED
 (4 CANOPY, 3 UNDERSTORY TREES PER 100 L.F.)

8.60 CANOPY TREE REQUIRED
 6.45 UNDERSTORY TREES REQUIRED
 CONTINUOUS HEDGE REQUIRED

9 CANOPY TREES PROVIDED
 (4 SOUTHERN LIVE OAK, 5 SOUTHERN MAGNOLIA)
 8 UNDERSTORY TREES REQUIRED
 (8 GRAPE MYRTLES)
 CONTINUOUS HEDGE PROVIDED

REMAINDER OF BUFFER TO BE SOD

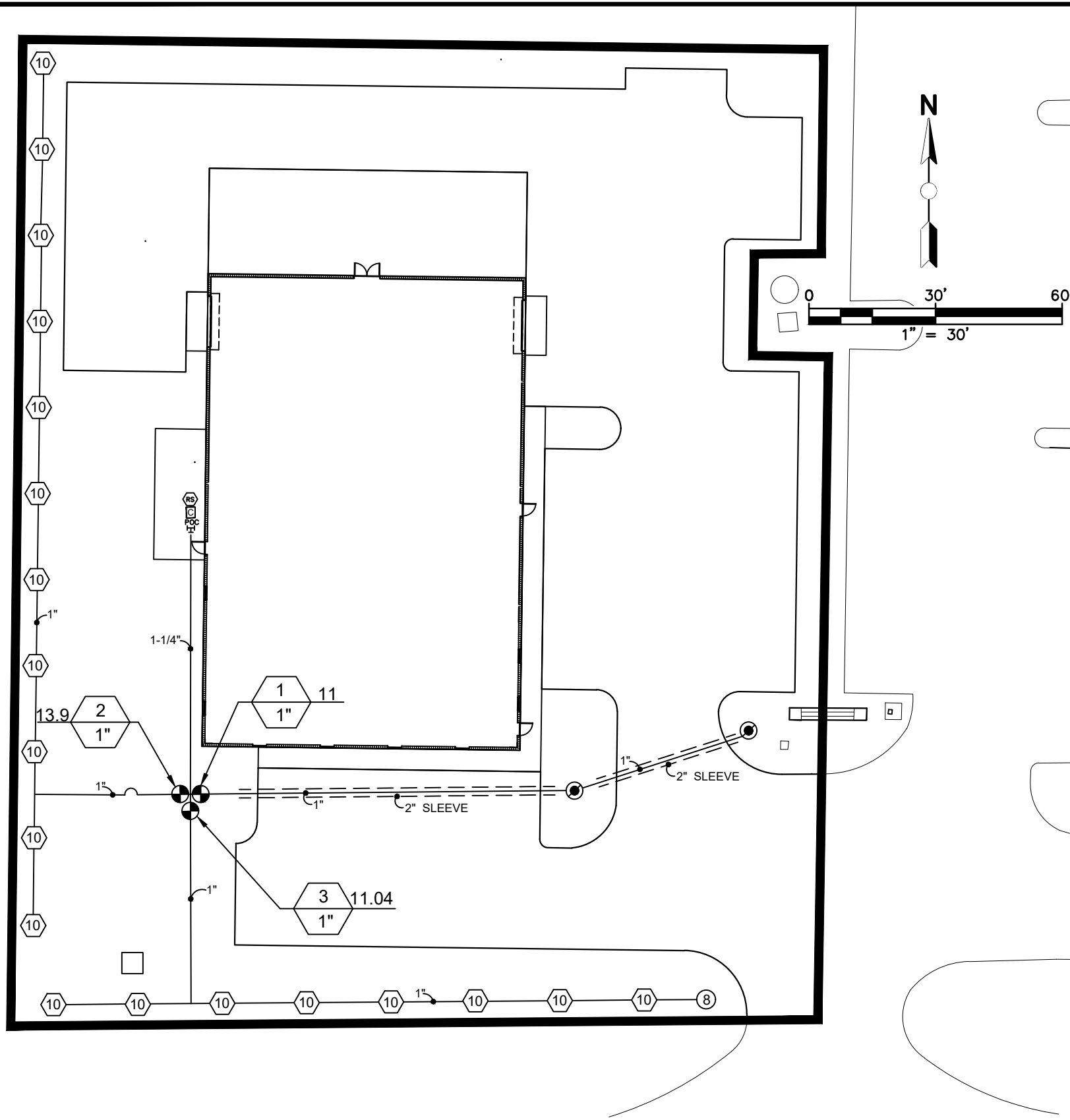


NOTES:
 1 - SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSIONS.
 2 - SMALL ROOTS (1" OR LESS) THAT GROW AROUND UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAVING CONTAINER DETAIL).
 3 - SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

KENILWORTH BLVD

REVISIONS DATE BY DESCRIPTION			STATUS <p style="color: red; font-weight: bold; font-size: 1.2em;">FOR BID</p>		DESIGNED BY: J.D. LANGFORD, P.E. DRAWN BY: STACEY MAHONEY CHECKED BY: J.D. LANGFORD, P.E. IN CHARGE: J.D. LANGFORD, P.E. DATE: 3/30/2023		HIGHLANDS COUNTY ENGINEERING DEPARTMENT 505 S. COMMERCIAL AVENUE SEBRING, FLORIDA 33870		 HIGHLANDS COUNTY NEW TRAFFIC OPERATIONS BUILDING LANDSCAPE PLAN		SCALE: HORIZ. 1"=30' VERT. N/A PROJECT NO. 19007 REV. 0	
SHEET 8 OF 9												

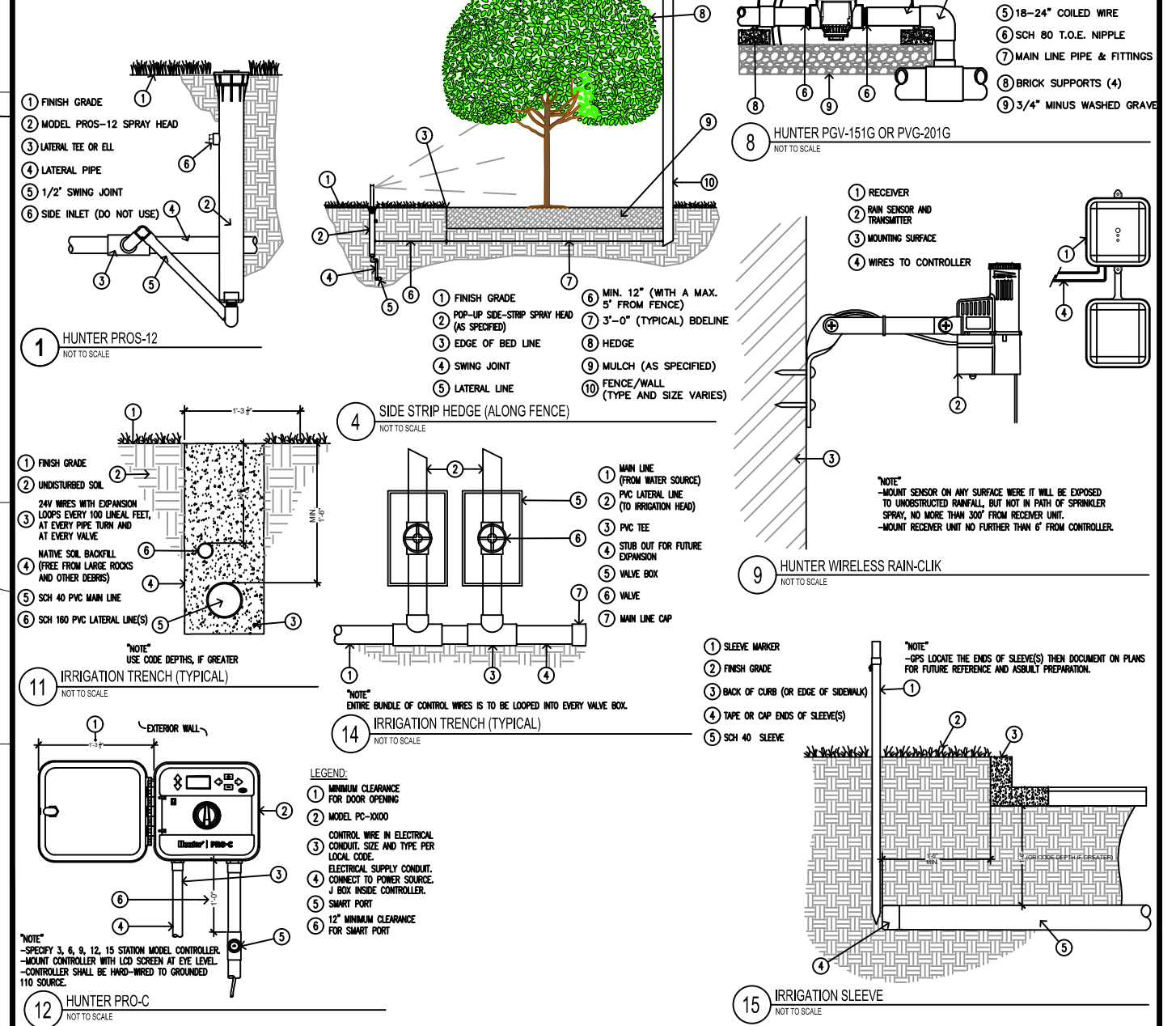
G:\PROJECTS\2019\19007 New Traffic Operations Building\All Drawings\19007 New Traffic Operations Building.dwg, 8 LANDSCAPE PLAN, Mahoney, Stacey Colors As Black Except Gray Colors.ctb



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/ DESCRIPTION	QTY	ARC	PSI	GPM	RADIUS	VALVE CALLOUT
⊗	HUNTER PROS-12 8' RADIUS SHRUD SPRAY, 12" POP-UP	2	180	40	0.96	8'	VALVE NUMBER VALVE GPM VALVE SIZE
⊙	HUNTER PROS-12 10' RADIUS SHRUD SPRAY, 12" POP-UP	11	180	40	1.26	10'	
⊕	HUNTER PGV-151, 201 ELECTRIC REMOTE CONTROL VALVE, PLASTIC GLOBE/ANGLE VALVE, FLOW CONTROL.	3					
⊙	PIPE TRANSITION POINT ABOVE GRADE PIPE TRANSITION POINT FROM PVC LATERAL TO DRIP TUBING WITH RISER TO ABOVE GRADE INSTALLATION.	2					
⊞	HUNTER PC-300 MODULAR CONTROLLER, 3 STATIONS, OUTDOOR MODEL.	1					
⊕	HUNTER WRC RAIN SENSOR, INSTALL WITHIN 1000 FT OF CONTROLLER, IN LINE OF SIGHT. 22-28 VAC/VDC 100 mA POWER FROM TIMER TRANSFORMER. MOUNT AS NOTED.	1					
⊞	POTABLE SOURCE	1					
---	IRRIGATION LATERAL LINE: 1-1/4" PVC SCHEDULE 40	62 L.F.					
---	IRRIGATION LATERAL LINE: 1" PVC SCHEDULE 40	582 L.F.					
---	PIPE SLEEVES: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE. PIPE SLEEVE SIZE SHALL ALLOW FOR IRRIGATION PIPING AND THEIR RELATED COUPLING TO EASILY SLIDE THROUGH SLEEVING MATERIAL. EXTEND SLEEVE 18 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.	38 L.F.					

NOTES:
 -CONTRACTOR TO VERIFY THAT THE WATER SUPPLY WILL SUPPLY APPROXIMATELY 25 GPM @ 40 PSI FOR SPRAY ZONES FOR PROPER SYSTEM OPERATIONS PRIOR TO INSTALLATION. NOTIFY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION IF THIS IS IMPRACTICAL.
 -DO NOT BID OR INSTALL PROJECT WITHOUT SPECIFICATIONS. DOING SO ASSUMES YOU AGREE TO THE SPECIFICATIONS.
 -UNLABELED LATERAL PIPE TO BE THE MINIMUM LATERAL SIZE AT RUN ENDS.



KENILWORTH BLVD

REVISIONS			STATUS	DESIGNED BY: J.D. LANGFORD, P.E.	DRAWN BY: STACEY MAHONEY	CHECKED BY: J.D. LANGFORD, P.E.	IN CHARGE: J.D. LANGFORD, P.E.	DATE: 3/30/2023	APPROVED BY: JAMES D. LANGFORD, JR., P.E. FLORIDA REGISTRATION NO.: 78402	DATE:	HIGHLANDS COUNTY ENGINEERING DEPARTMENT 505 S. COMMERCE AVENUE SEBRING, FLORIDA 33870		HIGHLANDS COUNTY NEW TRAFFIC OPERATIONS BUILDING IRRIGATION PLAN	SCALE: HORIZ. 1"=30' VERT. N/A	PROJECT NO. 19007	REV. 0
DATE	BY	DESCRIPTION														
			FOR BID													

G:\PROJECTS\2019\19007 New Traffic Operations Building\All Drawings\19007 New Traffic Operations Building.dwg, 9 IRRIGATION PLAN, Mahoney, Stacey Colors As Black Except Gray Colors.ctb

Highlands County Board of County Commissioners

New Traffic Operations Building

4490 Kenilworth Blvd.

Sebring, FL 33870

- ACOV/R Sheet Notes / Numbers May Not Be Consecutive
- 204 Existing signage to remain.
 - 205 4 inch thick poured concrete sidewalk with 6x6x11.4x1.4 xWF. Broom finish. Provide 8 inch x 8 inch thickened edge reinforced with 1-#5 dia. continuous at all edges.
 - 207 Existing stormwater retention pond. Refer to Civil Drawings.
 - 208 Existing asphalt driveway and parking. Protect from damage.
 - 209 Existing lift station.
 - 210 New asphalt paving. Refer to Civil Drawings.
 - 211 New concrete pad to accommodate mechanical equipment.
 - 212 8 ft. high chainlink fencing.
 - 213 3 ft. wide pedestrian gate with security access control.
 - 214 Access control pedestal. Contractor shall provide 12 in. x 12 in. x 2 ft. deep poured concrete footing at each pedestal. Verify location.
 - 215 New 24 ft. wide motorized rolling gate with security access control.
 - 216 Stabilized area for truck maneuvering. Refer to Civil Drawings for details and location.
 - 220 Quamr shall provide and install underground conduit from existing vault to new IT cabinet. Contractor shall coordinate work.



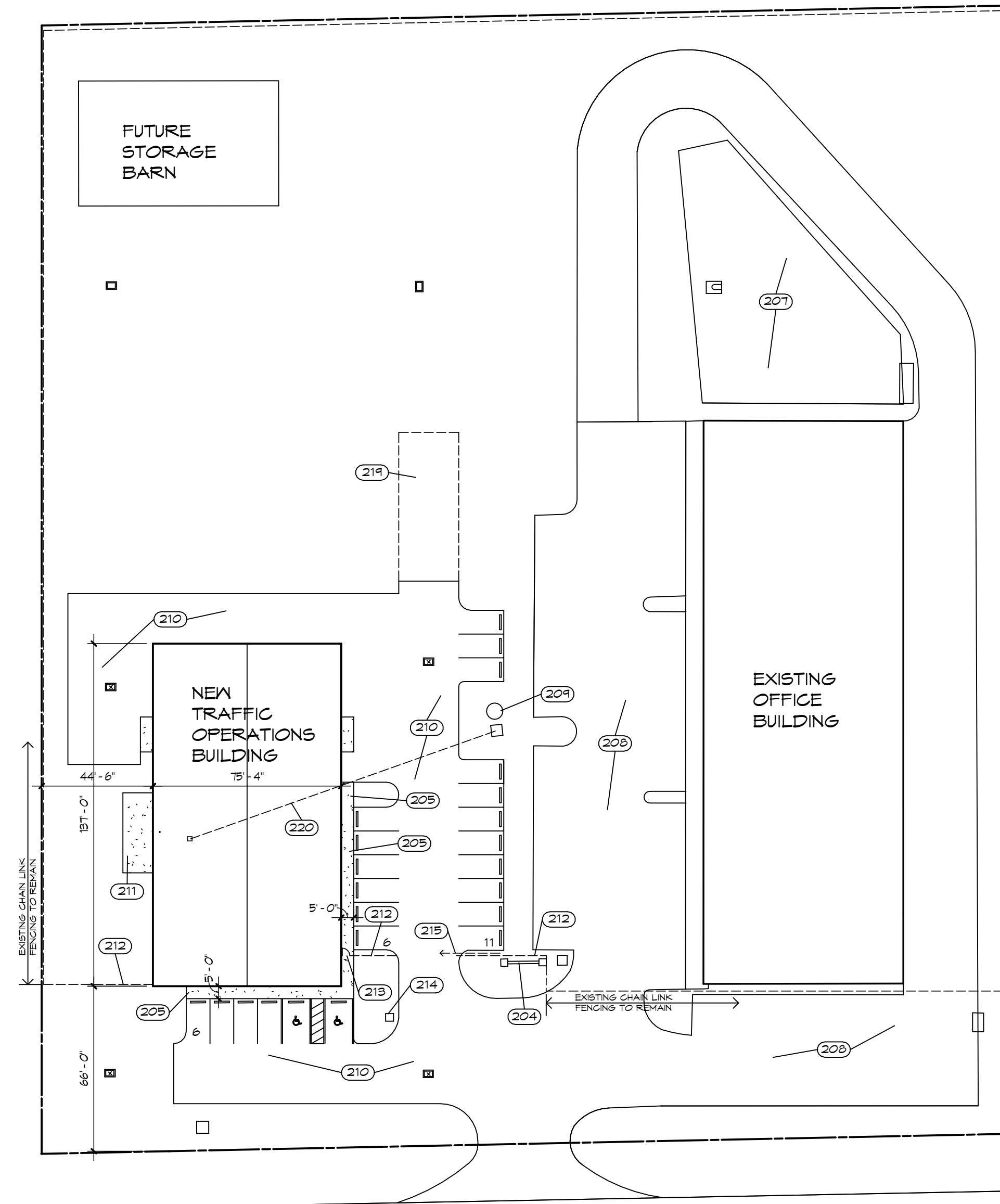
VICINITY MAP
NO SCALE

SYMBOL LEGEND	
(XXX)	DRAWING NOTE
(A / A01)	WALL SECTION DRAWING REFERENCE
(AA / A51)	BUILDING SECTION DRAWING REFERENCE
(1 / A10)	DETAIL DRAWING REFERENCE
CL	CENTERLINE
(101)	DOOR NUMBER
(A)	WINDOW NUMBER
(M1)	MILLWORK SYMBOL
Room name / 101	ROOM NAME / NUMBER
(FX)	FRAME NUMBER
UNO	UNLESS NOTED OTHERWISE
DO NOT SCALE THESE DRAWINGS	

LIST OF DRAWINGS

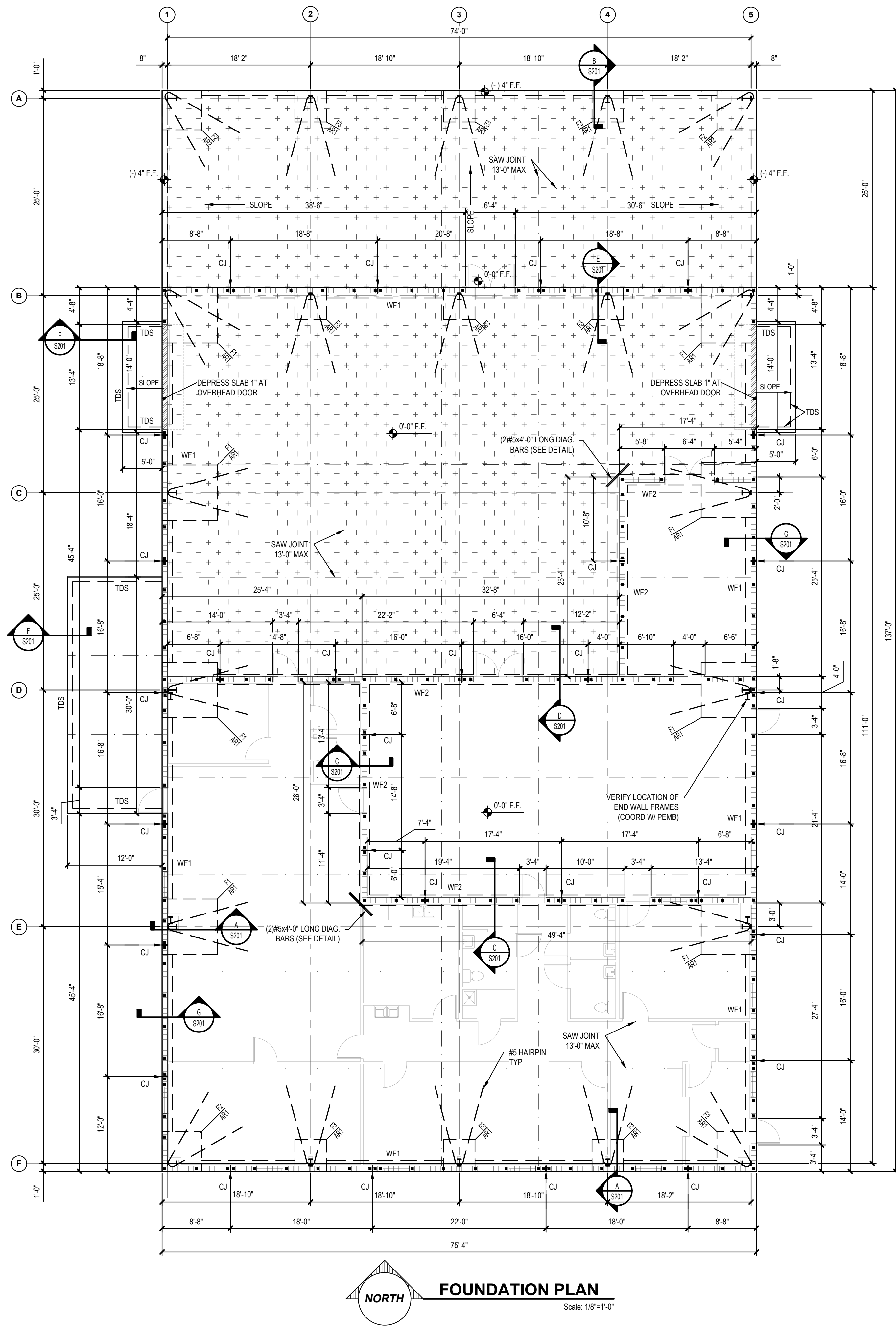
- COVR COVER SHEET
- STRUCTURAL**
- S101 FOUNDATION / SLAB PLAN
 - S201 FOUNDATION DETAILS AND NOTES
 - S202 MASONRY DETAILS
- ARCHITECTURAL**
- A101 OVERALL FLOOR PLAN
 - A102 LIFE SAFETY PLAN
 - A201 REFLECTED CEILING PLAN
 - A401 EXTERIOR ELEVATIONS
 - A501 1/4" BUILDING SECTIONS
 - A502 WALL SECTIONS AND DETAILS
 - A601 MILLWORK ELEVATIONS AND DETAILS
- MECHANICAL**
- M100 MECHANICAL PLAN
 - M200 MECHANICAL DETAILS AND SCHEDULES
- PLUMBING**
- P100 WASTE AND VENT PLAN
 - P200 WATER PLAN
 - P300 PLUMBING SCHEDULE AND DETAILS
- ELECTRICAL**
- E101 ELECTRICAL GENERAL NOTES AND SYMBOL LEGEND
 - E201 ELECTRICAL SITE PLAN AND POWER RISER DIAGRAM
 - E301 LIGHTING PLAN
 - E401 POWER AND SYSTEMS PLAN
 - E501 GENERATOR SPECIFICATIONS
 - E502 AUTOMATIC TRANSFER SWITCH SPECIFICATIONS

BUILDING DESIGN CRITERIA	
CODE CONFORMANCE	
FLORIDA BUILDING CODE - EXISTING	SEVENTH EDITION (2020)
ASCE	7-16
FBC-MECHANICAL	SEVENTH EDITION (2020)
FBC-PLUMBING	SEVENTH EDITION (2020)
FBC-FUEL GAS	SEVENTH EDITION (2020)
FBC-ACCESSIBILITY	SEVENTH EDITION (2020)
FBC-ENERGY CONSERVATION	SEVENTH EDITION (2020)
NATIONAL ELECTRIC CODE (NEC)	2011 NFPA 70
FLORIDA FIRE PREVENTION CODE (FFPC)	SEVENTH EDITION (2020)
NFPA 1	2018
NFPA 101	2018
DESIGN WIND SPEED: 160 MPH THIS PROJECT IS DESIGNED AS RISK CATEGORY IV AND COMPLIES WITH FLORIDA BUILDING CODE REQUIREMENTS FOR AN ESSENTIAL FACILITY AND IS CLASSIFIED AS A WIND BORNE DEBRIS REGION (1140 mph). EXTERIOR COMPONENTS AND CLADDING SHALL BE TESTED TO COMPLY WITH FBC SECTION 1626 TO WITHSTAND LARGE MISSILE IMPACTS.	
DESIGN LOAD FOR COMPONENTS & CLADDING: SEE STRUCTURAL DRAWINGS.	
DESIGN DATA	
OCCUPANCY GROUP	FBC: B - BUSINESS FFPC: BUSINESS
CONSTRUCTION TYPE	TYPE II-B, UNPROTECTED
COMPLIANCE STATEMENT	
TO THE BEST OF THE ARCHITECT'S KNOWLEDGE, THESE DRAWINGS AND THE PROJECT SPECIFICATIONS ARE COMPLETE AND COMPLY WITH THE REFERENCED CODES.	



ARCHITECTURAL SITE PLAN
1" = 40'-0"

CMHM ARCHITECTS INC.
 JOHN R. CURTIS, AIA
 BENJAMIN F. MUNDY, JR., AIA, LEED AP
 C. KEITH HUNNICUTT, AIA
 NEIL C. MELBY, AIA, LEED AP
 1036 SOUTH FLORIDA AVENUE
 LAKELAND, FLORIDA 33801-1118
 TELEPHONE 863-688-8882 | lhdarch.com
 MAR 02/12
 C. KEITH HUNNICUTT, AIA
 COVER SHEET
 BID DOCUMENTS
 Highlands County Board of County Commissioners
 New Traffic Operations Building
 4490 Kenilworth Blvd.
 Sebring, FL 33870
 REVISIONS
 CONSTRUCTION 03/24/2023
 APPROVAL
 REVIEW
 CHECKED BY
COVR
 19058

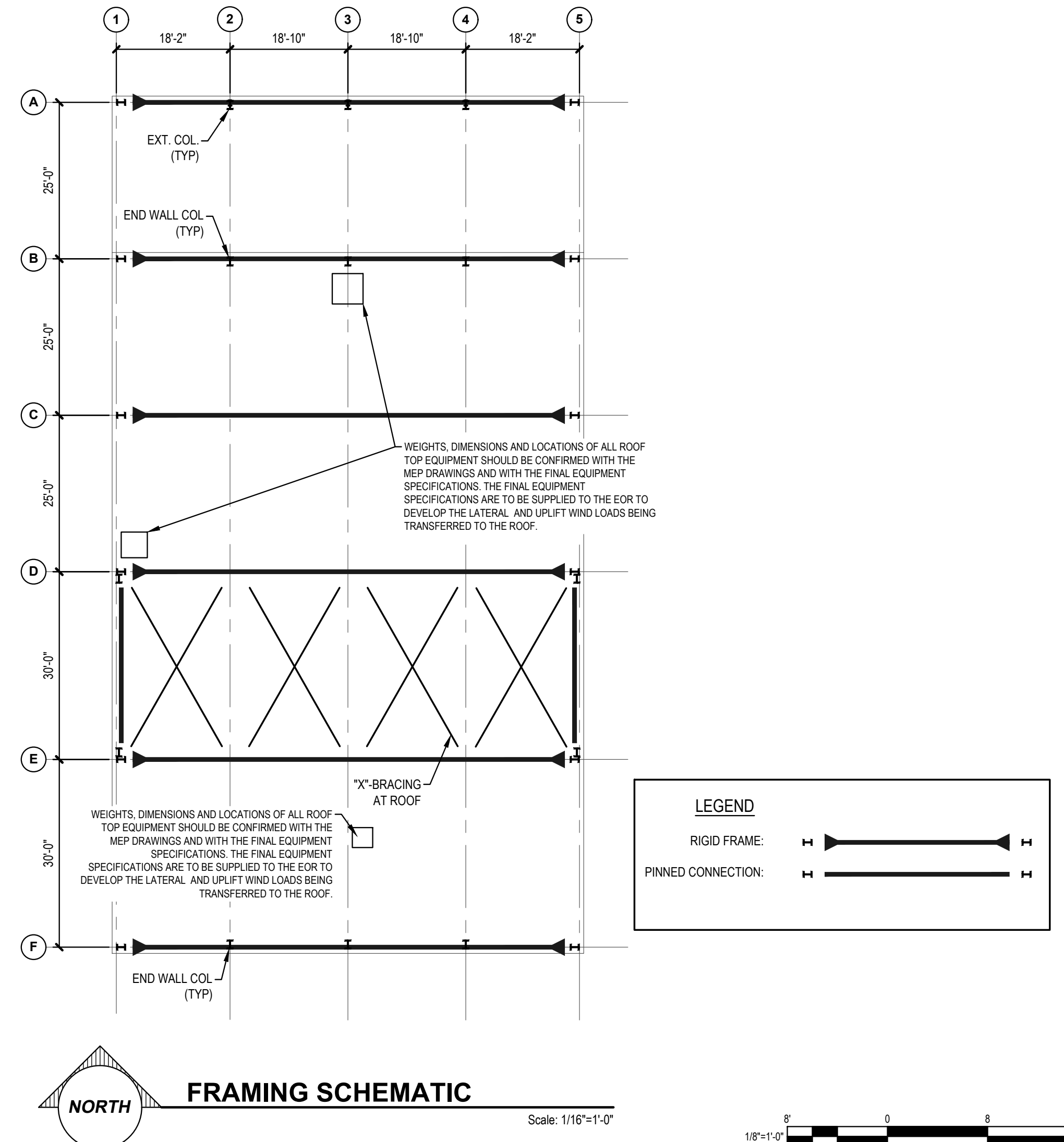


FOUNDATION PLAN
Scale: 1/8"=1'-0"

FOOTING SCHEDULE		
MK NO.	FOOTING SIZE	REINFORCEMENT
F1	7'-0" x 7'-0" x 2'-0"	(11) #5 E.W. CENTERED
F2	5'-0" x 5'-0" x 2'-0"	(8) #5 E.W. CENTERED
F3	4'-0" x 4'-0" x 2'-0"	(6) #5 E.W. CENTERED
WF1	1'-4"W x 1'-8"D	(2) #5 CONT
WF2	1'-4"W x 1'-0"D	(2) #5 CONT

NOTE:
 1. FOUNDATION DESIGN BASED ASSUMED LOADS. GWE SHOULD BE CONTRACTED TO REVIEW AND REVISE THIS FOUNDATION DESIGN ONCE PEMB REACTIONS ARE PROVIDED.
 2. REFERENCE ARCHITECTURAL DIMENSION FLOOR PLAN DRAWINGS FOR ADDITIONAL DIMENSIONS.

LEGEND	
	TYPICAL SLAB EDGE
	#5x10'-0"x10'-0" HAIR PIN CENTERED IN SLAB
	12H HIGH 8" CMU SCREEN WALL W/WS IN GROUT FILLED CELLS AT 48" O.C. IN 3,000 PSI GROUT FILLED CELLS.
	SAW CUT JOINT
	6" THICK CONC. SLAB W/WWF6x6-W2.9xW2.9 ON 6 MIL VAPOR BARRIER ON COMPACTED, TERMITES TREATED FILL FURNISH W.W.F. IN FLAT SHEETS PLACE 2" BELOW TOP OF SLAB
	4" THICK CONC. SLAB W/WWF6x6-W1.4xW1.4 ON 10 MIL VAPOR BARRIER ON COMPACTED, TERMITES TREATED FILL FURNISH W.W.F. IN FLAT SHEETS PLACE 2" BELOW TOP OF SLAB
	CONTROL JOINT



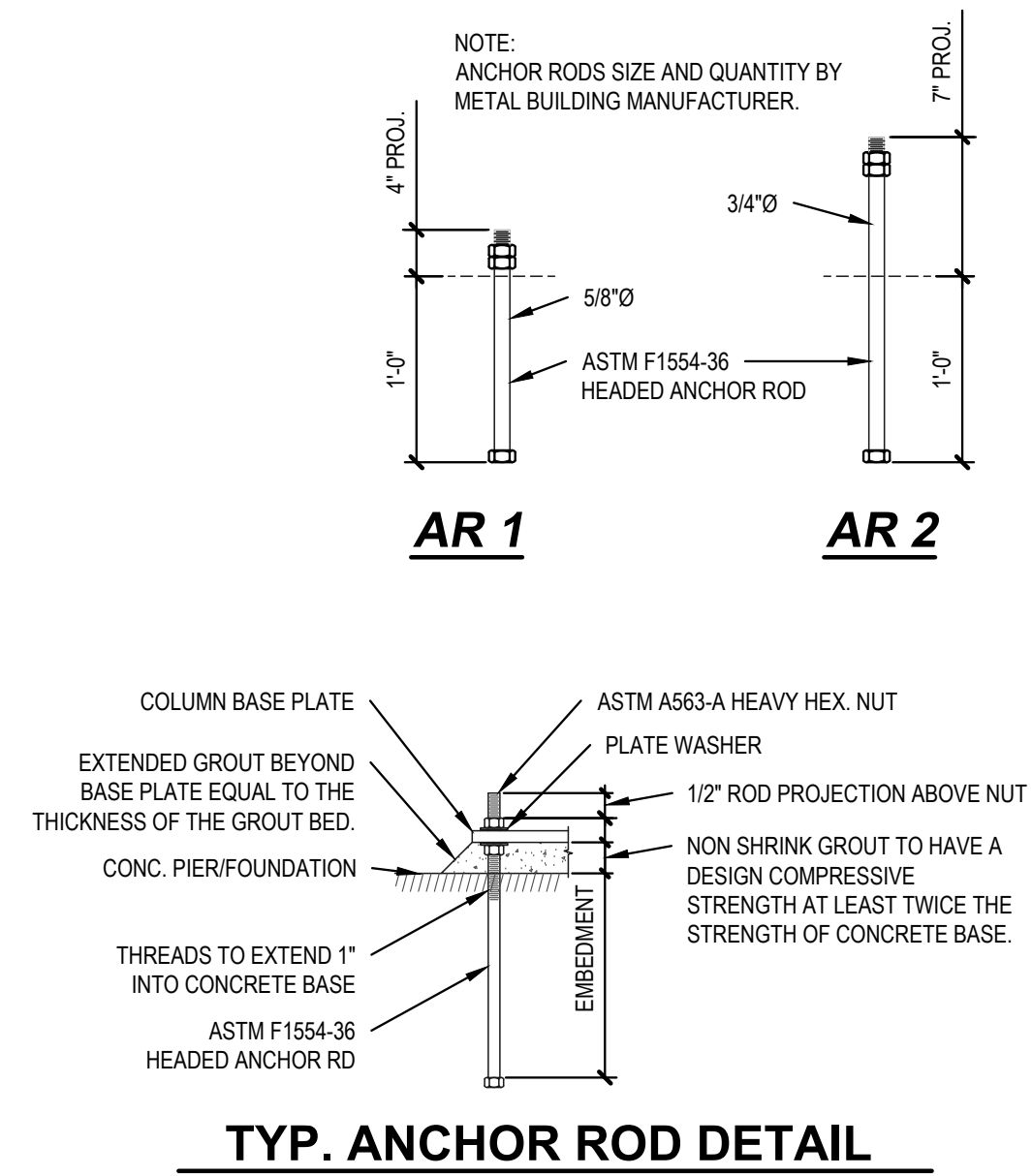
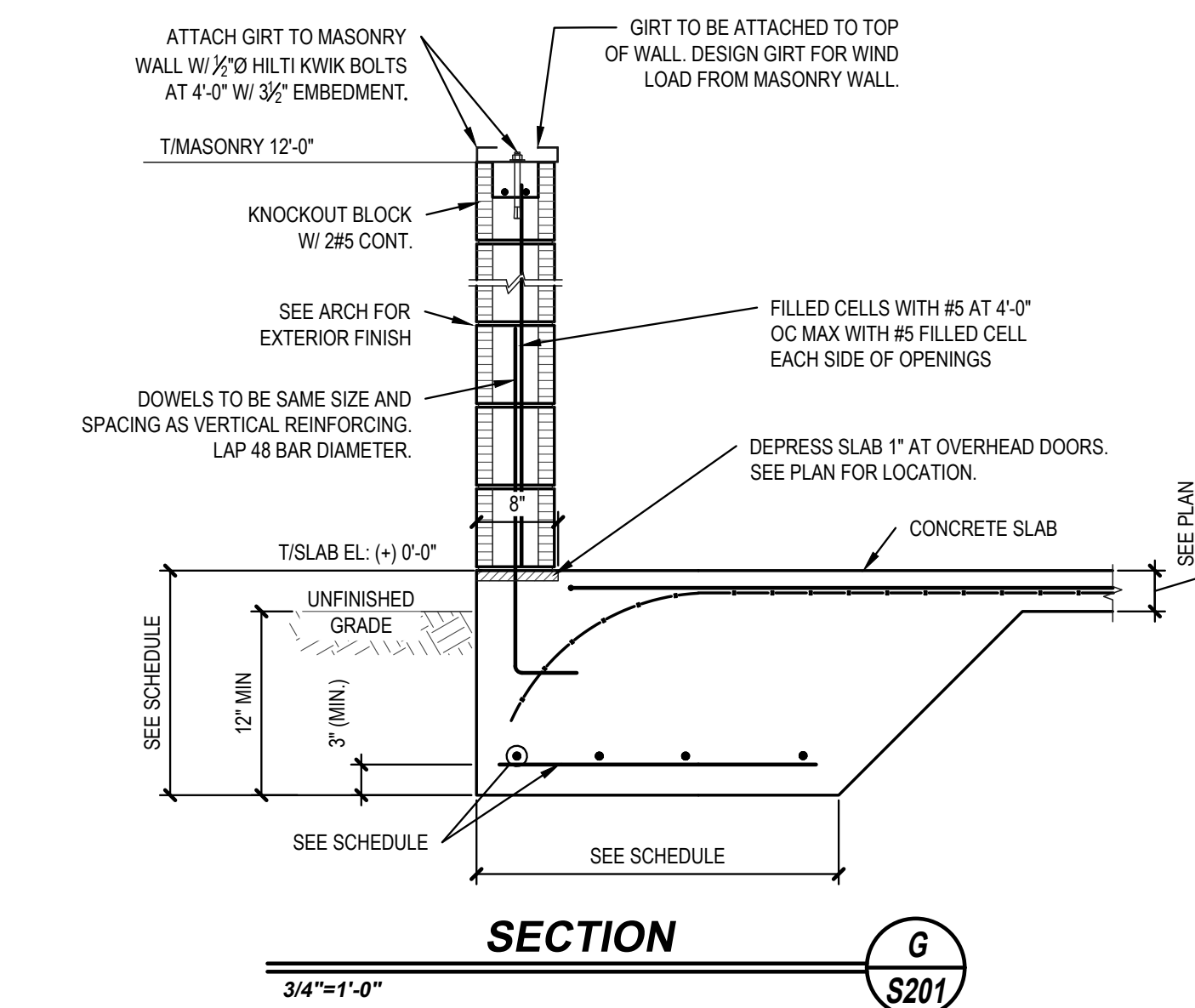
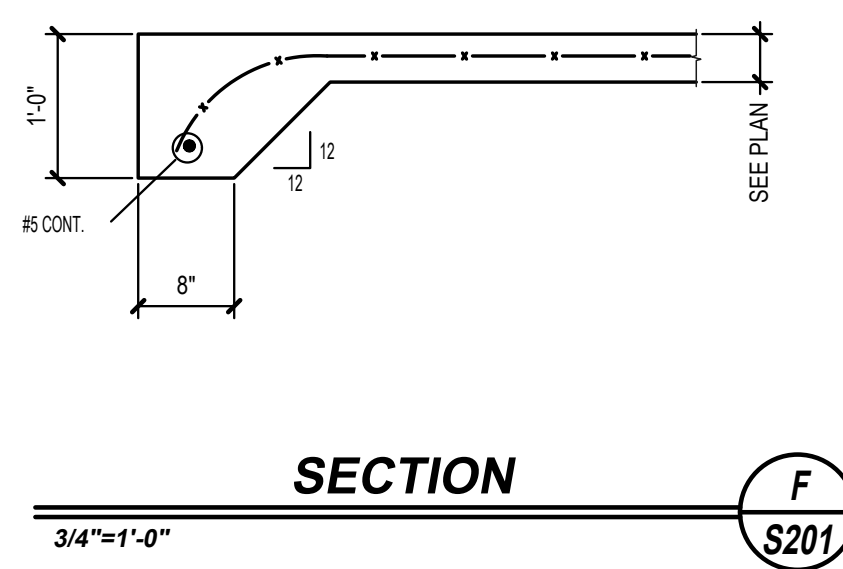
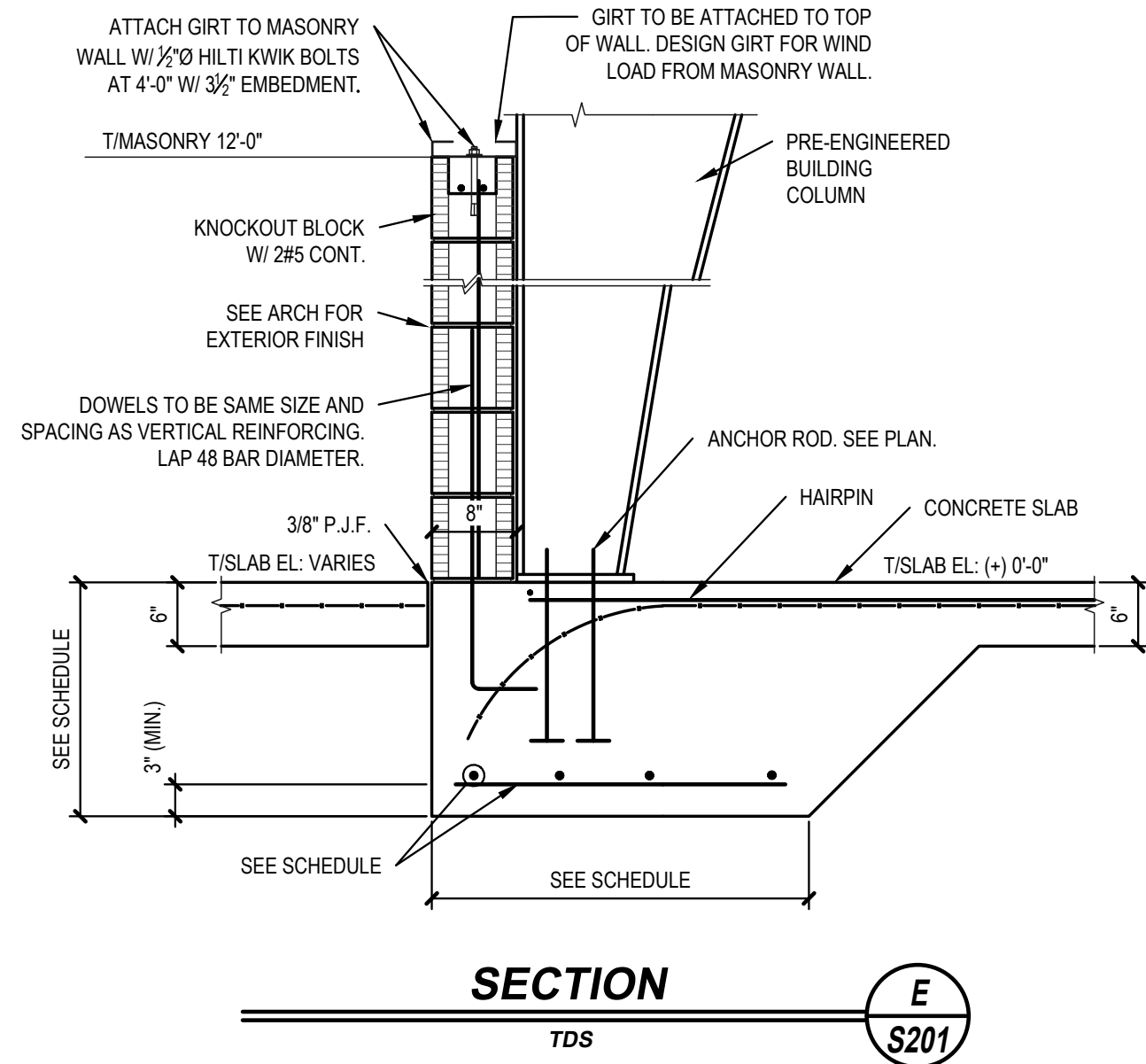
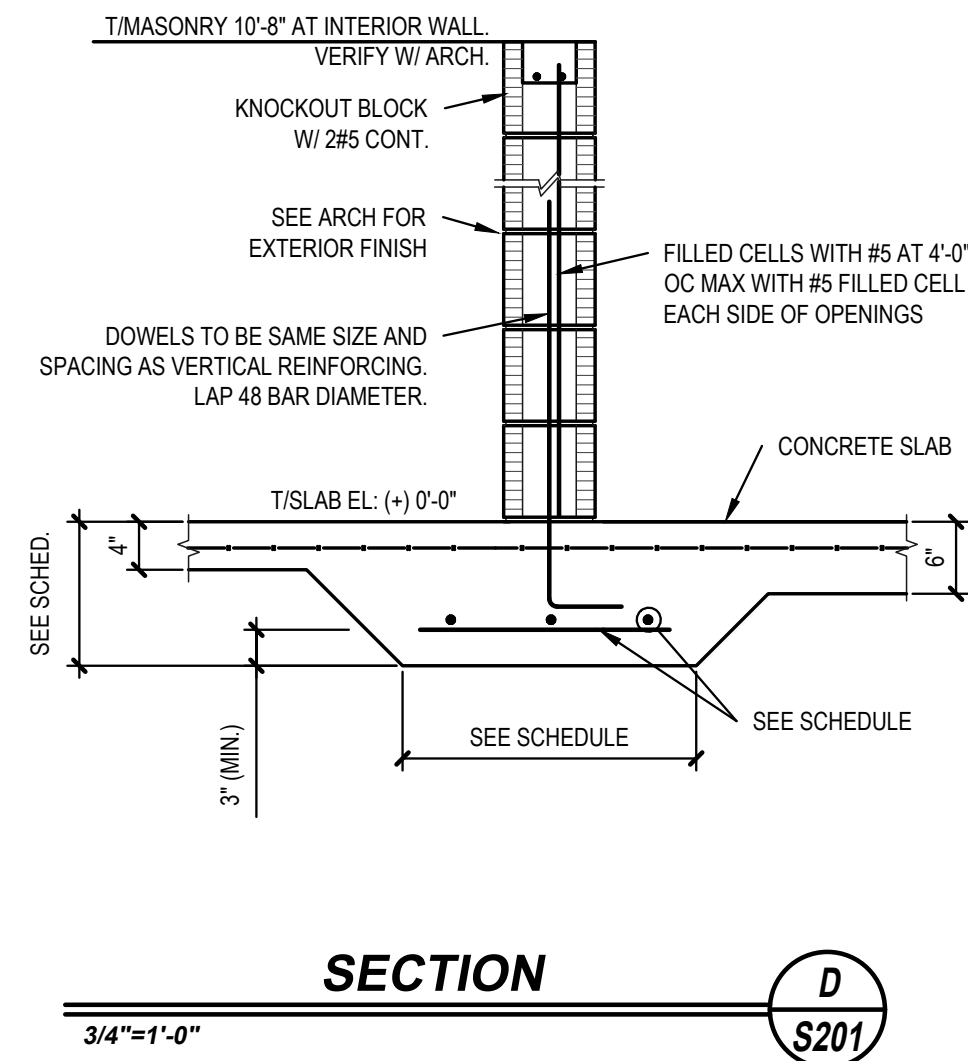
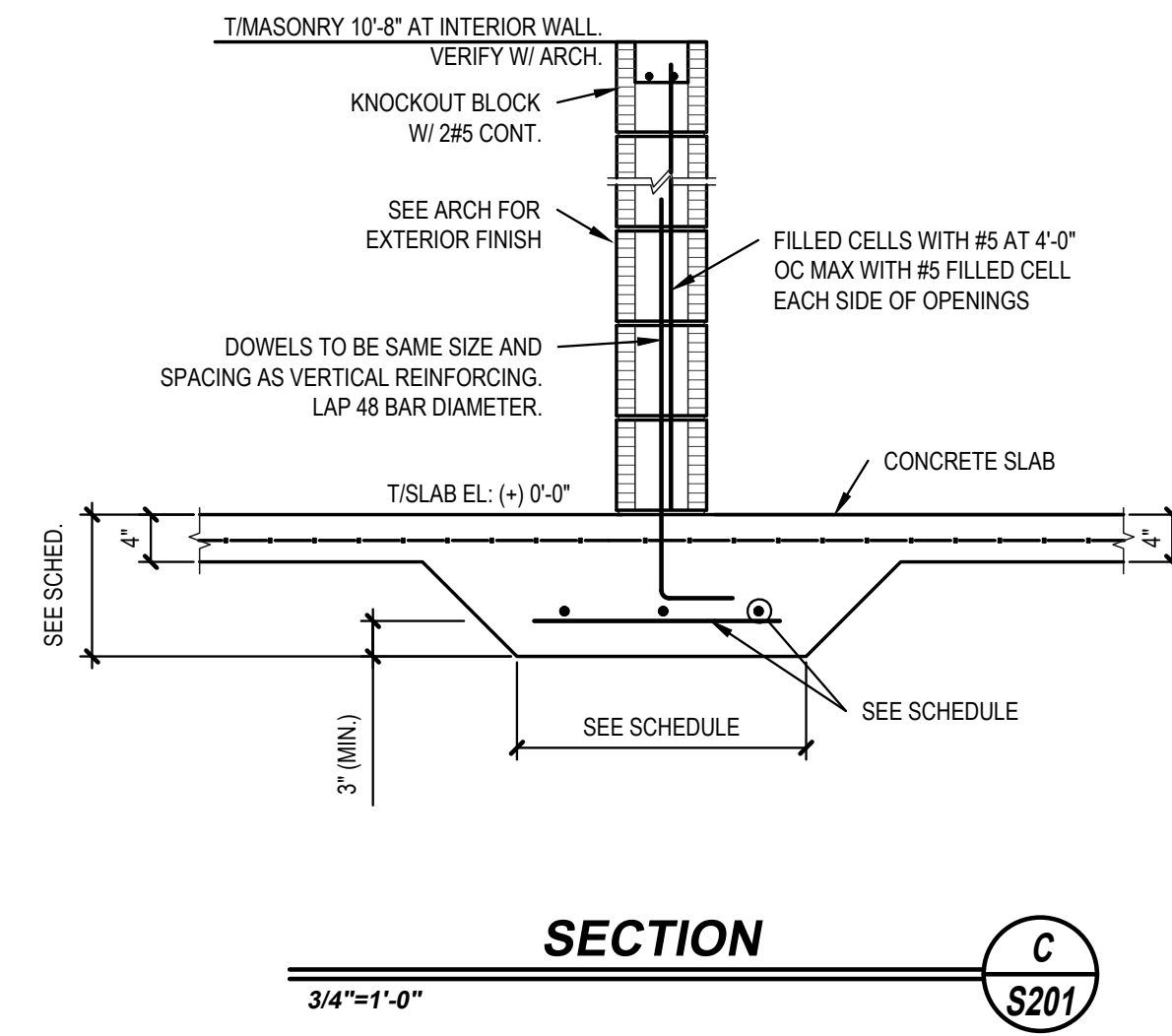
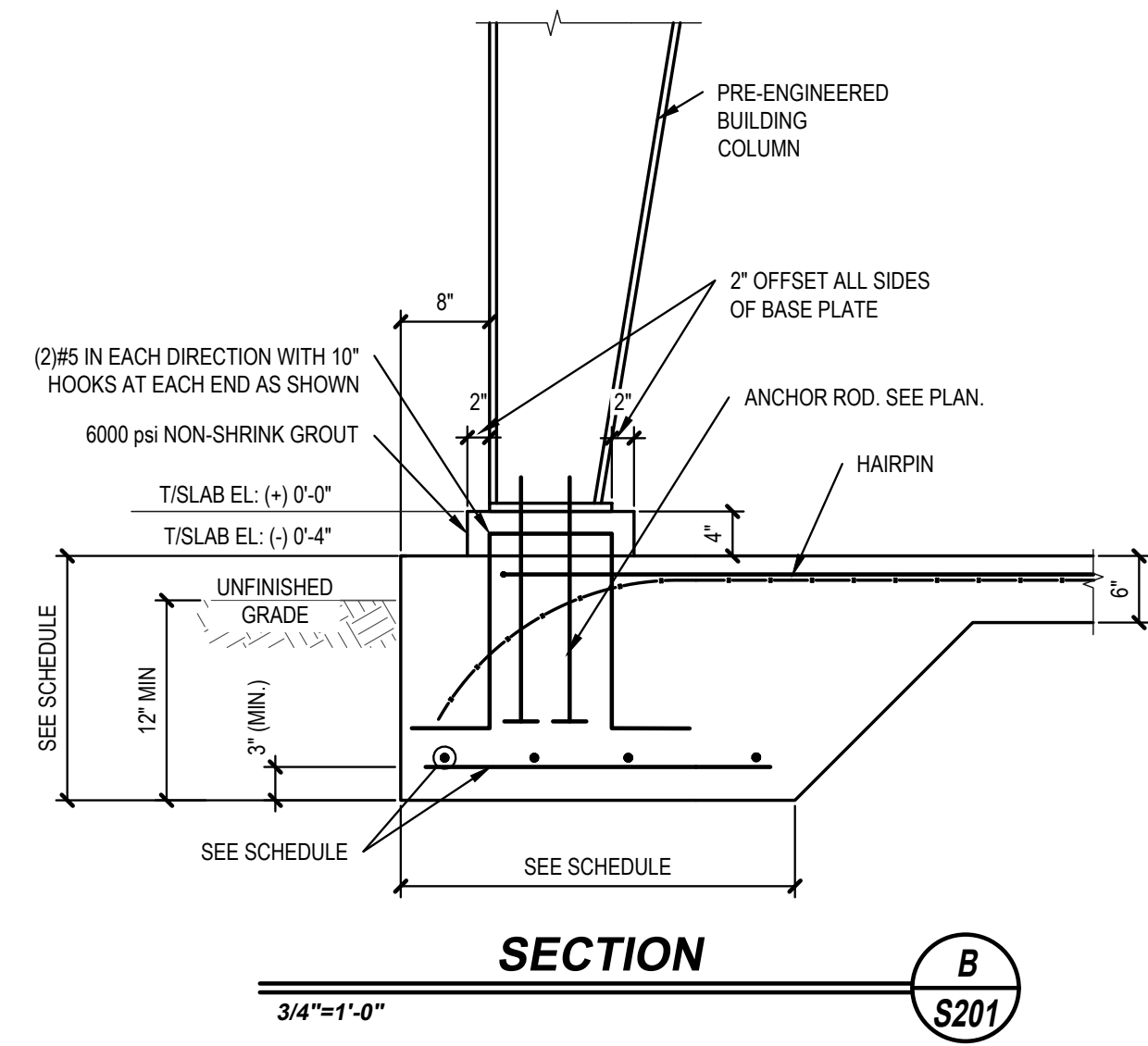
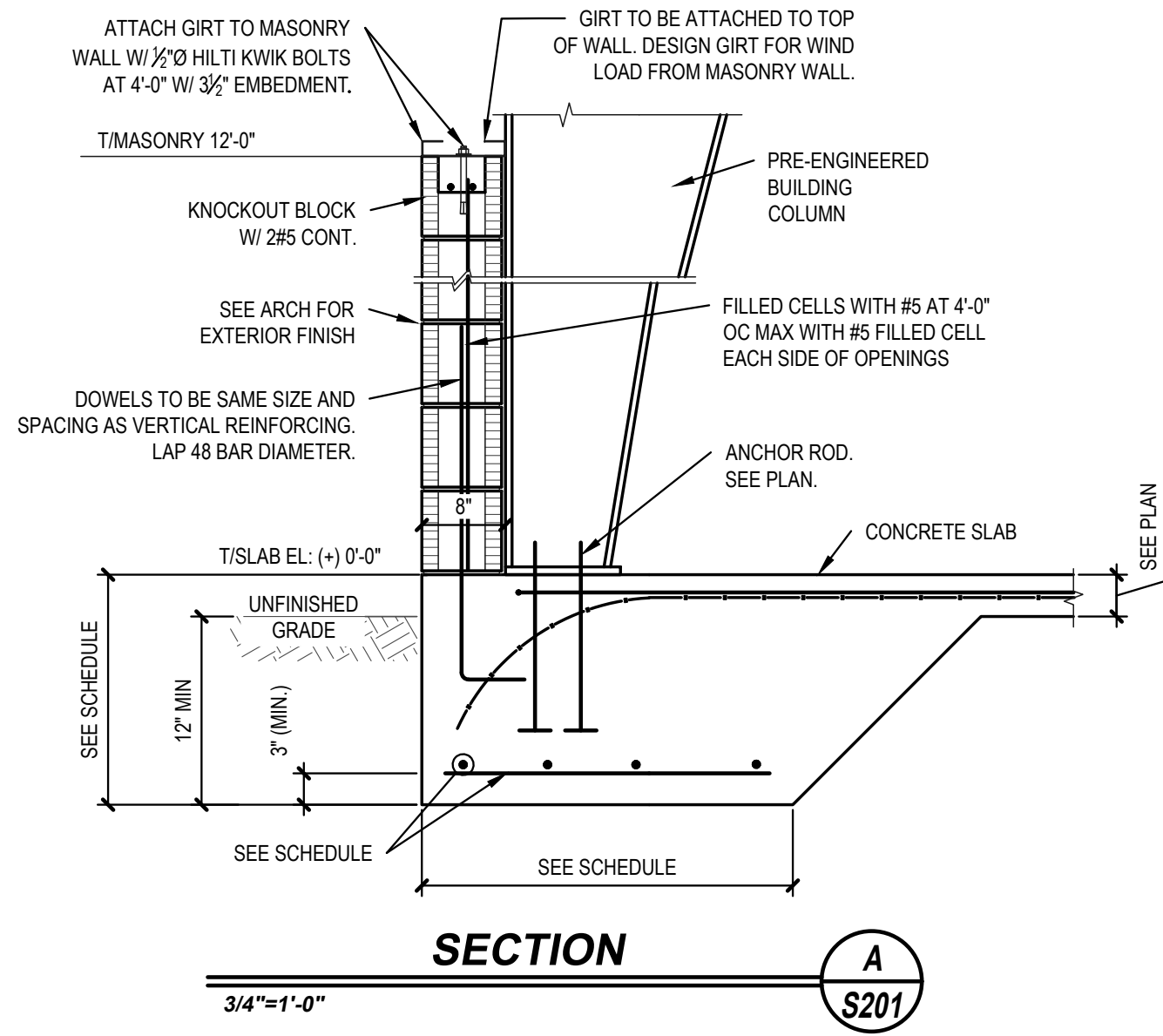
FRAMING SCHEMATIC
Scale: 1/16"=1'-0"

GRINDLEY WILLIAMS ENGINEERING
 4175 SOUTH PIPKIN RD, SUITE 210
 LAKELAND, FLORIDA
 863.676.2600
 grindleywilliams.com
 FL C.O.A. NO. 31483

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BID DOCUMENTS
 Highlands County Board of County Commissioners
 New Traffic Operations Building
 4490 Kenilworth Blvd.
 Sebring, FL 33870
 FOUNDATION / SLAB PLAN

CMHM ARCHITECTS INC.
 JOHN R. CURTIS, AIA, LEED AP
 BENJAMIN F. MUNDY, JR., AIA, LEED AP
 C. KEITH HUNNICUTT, AIA
 NEL C. MELEY, AIA, LEED AP
 1036 SOUTH FLORIDA AVENUE
 LAKELAND, FLORIDA
 TELEPHONE 863-688-8882
 MIdarch.com



THE PRESSURES INDICATED IN THIS CHART ARE ULTIMATE VALUES (LB/FT²) BASED ON ASCE 7-16

2020 FLORIDA BUILDING CODE, 7TH EDITION

ULTIMATE DESIGN WIND SPEED =	160 mph
NOMINAL DESIGN WIND SPEED =	124 mph
BUILDING RISK CATEGORY =	IV
EXPOSURE CATEGORY =	D
ENCLOSURE CLASSIFICATION =	Enclosed

ASCE 7-16 COMPONENTS & CLADDING PRESSURES

Zone 1'		Zone 1		Zone 2		Zone 3	
10 SF	32.0 -72.0	10 SF	32.0 -125.3	10 SF	32.0 -165.2	10 SF	32.0 -225.2
20 SF	30.0 -72.0	20 SF	30.0 -117.0	20 SF	30.0 -154.6	20 SF	30.0 -203.9
50 SF	27.3 -72.0	50 SF	27.3 -106.1	50 SF	27.3 -140.6	50 SF	27.3 -175.8
100 SF	25.3 -72.0	100 SF	25.3 -97.8	100 SF	25.3 -129.9	100 SF	25.3 -154.6
200 SF	25.3 -61.9	200 SF	25.3 -89.5	200 SF	25.3 -119.3	200 SF	25.3 -133.4
500 SF	25.3 -48.7	500 SF	25.3 -78.6	500 SF	25.3 -105.3	500 SF	25.3 -105.3
1000 SF	25.3 -38.6	1000 SF	25.3 -78.6	1000 SF	25.3 -105.3	1000 SF	25.3 -105.3

O.H.	Zone 1	Zone 1'	Zone 2	Zone 3
10 SF	-125.3	-125.3	-165.2	-225.2
20 SF	-123.2	-123.2	-151.1	-200.4
50 SF	-120.6	-120.6	-132.3	-167.6
100 SF	-118.6	-118.6	-118.2	-142.8
200 SF	-101.4	-101.4	-104.0	-118.0
500 SF	-78.6	-78.6	-85.3	-85.3

WALLS

Zone 4		Zone 5	
10 SF	72.0 -77.9	10 SF	72.0 -95.9
20 SF	68.8 -74.8	20 SF	68.8 -89.6
50 SF	64.6 -70.5	50 SF	64.6 -81.1
100 SF	61.4 -67.4	100 SF	61.4 -74.8
200 SF	58.2 -64.2	200 SF	58.2 -68.4
500 SF	54.0 -60.0	500 SF	54.0 -60.0

PARAPETS

CASE A - WINDWARD		CASE B - LEEWARD	
Zone 4	Zone 5	Zone 4	Zone 5
10 SF	237.2 297.1	10 SF	-149.9 -167.9
20 SF	223.4 272.7	20 SF	-143.5 -158.3
50 SF	205.1 240.4	50 SF	-135.1 -145.7
100 SF	191.3 216.0	100 SF	-128.7 -136.1

- GENERAL STRUCTURAL NOTES**
- THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 7TH EDITION (2020).
 - ULTIMATE DESIGN WIND VELOCITY IS A LINEAR INTERPOLATION FROM FIGURE 1609 OF THE FLORIDA BUILDING CODE
 - CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO START OF FABRICATION AND CONSTRUCTION
 - CONTRACTOR SHALL VERIFY ALL EQUIPMENT SUPPORTS AND OPENINGS WITH MANUFACTURERS DATA FOR EQUIPMENT PURCHASED.
 - CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS AND DETAILS BEFORE PROCEEDING WITH WORK.
 - CONTRACTOR SHALL FULLY BRACE AND PROTECT ALL WORK IN PROGRESS UNTIL THE BUILDING IS COMPLETED.

- CONCRETE**
- ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI-301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
 - WELDED WIRE FABRIC SHALL BE PLACED (2) TWO INCHES BELOW THE TOP OF ALL SLABS ON GRADE. LAP FOR FABRIC SHALL BE (2) TWO FULL SPACES OF THE CROSS WIRES.
 - WELDED WIRE FABRIC SHALL CONFORM TO ASTM-A185 (SMOOTH WIRE).
 - REINFORCING BARS IN WALLS, FOUNDATIONS & BEAMS SHALL BE CONTINUOUS AROUND CORNERS.
 - REINFORCING BAR SPLICES SHALL BE 36 BAR DIAMETERS (MIN.) HOOKS TO BE ACI STANDARD.
 - SPLICE CONTINUOUS TOP BARS AT CENTER BETWEEN SUPPORTS AND SPLICE CONTINUOUS BOTTOM BARS AT SUPPORTS. TOP BARS SHALL BE HOOKED WHERE BARS ARE NOT CONTINUOUS.

- FOUNDATIONS**
- ASSUMED DESIGN SOIL BEARING PRESSURE = 2000 PSF.

- MASONRY**
- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM-C90 GRADE N, TYPE II, NORMAL WEIGHT.
 - MORTAR SHALL BE TYPE S CONFORMING TO ASTM-C270.
 - REINFORCING BAR SPLICES IN MASONRY SHALL BE 48 BAR DIAMETERS.
 - JOINT REINFORCEMENT TO BE STANDARD WEIGHT LADUR TYPE, 9 GA. GALVANIZED STEEL. INSTALL HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. (U.O.N.) FACTORY FABRICATED SECTIONS SHALL BE INSTALLED AT CORNERS AND WALL INTERSECTIONS.
 - GROUT SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS. SLUMP = 8 - 10 INCHES.
 - MASONRY ANCHORS AND TIES SHALL BE ZINC COATED IN ACCORDANCE WITH ASTM - A153.
 - VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT INTERVALS OF 192 DIAMETERS.
 - PROVIDE HOOKS IN CONCRETE BEAMS FOR VERTICAL REINFORCEMENT FOR CONCRETE COLUMNS AND FILL CELLS WHERE VERTICAL REINFORCEMENT IS NOT CONTINUOUS.

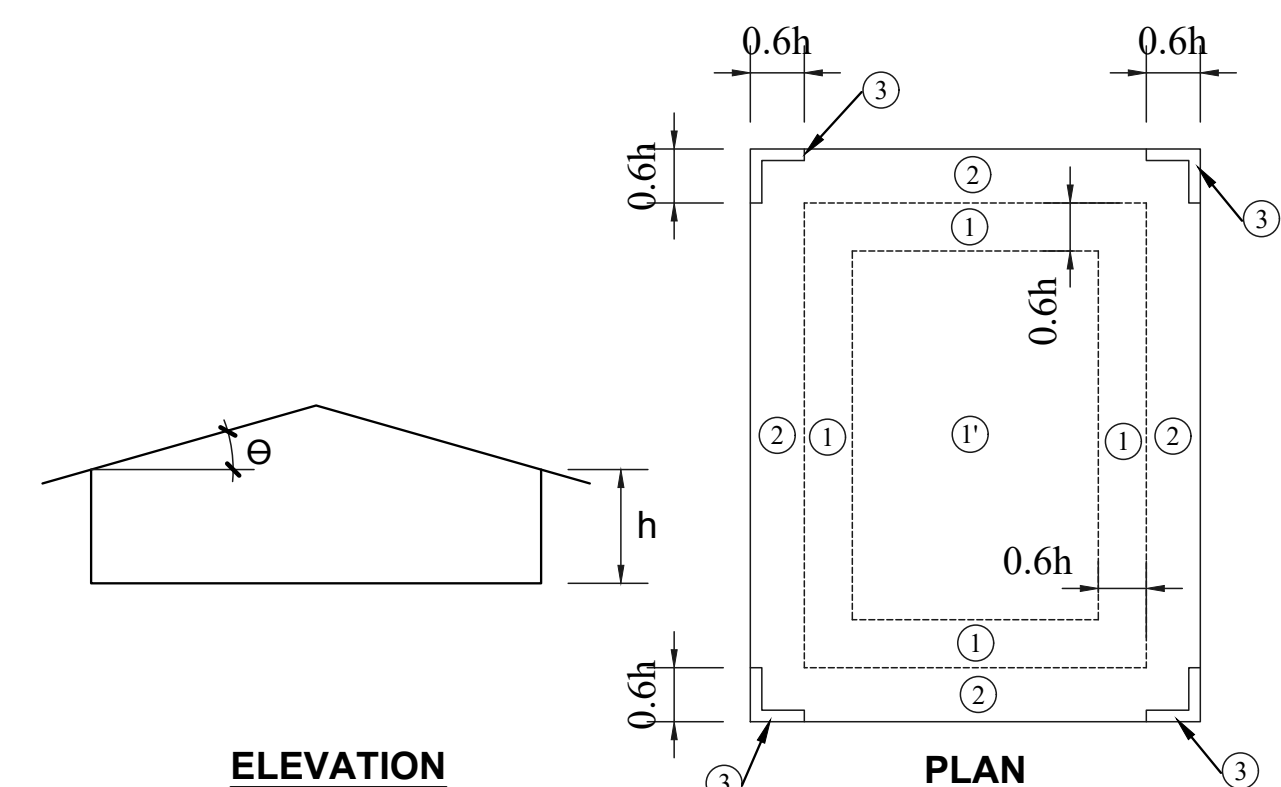
CONCRETE MIX DESIGN SHALL BE SUBMITTED FOR REVIEW AND SHALL PROVIDE NORMAL WEIGHT CONCRETE WITH THE FOLLOWING PROPERTIES:

CLASS OF CONCRETE	MAXIMUM SIZE OF AGGREGATE	MINIMUM CEMENT CONTENT	MAXIMUM WATER/CEMENT RATIO	MAXIMUM SLUMP*
FOOTING/SLAB 3000 PSI	3/4"	490#	.53	4"
CELL FILL 3000 PSI	3/8"	650#	.58	9"

*MEASURED AT POINT OF PLACEMENT AFTER ALL WATER HAS BEEN ADDED.

DESIGN LOADS:

DEAD LOAD = SELF WEIGHT OF STRUCTURE
 LIVE LOADS = SLAB ON GRADE = 40PSF OR 3000 LBS (PER ASCE 7-10 LIVE LOAD REQUIREMENTS FOR PASSENGER VEHICLES AND GARAGES)
 ROOF = 20PSF W/ MODIFICATIONS FOR SLOPE AND AREA
 WIND LOADS = SEE C&W WIND PRESSURE TABLE



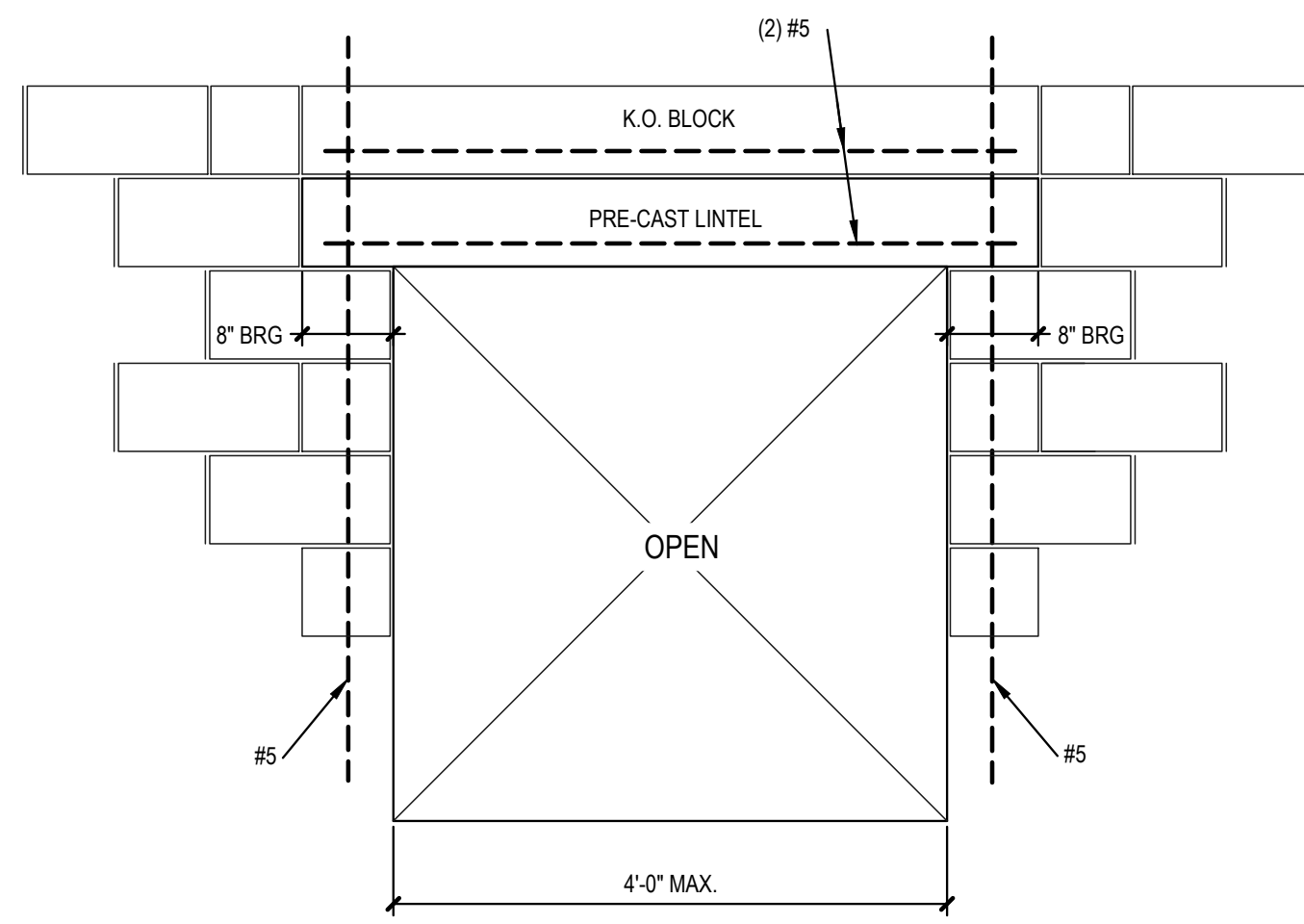
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 4175 SOUTH PIPKIN RD, SUITE 210
 LAKELAND, FLORIDA
 863.676.2600
 grindleywilliams.com
 FL C.O.A. NO. 31483

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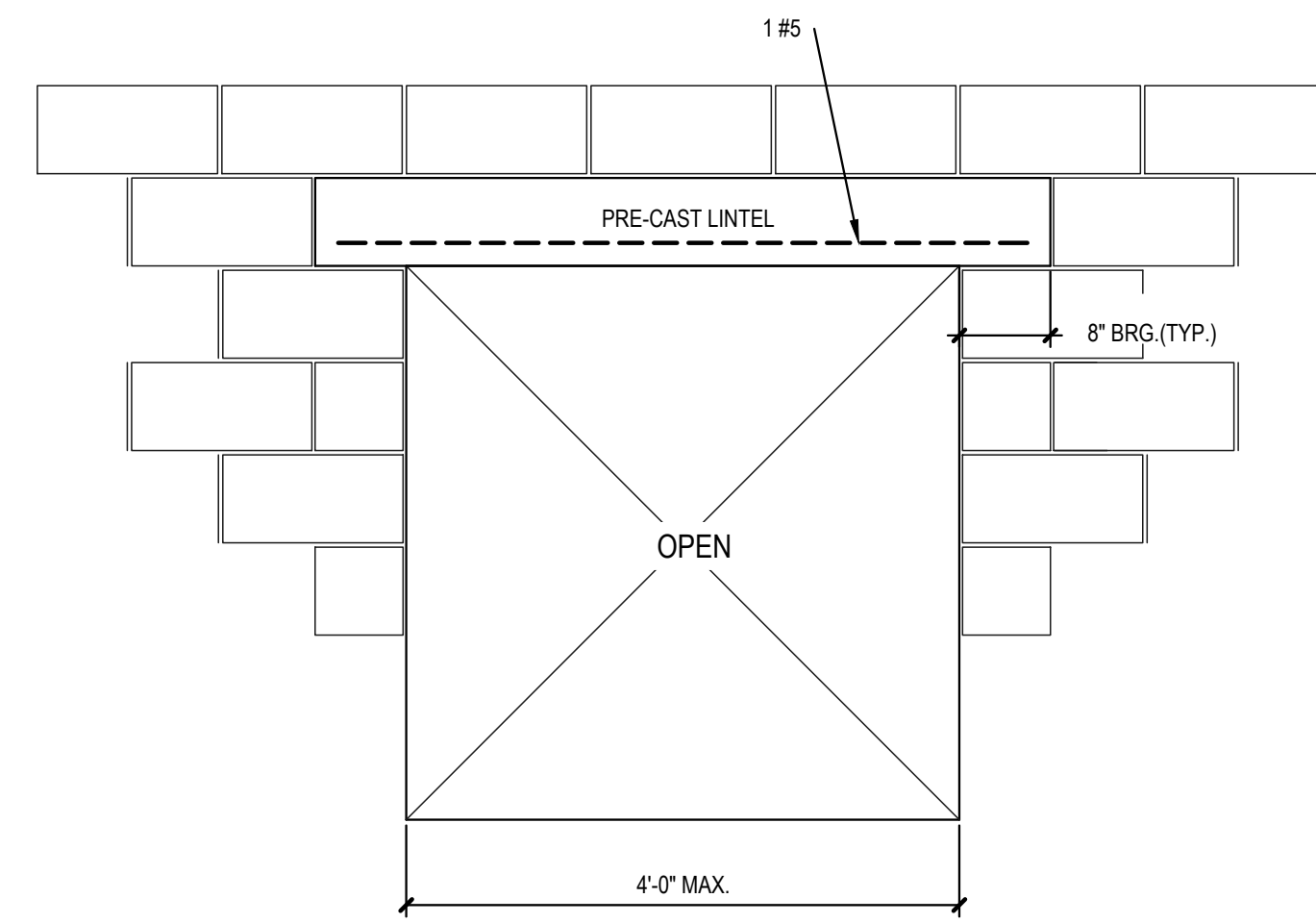
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 Sebring, FL 33870

REVISIONS
 CONSTRUCTION 03/29/2023
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S201
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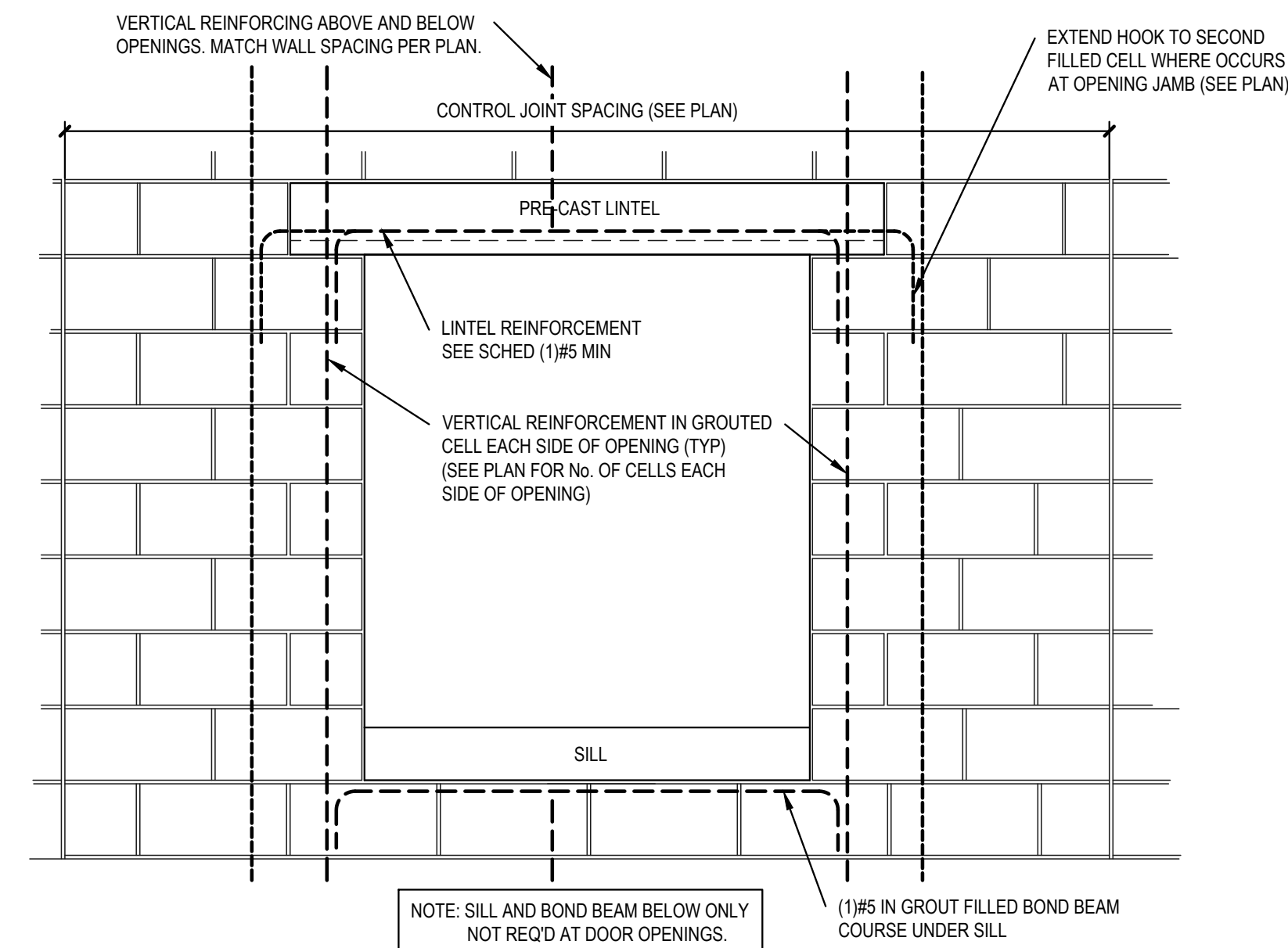
CMHM ARCHITECTS INC.
 JOHN R. CURTIS, AIA, LEED
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 C. KEITH HUNNICUTT, AIA
 NEL C. MELEY, AIA, LEED AP
 1036 SOUTH FLORIDA AVENUE
 LAKELAND, FLORIDA
 TELEPHONE 863-688-8882
 FAX 863-688-8882



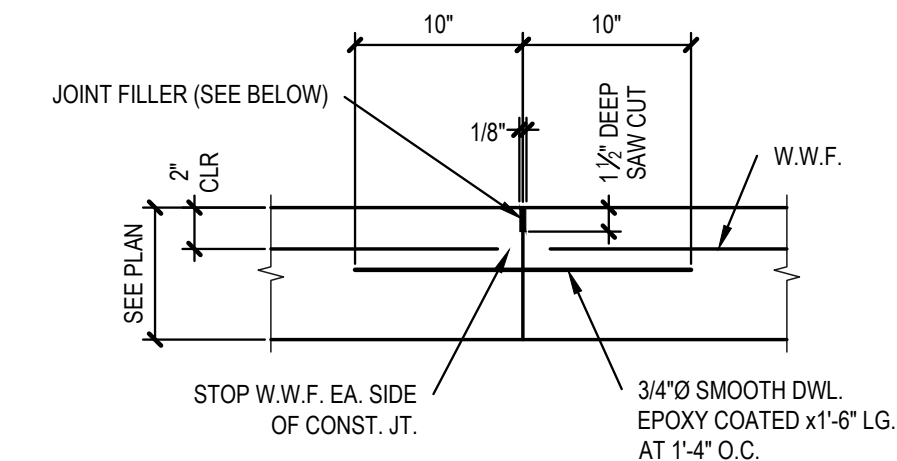
TYP. DOOR OPENING IN 8" MASONRY WALL (U.N.O.)



TYP. OPENING IN 8" NON-BEARING INTERIOR MASONRY WALL (U.N.O.)



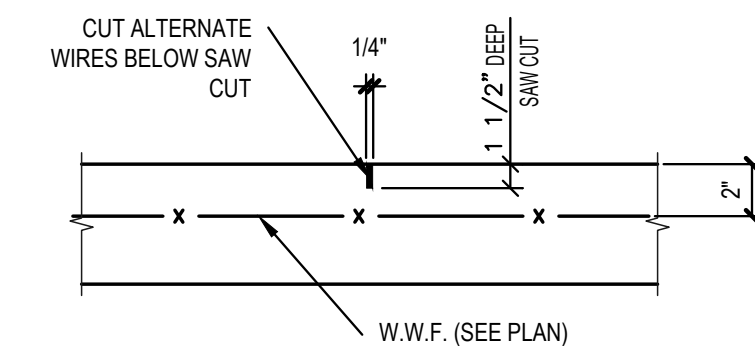
TYP. WINDOW OPENING REINFORCEMENT BETWEEN MASONRY CONTROL JOINTS IN EXTERIOR WALLS



NOTE:
 1. GREASE PROJECTING END PRIOR TO PLACEMENT OF ADJACENT SLAB.
 2. SAW CUT TO BE MADE AS SOON AS POSSIBLE USING AN EARLY ENTRY SAW, BUT NOT EXCEED 8 HRS. AFTER SLAB IS PLACED.

TYPICAL CONSTRUCTION JOINT (C.J.)

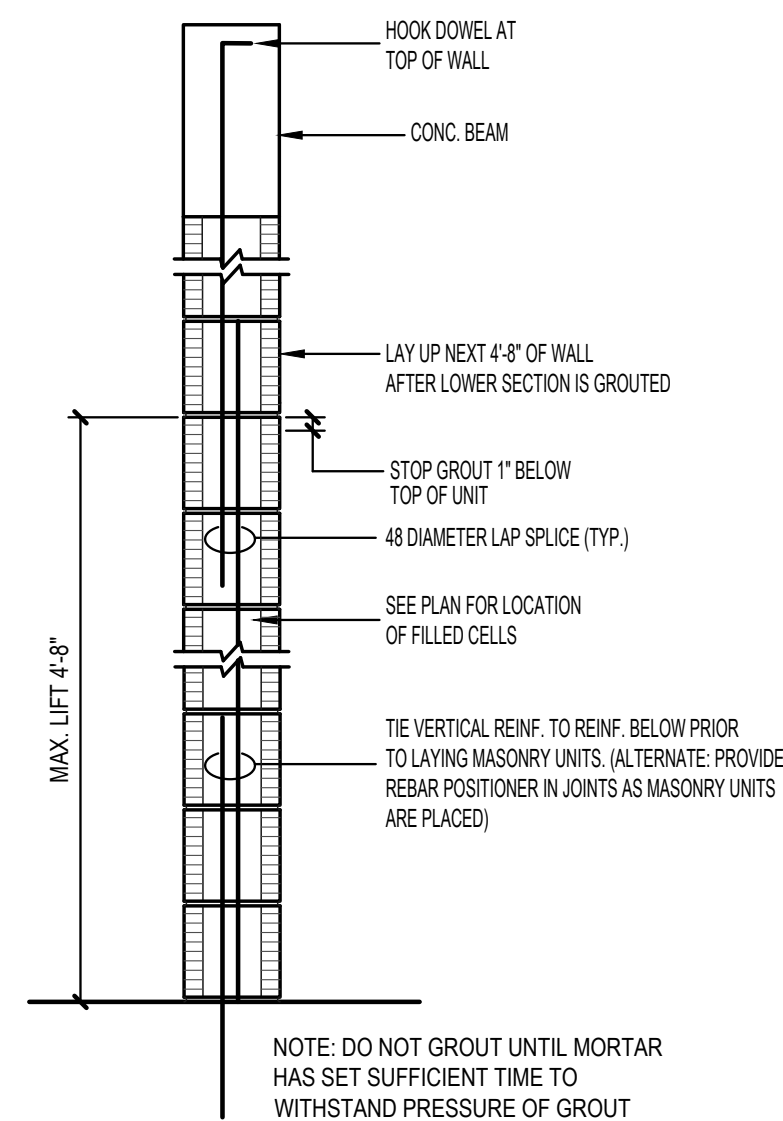
JOINT FILLER TO BE SILA SIKADUR CJR LPL



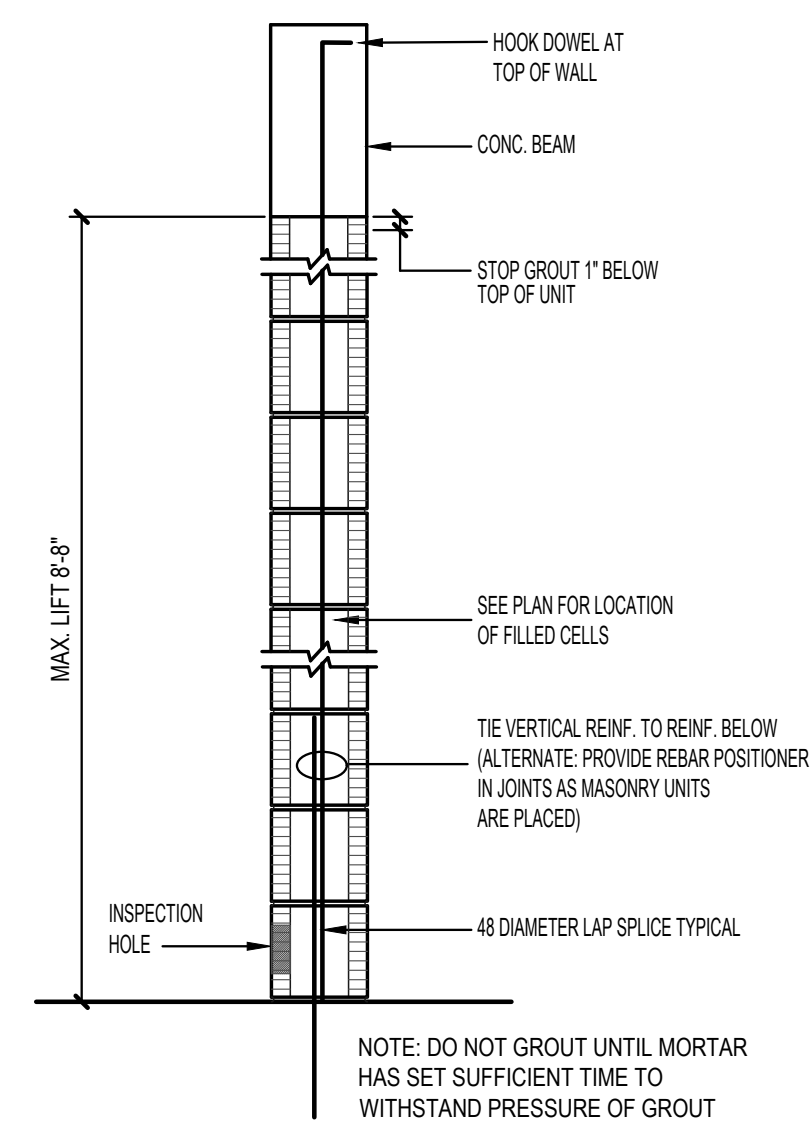
NOTE:
 SAW CUT TO BE MADE AS SOON AS POSSIBLE, BUT NOT EXCEED 8 HRS. AFTER SLAB IS PLACED.

TYPICAL SAWED CONTROL JOINT

JOINT FILLER TO BE SILA SIKADUR CJR LPL

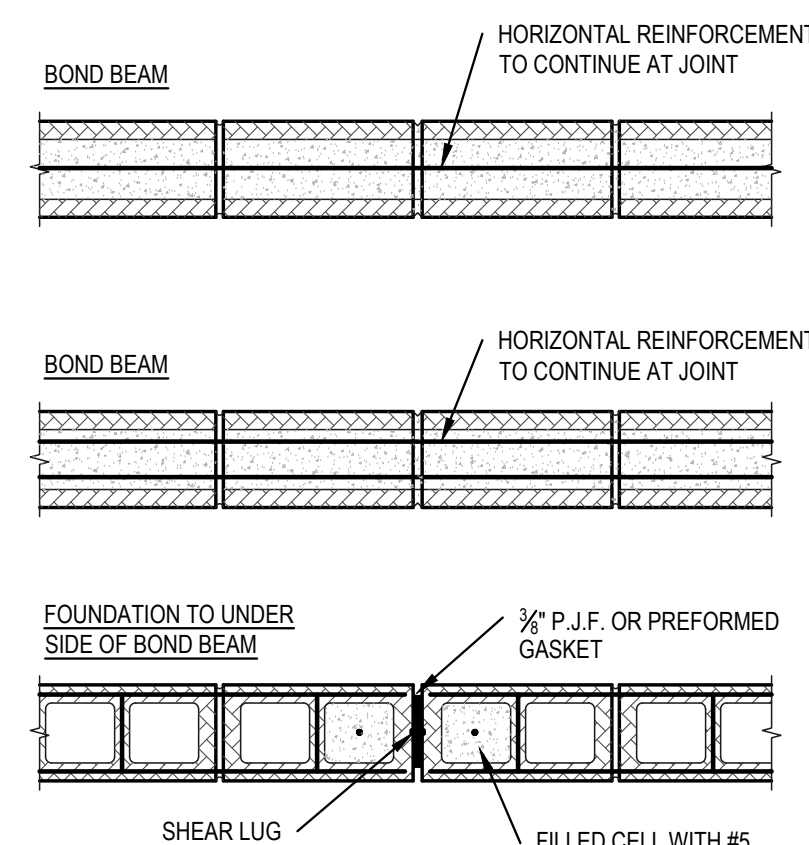


TYPICAL LOW LIFT GROUTING



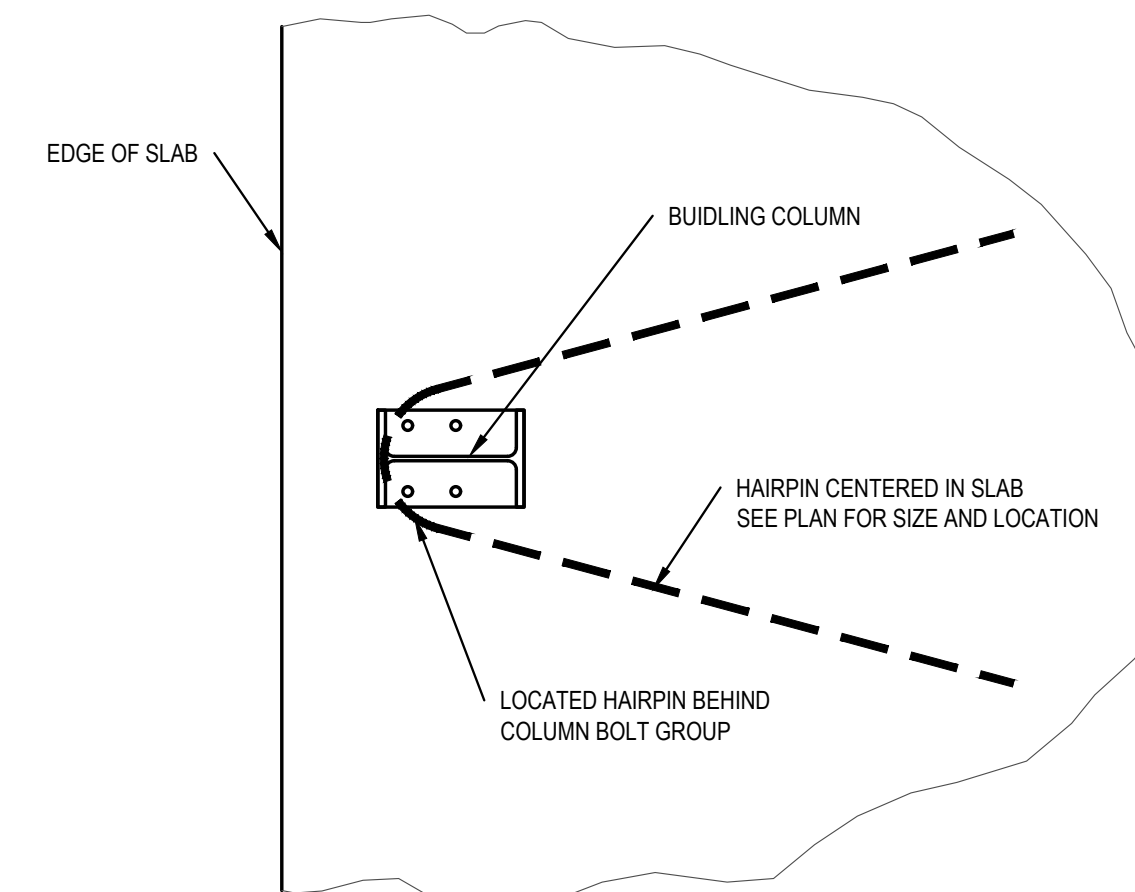
TYPICAL HIGH LIFT GROUTING

NOTE: ALLOWED ON 12" CMU ONLY.

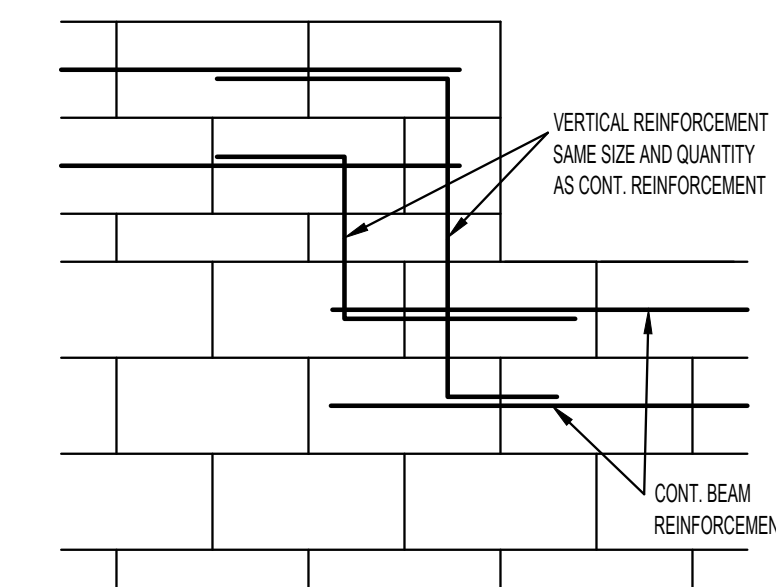


NOTE:
 1. DISCONTINUE HORIZONTAL JOINT REINF. AT CONTROL JOINT
 2. CONTROL JOINTS TO BE LOCATED AT 25'-0" MAX OR 1 1/2" TIMES WALL HEIGHT AND AT WALL HEIGHT CHANGES U.N.O.
 3. FORM A GROOVE 3/8" WIDE x 3/4" DEEP JOINT IN BOND BEAM DIRECTLY ABOVE WALL JOINT

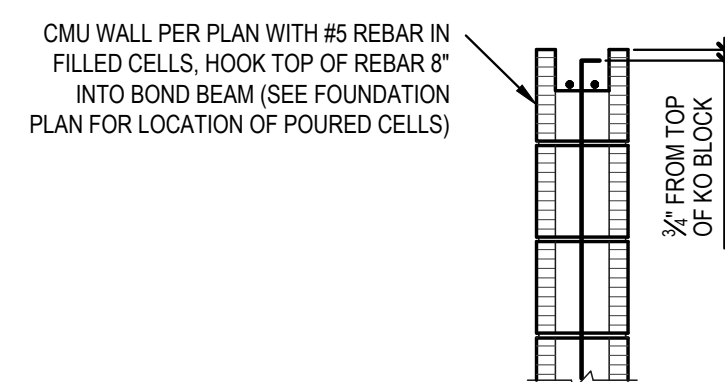
TYP. CONTROL JOINT IN MASONRY



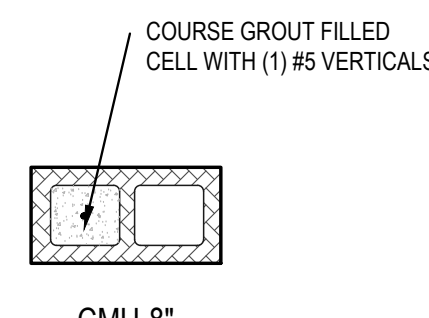
TYPICAL HAIRPIN PLACEMENT DETAIL



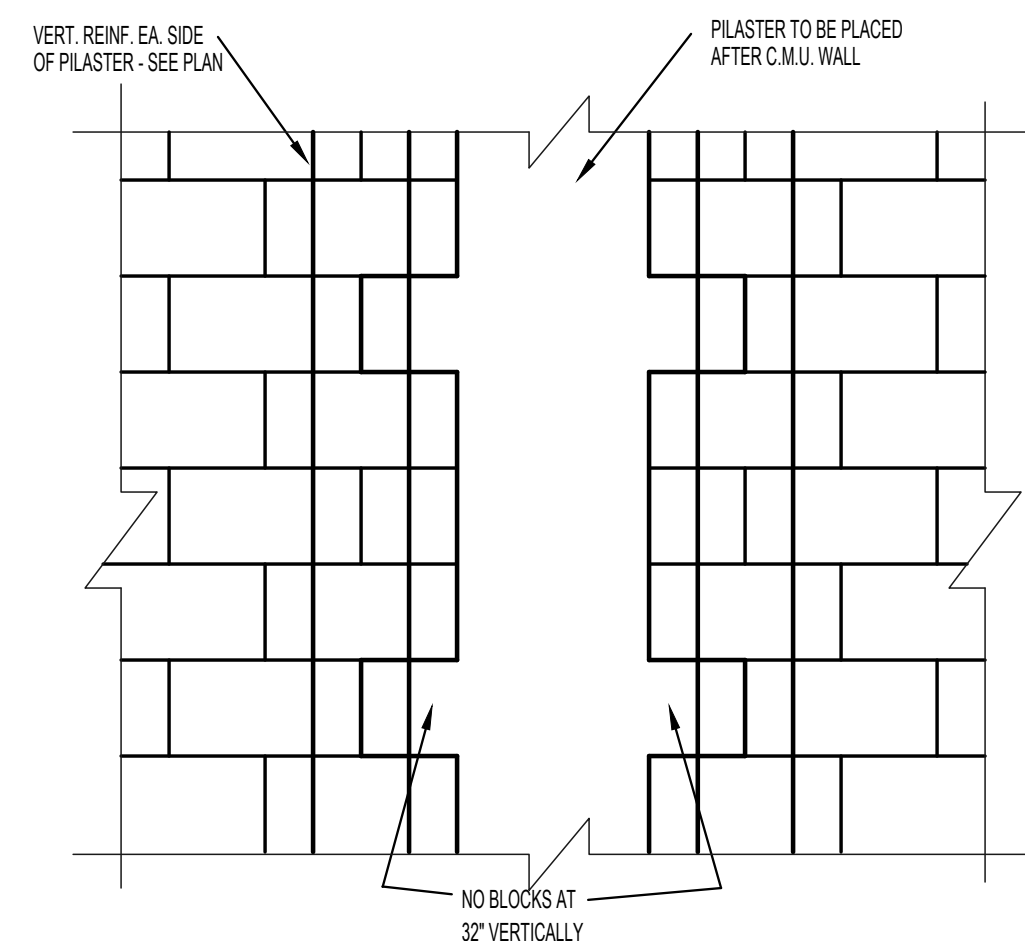
TYP. STEPPED BOND BEAM



TYP. REINFORCEMENT HOOK INTO KO BLOCK

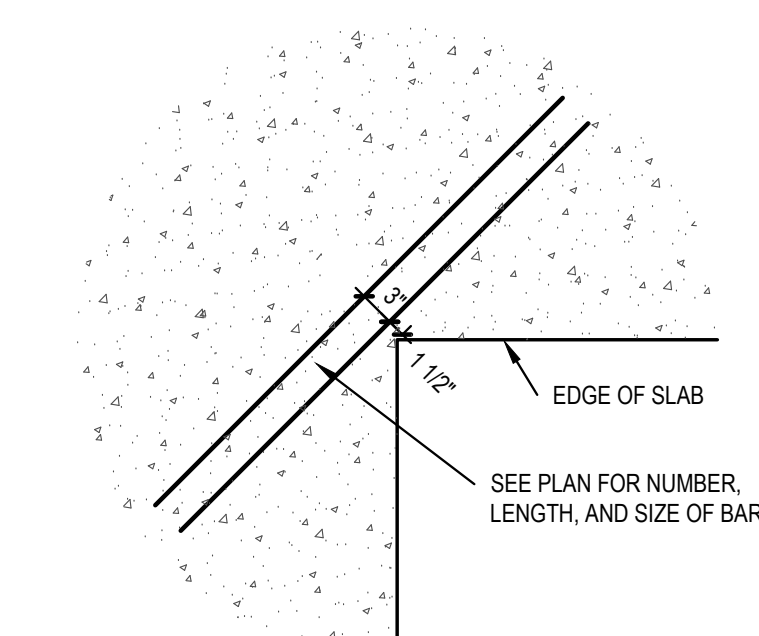


FILLED CELL WITH DOWELS



TYP. PILASTER TO MASONRY WALL DETAIL

(OMIT AT C.J.M.)



TYP. SLAB REINFORCEMENT AT INSIDE CORNER

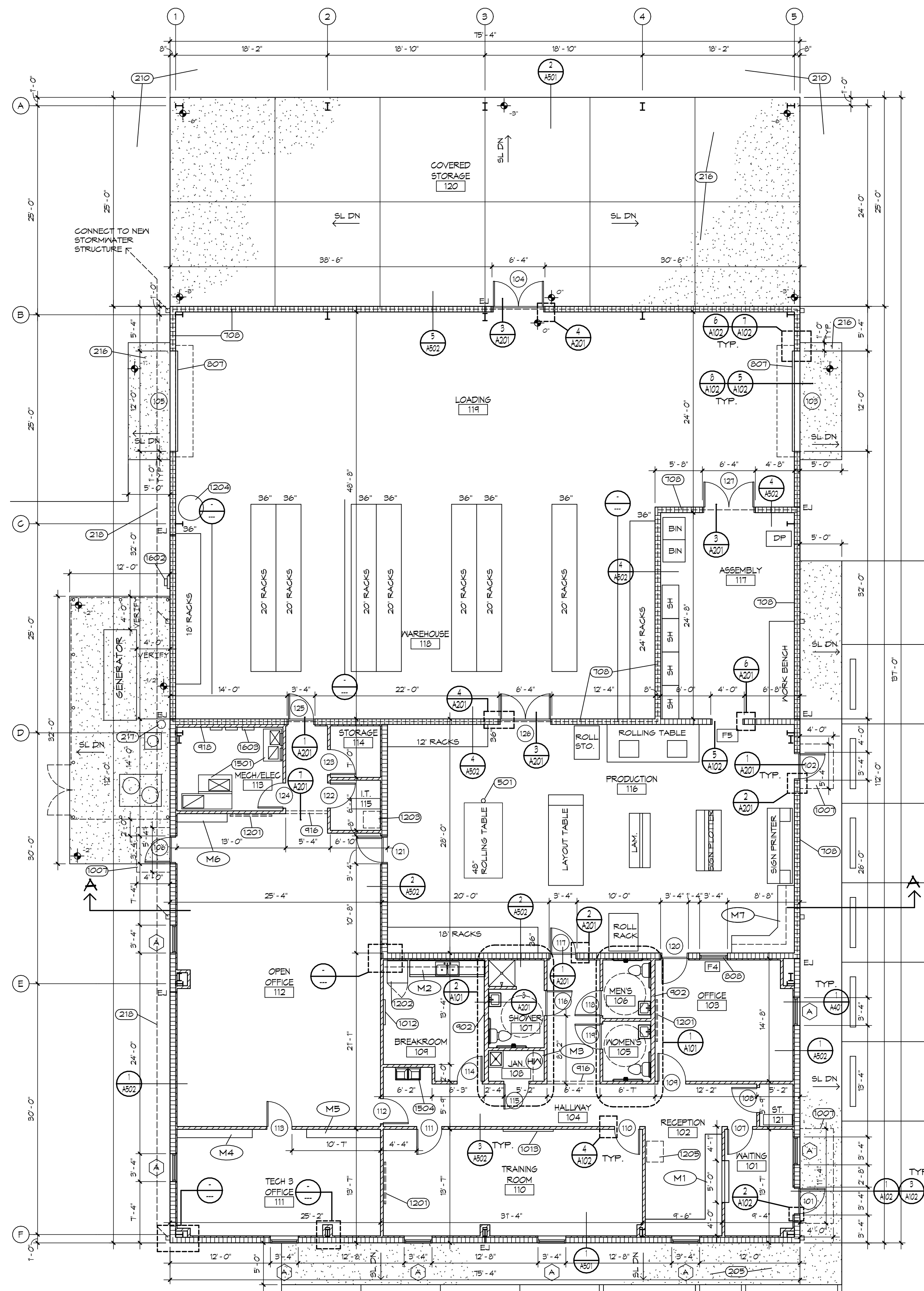
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 4175 SOUTH PIPKIN RD, SUITE 210
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 863.676.2600
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 FL C.O.A. NO. 31483

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 1036 SOUTH FLORIDA AVENUE
 LAKELAND, FLORIDA
 TELEPHONE 863-688-8882
 MIMARCH.COM

BID DOCUMENTS
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 New Traffic Operations Building
 4490 Kenilworth Blvd.
 Sebring, FL 33870
 MASONRY DETAILS



WALL TYPE LEGEND

- 8" CMU WITH RIGID INSULATION, FURRING AND DRYWALL FINISH. REFER TO DETAILS.
- 8" CMU. STRIKE ALL EXPOSED JOINTS CONCAVE. REFER TO DETAILS.
- 8" CMU. STRIKE ALL EXPOSED JOINTS CONCAVE. FILL ALL CELLS WITH FOAM INSULATION
- 3 5/8" GALV. METAL STUDS, 16" O.C. WITH ACOUSTICAL BATT INSULATION FULL HEIGHT AND 5/8" THICK DRYWALL BOTH SIDES. BRACE TOP OF WALL TO STRUCTURE ABOVE.

FLOOR PLAN
1/8" = 1'-0"

5195 GSF - CONDITIONED SPACE
3929 GSF - NON-CONDITIONED ENCLOSED SPACE
1893 GSF - OPEN SPACE
10,346 GSF TOTAL

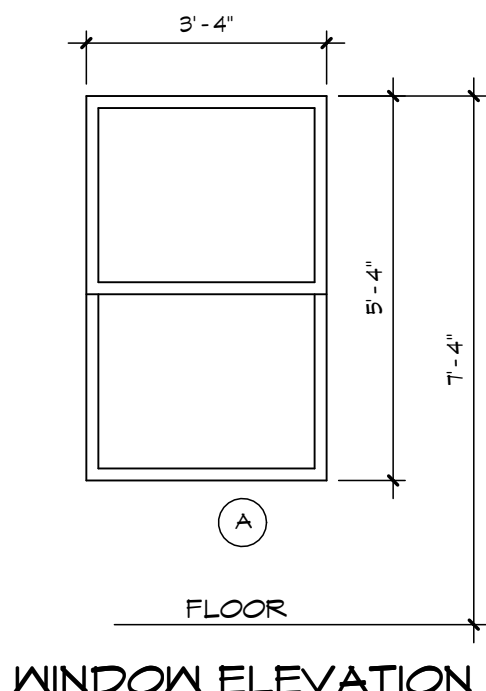
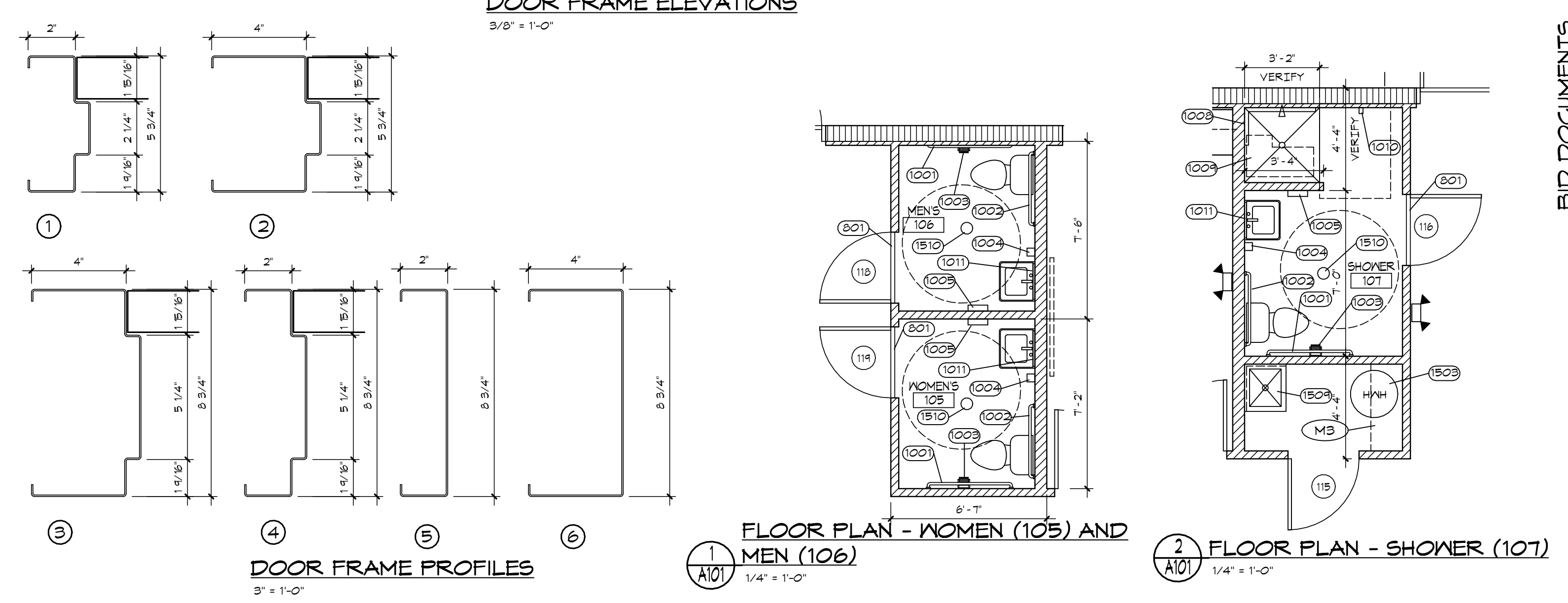
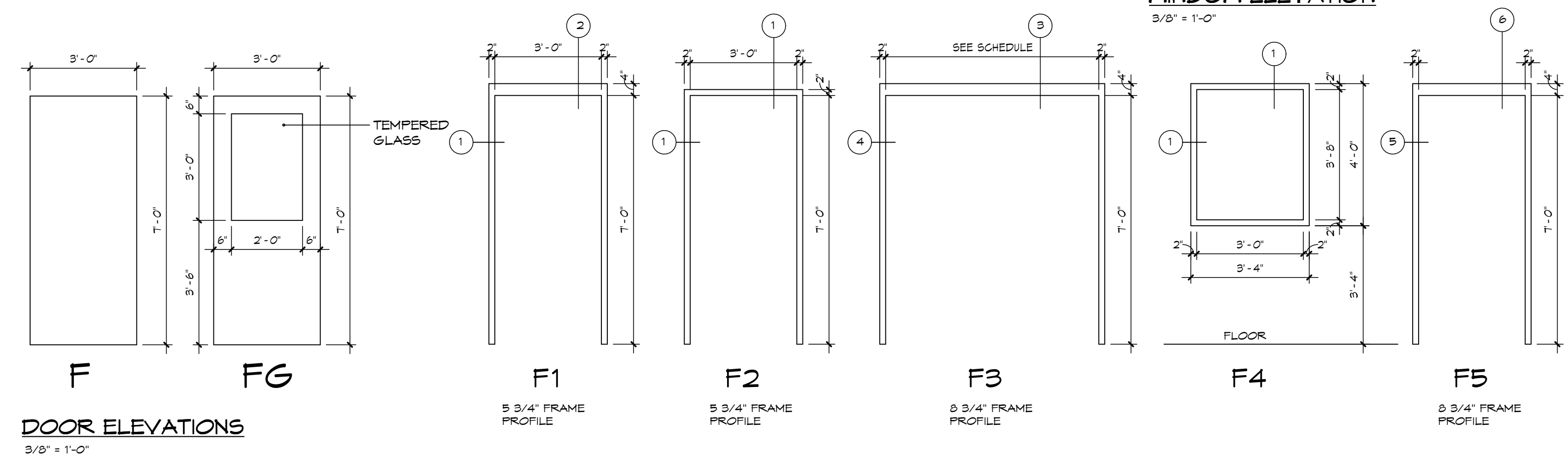
Room Finish Schedule						
Rm. No.	Room Name	Floor	Base	Wall	Ceiling	Remarks
101	WAITING	LVT	V	PDN	SAG1	
102	RECEPTION	LVT	V	PDN	SAG1	
103	OFFICE	LVT	V	PDN	SAG1	
104	HALLWAY	LVT	V	PDN	SAG1	
105	WOMEN'S	CT	CT	PDN (1/3)	SAG2	
106	MEN'S	CT	CT	PDN (1/3)	SAG2	
107	SHOWER	CT	CT	PDN (1/3)	PDN (3)	
108	JAN.	LVT	V	PDN (1)	SAG2	
109	BREAKROOM	LVT	V	PDN	SAG1	
110	TRAINING ROOM	LVT	V	PDN	SAG1	
111	TECH 3 OFFICE	LVT	V	PDN	SAG1	
112	OPEN OFFICE	LVT	V	PDN	SAG1	
113	MECH/ELEC	CONC	V	PDN	SAG2	(4)
114	STORAGE	LVT	V	PDN	SAG1	
115	IT	LVT	V	PDN	SAG1	
116	PRODUCTION	CONC-S	V	CMU (2)	SAG2	
117	ASSEMBLY	CONC-S	V	CMU (2)	SAG2	
118	WAREHOUSE	CONC	NONE	CMU (2) (5)	EX	
119	LOADING	CONC	NONE	CMU (2) (5)	EX	
120	COVERED STORAGE	CONC	NONE	CMU (2) (5)	EX	
121	ST	LVT	V	PDN (1)	SAG1	

- ROOM FINISH NOTES**
- (1) EPOXY PAINT FINISH
 - (2) TOOL CMU JOINTS CONCAVE
 - (3) MOISTURE RESISTANT DRYWALL
 - (4) FIT CEILING GRID AND TILES TIGHT TO HVAC DUCTWORK PENETRATIONS
 - (5) PROVIDE MOISTURE RESISTANT TYPE AT ALL DRYWALL LOCATIONS
- FINISH SCHEDULE ABBREVIATIONS**
- CMU CONCRETE MASONRY UNIT
 - CONC CONCRETE
 - CONC-S CONCRETE WITH SEALER
 - CT CERAMIC TILE
 - EX EXPOSED
 - LVT LUXURY VINYL TILE
 - PDN PAINTED DRYWALL
 - SAG1 SUSPENDED CEILING TILE AND GRID
 - SAG2 SUSPENDED CEILING TILE AND GRID - MOISTURE RESISTANT
 - V VINYL

- ROOM FINISH NOTES**
- 205 4 inch thick poured concrete sidewalk with 6x6x11.4x11.4 WVF. Broom finish. Provide 8 inch x 8 inch thickened edge reinforced with 1-#5 dia. continuous at all edges.
 - 210 New asphalt paving. Refer to Civil Drawings.
 - 216 6 inch thick poured concrete slab apron. Refer to Structural Drawings. Hub drain to accommodate HVAC condensate drain. Refer to Plumbing Drawings. Connect to stormwater drain line.
 - 218 3 inch dia. PVC underground stormwater drain piping. Connect to all downspouts and slope to catch basin. Refer to Civil Drawings.
 - 501 2 in. x 2 in. x 36 in. high metal support post. Bolt to Floor.
 - 709 Dashed line indicates wall is to receive foam insulation in all cells full height of wall.
 - 801 Marble door sill.
 - 807 Overhead roll-up door. Refer to Door Schedule and specifications.
 - 808 Hollow metal frame borrowed light. Refer to details.
 - 902 Same as -901 with 6 in. metal studs.
 - 916 Drywall finished header at opening. Construct same as typical interior partition. Locate bottom at 2 inches below lowest ceiling.
 - 918 3 5/8 in. x 20 ga. (min.) galvanized metal studs at 16 in. o.c. with 5/8 in. thick drywall on side. Wall to accommodate horizontal drain pipe from HVAC unit.
 - 1001 42 in. long handicap grab bar.
 - 1002 36 in. long handicap grab bar.
 - 1003 Toilet tissue dispenser.
 - 1004 Soap dispenser.
 - 1005 Paper towel dispenser.
 - 1007 Aluminum canopy awning.
 - 1008 Shower grab bar per Fla. Accessibility Code requirements.
 - 1009 Shower seat per Fla. Accessibility Code requirements.
 - 1010 Robe hook.
 - 1011 Mirror - mount above lavatory.
 - 1012 Tackboard.
 - 1013 Markerboard.
 - 1201 Wall mounted TV - by owner.
 - 1202 Refrigerator - by owner.
 - 1203 Data rack - by owner.
 - 1204 compressed air system - by owner.
 - 1205 Copy machine - by owner.
 - 1501 HVAC air handler. Refer to Mechanical drawings.
 - 1503 Electric water heater.
 - 1504 Electric drinking fountain. Refer to plumbing drawings.
 - 1504 Janitor sink with 36 inch high stainless steel splash panels on two sides and wall mounted mop rack above.
 - 1510 Floor drain. Refer to Plumbing Drawings.
 - 1602 Electric meter. Refer to Electrical Drawings.
 - 1603 Electric panel. Refer to Electrical Drawings.

Door Schedule													
Door No.	Ext.	Int.	Frame Material	Frame Type	Hdw. Group	U.L. Rating	No. in Frame	Door Type	Mat.	Height	Width	Thickness	Comments
101	X		HM	F1	1		1	F	HM	84"	36"	1 3/4"	IMPACT RESISTANT
102	X		HM	F1	1		1	F	HM	84"	36"	1 3/4"	IMPACT RESISTANT
103	X		STL	F1	1		1	OH	STL	168"	144"	1"	IMPACT RESISTANT
104	X		HM	F1	2		2	F	HM	84"	36"	1 3/4"	IMPACT RESISTANT
105	X		STL	F1	1		1	OH	STL	168"	144"	1"	IMPACT RESISTANT
106	X		HM	F1	1		1	F	HM	84"	36"	1 3/4"	IMPACT RESISTANT
107	X	X	HM	F2	5		1	F	MD	84"	36"	1 3/4"	
108	X	X	HM	F2	3		1	F	MD	84"	36"	1 3/4"	
109	X	X	HM	F2	5		1	F	MD	84"	36"	1 3/4"	
110	X	X	HM	F2	5		1	F	MD	84"	36"	1 3/4"	
111	X	X	HM	F2	5		1	F	MD	84"	36"	1 3/4"	
112	X	X	HM	F2	5		1	F	MD	84"	36"	1 3/4"	
113	X	X	HM	F2	4		1	F	MD	84"	36"	1 3/4"	
114	X	X	HM	F2	3		1	F	MD	84"	36"	1 3/4"	
115	X	X	HM	F2	3		1	F	MD	84"	36"	1 3/4"	
116	X	X	HM	F2	6		1	F	MD	84"	36"	1 3/4"	
117	X	X	HM	F2	4		1	F	MD	84"	36"	1 3/4"	
118	X	X	HM	F2	6		1	F	MD	84"	36"	1 3/4"	
119	X	X	HM	F2	6		1	F	MD	84"	36"	1 3/4"	
120	X	X	HM	F2	5		1	F	MD	84"	36"	1 3/4"	
121	X	X	HM	F2	4		1	F	MD	84"	36"	1 3/4"	
122	X	X	HM	F2	3		1	F	MD	84"	36"	1 3/4"	
123	X	X	HM	F2	3		1	F	MD	84"	36"	1 3/4"	
124	X	X	HM	F2	3		1	F	MD	84"	36"	1 3/4"	
125	X	X	HM	F2	4		1	F	MD	84"	36"	1 3/4"	
126	X	X	HM	F2	7		2	F6	HM	84"	36"	1 3/4"	
127	X	X	HM	F2	7		2	F6	HM	84"	36"	1 3/4"	

- DOOR SCHEDULE ABBREVIATIONS**
- HM = HOLLOW METAL
 - STL = STEEL
 - MD = WOOD



CMHM ARCHITECTS INC.
1036 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801-1118
TELEPHONE 863-688-8882 | lhd@cmhm.com

CMHM architects

JOHN R. CURTIS, AIA
BENJAMIN F. MUNDY, JR., AIA, LEED AP
C. KEITH HUNNICUTT, AIA
NEIL G. MELBY, AIA, LEED AP

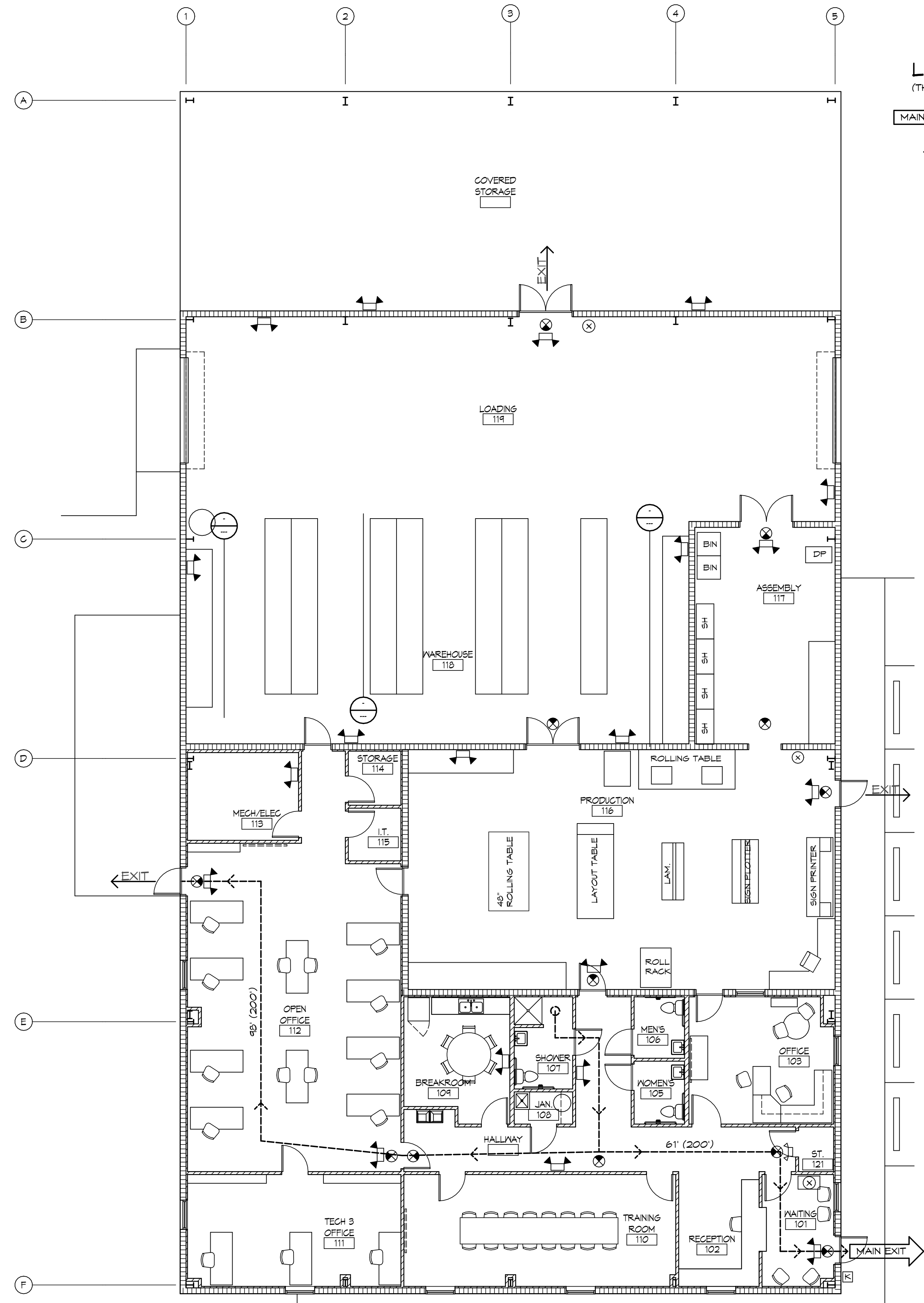
BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Board Operations Building
4450 Kenilworth Blvd.
Sebring, FL 33870

OVERALL FLOOR PLAN

REVISIONS
CONSTRUCTION 03/24/2023
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LIFE SAFETY LEGEND

(THIS LEGEND APPLIES TO ALL LIFE SAFETY PLANS)

- ➔ MAIN EXIT → MAIN BUILDING EXIT
- ➔ EXIT → ROOM OR AREA EXIT
- ⊗ FIRE EXTINGUISHER (Wall bracket mounted)
- ⊗ FIRE EXTINGUISHER IN SEMI-RECESSED CABINET
- ⊕ SMOKE DETECTOR
- ⊕ HEAT DETECTOR
- ⊠ KNOX-BOX (RECESSED)
- ⬇ SURFACE MTD. EMERGENCY LIGHT
- ⊙ EXIT LIGHT
- ⬇ TRAVEL DISTANCE
- TD = XX (XXX) → TD ALLOWABLE

DESIGN IS BASED ON MOST RESTRICTIVE = BUSINESS (B) WITH MIXED, NON-SEPARATED OCCUPANCIES. (BUSINESS, FACTORY - LOW HAZARD AND STORAGE - LOW HAZARD)

BUILDING AREA = 10,321 GSF - 23,000 SF ALLOWABLE. BUILDING CONSTRUCTION IS TYPE II-B (UNPROTECTED). BUILDING DOES NOT CONTAIN A FIRE SPRINKLER SYSTEM. EXIT ACCESS TRAVEL DISTANCE = 200 FT. MAXIMUM. EXIT CORRIDORS IN BUSINESS AREA DO NOT REQUIRE ONE HOUR RATINGS. < 30 OCCUPANTS UTILIZING THE CORRIDOR AND OCCUPIED BY A SINGLE TENANT. CORRIDOR WIDTH = 44 INCHES, MINIMUM. DEAD END CORRIDOR = 20 FEET, MAXIMUM.

EMERGENCY LIGHTING IS REQUIRED - 40.2.9.1 (NFPA 101)
FIRE ALARM SYSTEM IS NOT REQUIRED - 40.3.4.1 (NFPA 101)
FIRE SPRINKLER SYSTEM IS NOT REQUIRED - 40.3.5 (NFPA 101)

PLUMBING FIXTURE CALCULATION

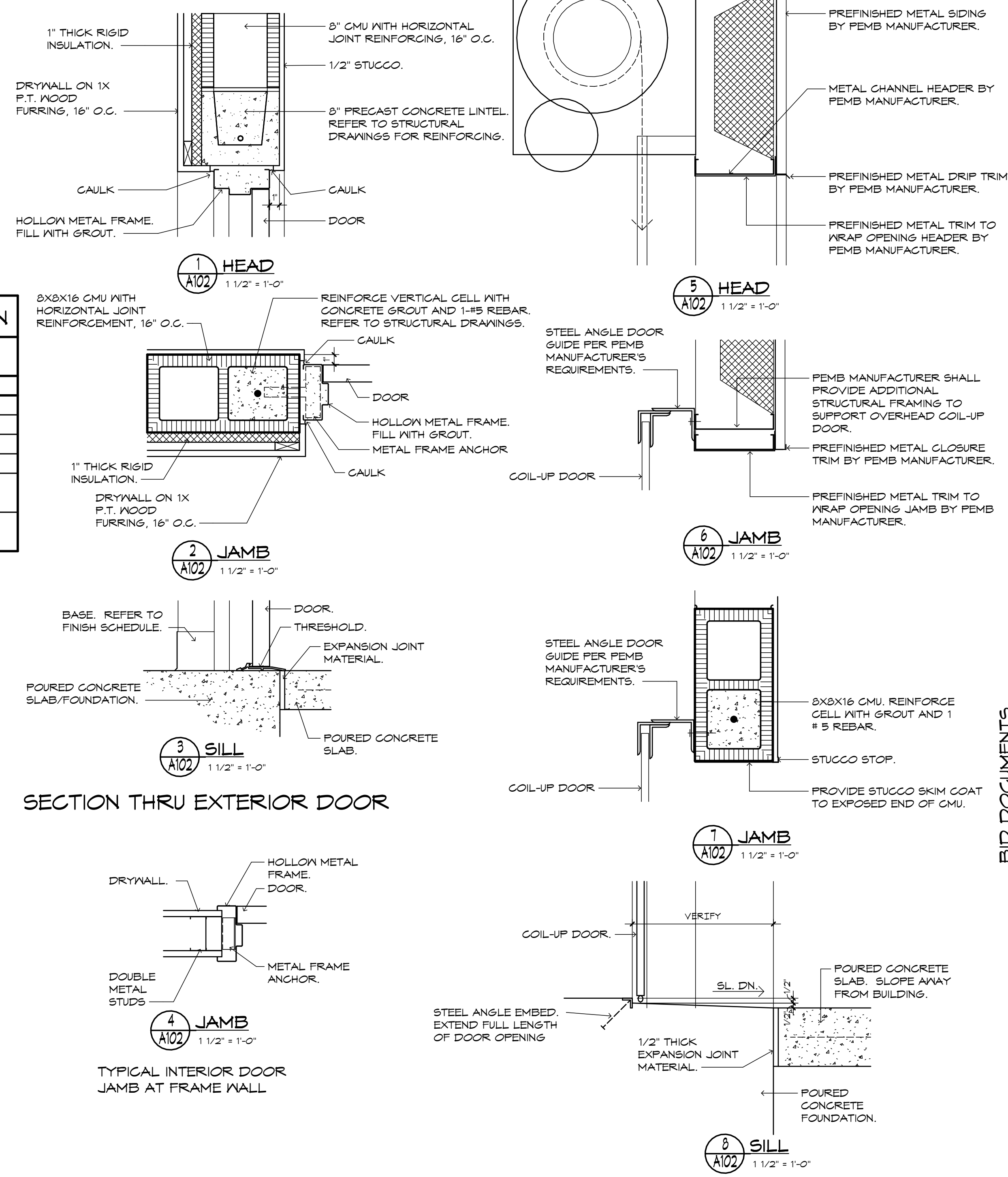
BUSINESS CLASSIFICATION
TOTAL NUMBER OF OCCUPANTS = 46 (23 MEN, 23 WOMEN)

FIXTURE TYPE		REQUIRED	PROVIDED
WATER CLOSET	MEN	1	1
	WOMEN	1	1
LAVATORIES	MEN	1	1
	WOMEN	1	1
DRINKING FOUNTAIN		1	1
SERVICE SINK		1	1

ONE ADDITIONAL UNISEX TOILET ROOM WITH SHOWER IS PROVIDED IN ADDITION TO THE REQUIRED FIXTURES LISTED ABOVE.

OCCUPANCY CALCULATION

	SPACE	AREA	CALCULATION	OCCUPANTS	
BUSINESS	101	WAITING	104 SF		
	102	RECEPTION	120 SF		
	103	OFFICE	234 SF		
	104	HALLWAY	N/A		
	105	WOMEN'S	N/A		
	106	MEN'S	N/A		
	107	SHOWER	N/A		
	108	JANITOR	N/A		
	109	BREAKROOM	163 SF		
	110	TRAINING	343 SF		
	111	TECH 3 OFFICE	307 SF		
	112	OPEN OFFICE	940 SF		
113	MECH./ELEC.	124 SF			
114	STORAGE	37 SF			
115	I.T.	36 SF			
121	STO.	20 SF			
BUSINESS TOTALS			2491 SF	2491 / 150 = 17	17
FACTORY - LOW HAZARD (F-2)	116	PRODUCTION	1330 SF		
	117	ASSEMBLY	395 SF		
FACTORY TOTALS			1725 SF	1725 / 100 = 18	18
STORAGE - LOW HAZARD (S-2)	118	WAREHOUSE	1444 SF		
	119	GARAGE	1734 SF		
	120	COV. STO.	1893 SF		
STORAGE TOTALS			5061 SF	5061 / 500 = 11	11
TOTAL OCCUPANTS					46



LIFE SAFETY PLAN
1/8" = 1'-0"



CMHM ARCHITECTS INC.
JOHN R. CURTIS, AIA
BENJAMIN F. MUNDY, JR., AIA, LEED AP
C. KEITH HUNNICUTT, AIA
NEIL G. MELBY, AIA, LEED AP
1036 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801-1118
TELEPHONE 863-688-8882 | lhdarch.com

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C. KEITH HUNNICUTT, AIA

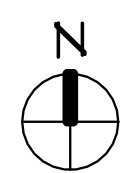
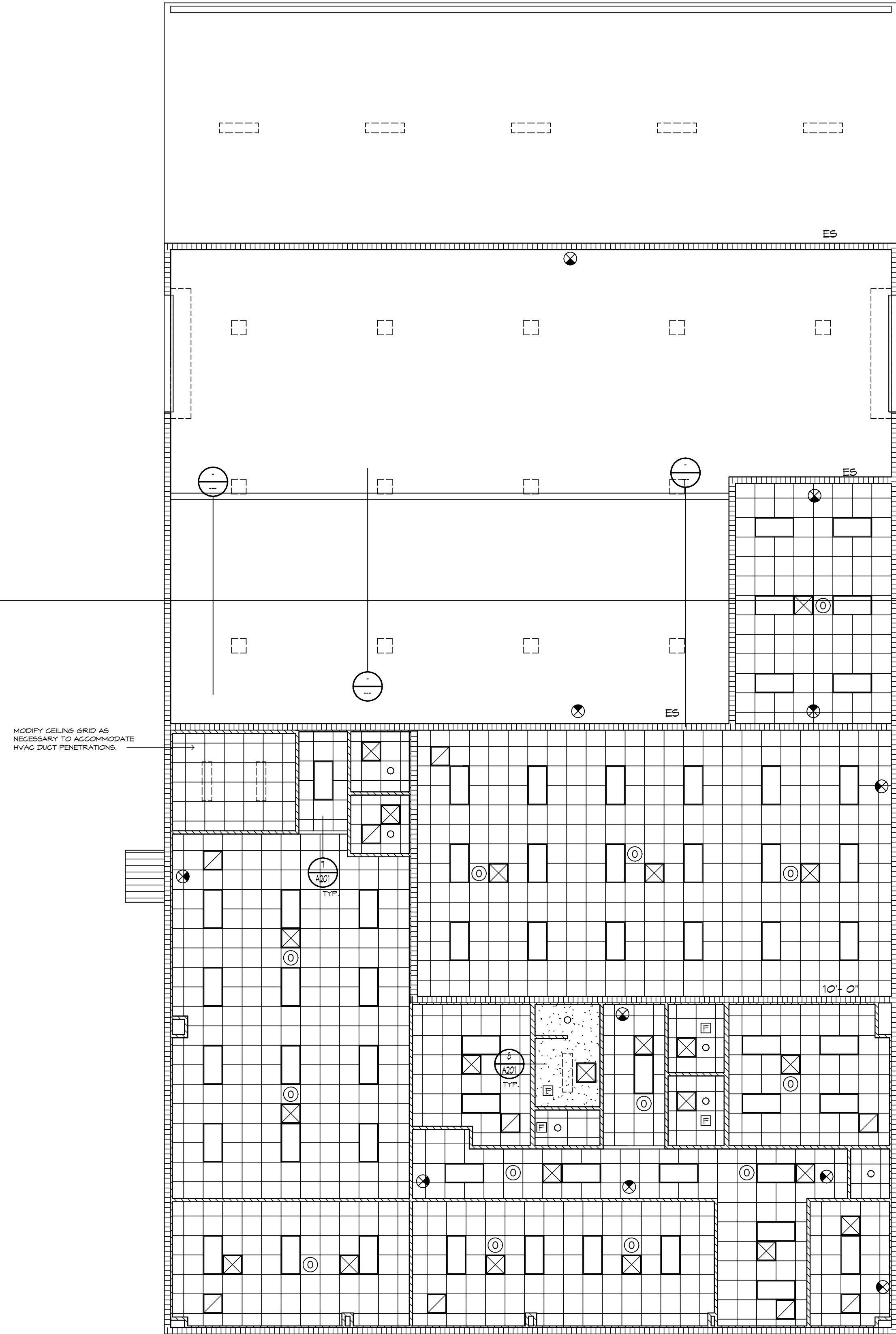
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LIFE SAFETY PLAN

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REFLECTED CEILING PLAN LEGEND

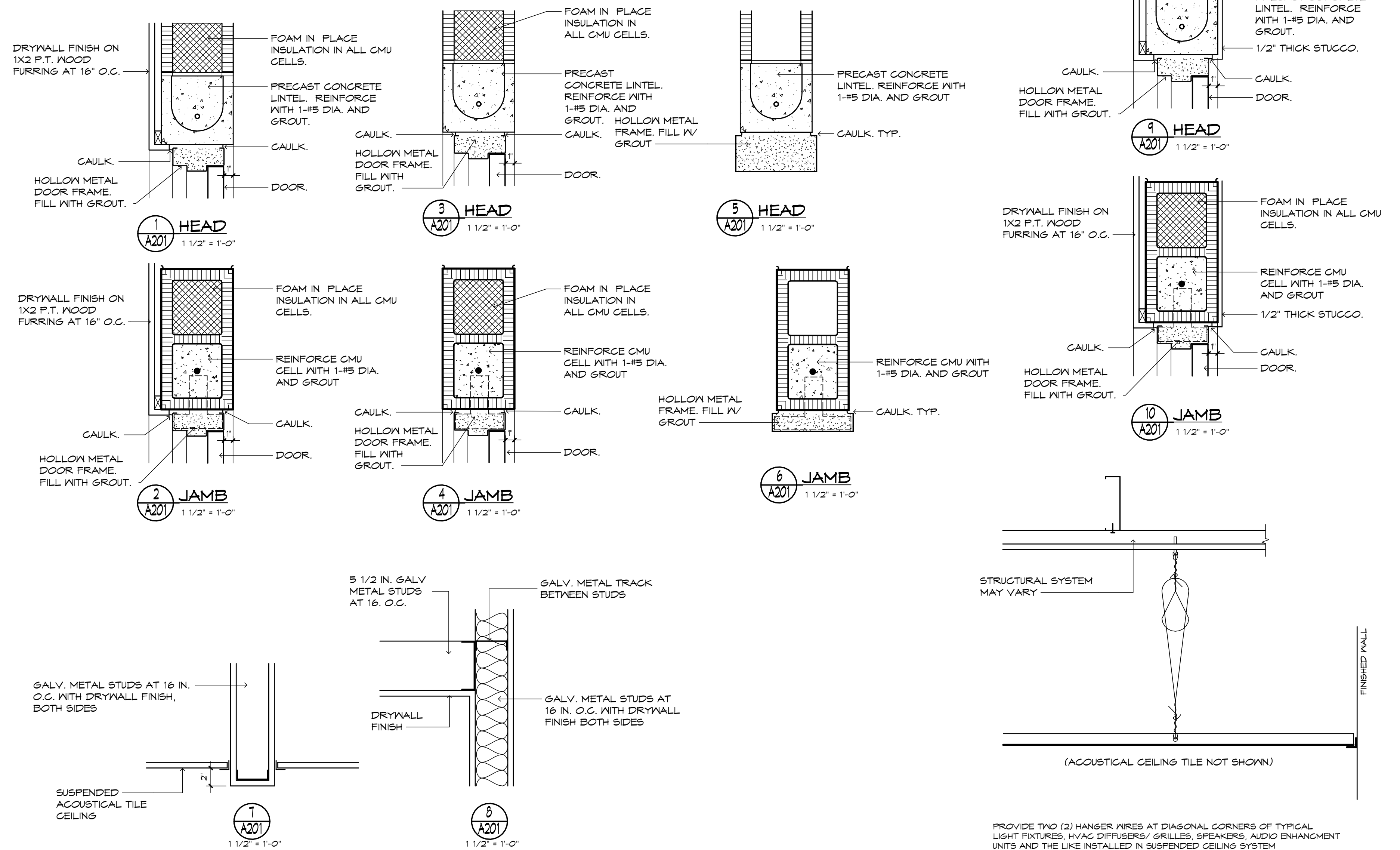
(THIS LEGEND APPLIES TO ALL CEILING PLANS)

- 2'-0" x 2'-0" and/ or 2'-0" x 4'-0" SUSPENDED GRID WITH CEILING TILES
- GYPSUM DRYWALL CEILING
- METAL SOFFIT OR METAL CANOPY
- FLUORESCENT LIGHT FIXTURE SET IN GRID
- RECESSED LIGHT FIXTURE
- SURFACE MOUNTED CEILING LIGHT FIXTURE
- SURFACE MOUNTED EXIT LIGHT
- EXPOSED STRUCTURE AND/OR INSULATION
- 0'-0" CEILING HEIGHT AS NOTED
- SMOKE DETECTOR
- HEAT DETECTOR
- OCCUPANCY SENSOR
- HVAC SUPPLY DIFFUSER
- HVAC RETURN EXHAUST/ GRILLE
- PARTITIONS TERMINATING NOM. 12" ABOVE CLG.
- WALLS/ PARTITIONS FULL HT. TO FLOOR/ ROOF DECK ABOVE 1/4" GYP. BOARD EA. FACE AND SOUND BATT INSULATION FULL HEIGHT



REFLECTED CEILING PLAN

1/8" = 1'-0"
ALL CEILING HEIGHTS SHALL BE 9'-0" AFF UNLESS NOTED OTHERWISE



TYPICAL SUSPENDED CEILING DETAIL

1 1/2" = 1'-0"

JOHN R. CURTIS, AIA
BENJAMIN F. MUNDY, JR., AIA, LEED AP
C. KEITH HUNNICUTT, AIA
NEIL G. MELBY, AIA, LEED AP

1036 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801-1118
TELEPHONE 863-688-8882 | cmhm.com

MAR 03/21/21
C. KEITH HUNNICUTT, AIA

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REFLECTED CEILING PLAN

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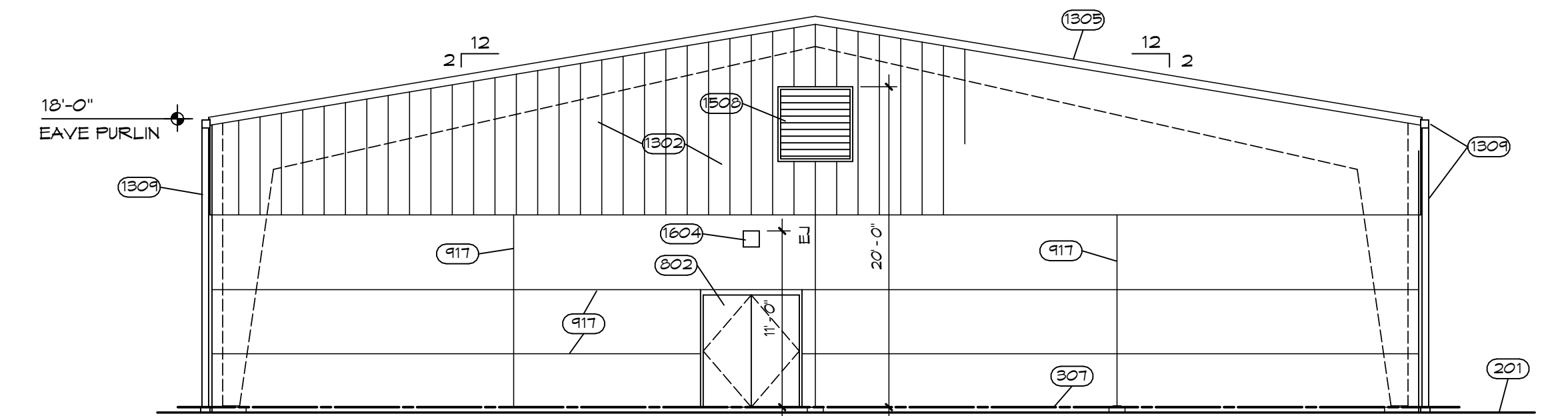
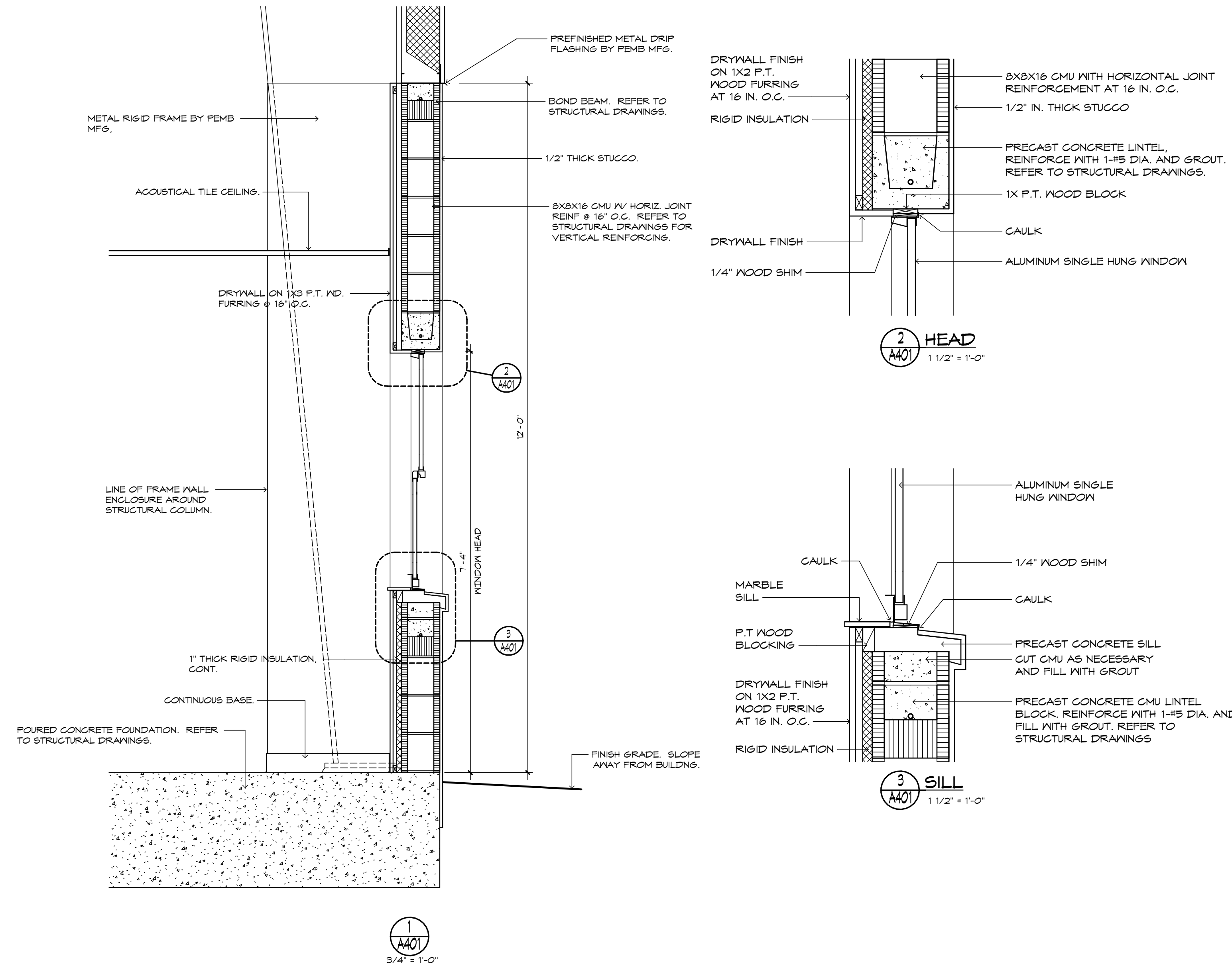
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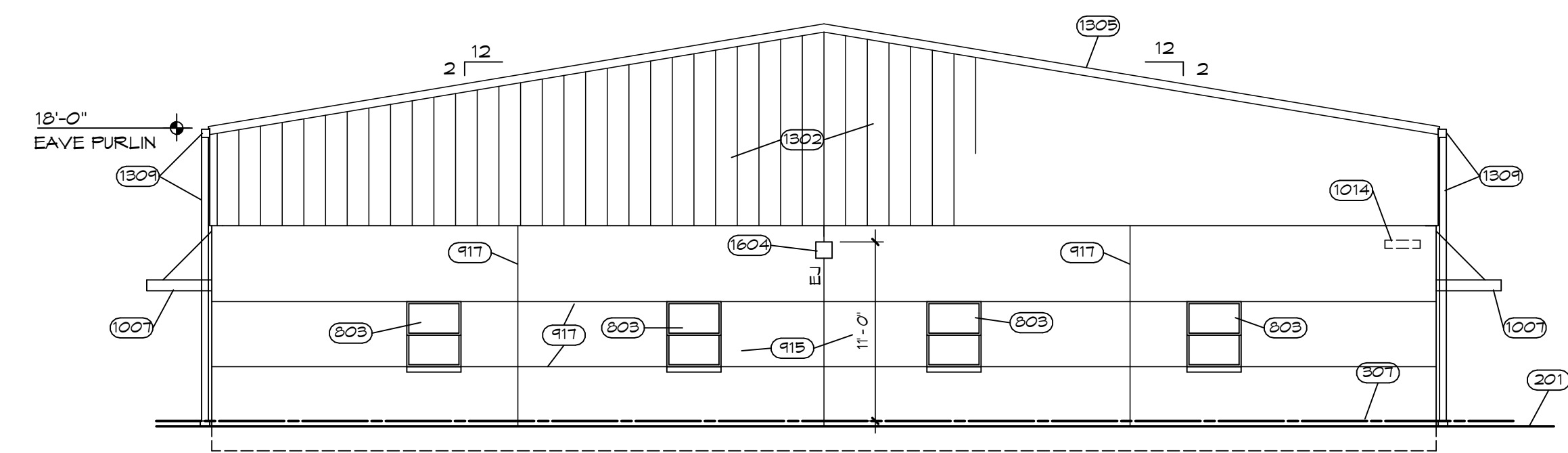
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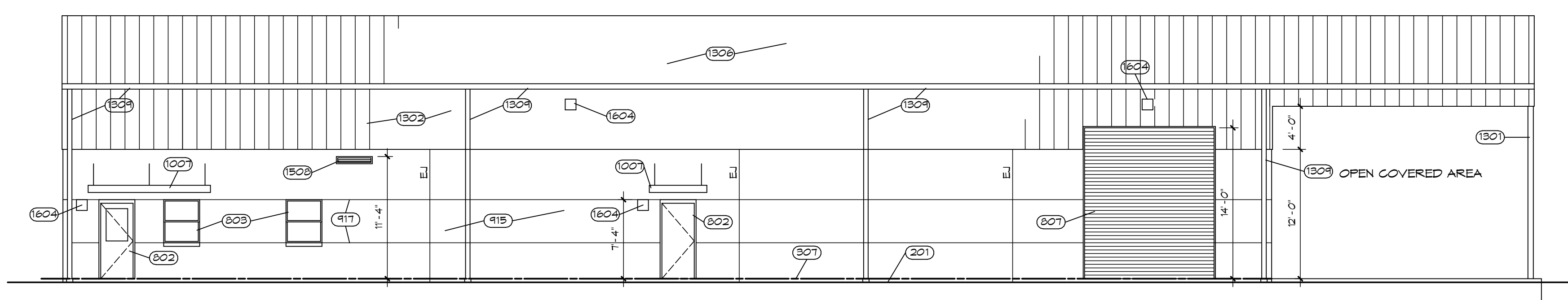
- 201 Finish grade. Slope down from interior floor slab.
- 301 Line of finish floor.
- 802 Hollow metal door and frame.
- 803 Aluminum single hung window.
- 807 Overhead roll-up door. Refer to Door Schedule and specifications.
- 915 1/2 inch thick stucco with sand finish and paint.
- 917 Stucco control joint.
- 1007 Aluminum canopy awning.
- 1014 6 inch high address numbers.
- 1301 Pre-engineered metal building frame.
- 1302 Pre-finished metal siding by PEMB manufacturer.
- 1305 Continuous eave trim by PEMB manufacturer.
- 1306 Pre-finished metal roof panels by PEMB manufacturer.
- 1304 Continuous pre-finished steel gutter and downspout system by PEMB manufacturer.
- 1315 Line of metal siding - beyond.
- 1503 Pre-finished louver/wall cap/hood. Refer to Mechanical Drawings.
- 1604 Exterior light fixture. Refer to Electrical Drawings.



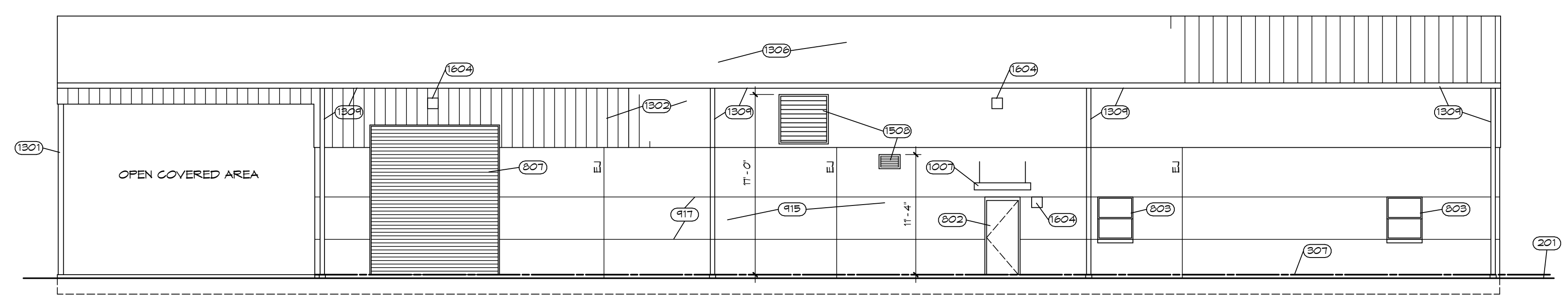
NORTH ELEVATION - MASONRY WALL
1/8" = 1'-0"



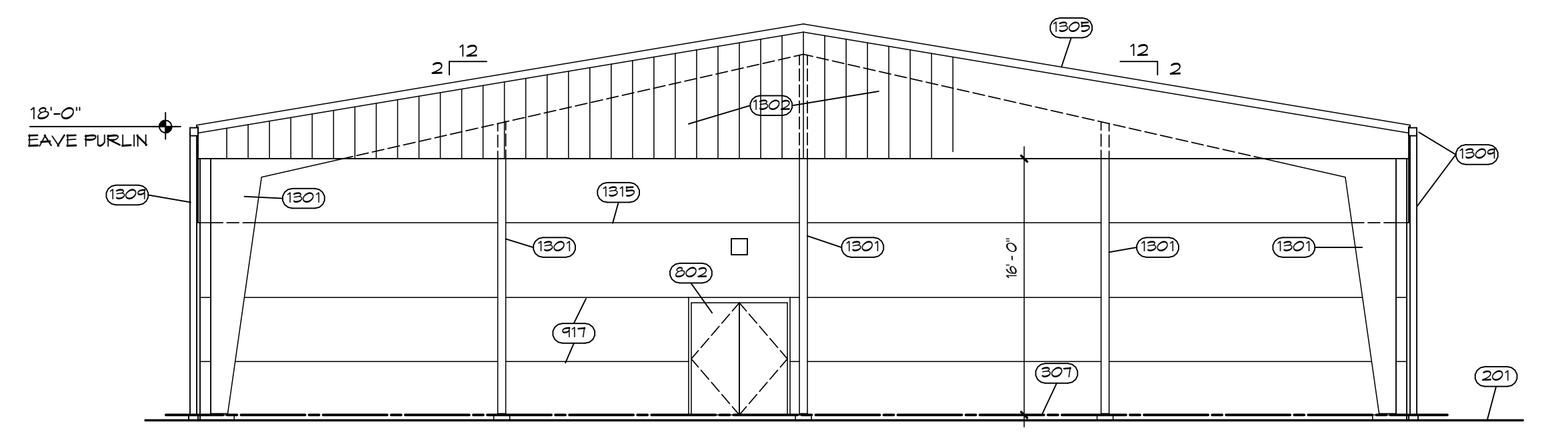
SOUTH ELEVATION
1/8" = 1'-0"



EAST ELEVATION
1/8" = 1'-0"



WEST ELEVATION
1/8" = 1'-0"



NORTH ELEVATION
1/8" = 1'-0"



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JOHN R. CURTIS, AIA
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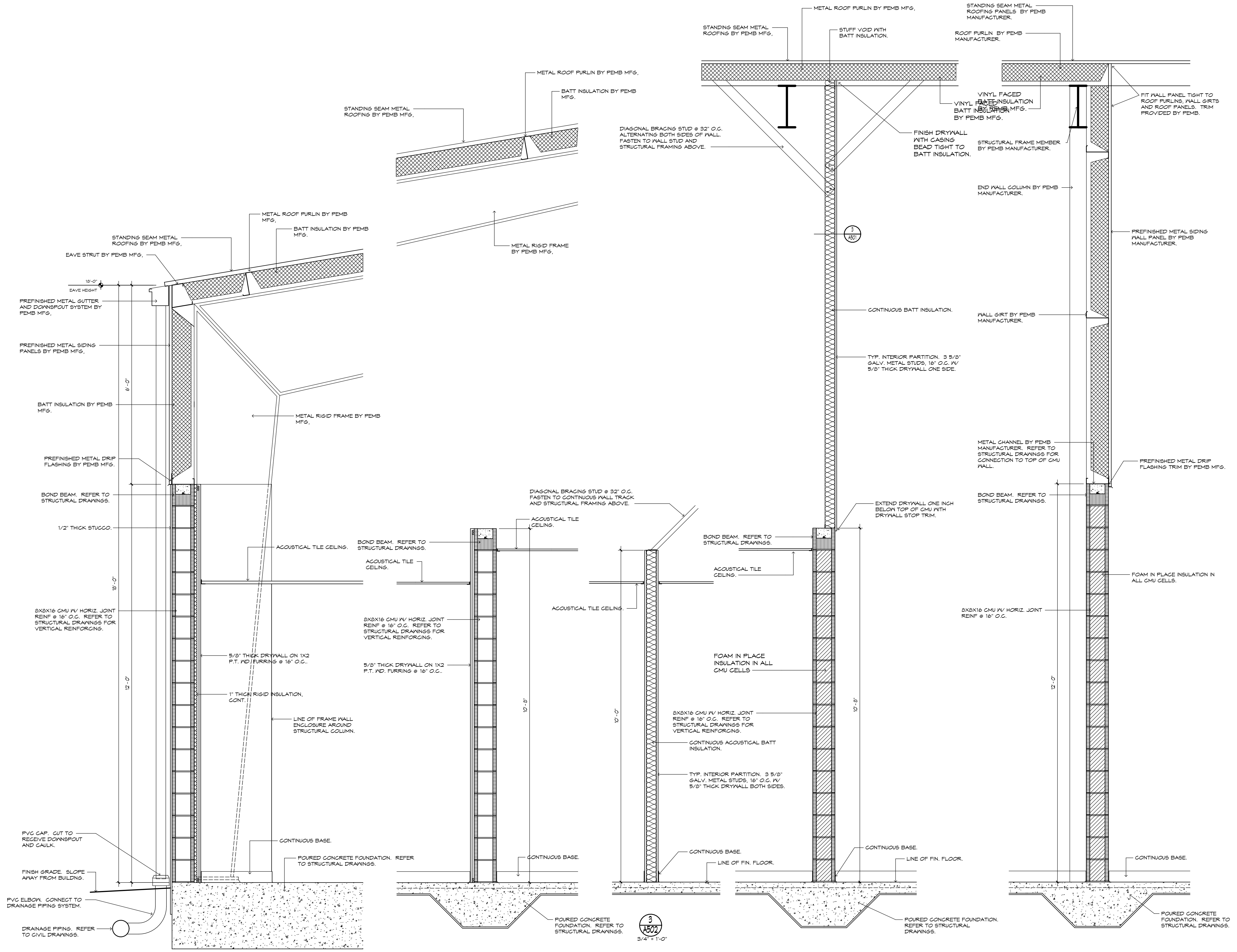
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EXTERIOR ELEVATIONS

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1
A502
3/4" = 1'-0"

2
A502
3/4" = 1'-0"

3
A502
3/4" = 1'-0"

4
A502
3/4" = 1'-0"

5
A502
3/4" = 1'-0"

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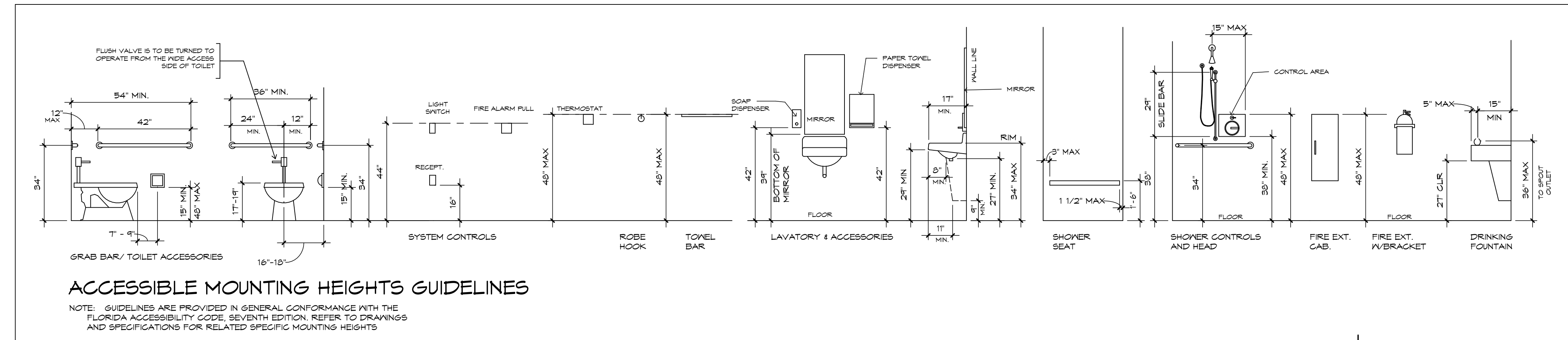
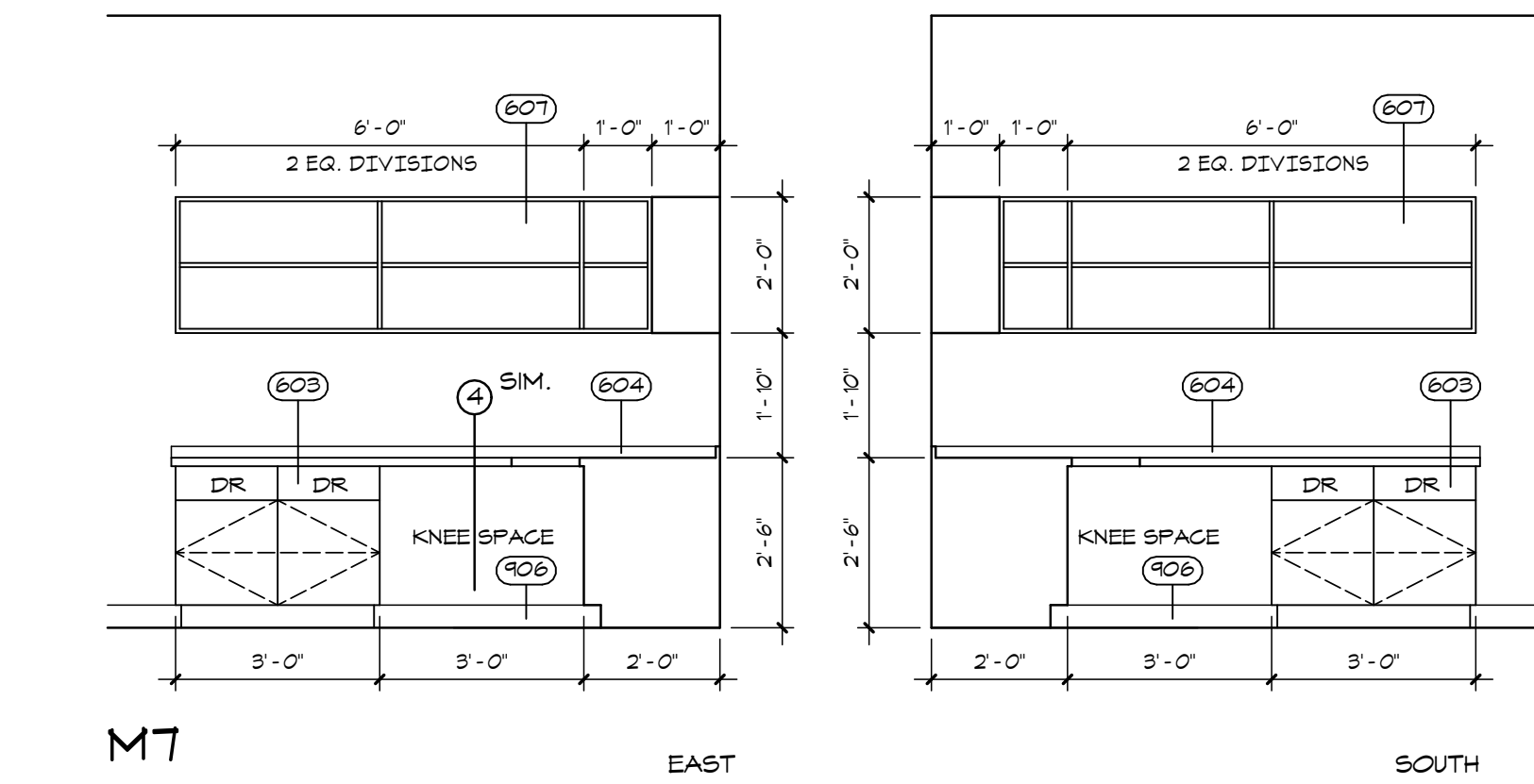
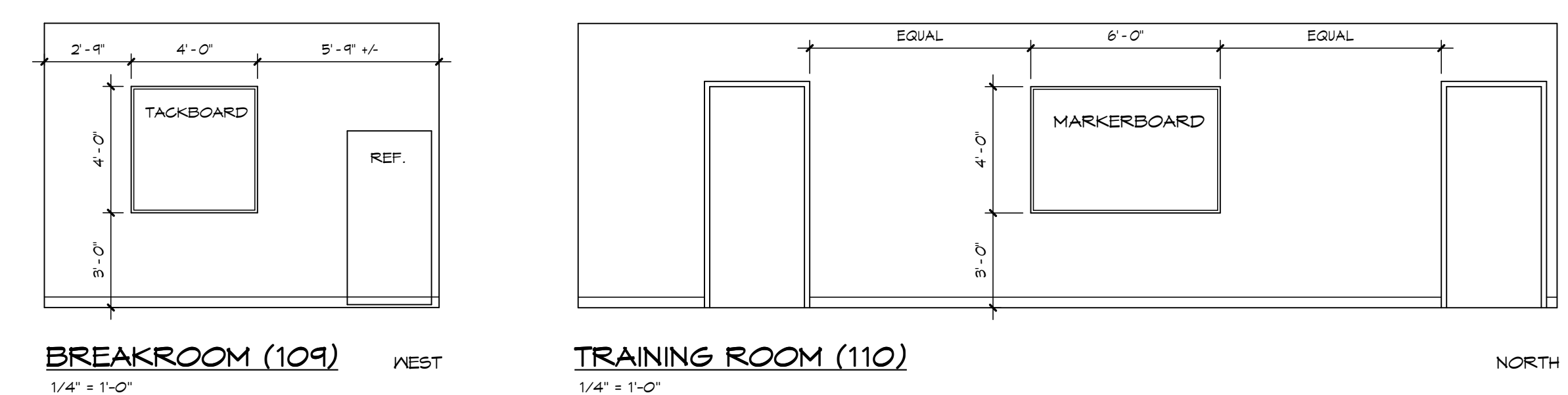
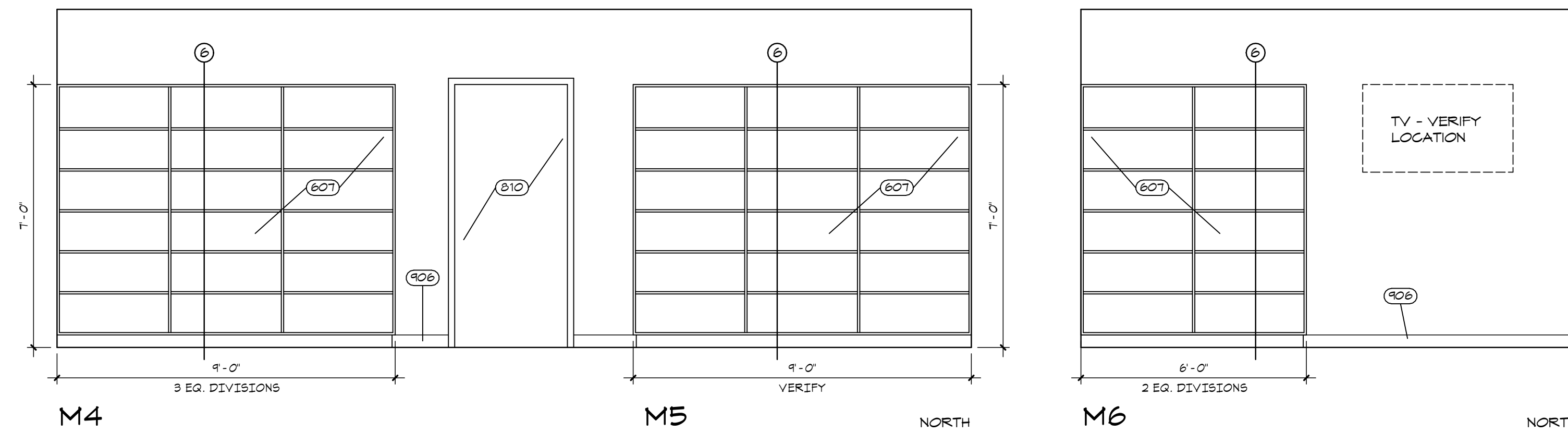
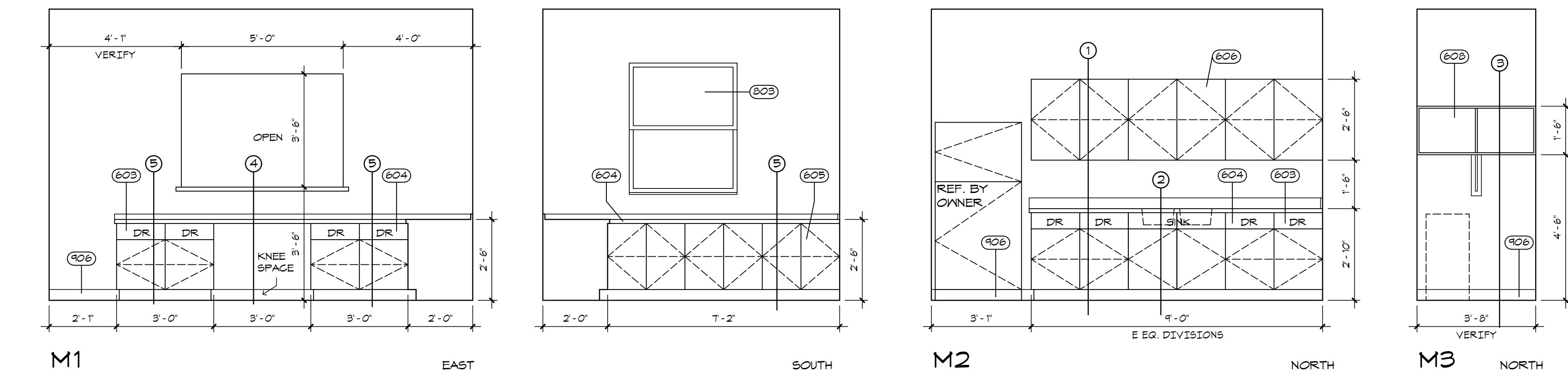
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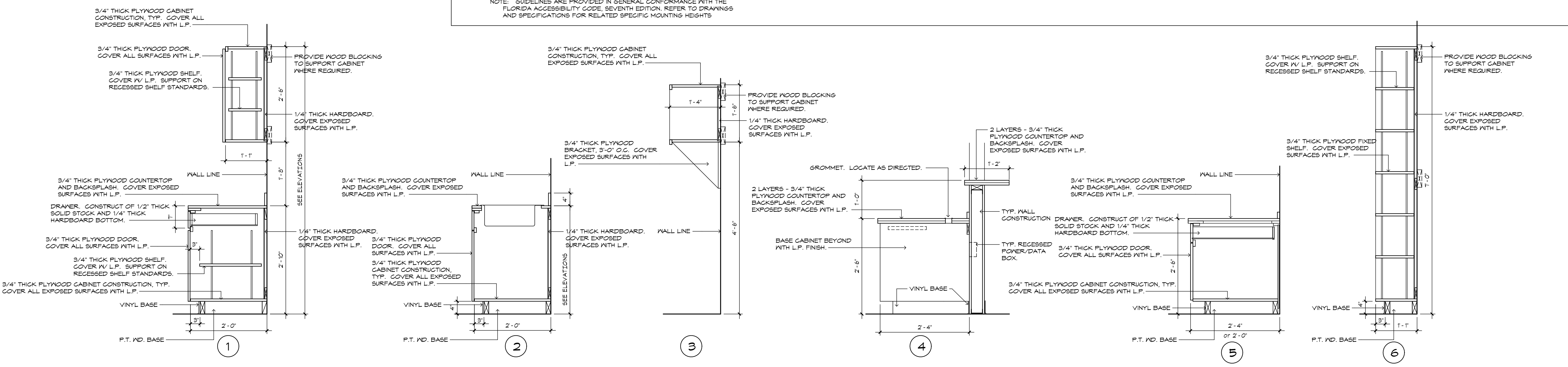
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1035 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA 33801-1118
TELEPHONE 863-688-8882 | lhdarch.com

CMHM ARCHITECTS
architects

- 603 24 in. deep base cabinet. Construct of 3/4 in. thick plywood with one adjustable shelf and one 8 in. deep drawer. Cover all exposed surfaces with L.P.
- 604 3/4 in. thick plywood countertop with 4 in. high side and backsplash. Cover all exposed surfaces with L.P.
- 605 Same as -603- without drawer.
- 606 12 in. deep upper wall cabinet. Construct of 3/4 in. thick plywood with doors and adjustable shelves. Cover all exposed surfaces with L.P.
- 607 12 in. deep open shelf unit. Construct of 3/4 in. thick plywood with adjustable shelves as shown. Cover all exposed surfaces with L.P.
- 608 Same as -607- but with fixed shelves and 16 in. deep.
- 609 Aluminum single hung window.
- 610 Wood door and hollow metal frame.
- 606 Continuous vinyl base.



MILLWORK ELEVATIONS
3/8" = 1'-0"



MILLWORK SECTIONS
3/4" = 1'-0"

- ### HVAC GENERAL NOTES
- WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE, AND LOCAL CODES INCLUDING:
 - 2020 FLORIDA BUILDING CODE (2018 IBC WITH AMENDMENTS)
 - 2020 FLORIDA MECHANICAL CODE (2018 IMC WITH AMENDMENTS)
 - 2020 FLORIDA ENERGY CONSERVATION CODE (2018 IECC WITH AMENDMENTS)
 - ALL APPLICABLE NFPA CODES
 - DEFINITIONS: "FURNISH" SHALL MEAN TO PURCHASE AND LOCATE AN ITEM ON THE JOBSITE. "INSTALL" SHALL MEAN TO PHYSICALLY INSTALL AN ITEM, AND TO CONNECT ALL REQUIRED SERVICES TO MAKE THAT ITEM FULLY FUNCTIONAL. "PROVIDE" SHALL MEAN TO BOTH FURNISH AND INSTALL AN ITEM.
 - TEST AND BALANCE (T&B) SHALL BE PERFORMED BY A TEST AND BALANCE AGENCY WHICH IS A MEMBER OF AABC OR NEBB, AND APPROVED BY THE ENGINEER. THE MECHANICAL CONTRACTOR SHALL HAVE ALL SYSTEMS FULLY INSTALLED AND OPERATIONAL, WITH CLEAN FILTERS PRIOR TO TEST AND BALANCE. TEST AND BALANCE SHALL BE PERFORMED WITH ALL EQUIPMENT RUNNING SIMULTANEOUSLY. THE TEST AND BALANCE COMPANY SHALL VERIFY THAT ALL DAMPERS ARE FULLY OPEN BEFORE ANY BALANCING. A T&B REPORT SHALL BE SUBMITTED TO THE ENGINEER, WHICH SHALL INCLUDE THE FOLLOWING:
 - ALL AIR FLOW RESULTS FOR ALL AIR DISTRIBUTION DEVICES
 - AIR FLOWS FOR TOTAL SUPPLY AIR, OUTSIDE AIR AND EXHAUST.
 - ANY DIFFERENCES BETWEEN AS-BUILT CONDITIONS AND THE MECHANICAL PLANS THAT MAY AFFECT SYSTEM PERFORMANCE OR BALANCING
 - MEASUREMENT OF UNIT COOLING AND HEATING CAPACITY INCLUDING COIL ENTERING AIR AND LEAVING AIR DRY BULB AND WET BULB, AND OUTSIDE AIR DRY BULB AT THE CONDENSERS.
 - VERIFICATION OF ALL CONTROLS TO FUNCTION IN COMPLIANCE WITH THE MECHANICAL PLANS INCLUDING INTERLOCK OF FANS AND OUTSIDE AIR DAMPERS.

- ### HVAC EQUIPMENT
- CARRIER IS THE BASE-BID MANUFACTURER FOR THE AIR CONDITIONING EQUIPMENT. TRANE IS AN APPROVED ALTERNATE MANUFACTURER. IF TRANE IS USED, IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE ALL ELECTRICAL AND SERVICE CLEARANCE DIFFERENCES FROM THE BASIS OF DESIGN.
 - ALL AIR CONDITIONING UNITS SHALL INCLUDE A ONE YEAR UNIT WARRANTY AND AN EXTENDED 4-YEAR COMPRESSOR WARRANTY.
 - ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED.
 - ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 - THE AIR CONDITIONING EQUIPMENT SHALL BE OPERATED DURING CONSTRUCTION WITH THROWAWAY FILTERS. FILTERS SHALL BE CHANGED DURING CONSTRUCTION IF THEY BECOME RESTRICTIVE OF AIRFLOW FOR NORMAL OPERATION. PROVIDE 30% PLEATED MEDIA FILTERS, JUST PRIOR TO TEST AND BALANCE.
 - THE MECHANICAL SUBCONTRACTOR SHALL PREPARE PLANS SHOWING THE LOCATIONS AND SIZES OF ALL WALL PENETRATIONS AND ROOF OPENINGS, FOR USE BY THE GENERAL CONTRACTOR.
 - SUBMITTALS SHALL BE REVIEWED BY THE ELECTRICAL SUBCONTRACTOR, FOR IMPACT ON THE ELECTRICAL, PRIOR TO ORDERING EQUIPMENT. ANY SUBSTITUTED EQUIPMENT SHALL BE PROTECTED BY EITHER FUSES OR AN HACR BREAKER.
 - UNITS SHALL BE CLEANED, ALL SCRATCHES SHALL BE PAINTED OVER WITH FACTORY PAINT TO MATCH UNIT, ALL CONDENSER COILS SHALL BE COMBED OUT, AND ALL PANELS AND SCREWS SHALL BE RE-INSTALLED AT COMPLETION OF THE PROJECT.

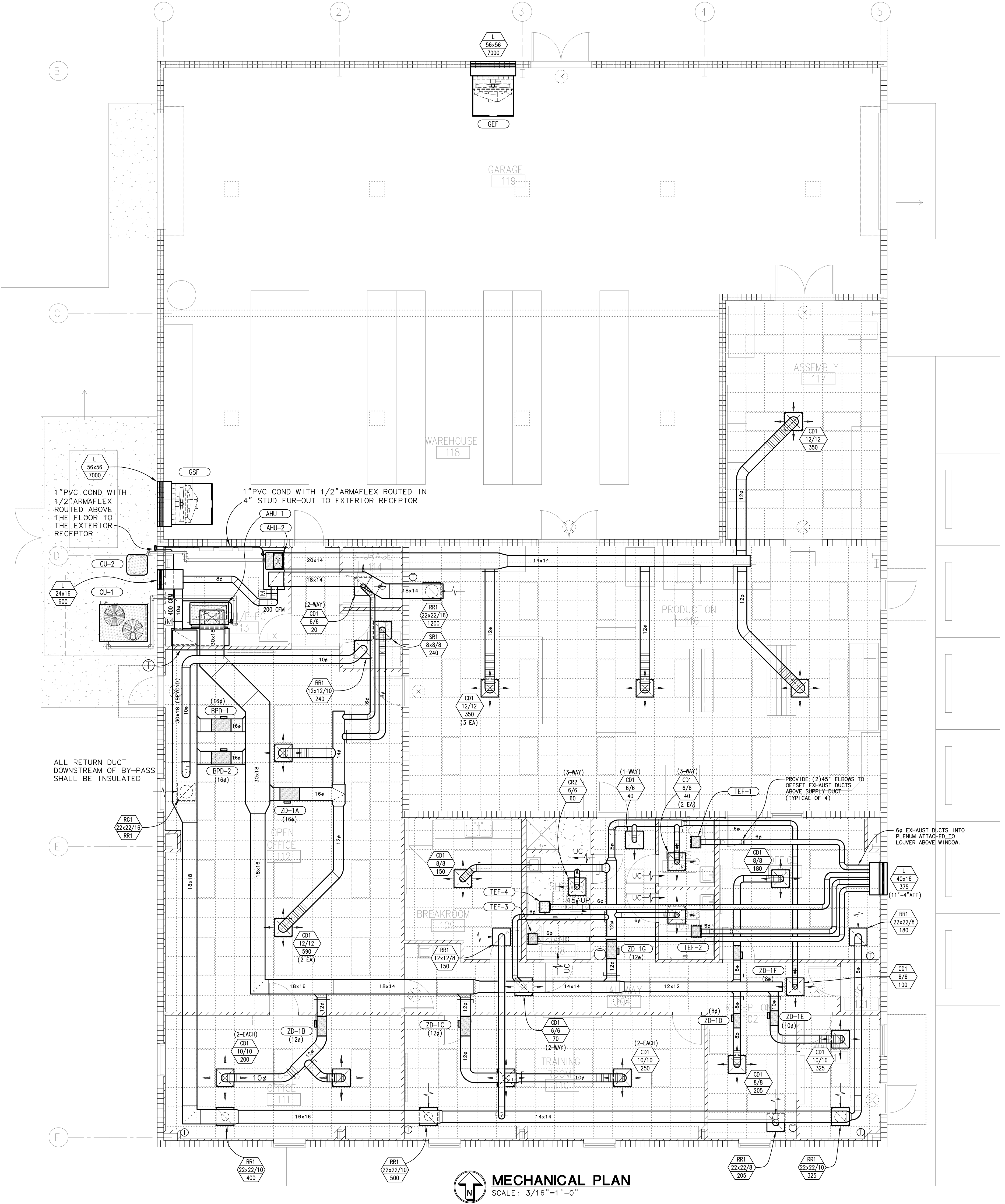
- ### HVAC CONTROLS
- THERMOSTATS SHALL BE DIGITAL, 7-DAY PROGRAMMABLE WITH 4 MODES PER DAY.
 - THERMOSTATS SERVING ELECTRIC HEATERS SHALL HAVE THE STAGES OF CAPACITY NOTED ON THE SCHEDULE.
 - ALL THERMOSTATS SHALL BE MOUNTED 48" AFF.
 - LOW VOLTAGE (24V) CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL SUBCONTRACTOR, WHO SHALL SUBCONTRACT WITH THE ELECTRICAL SUBCONTRACTOR TO PROVIDE CONDUIT FOR ALL CONTROL WIRING, AS COORDINATED WITH THE MECHANICAL SUBCONTRACTOR. ALL CONDUIT SHALL BE RUN SQUARE WITH BUILDING LINES.
 - LINE VOLTAGE (120V AND HIGHER) CONTROL AND POWER WIRING AND CONDUIT SHALL BE PROVIDED BY THE ELECTRICAL SUBCONTRACTOR.
 - THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE ALL DISCONNECT SWITCHES.
 - PROVIDE SMOKE DETECTORS, APC MODEL#SL-2000 IN THE SUPPLY DUCTS OF EACH AHU (ABOVE 5-TONS), APC MODEL# SL-2000. PROVIDE A REMOTE TEST STATION FOR EACH DETECTOR, APC MODEL# MS-RH/KA/P/A/T WITH TEST/RESET, ALARM SIREN, ALARM LED, FAULT LED AND PILOT LED. MOUNT ON WALL JUST OUTSIDE OF MECHANICAL ROOM DOOR. SMOKE DETECTORS SHALL SHUT OFF POWER TO THE ROOFTOP UNIT UPON THE DETECTION OF SMOKE.

- ### OUTSIDE AIR CONTROLS
- THE CONTRACTOR SHALL PROVIDE A TIME CLOCK FOR EACH AIR HANDLER. THE TIME CLOCK SHALL BE PROGRAMMED, PER COORDINATION WITH THE OWNER, TO CLOSE THE OUTSIDE AIR DAMPERS DURING ALL UNOCCUPIED HOURS.

AIR DISTRIBUTION SCHEDULE

TAG	DEVICE	METALAIRES MODEL #	MOUNTING FRAME	DESCRIPTION
CD1	CEILING REGISTER	5750	LAY-IN	PANEL DIFFUSER, FLUSH MOUNT STYLE BUTTERFLY DAMPER.
CR2	CEILING REGISTER	5750	SURFACE	PANEL DIFFUSER, FLUSH MOUNT STYLE BUTTERFLY DAMPER.
RR1	RETURN REGISTER	RH	LAY-IN	FIXED LOUVER, 45° DEFLECTION, OPPOSED BLADE BALANCING DAMPER
L	WALL LOUVER	-	WALL	FLORIDA PRODUCT APPROVED DRAINABLE STATIONARY VERTICAL BLADE LOUVERS COMPLIANT WITH FLORIDA & MIAMI-DADE REQUIREMENTS: <ul style="list-style-type: none"> • AIR PERFORMANCE, WATER PENETRATION & WIND DRIVEN RAIN (AMCA 500-L & TAS 100A) • WIND BORNE DEBRIS & MISSILE IMPACT (AMCA 540 & TAS 201) • UNIFORM STATIC AIR PRESSURE (TAS 202) • CYCLIC WIND LOADING (TAS 203) FIELD FABRICATE PLENUM TO DRAIN OVER FACTORY EXTENDED SILL. COLOR SHALL BE ANODIZED ALUMINUM. IF LOUVER IS INSTALLED IN SIDING, THEN THE COLOR OF THE LOUVER SHALL MATCH THE COLOR OF THE SIDING IT IS INSTALLED IN.

NOTES:	LEGEND
<ul style="list-style-type: none"> • ALL AIR DISTRIBUTION SHALL INCLUDE: ALUMINUM CONSTRUCTION AND OFF-WHITE COLOR. • APPROVED MANUFACTURERS: METALAIRES & TITUS • MATCH RUN-OUT SIZE TO NECK SIZE IF NOT NOTED. 	TYPE OF AIR DISTRIBUTION NECK SIZE / RUNOUT SIZE CFM AIRFLOW



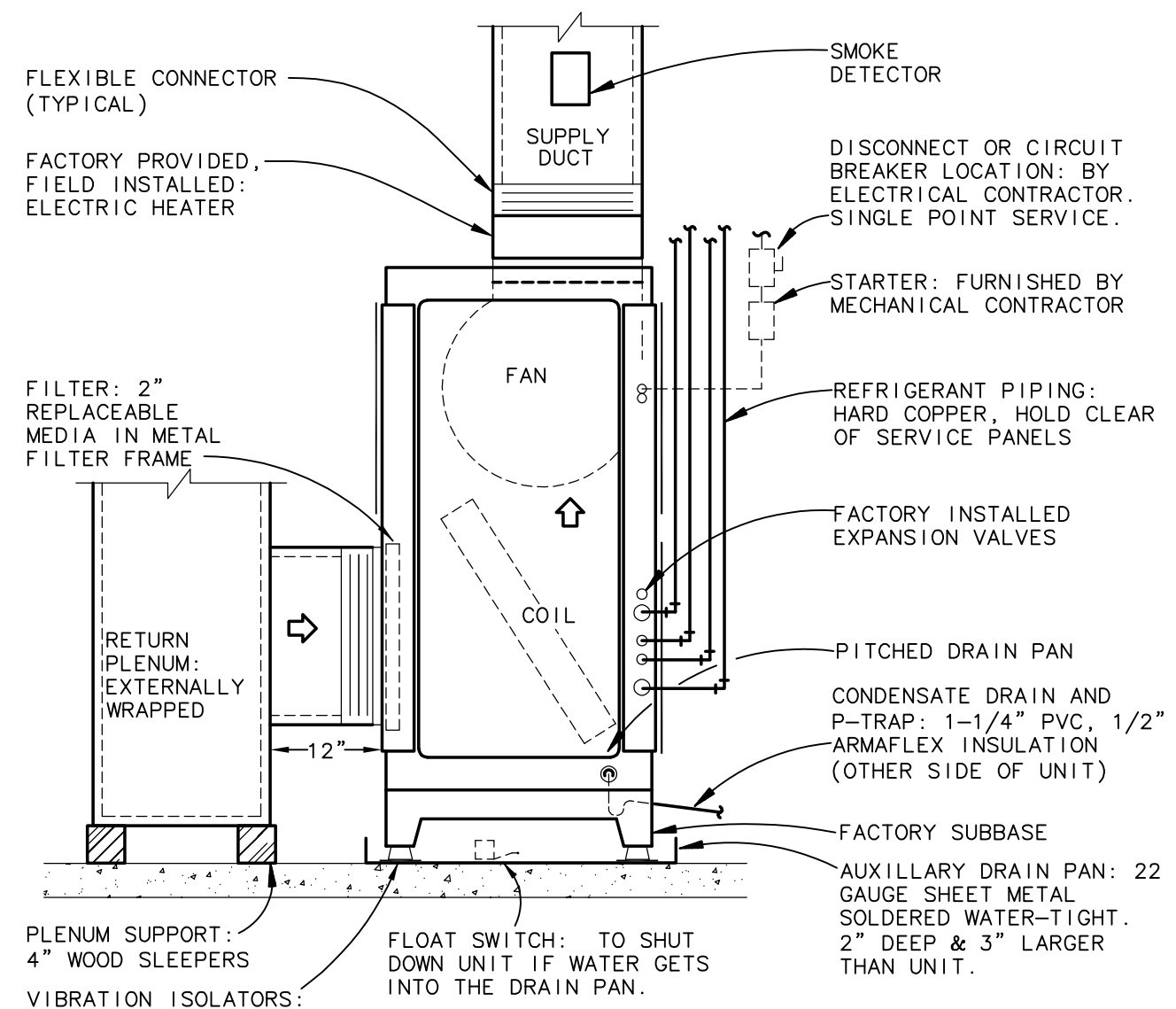
GRAMLICH & ASSOCIATES, P.A.
 RICHARD B. GRAMLICH P.E. No. 30715
 GREGOR GRAMLICH P.E. No. 54709
 CERTIFICATE OF AUTHORIZATION No. 4726
 13191 STARKLEY ROAD, SUITE 17
 FORT WORTH, TEXAS 76137
 (727) 536-0454 FAX: (727) 530-5931



CMHM ARCHITECTS INC.
 JOHN F. CURTIS, AIA
 BENJAMIN F. HUNDT, JR., AIA, LEED AP
 C. KEITH HUNDT, AIA
 NIEL G. HEBEL, AIA, LEED AP
 108 SOUTH FLORIDA AVENUE
 LAKELAND, FLORIDA | 33803-1118
 TELEPHONE: 863-688-8883 | mhm.com

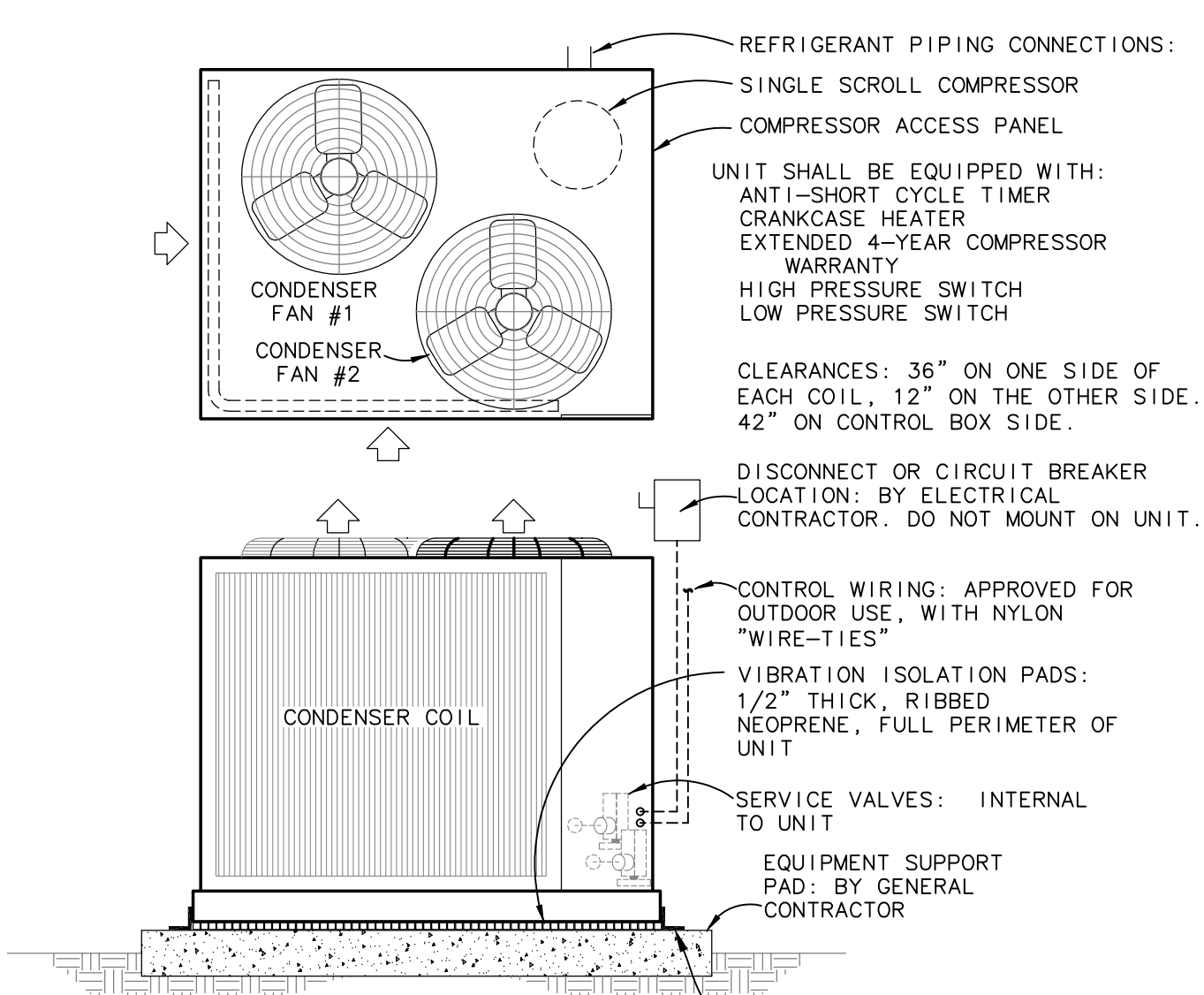
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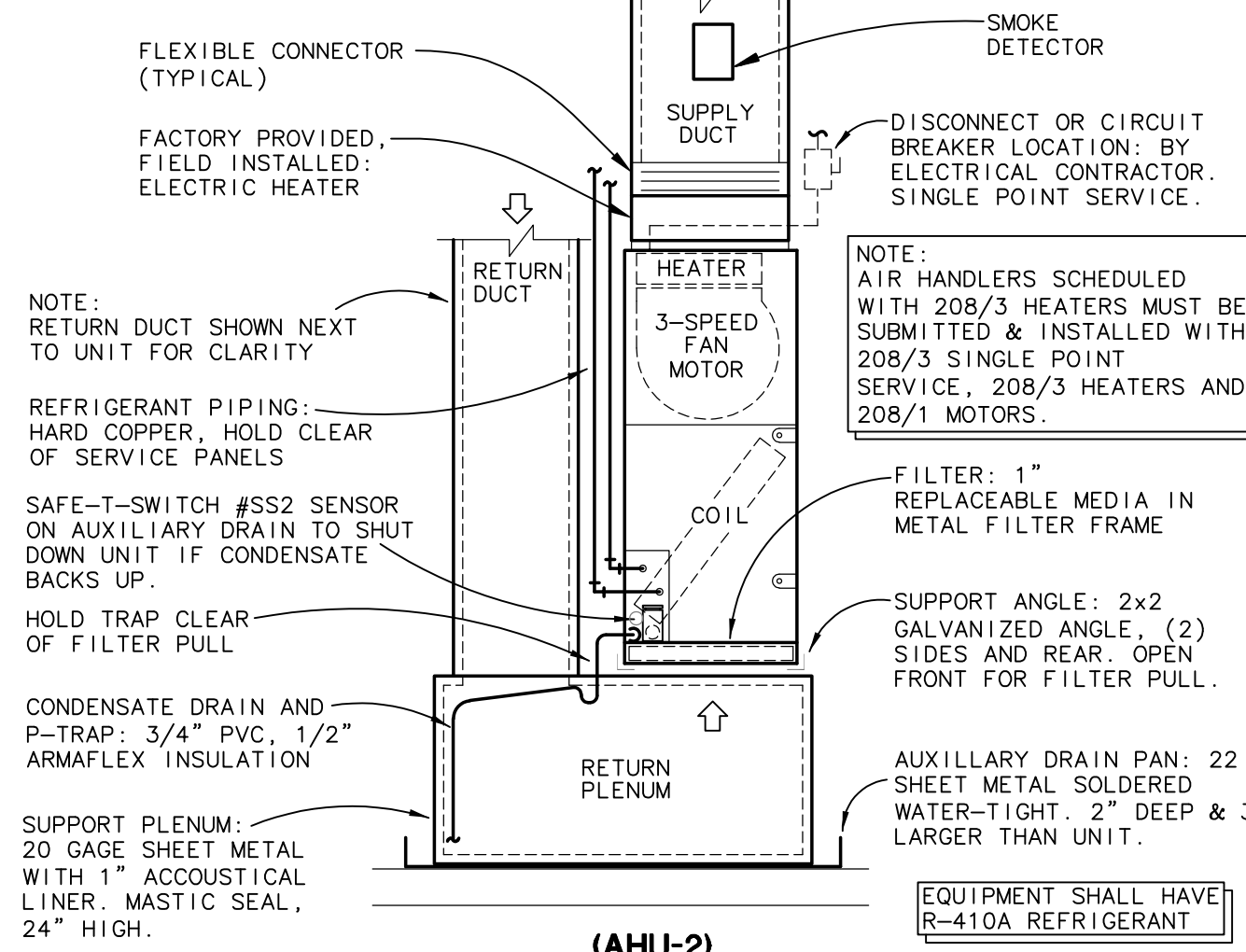
AIR HANDLING UNIT DETAIL

DESIGNATION AREA SERVED	AHU-1 PERIMETER OFFICES
CARRIER MODEL NUMBER	40RUA12
WEIGHT - LBS	425
TOTAL CAPACITY - MBH	116.6
SENSIBLE CAPACITY - MBH (GROSS AT ARI CONDITIONS)	92.9
ELECTRIC HEAT - KW @ 240	10.0
ELECTRIC HEATER VOLTAGE	208/3
HEATER AMPS	20.8
FAN BRAKE HORSEPOWER	2.4
SUPPLY AIR CFM	3500
OUTSIDE AIR CFM	400
EXTERNAL STATIC PRESSURE	0.8
FAN MOTOR VOLTAGE	208/3
FAN MOTOR FLA	7.1
SPEED - RPM	879
MINIMUM CIRCUIT AMPS	34.9
FUSE/CIRCUIT BREAKER AMPS	35
REFRIGERANT PIPING SIZES:	
LIQUID	1-1/8"
SUCTION	5/8"



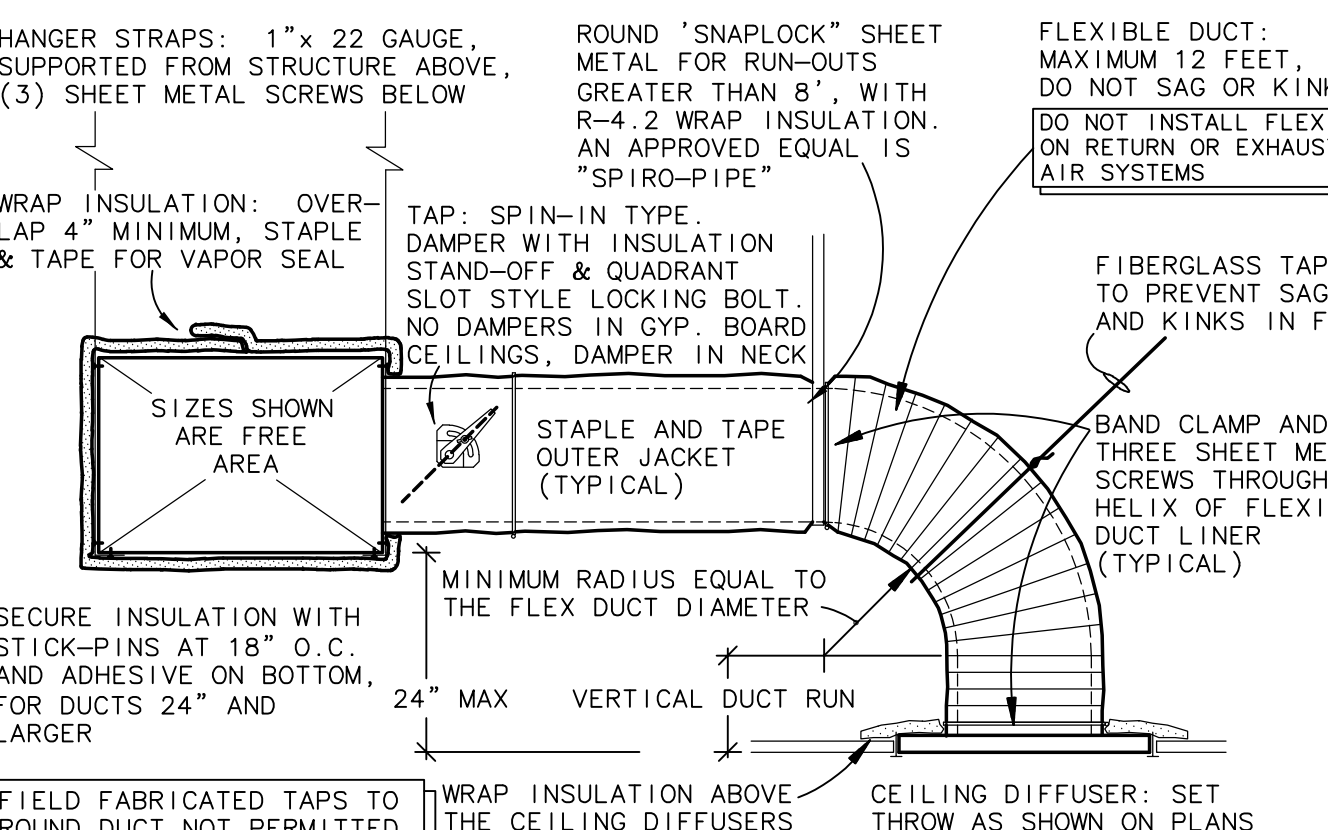
CONDENSING UNIT DETAIL

DESIGNATION AREA SERVED	CU-1 INTERIOR OFFICES
CARRIER MODEL NUMBER	38AUZ012
WEIGHT - LBS	353
NOMINAL TONS CAPACITY - TOTAL MBH (ARI)	116.6
AMBIENT TEMPERATURE - °F	92
ELECTRICAL VOLTAGE	208/3
COMPRESSOR - (QTY) RLA	(1) 25.2
CONDENSER FAN FLA (#1/#2)	1.5/1.5
MINIMUM CIRCUIT AMPS	39.0
FUSE/CIRCUIT BREAKER AMPS	60
CONDENSING UNIT EER:	10.3
CONDENSING UNIT IEER:	12.9
REFRIGERANT PIPING SIZES:	
LIQUID	1-1/8"
SUCTION (0-75 FT)	5/8"



AIR HANDLING UNIT DETAIL

UNIT DESIGNATION AREA SERVED	AHU-2 INTERIOR OFFICES
CARRIER MODEL NUMBER	FV4CNB005L00
WEIGHT - LBS	100
NOMINAL TONS CAPACITY - TOTAL MBH	41.77
CAPACITY - SENS MBH	36.09
ELECTRIC HEAT - KW @ 240	9.0
ELECTRIC HEATER VOLTAGE	208/3
HEATER AMPS	18.8
CFM - SUPPLY	1400
CFM - OUTSIDE AIR	200
EXTERNAL STATIC PRESSURE	3/4"
FAN HORSEPOWER	1/2
FAN MOTOR VOLTAGE	208/1
FAN MOTOR FLA	4.3
SINGLE POINT VOLTAGE	208/3
MINIMUM CIRCUIT AMPS	32.0
MAXIMUM FUSE AMPS	35

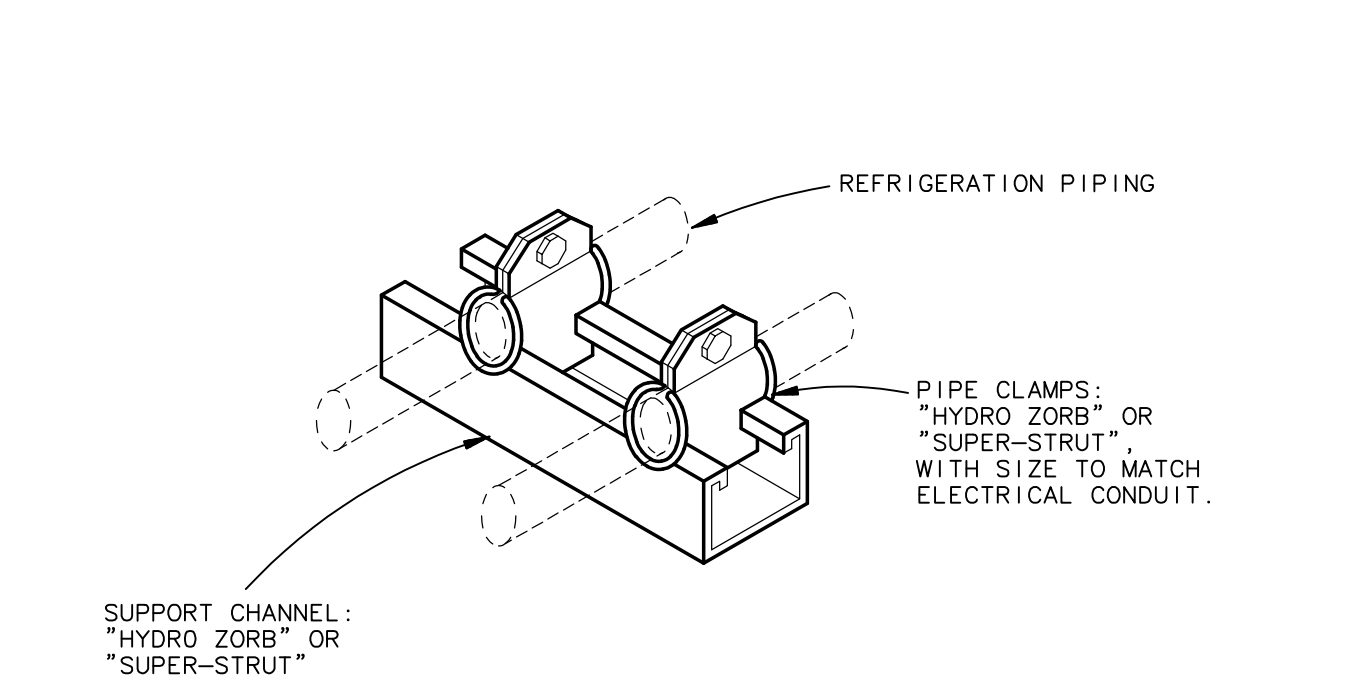


SHEET METAL DUCT DETAIL

- SHEET METAL DUCTS SHALL BE FABRICATED & INSTALLED PER THE LATEST EDITION OF SMACNA, AND THE FLORIDA ENERGY CODE (SECTIONS 503.8 AND 503.9)
- ALTERNATE INTERPRETATIONS OF SMACNA DUCT MATERIAL, HANGERS AND REINFORCEMENTS ARE SUBJECT TO ENGINEER APPROVAL, AND REQUIRE SEPARATE SUBMITTAL OF THE ALTERNATES.
- FLEXIBLE DUCT CONNECTORS SHALL BE PROVIDED AT CONNECTIONS TO ALL EQUIPMENT.
- RECTANGULAR ELBOWS SHALL BE SQUARE NECK (SAME IN & OUT DIMENSIONS) WITH 2" DOUBLE THICKNESS TURNING VANES.
- OFFSETS SHALL NOT REDUCE THE FREE AREA, AND SHALL NOT EXCEED 30" UNLESS OTHERWISE SPECIFIED.
- TRANSITIONS SHALL NOT EXCEED 1:3 RATIO (4" TRANSITION PER FOOT SINGLE SIDED TRANSITION, AND 8" PER FOOT DOUBLE SIDED TRANSITION).
- INSULATION SHALL BE NFPA 90 APPROVED, WITH ALUMINUM FOIL FACING AND A MINIMUM INSTALLED R-VALUE OF 4.2. RETURN AIR, OUTSIDE AIR, AND EXHAUST DUCTWORK SHALL NOT BE INSULATED.
- ROUND DUCT CONNECTIONS SHALL BE SPIN-IN TYPE, WITH DAMPER AND HANDLE. SPRAY PAINT LOCATIONS OF HANDLES.
- FLEXIBLE DUCT SHALL INCLUDE AN INNER POLYETHYLENE LINER, A SPRING HELIX, BLANKET INSULATION WITH A MINIMUM INSTALLED R-VALUE OF 4.2, A FOIL OUTER VAPOR BARRIER, AND BE UL-181 APPROVED.
- ALL TAPE SHALL BE FASSON 0810 (NO SUBSTITUTIONS), SMACNA APPROVED.
- COMPLETELY SEAL ALL SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR DUCTS WITH RCD #6 MASTIC OR "HARDCAST" MASTIC TAPE. (NO SUBSTITUTIONS)

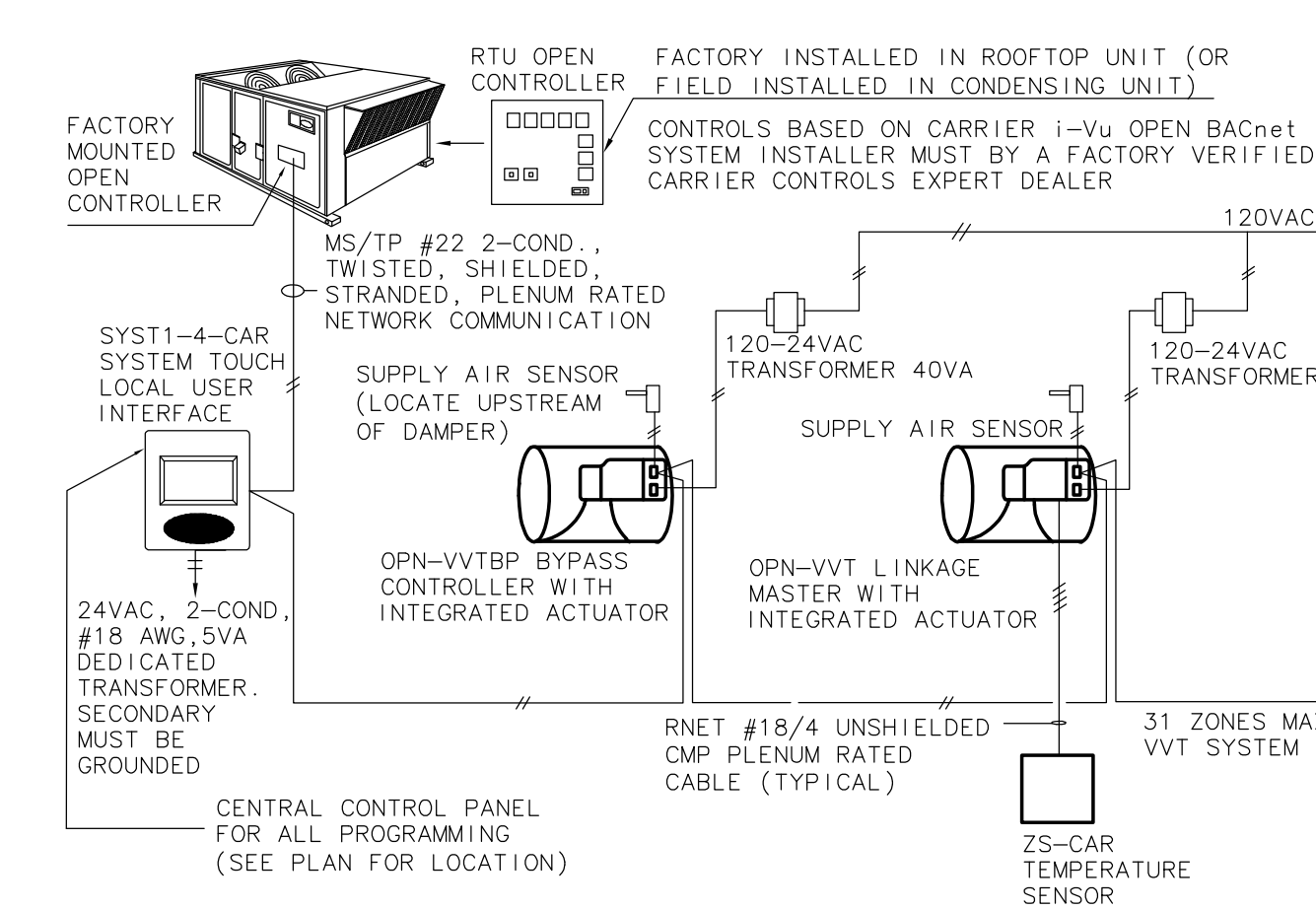
RETURN, OUTSIDE AIR, AND EXHAUST DUCTS DO NOT NEED TO BE INSULATED. INSULATION IS ONLY REQUIRED FOR SUPPLY DUCTWORK.

FIELD FABRICATED TAPS TO ROUND DUCT NOT PERMITTED



REFRIGERANT PIPING DETAIL

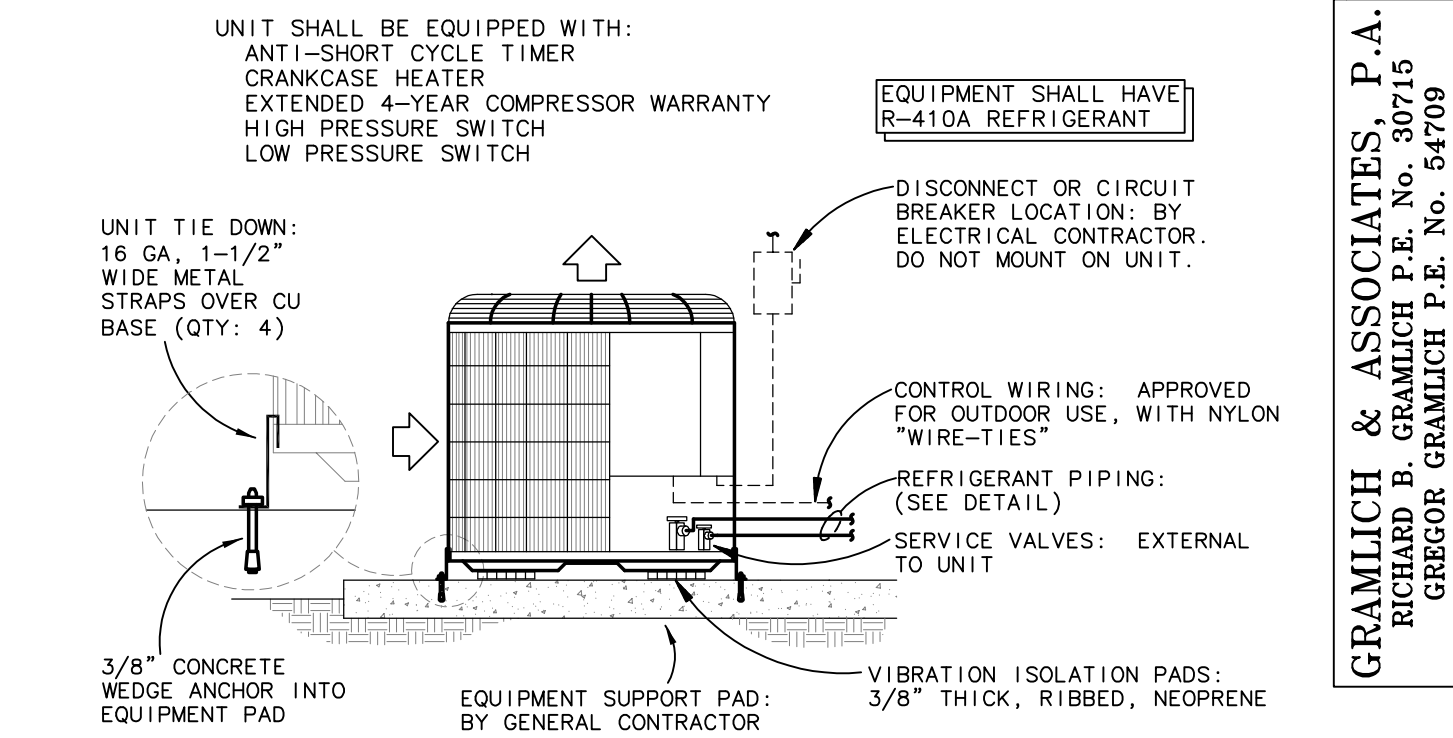
- ALL REFRIGERANT PIPING ABOVE THE FLOOR SHALL BE HARD COPPER, ACR TYPE "L", WITH LONG RADIUS ELBOWS AND WROUGHT FITTINGS. PIPING BELOW THE FLOOR SHALL BE SOFT COPPER.
- TRAPS SHALL BE SINGLE PIECE, WROUGHT COPPER.
- INSULATE SUCTION LINES FULL LENGTH WITH ARMAFLEX INSULATION. THICKNESS SHALL BE 1/2" UP THROUGH 7/8" SUCTION LINE SIZE, WITH 3/4" THICKNESS FOR 1-1/8" SUCTION LINES & ABOVE. ALL INSULATION SHALL BE ASTM E84 APPROVED (FLAME SPREAD OF 25, SMOKE DENSITY OF 50).
- INSULATION SHALL NOT BE SPLIT DURING INSTALLATION.
- ALL INSULATION THAT IS EXPOSED TO THE OUTDOORS, SHALL BE WRAPPED WITH A PROTECTIVE ALUMINUM JACKET.
- ROUTING OF ALL REFRIGERANT PIPING SHALL BE "SQUARE WITH" BUILDING LINES. HORIZONTAL PIPING SHALL BE SLOPED AT THE RATE OF (1) INCH FOR EACH (10) FEET, TOWARD THE COMPRESSOR.
- SUPPORT OF THE REFRIGERANT PIPING AT THE COMPRESSORS, CONDENSERS, AND AIR HANDLING UNITS SHALL BE AS SHOWN ABOVE.
- SUPPORT OF THE REFRIGERANT PIPING, IN CEILING PLENUMS, SHALL BE WITH STRAP HANGERS, SHEET METAL "SADDLES", WITH 3/4" INSULATION TO ELIMINATE ANY METAL-TO-METAL CONTACT.
- BRAZE ALL REFRIGERANT PIPING WITH A FLOW OF DRY NITROGEN DURING THE BRAZING OPERATIONS.
- SOLDER SHALL BE 15% SILVER "SIL-FOS" OR EQUAL.
- CHANGE FILTER-DRYER CORES AFTER 30 DAYS OF OPERATION. SAVE CORES FOR INSPECTION BY TEST & BALANCE, OR BY OWNERS REPRESENTATIVE INSPECTION.
- REFRIGERANT PIPING, AND EXPANSION VALVES, FOR 6 TON AND SMALLER, TO BE SIZED BY EQUIPMENT MANUFACTURER.



VARIABLE VOLUME/TEMPERATURE (VVT) DETAIL

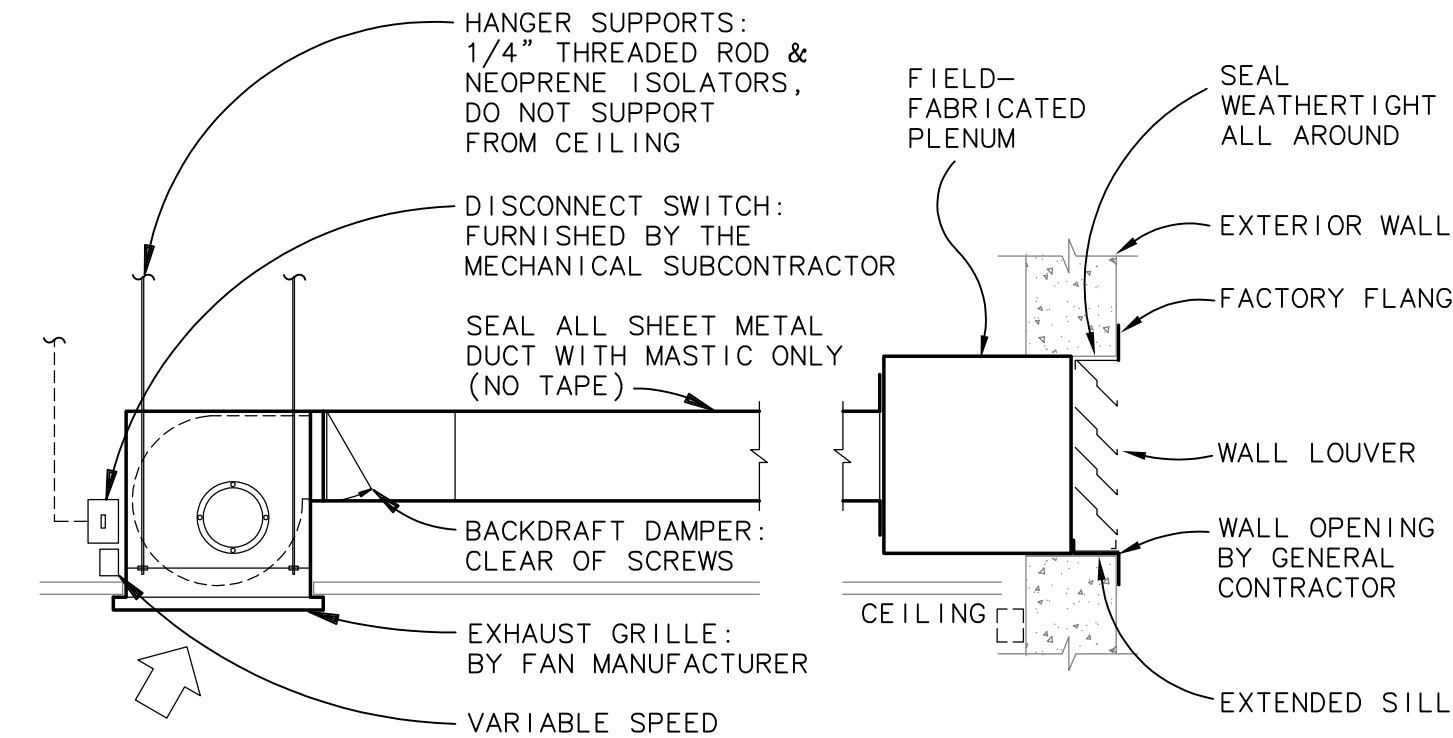
- NOTES:
- SYSTEM COMPONENTS ARE BASED ON CARRIER.
 - ALL LOW VOLTAGE WIRING AND COMMUNICATIONS WIRING SHALL BE BY THE MECHANICAL CONTRACTOR. WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.
 - ALL DAMPERS SHALL BE PROVIDED WITH A FACTORY CONTROL TRANSFORMER. SYSTEM ZONE DAMPERS SHALL OPERATE UNDER PRESSURE DEPENDENT CONTROL WHICH SHALL BE MOUNTED AND WIRED BY THE ELECTRICAL CONTRACTOR. TRANSFORMERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO THE DAMPERS SERVED.
 - THE "SYSTEM TOUCH" SHALL BE MOUNTED 4'-0" AFF AND LOCATED AS SHOWN ON PLANS. ALL SENSORS SHALL BE LOCATED AT 5'6" AFF AND LOCATED AS SHOWN ON PLANS.
 - THE OPEN CONTROLLER PACKAGE SHALL BE COMPATIBLE WITH THE PARTICULAR STAGES OF HEATING AND COOLING AS SHOWN ON THE EQUIPMENT SCHEDULE.
 - BYPASS DAMPER(S) SHALL BE SIZED AT MAXIMUM 1200 FPM FOR RELIEF OF 300 CFM/TON FOR PROPER AIR FLOW OVER THE COOLING COIL. IF MULTIPLE DAMPERS ARE REQUIRED, THEY SHALL BE WIRED TOGETHER TO ACT AS A SINGLE DAMPER.
 - COMMUNICATED BUS AND SENSOR WIRING MUST BE SEPARATE FROM AC POWER WIRING.
 - LOCATED SAT IN DUCT DOWNSTREAM OF CCT ZONE TERMINAL AND UPSTREAM OF CCT BYPASS TERMINAL
 - ALL DAMPERS SHALL BE SIZED ACCORDING TO THE FOLLOWING SCHEDULE:

CARRIER MODEL NO.	SIZE (IN)	CFM (Ø800 FPM)	CFM (Ø1200 FPM)
ZD-06	6	160	240
ZD-08	8	280	420
ZD-10	10	440	660
ZD-12	12	630	950
ZD-14	14	850	1275
ZD-16	16	1125	1675
RD0810	8x10	410	610
RD0814	8x14	560	825
RD0818	8x18	725	1075
RD0824	8x24	925	1375



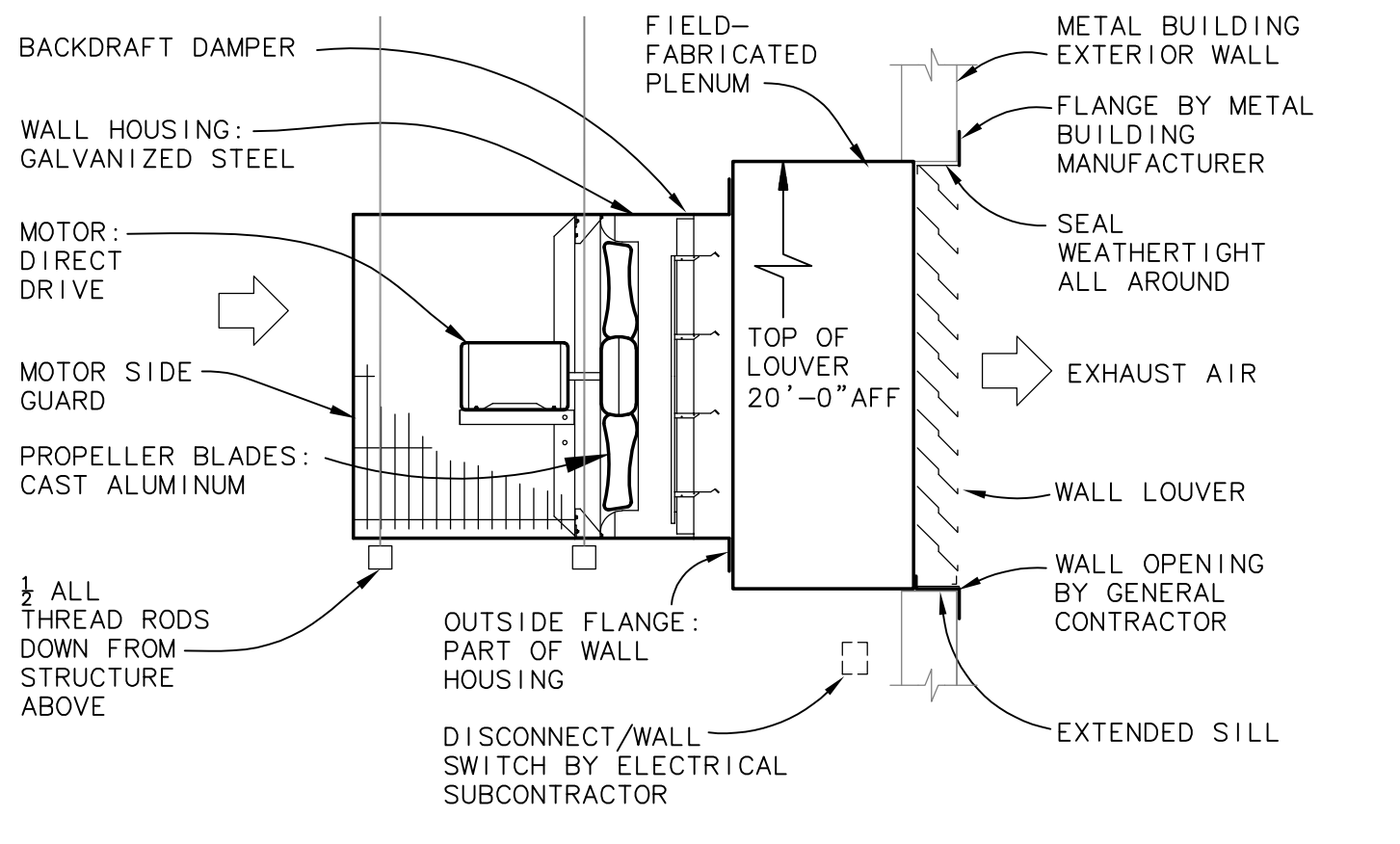
CONDENSING UNIT DETAIL

DESIGNATION AREA SERVED	CU-2 INTERIOR OFFICES
CARRIER MODEL NUMBER	CA16PW048
WEIGHT - LBS	275
NOMINAL TONS CAPACITY - TOTAL MBH	4
AMBIENT TEMPERATURE - °F	92
ELECTRICAL VOLTAGE	208/3
COMPRESSOR RLA (1) EA	13.8
CONDENSER FAN FLA (1) EA	2.8
MINIMUM CIRCUIT AMPS	20.1
FUSE/CIRCUIT BREAKER AMPS	30
EER:	13.0
SYSTEM SEER:	16.1
REFRIGERANT PIPING SIZES:	
LIQUID	3/8"
SUCTION (0-80 FT)	7/8"



CEILING FAN DETAIL

DESIGNATION AREA SERVED	TEF-1 TOILET	TEF-2 TOILET	TEF-3 JANITOR	TEF-4 SHOWER
GREENHECK MODEL NUMBER	SP-110-VG	SP-110-VG	SP-110-VG	SP-A200
WEIGHT - LBS	12	12	12	12
FAN CAPACITY - CFM	75	75	75	150
STATIC PRESSURE "WG	0.375	0.375	0.375	0.375
RPM	866	866	866	802
SONES	2.5	2.5	2.5	2.0
MOTOR HORSEPOWER	8 W	8 W	8 W	36 W
MOTOR VOLTAGE/PHASE	115/1	115/1	115/1	115/1
CONTROL VOLTAGE/PHASE	120/1	120/1	120/1	120/1
INTERLOCK WITH:	LIGHTS	LIGHTS	LIGHTS	LIGHTS



WALL FAN DETAIL

DESIGNATION AREA SERVED	GEF GARAGE EXHAUST	GSF GARAGE SUPPLY
GREENHECK MODEL NUMBER	AER-E42C-605-VG1H20	AER-S42C-605-VG
WEIGHT - LBS	498	498
CFM	7000	7000
STATIC PRESSURE "WG	0.375	0.375
RPM	711	709
SONES	22	22
WALL OPENING (SQUARE)	51-1/4"	51-1/4"
MOTOR HORSEPOWER	2	2
MOTOR VOLTAGE/PHASE	208/3	208/3
MOTOR AMPS	9.7	9.7
CONTROL VOLTAGE/PHASE	120/1	120/1
INTERLOCK WITH:	WALL SWITCH	WALL SWITCH

GRAMLICH & ASSOCIATES, P.A.
RICHARD B. GRAMLICH P.E. No. 30715
GREGOR GRAMLICH P.E. No. 54709
CERTIFICATE OF AUTHORIZATION No. 4726
1444 W. BAYVIEW BLVD., SUITE 400
LARGO, FLORIDA 34747-4000
(727) 538-0454 FAX: (727) 530-5931

CMHM ARCHITECTS INC.
108 SOUTH FLORIDA AVENUE
JACKSONVILLE, FLORIDA 32202
TELEPHONE: 904-488-8882 | info@cmhm.com

architects

BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
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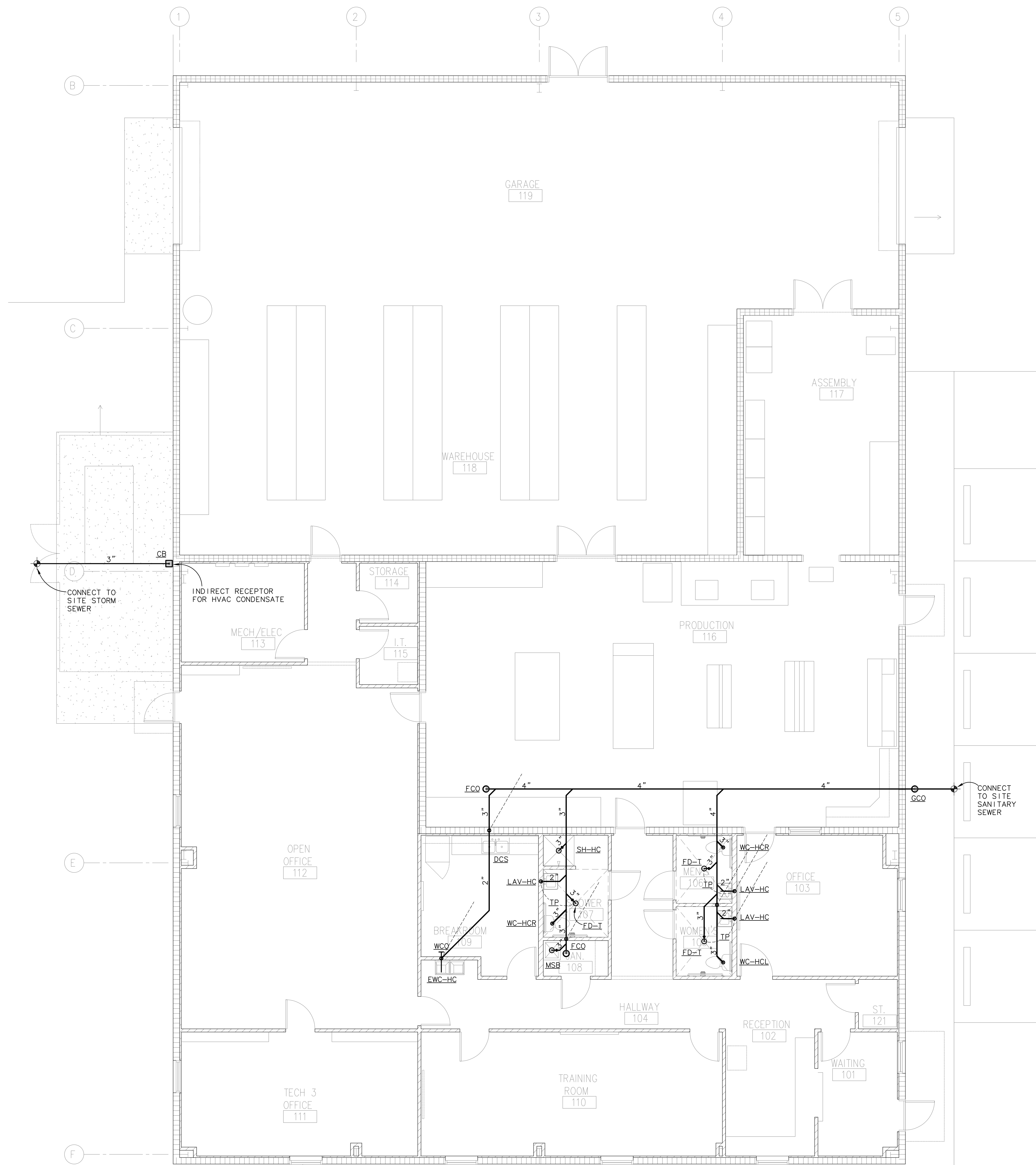
MECHANICAL DETAILS & SCHEDULES

REVISIONS

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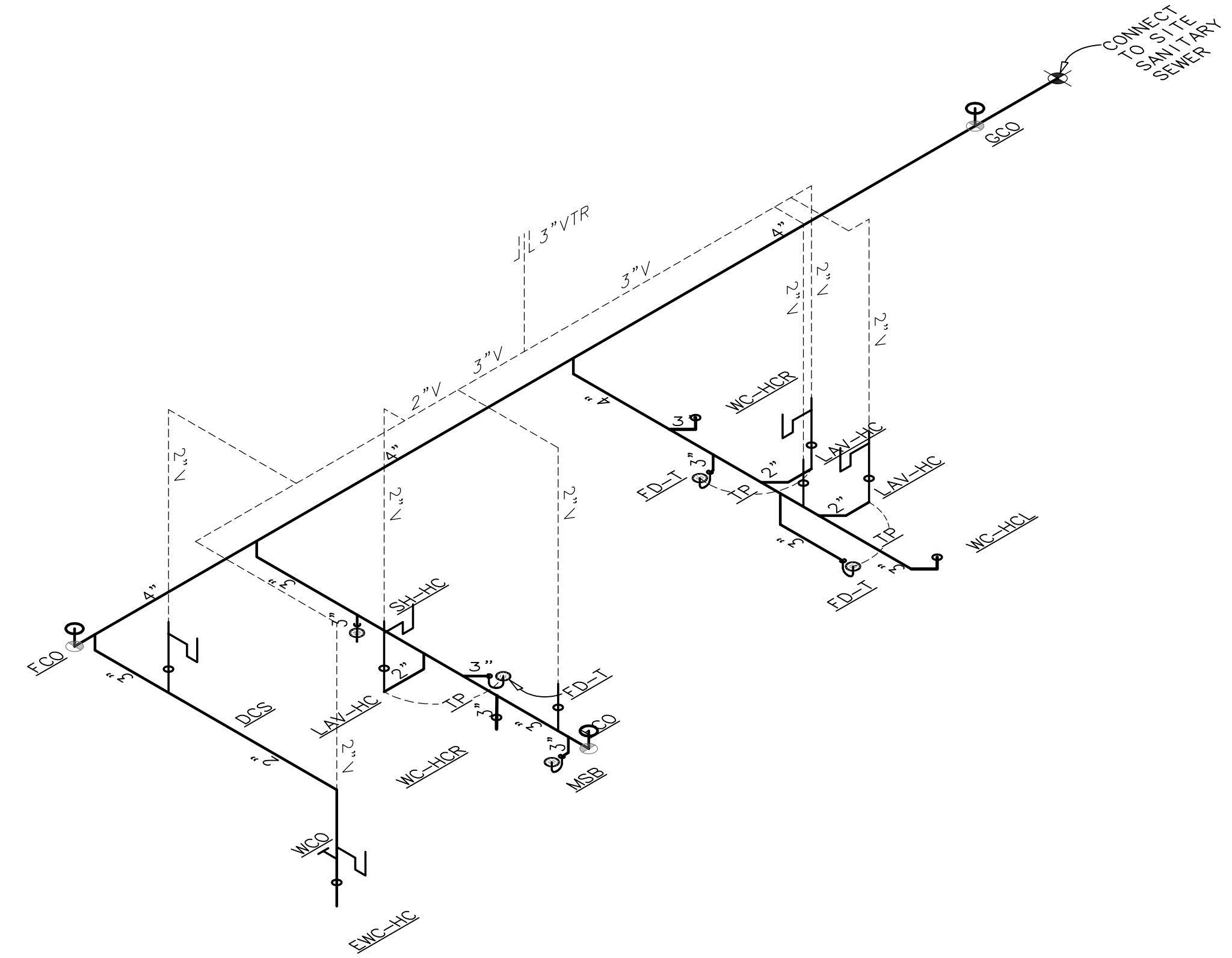
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WASTE & VENT PLAN
SCALE: 3/16"=1'-0"

- ### PLUMBING GENERAL NOTES
- WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE, AND LOCAL CODES INCLUDING:
 - 2020 FLORIDA BUILDING CODE
 - 2020 FLORIDA PLUMBING CODE
 - 2020 FLORIDA GAS CODE
 - STATE ENERGY CODE
 - DEFINITIONS: "FURNISH" SHALL MEAN TO PURCHASE AND LOCATE AN ITEM ON THE JOBSITE. "INSTALL" SHALL MEAN TO PHYSICALLY INSTALL AN ITEM, AND TO CONNECT ALL REQUIRED SERVICES TO MAKE THAT ITEM FULLY FUNCTIONAL. "PROVIDE" SHALL MEAN TO BOTH FURNISH AND INSTALL AN ITEM.
 - VERIFY ALL POINTS OF CONNECTION WITH OTHER DISCIPLINES (LOCATION AND INVERT) PRIOR TO INSTALLATION. THIS SHALL INCLUDE EXISTING UTILITIES AS WELL AS NEW UTILITIES INSTALLED UNDER THE SCOPE OF WORK FOR THIS PROJECT.
 - COORDINATE WITH OTHER TRADES TO PREVENT INTERFERENCE WITH HVAC DUCTS, ELECTRICAL LIGHTING, AND STRUCTURE, IN THE CEILING PLENUMS. PRIORITY SHALL BE GIVEN TO HVAC DUCTWORK.
 - ALL WORK, BOTH MATERIAL AND INSTALLATION, SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM THE DATE OF OWNER ACCEPTANCE (CERTIFICATE OF OCCUPANCY).

- ### SANITARY, WASTE AND VENT PIPING
- SANITARY, WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC PER ASTM D2665 (NO SUBSTITUTIONS) WITH SOLVENT WELDED CEMENT IN ACCORDANCE WITH ASTM 2564, AND BE INSTALLED PER ASTM D2321
 - COORDINATE SANITARY AND WASTE PIPING BELOW THE SLAB WITH THE BUILDING FOUNDATIONS PRIOR TO INSTALLATION.
 - SET FLOOR DRAINS BELOW FINISHED FLOOR LEVEL TO ALLOW FULL DRAINAGE OF AREA.
 - EXPOSED DRAINS IN TOILETS SHALL BE CHROME-PLATED BRASS WITH ESCUTCHEONS.
 - PROVIDE CLEANOUTS AS SHOWN ON THE PLAN AND SHALL NOT BE DELETED. PROVIDE ADDITIONAL CLEANOUTS WHERE REQUIRED BY THE PLUMBING OFFICIAL AT NO ADDITIONAL COST.
 - METAL ROOFING CONTRACTOR SHALL FURNISH AND INSTALL ALL VTR CAPS.
 - ALL INDIRECT PIPING SHALL TERMINATE AT THE RECEPTOR WITH A MINIMUM AIR GAP OF TWO PIPE DIAMETERS AND SHALL BE BEVELED AT 45 DEGREES.
 - TEST PIPING WITH A 10' WATER COLUMN FOR TWO HOURS.



WASTE & VENT RISER
SCALE: NTS

GRAMLICH & ASSOCIATES, P.A.
RICHARD B. GRAMLICH P.E. No. 30715
GREGOR GRAMLICH P.E. No. 54709
CERTIFICATE OF AUTHORIZATION No. 4726
13191 STARBUCK ROAD, SUITE 17
DUNEDIN, FLORIDA 32726
(727) 538-0454 FAX: (727) 530-5931

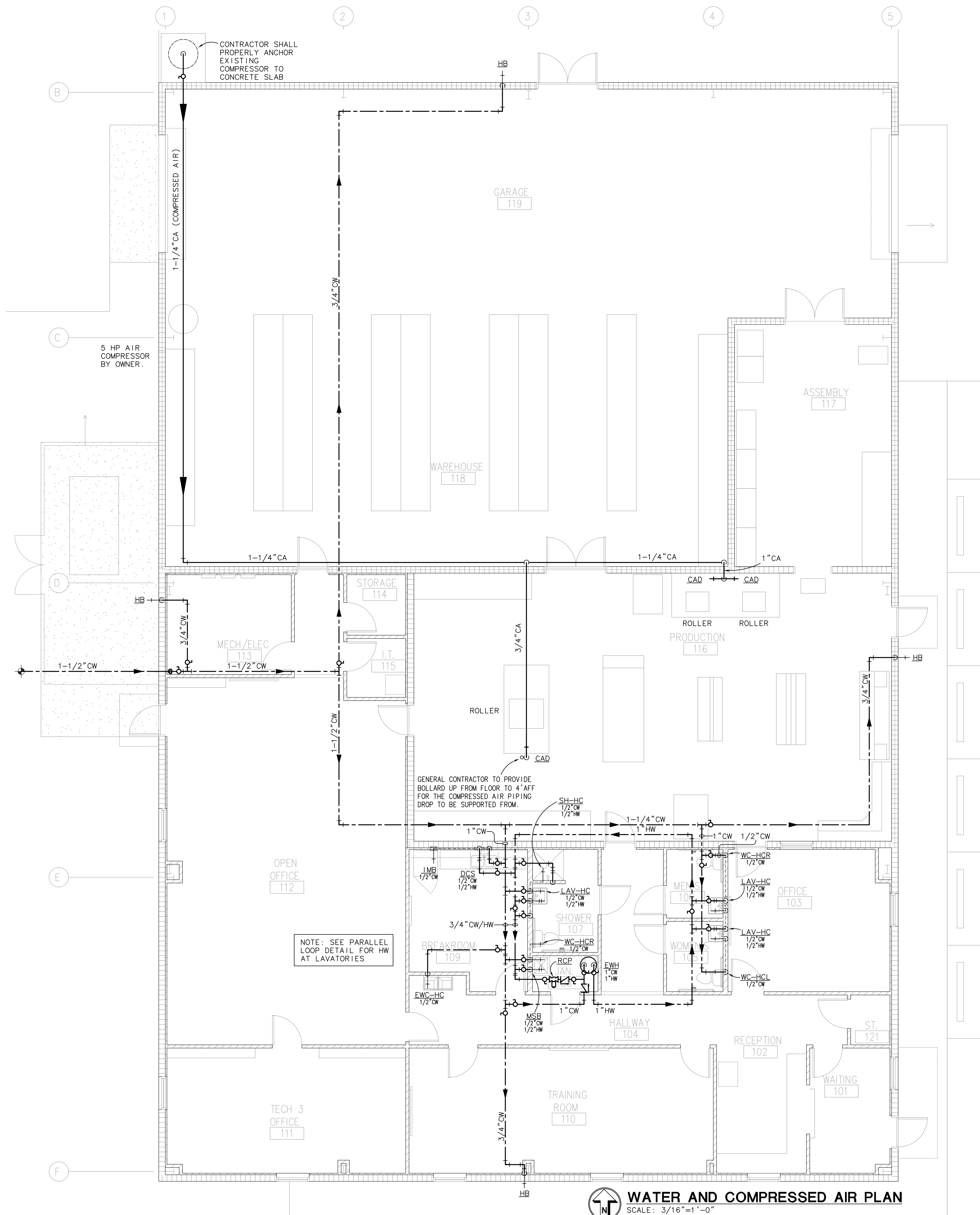


CMHM ARCHITECTS INC.
108 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA | 33803-1118
TELEPHONE: 863-488-8882 | lla@cmhm.com

JOHN R. CURTIS, AIA
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WASTE & VENT PLAN

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WATER AND COMPRESSED AIR PLAN
SCALE: 3/16"=1'-0"

WATER PIPING

1. THE BASE BID FOR WATER PIPING ABOVEGROUND SHALL BE TYPE "L" COPPER (ASTM B88-89), WITH WROUGHT COPPER FITTINGS (ASTM B16.22-89) AND 95-5 SILVER SOLDERED JOINTS. PRICING FOR USE OF CPVC, AS AN ALTERNATE, SHALL BE PROVIDED.
2. SUPPORT ALL PIPING WITH PIPE HANGERS BY GRINELL OR APPROVED EQUAL. HANGERS SHALL BE SPECIFICALLY SELECTED FOR USE WITH THE PIPE MATERIAL AND INSULATION THICKNESS (IF INSULATED) SPECIFIED.
3. PROVIDE ZONE SERVICE VALVES AT ALL BRANCH SUPPLY LINES. ALL VALVES SHALL BE 125 LB SERVICE RATED. SHUTOFF VALVES SHALL BE 2 PIECE, BRASS, BALL VALVES AND SHALL BE INSTALLED CLOSE TO CEILINGS FOR ACCESS. PROVIDE AN ACCESS PANEL WHERE VALVES ARE LOCATED ABOVE GYPSUM BOARD CEILINGS.
4. PROVIDE EACH FIXTURE WITH SHUTOFF SUPPLY STOPS. EXPOSED STOPS AND SUPPLY PIPING SHALL BE CHROME PLATED WITH A CHROME PLATED ESCUTCHEON AND SET SCREW.
5. PROVIDE UNIONS FOR ALL CONNECTIONS TO SERVICEABLE EQUIPMENT. UNIONS SHALL BE DIELECTRIC TYPE WHERE DISSIMILAR METALS ARE CONNECTED.
6. HOT WATER PIPING INSULATION SHALL BE EITHER FIBERGLASS "MANVILLE MICRO-LOK AP-1" OR CLOSED CELL "ARMAFLEX".
7. INSULATE HOT WATER PIPING AS FOLLOWS: RECIRCULATING PORTIONS (IF PRESENT) SHALL PROVIDE 1" INSULATION FOR PIPING UP TO AND INCLUDING 1-1/4", 1-1/2" INSULATION FOR PIPING LARGER THAN 1-1/4" AND 1/2" INSULATION ON ALL RUNOUTS TO INDIVIDUAL FIXTURES.
8. ALL WATER PIPING INSTALLED INSIDE CMU WALLS SHALL BE PROTECTED FROM CORROSION WITH EITHER INSULATION OR A CONTINUOUS VINYL SLEEVE.
9. PROVIDE VACUUM BREAKERS, OR BACKFLOW PREVENTERS, AS REQUIRED BY CODE.
10. PROVIDE TRAP PRIMERS AS REQUIRED BY CODE.
11. TEST ALL WATER PIPING AT 100 PSIG FOR SIX HOURS OR AS REQUIRED BY THE BUILDING DEPARTMENT.
12. STERILIZE WATER PIPING IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS.

COMPRESSED AIR PIPING

1. COMPRESSED AIR PIPING SHALL BE TYPE GALVANIZED IRON PIPE (ASTM A53), WITH GALVANIZED MALLEABLE IRON FITTINGS (ASTM B16.3)
2. ALL BALL VALVES SHALL BE FULL PORT
3. ROUTING OF ALL COMPRESSED AIR PIPING SHALL BE "SQUARE WITH" BUILDING LINES.
4. HORIZONTAL PIPING SHALL BE SLOPED AT THE RATE OF (1) INCH FOR EACH (10) FEET, TOWARD THE MOISTURE TRAP.
5. SUPPORT OF THE COMPRESSED AIR PIPING SHALL BE AS SHOWN IN DETAIL.
6. PROVIDE A "LOW POINT" DRAIN & BALL VALVE AT MOISTURE TRAP
7. ALL COMPRESSED AIR DROPS (CAD) SHALL BE 3/4" UNLESS NOTED OTHERWISE
8. ALL TAPS INTO MAINS SHALL BE MADE OFF THE TOP OF THE MAIN WITH AN INVERTED TRAP.

COMPRESSED AIR PIPING TESTING

TEST ALL COMPRESSED AIR PIPING FOR LEAKS BY PRESSURISING TO 100 PSI AND HOLDING FOR A MINIMUM OF 15 MINUTES

PLUMBING CONTRACTOR SHALL PERFORM THIS TEST, AND REPEAT AS NEEDED TO ENSURE THAT THE COMPRESSED AIR PIPING IS FREE OF OILS AND DEBRIS. THE FINAL "WHITE CLOTH" TEST IS TO BE PERFORMED IN PRESENCE OF OWNER'S REPRESENTATIVE FOR ACCEPTANCE.

1. WITH THE COMPRESSOR CONNECTED AND THE SYSTEM AT WORKING PRESSURE, FIRST, DIRECT AIRFLOW FROM TEST PORT INTO SAFE DIRECTION, AND PLACE INTO BUCKET OR TRAP TO CATCH ANY LARGER DEBRIS WHICH MIGHT BE IN SYSTEM. OPEN VALVE FULLY, UNTIL SYSTEM IS FULLY FLUSHED WITH COMPRESSED AIR. REPEAT UNTIL NO VISIBLE DEBRIS IS EXPELLED WHEN VALVE IS OPENED.
2. THEN, PLACE A WHITE CLOTH OVER THE TEST PORT AND OPEN FULLY FOR ANOTHER FULL SYSTEM FLUSH. EXAMINE THE CLOTH AND REPEAT UNTIL CLOTH IS CLEAN AND FREE OF ANY OILS AND DEBRIS, OR AS ACCEPTED BY OWNER'S REPRESENTATIVE. PLUG TEST PORT AFTER TESTING IS COMPLETED.

GRAMLICH & ASSOCIATES, P.A.
RICHARD B. GRAMLICH P.E. No. 30715
GREGOR GRAMLICH P.E. No. 64709
CERTIFICATE OF AUTHORIZATION No. 4726
13191 S. STATE ROAD, SUITE 17
MARIETTA, GEORGIA 30067
(770) 538-0454 FAX: (770) 530-5931

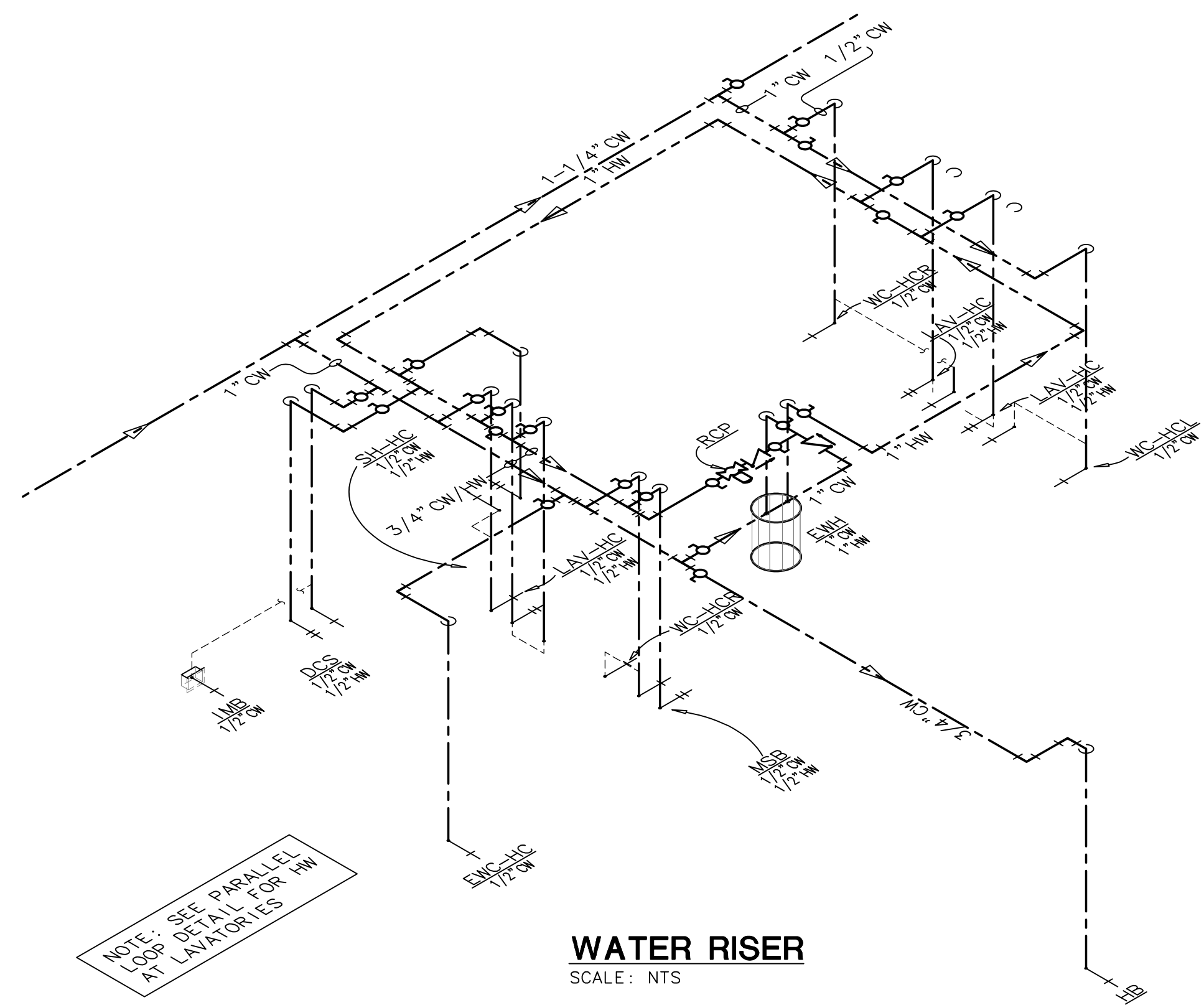


CMHM ARCHITECTS INC.
JOHN F. CURTIS, AIA
BENJAMIN F. HUNDT, JR., AIA, LEED AP
KEITH R. HANCOCK, AIA
NELL G. FIEBIGER, AIA, LEED AP
108 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA 33803-1118
TELEPHONE: 863-688-8882 | info@cmhm.com

WATER DEMAND

FIXTURE	QTY	CW		HW		TOTAL EACH	TOTAL ALL
		EACH	EACH	EACH	EACH		
DRINKING FOUNTAIN	1	0.25	0.00	0.25	0.00	0.25	0.25
KITCHEN SINK	1	3.00	3.00	4.00	4.00	4.00	4.00
LAVATORY	3	1.50	1.50	2.00	2.00	6.00	6.00
SERVICE SINK	1	2.25	2.25	3.00	3.00	3.00	3.00
WATER CLOSET - FLUSH TANK	3	5.00	0.00	5.00	0.00	15.00	15.00
SHOWER	1	3.00	0.00	3.00	0.00	3.00	3.00
MISCELLANEOUS	4	1.00	0.00	1.00	0.00	4.00	4.00
TOTAL WATER SUPPLY FIXTURE UNITS (WSFU)							35.25
TOTAL GPM							26
SERVICE PIPE SIZE							1-1/2"
AVAILABLE WATER PRESSURE (PSI) (ASSUMED)							50.00
1-1/2" SERVICE (426-FT)							9.22
1" WATER METER (PSI)							3.00
1-1/2" BACKFLOW PREVENTER (PSI)							12.00
PRESSURE LOSS AT CRITICAL FIXTURE (PSI)							20.00
PRESSURE AVAILABLE FOR PIPING (PSI)							5.78
EQUIVALENT LENGTH OF PIPING IN BUILDING (FT)							100.00
PRESSURE LOSS/100 FEET AVAILABLE							5.78

DATA TAKEN FROM THE FLORIDA PLUMBING CODE - TABLE E103.3(2)



WATER RISER
SCALE: NTS

BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL

WATER PLAN

CONSTRUCTION 03/29/2023
APPROVAL
REVIEW
CHECKED BY

P200
19058

PLUMBING FIXTURE SCHEDULE

TOILET FIXTURES					
MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/WASTE	VENT
WC-HCL	WATER CLOSET: ADA, LEFT HAND TRIP LEVER AMERICAN STANDARD "CADET 3" 215AA.004 FLOOR MOUNTED, 1.6 GPF, GRAVITY FLUSH, VITREOUS CHINA, 3" FLAPPER VALVE, 2-1/8" GLAZED TRAPWAY, 12" ROUGH ELONGATED, 16-1/2" HIGH BOWL, SIPHON JET, WATER SAVER. SEAT: OLSONITE #10 HEAVY DUTY, OPEN FRONT, LESS COVER	1/2"	-	3"	2"
WC-HCR	WATER CLOSET: ADA, RIGHT HAND TRIP LEVER AMERICAN STANDARD "CADET 3" 4188A.005 FLOOR MOUNTED, 1.6 GPF, GRAVITY FLUSH, VITREOUS CHINA, 3" FLAPPER VALVE, 2-1/8" GLAZED TRAPWAY, 12" ROUGH ELONGATED, 16-1/2" HIGH BOWL, SIPHON JET, WATER SAVER. SEAT: OLSONITE #10 HEAVY DUTY, OPEN FRONT, LESS COVER	1/2"	-	3"	2"
LAV-HC	LAVATORY HANDICAP: AMERICAN STANDARD "LUCERNE" 0355.012 WALL HUNG TYPE, 20-1/2"x18-1/4" VITREOUS CHINA, FOR CONCEALED ARM SUPPORT, 0.5 GPM FLOW RESTRICTOR, AERATOR AND CP SUPPLIES WITH STOPS, CP ESCUTCHEONS, CP GRID DRAIN, CP TRAP WITH INTEGRAL CLEANOUT, HANDI-CAP OFFSET TAILPIECE. LAV GUARD: TRUEBRO T03E-7 INSULATION KIT. TRIM: SINGLE LEVER, SINGLE HOLE FAUCET. ZURN Z82200-XL-3M WITH GRID STRAINER DRAIN AND 0.5 GPM VANDAL RESISTANT PRESSURE COMPENSATING AERATOR, LESS POP-UP DRAIN AND HOLE. PROVIDE WITH WATTS LFUSG-B-SC-M2, ASSE 1070, MIXING VALVE WITH 3/8" COMPRESSION FITTINGS. SET FOR 110F, MIN 0.25 GPM. CARRIER: ZURN Z-1231, MOUNT RIM AT HANDICAP HEIGHT.	1/2"	1/2"	1-1/4"	2"
FD-T	FLOOR DRAIN - TOILETS 6" ADJUSTABLE DURA-COATED CAST IRON BODY, TYPE "N" DURA-COAT CAST IRON STRAINER, POLISHED NICKLE BRONZE COVER WITH FLASHING MEMBRANE CLAMPING DEVICE AND TRAP PRIMER CONNECTION.	-	-	3"	2"
TP-1	TRAP PRIMER: JR SMITH 2698 OR 2698-ADA WATER SAVER TYPE, CP BRONZE, 1/2" PIPING AND ESCUTCHEON PLATES. ROUTE PRIMER PIPING IN WALL TO FLOOR DRAIN. OFFSET DRAIN TO LEFT PER MANUFACTURER'S INSTRUCTION FOR USE ON HANDICAP FIXTURES AND USE #2698-ADA	-	-	-	-

SINKS					
MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/WASTE	VENT
DCS	DOUBLE COMPARTMENT SINK: ELKAY "LUSTERTONE" LR-3322 COUNTER-TOP TYPE. DOUBLE COMPARTMENT, 33 X 22 X 8", 18 GAGE, 304 STAINLESS STEEL, WITH DROPPED LEDGE & RAISED FAUCET DECK. TRIM: T&S B-2731 SINGLE LEVER SWIVEL SPOUT FAUCET AND AERATOR, MCGUIRE 2165 CP SUPPLIES WITH STOPS, CP ESCUTCHEONS, MCGUIRE 8912 1-1/2" CP TRAP AND BASKET & STRAINER.	1/2"	1/2"	1-1/2"	2"
MSB	MOP SERVICE BASIN: AMERICAN STANDARD 7741.00 ENAMEL CAST IRON 28"x 28"x 13" CORNER MODEL. TRIM: T & S FAUCET B-0665-BSTR, HOSE BRACKET B-0654 AND MOP HANGER, HEAVY GAGE 304 STAINLESS STEEL SPLASH GUARDS BOTH SIDES 24" TALL (MIN).	1/2"	1/2"	3"	2"

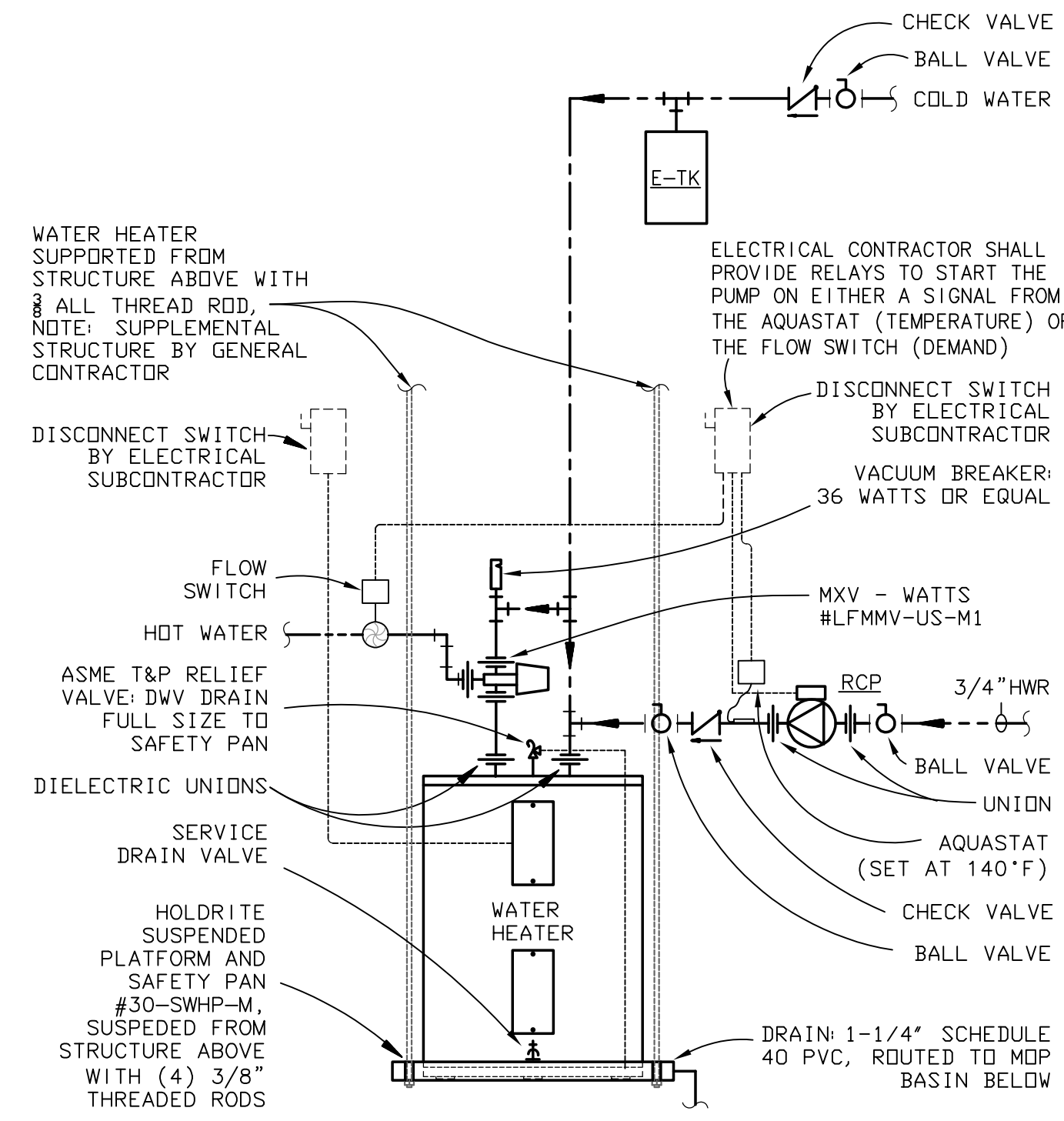
WATER COOLERS					
MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/WASTE	VENT
EW-C-HC	ELECTRIC WATER COOLER-SPLIT LEVEL ELKAY LZSTL8WSSP 8.0 GPH @ 50F, 5 AMPS, 120/11V ADA AND UL APPROVED. WALL MOUNT, SPLIT LEVEL DOUBLE BASIN MODEL WITH TOUCH PADS ON FRONT / SIDES, FACTORY INSTALLED WATER FILTER, & ENHANCED "EZ H2O" BOTTLE FILLING STATION. CP SUPPLIES WITH STOPS, CP ESCUTCHEONS, CP GRID DRAIN, 1-1/4" PLASTIC TRAP CARRIER: ZURN Z-1225-BL, BI-LEVEL.	1/2"	-	1-1/4"	2"

WATER HEATERS					
MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/WASTE	VENT
EW-H-20	ELECTRIC WATER HEATER: A.O. SMITH EJCT-20 FOAM INSULATED, SIDE CONNECTED, 20 GALLON, 2500 WATT, VOLTAGE: 120, 20.8A, SINGLE PHASE.	3/4"	3/4"	-	-
MXV	THERMOSTATIC MIXING VALVE WATTS LFMV-US-M1 3/4" SWEAT CONNECTION, WITH UNIONS LEAD FREE, WITH BUILT IN CHECKS AND INTEGRAL FILTER WASHERS. SET AT 120 DEGREES F	3/4"	3/4"	-	-
RCP	RECIRCULATING PUMP GRUNDFOS UPS26-150SF STAINLESS STEEL, 10 GPM AT 34 THD, 1/3 HP, FLANGE CONNECTION. PROVIDE WITH GRISWOLD MODEL #5521, 5.0 GPM AUTOMATIC FLOW CONTROL WITH A JOHNSON CONTROL ADJUSTABLE THERMOSTATIC CONTROL MODEL #190AC-1C TO MAINTAIN 140 DEGREE HOT WATER RETURN. PROVIDE WITH IN-LINE FLOW SWITCH PER DETAIL P201	-	-	-	-
E-TK	EXPANSION TANK AMTROL ST SERIES THERMAL-X-TROL MODEL ST-5, 3/4" CONNECTION, MAX. WORKING PRESSURE 150 PSI., TOTAL VOLUME GALLON 2.0	-	3/4"	-	-

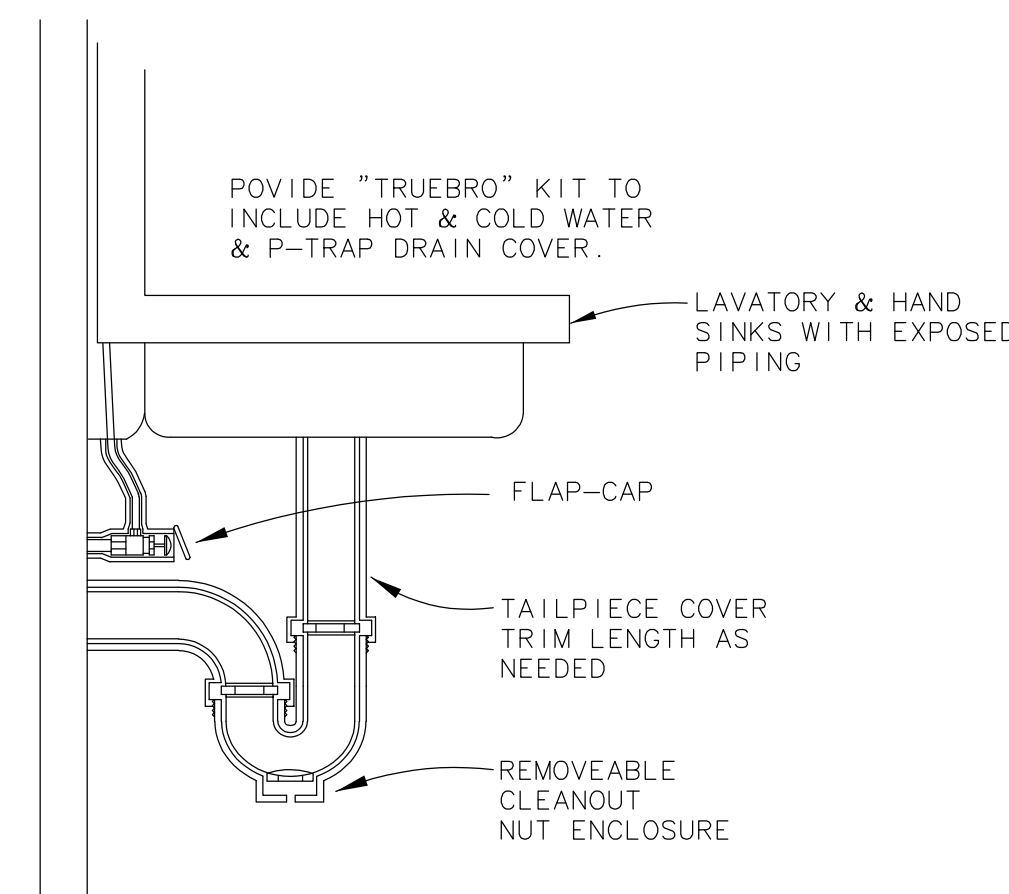
SANITARY AND WASTE DRAINAGE					
MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/WASTE	VENT
WCO	WALL CLEANOUT ZURN ZS-1469 STAINLESS STEEL ACCESS COVER WITH 1/4"-20 SCREW TO CLEANOUT PLUG. INSTALL 18" AFF. PROVIDE PVC PLUG.	-	-	MATCH PIPE	-
GCO	GRADE CLEANOUT ZURN ZB-1400-HD EXTERIOR, ADJUSTABLE CLEANOUT, DUCO COATED, CI BODY, ABS TAPERED PLUG WITH GASKET. HEAVY DUTY TOP.	-	-	MATCH PIPE	-
FCO	FLOOR CLEANOUT ZURN ZN-1400-VP INTERIOR, FLOOR TYPE. ABS TAPERED PLUG WITH GASKET SEAL & NICKEL BRONZE TOP. "C.O." CAST IN THE TOP. SPANNER WRENCH REMOVABLE.	-	-	MATCH PIPE	-

MISCELLANEOUS					
MARK	DESIGNATION & SPECIFICATION	COLD WATER	HOT WATER	TRAP/WASTE	VENT
CAD	COMPRESSED AIR DROP SITE BUILT PER DETAIL SHEET P300	-	-	-	-
HB	HOSE BIBB: WOODFORD #24C-3/4 VACUUM BREAKER-BACKFLOW PROTECTED, WITH EXPOSED SWEAT COPPER CONNECTION, MILD CLIMATE.	3/4"	-	-	-
IMB	ICE MAKER BOX WATER-TITE PRODUCT #88080 FLUSH MOUNTED WITH SINGLE VALVE AND HAMMER ARRESTOR	1/2"	-	-	-
CB	CATCH BASIN HANCOR 0909SD2 BASIN/0902SDDI GRATE TWO-HOLE CATCH BASIN FOR 3" PVC PIPE. DUCTILE IRON BAR GRATE. PLUG UNUSED OPENING.	-	-	NOTED	-
AAV	AIR ADMITTANCE VALVE STUDDOR #20395 OR #20396 1-1/4" OR 1-1/2" TRAP VENT AS REQUIRED, INSTALLED ACCORDING TO MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS.	-	-	-	-

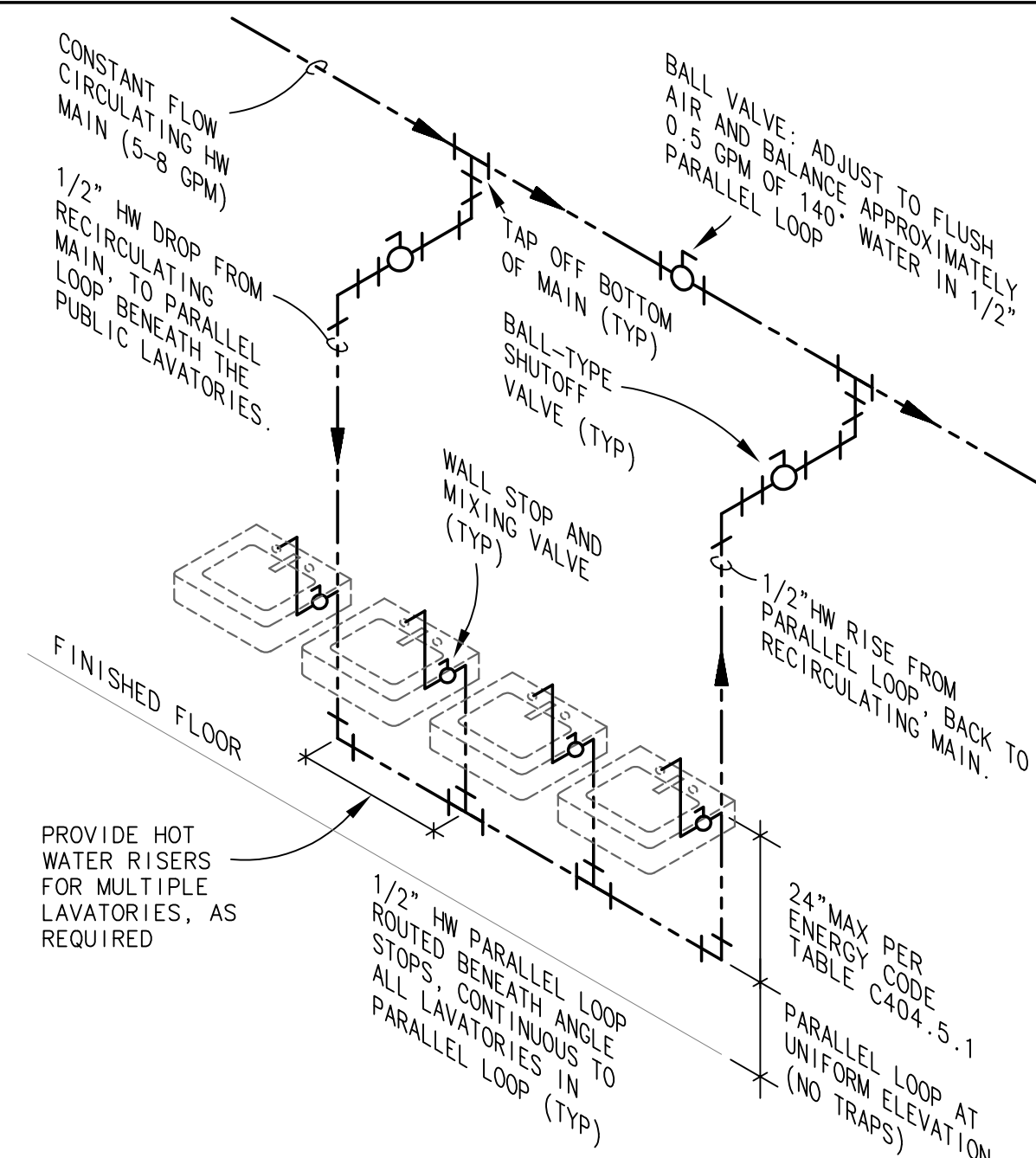
- NOTES:
 1. APPROVED MANUFACTURERS OF FIXTURES ARE AMERICAN STANDARD, KOHLER AND TOTO.
 2. APPROVED MANUFACTURERS OF FAUCETS ARE AMERICAN STANDARD, SLOAN, DELTA, T & S AND CHICAGO.
 3. APPROVED MANUFACTURERS OF FLOOR DRAINS AND CLEANOUTS ARE J.R. SMITH, JOASM, ZURN AND WATTS.
 4. APPROVED MANUFACTURERS OF WATER COOLER IS ELKAY, OASIS AND HAWS.
 5. APPROVED MANUFACTURERS OF THE WATER HEATERS ARE A.O. SMITH, STATE, RHEEM AND RUUD.
 6. ALL SUPPLIES SHALL BE PROVIDED WITH CHROME PLATED ANGLE STOPS AND TUBING EQUAL TO EASTMAN, BRASS-CRAFT OR EQUAL.



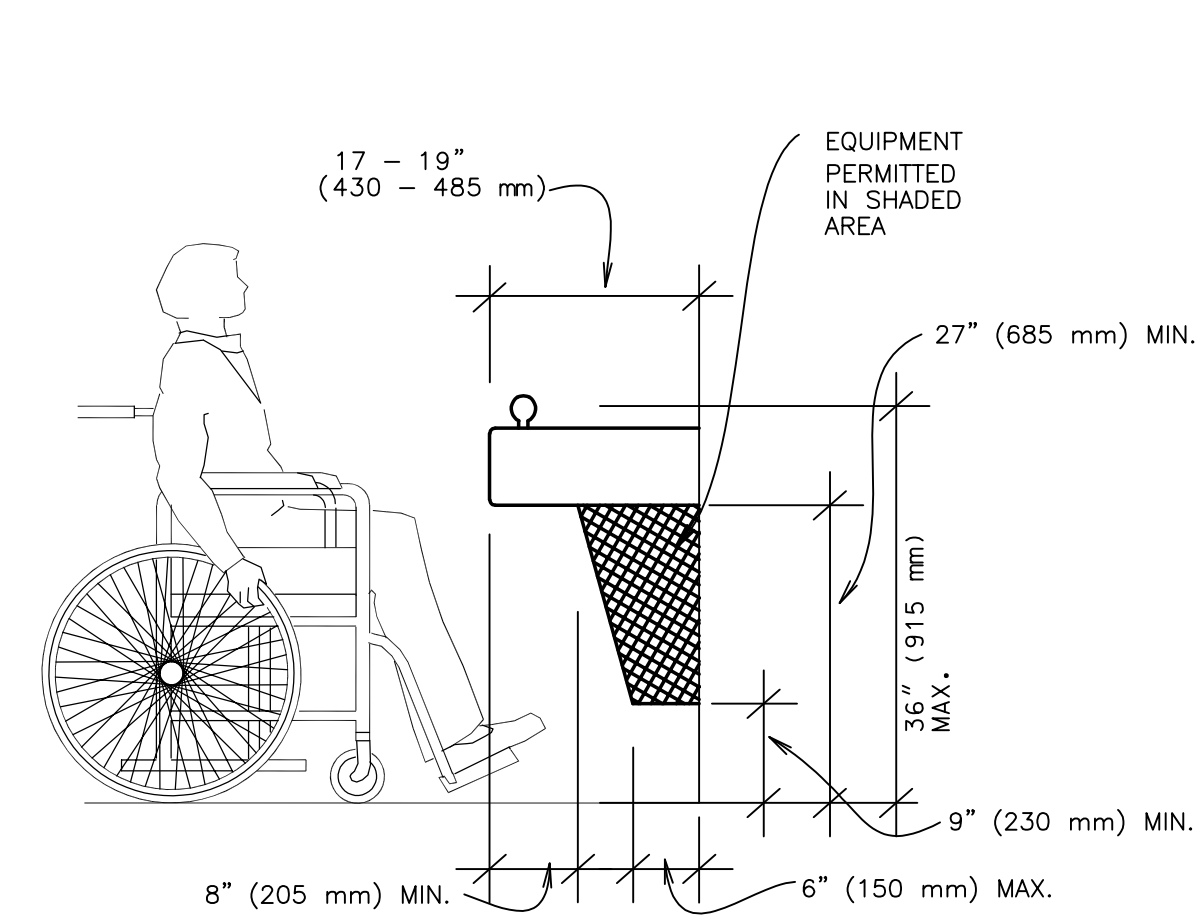
WATER HEATER DETAIL



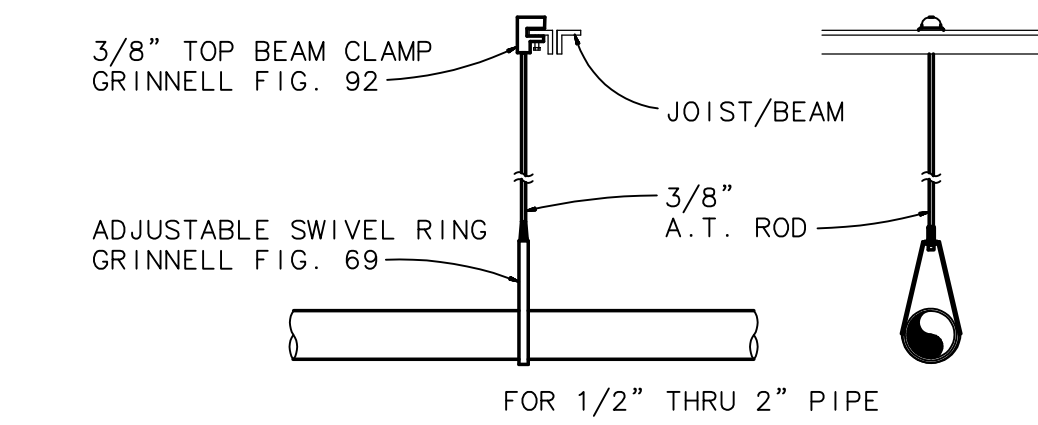
WASTE ARM AND WATER SUPPLY PROTECTION



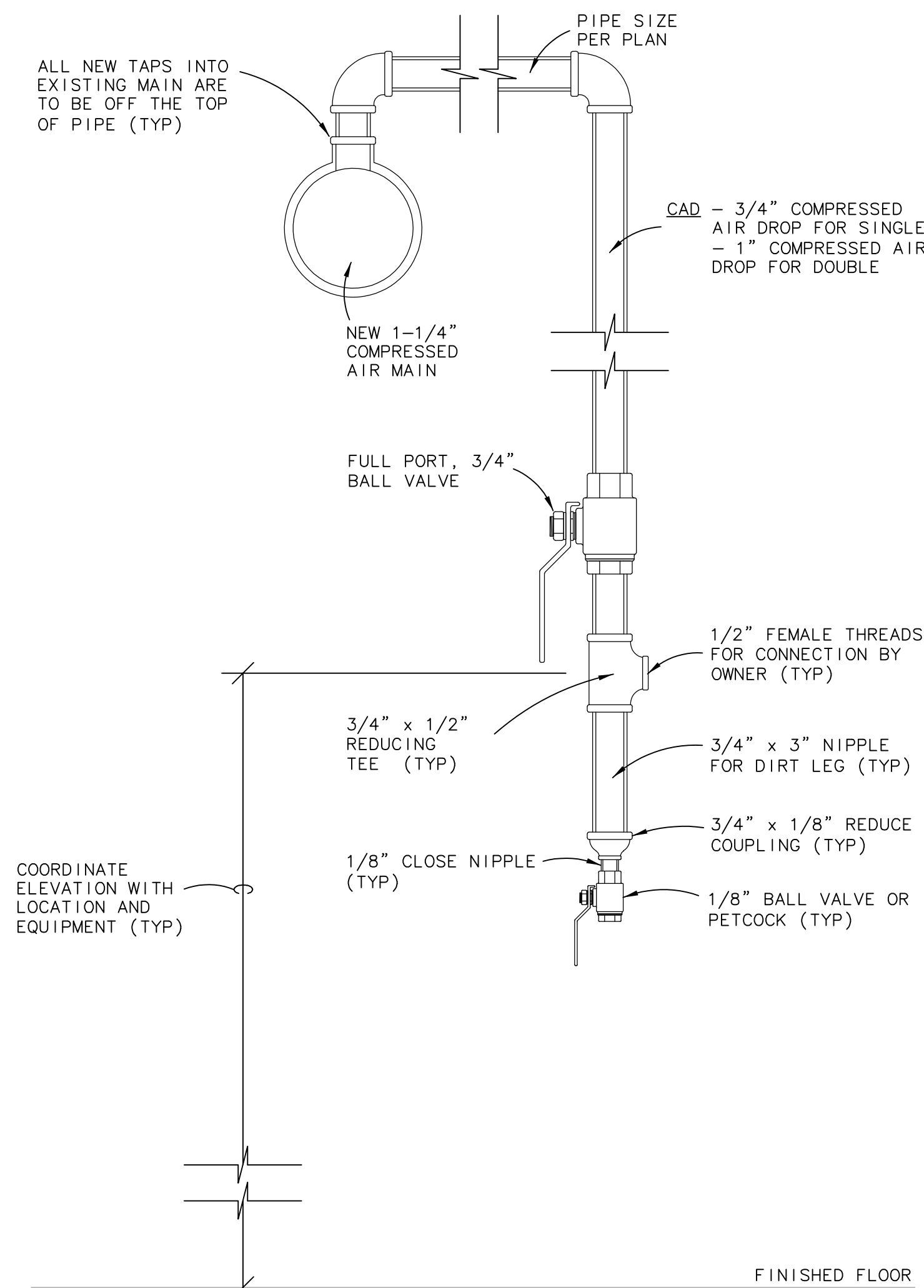
PARALLEL HOT WATER LOOP DETAIL



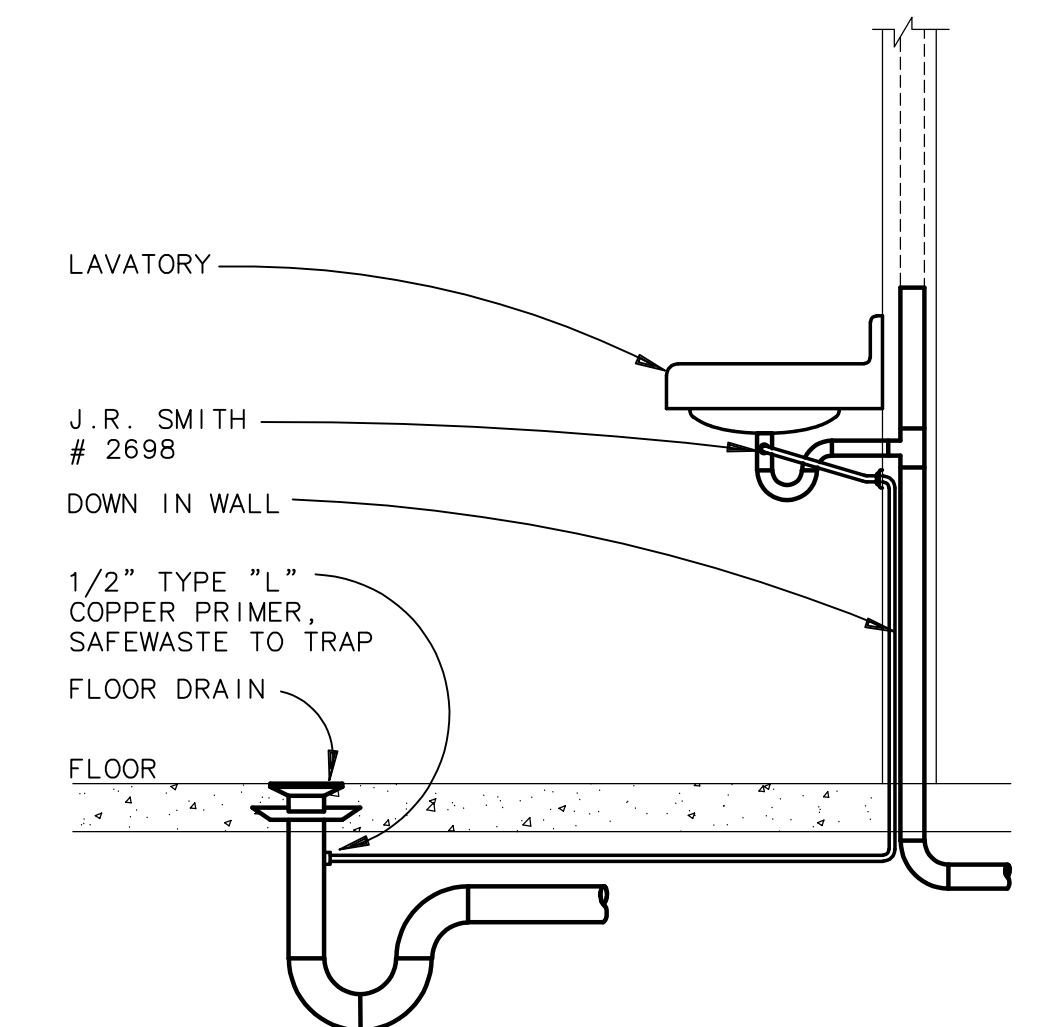
HANDICAPPED ELECTRIC WATER COOLER MOUNTING



TYPICAL PIPE HANGER DETAIL



TYPICAL COMPRESSED AIR DROP (CAD)



FLOOR DRAIN TRAP PRIMER DETAIL (SINGLE PRIMER)

GRAMLICH & ASSOCIATES, P.A.
 RICHARD B. GRAMLICH P.E. No. 30715
 GREGOR GRAMLICH P.E. No. 54709
 CERTIFICATE OF AUTHORIZATION No. 4726
 13191 STARBUCK FLOOR, SUITE 17
 BOCA RATON, FLORIDA 33433
 (727) 538-0454 FAX: (727) 530-5931



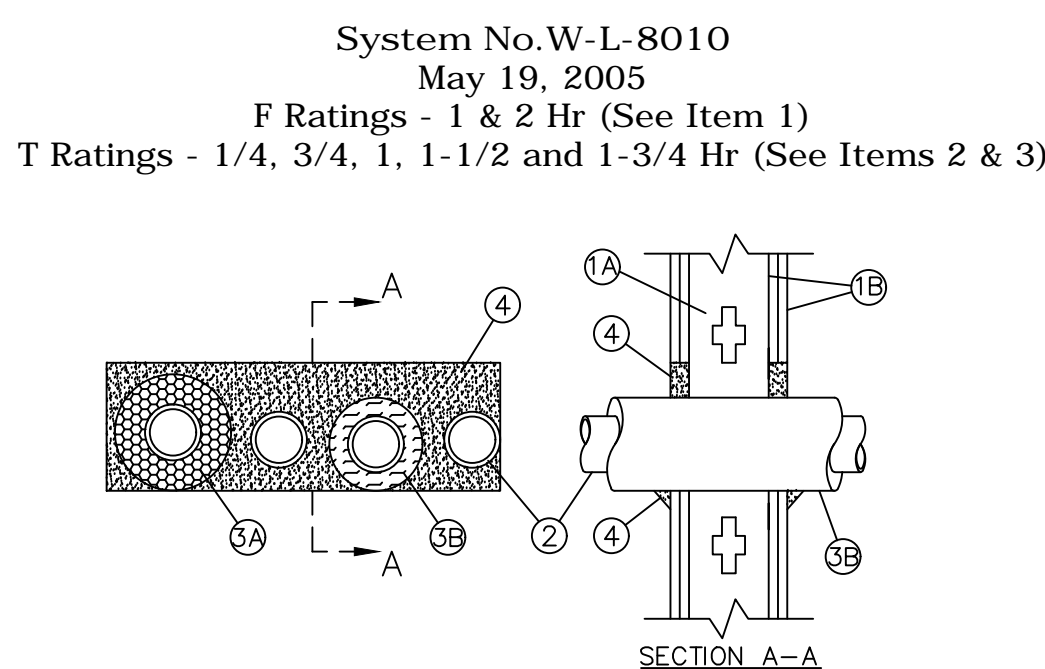
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 NEIL G. FLEISS, AIA, LEED AP
 108 SOUTH FLORIDA AVENUE
 LAKELAND, FLORIDA 33803-1118
 TELEPHONE: 863-488-8882 | kllarch.com

BID DOCUMENTS
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 New Traffic Operations Building
 4490 Kenilworth Blvd.
 Sebring, FL

PLUMBING SCHEDULE AND DETAILS
 REVISIONS
 CONSTRUCTION 03/29/2023
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 REVIEW
 CHECKED BY
 P300
 19058

RATED THRU WALL PIPE PENETRATION

NTS



1. Wall Assembly - The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 in. by 4 in. (51 mm to max 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (.92 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* - Nom 5/8 in. (16 mm) thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max area of opening is 65-1/4 sq in. (421 cm2) with max dimension of 14-1/2 in. (368 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly.

2. Through Penetrants - A max of four pipes, conduits or tubing to be installed within the opening. The space between pipes, conduits or tubing shall be min 1/2 in. to max 1-5/16 in. (13 mm to max 33 mm). The space between pipes, conduits or tubing and periphery of opening shall be min 1-3/16 in. (30 mm) for uninsulated copper tubes and copper pipes (Items 2C and 2D) and D in. (point contact) for insulated copper tubes and copper pipes and uninsulated steel pipes and conduit (Item 2B). The space between pipes, conduits or tubing and periphery of opening shall be max 1-5/16 in. (33 mm). Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe - Nom 2 in. (51 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.
 B. Conduit - Nom 2 in. (51 mm) diam (or smaller) steel electrical metallic tubing or steel conduit.
 C. Copper Tubing - Nom 2 in. (51 mm) diam (or smaller) Type L (or heavier) copper tubing.
 D. Copper Pipe - Nom 2 in. (51 mm) diam (or smaller) Regular (or heavier) copper pipe.

When uninsulated steel pipe or conduit is used, T Rating is 3/4 hr and 1-1/2 hr for 1 and 2 hr rated assemblies, respectively. When uninsulated copper tubing or pipe is used, T Rating is 1/4 hr for both 1 and 2 hr rated assemblies.

3A. Pipe Covering* (Optional) - Nom 1 in. (25 mm) hollow cylindrical heavy density glass fiber units jacketed on the outside with an oil service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product.

See Pipe and Equipment Covering - Materials* (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

When pipe covering is used on all through penetrants, T Rating is 1 hr and 1-3/4 hr for 1 and 2 hr rated assemblies, respectively.

3B. Tube Insulation - Plastics* (Optional) - Nom 3/4 in. (19 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing.

See Plastics (OMF22) category in the Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL94 Flammability Classification of 94-5VA may be used.

When tube insulation is used on all through penetrants, T Rating is 3/4 hr and 1-1/2 hr for 1 and 2 hr rated assemblies, respectively.

4. Fill/Void or Cavity Material* - Caulk or Sealant - Min 5/8 in. or 1-1/4 in. (16 mm or 32 mm) thickness of fill material, for 1 or 2 hr walls, respectively, applied within the annulus, flush with both surfaces of wall. At point contact locations, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the wall/pipe and wall/pipe insulation interface on both surfaces of wall.

3M COMPANY - CP 25WB+, IC 15WB+ caulk or FB-3000 WT sealant

5. Fill/Void or Cavity Materials* - Wrap Strip (Not Shown) - Min one layer of 2 in. (51 mm) wide, nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foil, required only when tube insulation (Item 3B) is used in 2 hr rated assemblies. Wrap strip tightly wrapped around tube insulation (foil side exposed) within the opening on both sides of the wall, flush with both surfaces of the wall assembly.

3M COMPANY - FS-195+
 #Bearing the UL Recognized Component Mark
 *Bearing the UL Classification Marking

System No. W-L-8010
 May 19, 2005
 F Ratings - 1 & 2 Hr (See Item 1)
 T Ratings - 1/4, 3/4, 1, 1-1/2 and 1-3/4 Hr (See Items 2 & 3)

SWITCHGEAR:

GENERAL NOTES:

- ALL WORK SHALL BE IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE AND THE 2017 NATIONAL ELECTRICAL CODE. WORK SHALL ALSO COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS OF LOCAL LAWS AND ORDINANCES.
- CONTRACTOR SHALL MAKE A THOROUGH EXAMINATION OF THE SITE AND THE CONTRACT DOCUMENTS. NO CLAIM FOR EXTRA COMPENSATION WILL BE RECOGNIZED IF DIFFICULTIES ARE ENCOUNTERED WHICH AN EXAMINATION OF SITE CONDITIONS AND CONTRACT DOCUMENTS PRIOR TO EXECUTING CONTRACT WOULD HAVE REVEALED.
- ELECTRICAL CONTRACTOR SHALL ARRANGE FOR ALL NECESSARY PERMITS, LICENSES, UTILITY COORDINATION, AND INSPECTIONS AS REQUIRED BY THE CITY OR UTILITY COMPANY. CONTRACTOR IS RESPONSIBLE FOR ALL EQUIPMENT REQUIRED BY UTILITY COMPANY AND SHOULD INCLUDE NECESSARY COSTS IN BID.
- CONTRACTOR SHALL LEGIBLY MARK-UP A SET OF 24"x36" DRAWINGS TO REFLECT AS-BUILT CONDITIONS, AND TURN OVER TO ARCHITECT WITHIN 30 DAYS AFTER THE DATE OF PROJECT ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER PER FBC ENERGY CODE C405.5.4.1.
- AN OPERATING MANUAL AND MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER PER FBC ENERGY CODE C405.5.4.2. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
 - SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
 - OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
 - NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.
- ALL EQUIPMENT INSTALLED SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) AND/OR LISTED AND LABELED AS AN ASSEMBLY BY AN NRTL PER NEC ARTICLE 90.7.

WIRE/RACEWAY:

- ALL CONDUCTORS SHALL BE COPPER, CONDUCTOR INSULATION SHALL BE DUAL TYPE THHN/THWN 75°C (167°F) FOR DRY, DAMP, AND WET LOCATIONS. CONDUCTOR INSULATION WITH SINGLE TYPE MARKING THHN 90°C (194°F) MAY BE USED FOR DRY LOCATIONS ONLY. ALL CONDUCTORS SHALL BE COLOR CODED AS REQUIRED BY NEC AND FURTHER IDENTIFIED AND CODED AS SPECIFIED HEREINAFTER. COLOR CODING SHALL BE BY MEANS OF COLORED INSULATING MATERIAL, COLORED BRAID OR JACKET OVER THE INSULATION BY MEANS OF SUITABLE MARKING. PERMANENT, NON-AGING, INSULATING TAPE APPLIED TO CONDUCTORS AT EACH CABINET OR JUNCTION POINT. THE COLOR CODING SHALL BE ACCOMPLISHED AS THE CONDUCTORS ARE INSTALLED. THE FOLLOWING TYPES OF COLOR CODING SHALL BE STRICTLY ADHERED TO:

- GROUND LEADS: GREEN
- 120/208 VOLT UNGROUNDED PHASE WIRES:
 - PHASE A: BLACK
 - PHASE B: RED
 - PHASE C: BLUE
 - NEUTRAL: WHITE

THE COLOR CODE ASSIGNED TO EACH PHASE WIRE SHALL BE CONSISTENTLY CONSISTENTLY FOLLOWED THROUGHOUT.

- THE CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS COMBINED SHALL BE SIZED FOR A MAXIMUM OF 5 PERCENT VOLTAGE DROP TOTAL PER FBC C405.6.3.
- ALL INTERIOR BUILDING CONDUCTORS SHALL BE RUN IN THIN WALL CONDUIT AND THIN WALL CONDUIT SHALL BE UNDERWRITERS' APPROVED GALVANIZED ELECTRICAL METALLIC TUBING. COUPLINGS AND CONNECTORS SHALL BE STEEL COMPRESSION TYPE, ZINC OR CADMIUM PLATED. BELOW GRADE CONDUITS SHALL BE SCHEDULE 40 PVC WITH RIGID METAL ELBOWS AND RISERS. RIGID METAL CONDUIT BELOW GRADE OR IN CONCRETE SHALL BE COATED WITH BITUMASTIC OR OR SLEEVED WITH 10 MIL POLYETHYLENE. SITE CONDUITS SHALL BE ROUTED AT 2" BELOW GRADE AND CONDUITS ROUTED BELOW BUILDINGS SHALL BE AT 36". EXTERIOR CONDUITS SHALL BE RIGID GALVANIZED STEEL.

PENDING OWNER APPROVAL METAL CLAD CABLE (TYPE MC) IS ACCEPTABLE PROVIDED CABLE IS SUPPLIED WITH AN INSULATED GREEN EQUIPMENT GROUND CONDUCTOR AND MAY ONLY BE USED UNDER THE FOLLOWING CONDITIONS:

- SHORT RUNS IN WALLS.
- BETWEEN OUTLET BOXES IN HUNG OR FURRED CEILINGS, AND FLUSH TYPE LIGHTING FIXTURES AND TROUGH UNITS.
- CONNECTION TO EQUIPMENT IN SHELVING AND SHALL NOT BE USED FOR ANY CIRCUIT WITH OVER A 20 AMP CIRCUIT BREAKER.
- HOME-RUNS OF MULTI-CONDUCTOR CABLE WILL BE ALLOWED. CABLING MUST BE PROPERLY SUPPORTED AND COMPLY WITH ALL NEC CODES. MAXIMUM OF 9 CIRCUITS OR 13 CONDUCTORS IN A HOME-RUN.
- SHALL BE APPROVED FOR BRANCH CIRCUIT WIRING (20 AMPS & UNDER ONLY) IN CEILING SPACES AND WITHIN WALLS.

METAL CLAD CABLE IS NOT ACCEPTABLE UNDER THE FOLLOWING CONDITIONS:

- BRANCH CIRCUITS OVER 20 AMPS.
 - WHERE CABLING WILL BE EMBEDDED IN CONCRETE.
 - WHERE CABLING WILL BE EXPOSED TO MOISTURE.
 - WHERE PROHIBITED BY LOCAL CODE.
- COMBINING OF CIRCUITS IN SAME RACEWAY, OTHER THAN THOSE INDICATED ON DRAWINGS, WILL NOT BE PERMITTED.
 - ALL RACEWAYS SHALL BE PROPERLY ALIGNED, GROUPED, AND SUPPORTED BY MECHANICAL TYPE 'CADDY' CLIPS AT INTERVALS NOT EXCEEDING 8 FEET.
 - ALL RACEWAYS WITH NO. 10 OR 12 AWG PHASE CONDUCTORS FOR RECEPTACLES, LIGHTING FIXTURES AND SIMILAR CIRCUITS SHALL BE PROVIDED WITH A PARTY SIZED GREEN EQUIPMENT GROUND CONDUCTOR. GROUND CONDUCTOR SHALL BE INSTALLED IN ENTIRE RACEWAY SYSTEM INCLUDING WALL SWITCHES AND FLEXIBLE CONDUIT TO LIGHT FIXTURES. EQUIPMENT GROUND CONDUCTOR SIZES FOR CIRCUITS WITH PHASE CONDUCTORS LARGER THAN NO. 12 AWG ARE INDICATED ON DRAWINGS. GROUND CONDUCTORS SHALL BE CONNECTED TO GROUND BUSS IN PANELBOARDS.
 - RACEWAY PENETRATIONS OF FIRE RATED WALLS AND/OR FLOORS SHALL BE SEALED TO MAINTAIN INTEGRITY OF CONSTRUCTION. ALL PRODUCTS, MATERIALS AND METHODS OF INSTALLATION SHALL BE UL APPROVED AND MEET NFPA.

GROUNDING:

- THE ENTIRE ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDING AS REQUIRED BY NATIONAL ELECTRICAL CODE. ALL METALLIC RACEWAYS SHALL BE MECHANICALLY AND ELECTRICALLY SECURE AT ALL JOINTS AND AT ALL BOXES, CABINETS, FITTINGS AND EQUIPMENT.
- THE GROUNDING SYSTEM SHALL BE TESTED BY THE CONTRACTOR. THE RESISTANCE TO GROUND SHALL BE NO MORE THAN (5) OHMS. SUBMIT TEST RESULTS TO ENGINEER. CONTRACTOR SHALL MAKE UPGRADES AND ADDITIONS TO GROUNDING SYSTEM AS REQUIRED TO ACHIEVE THE (5) OHM REQUIREMENT.
- PROVIDE NO. 6 AWG GROUND CONDUCTOR AT TELEPHONE BOARD AND CONNECTION TO THE MAIN SERVICE ENTRANCE GROUND. PROVIDE 10FT. OF SLACK AT BOARD.

OUTLET BOXES/DEVICES:

- COORDINATE DEVICE AND COVER PLATE COLORS WITH ARCHITECT.
- ALL OUTLET BOXES SHALL BE RIGIDLY MOUNTED AND SHALL BE EQUIPPED WITH SUITABLE SCREW FASTENED COVERS. OPEN KNOCKOUTS OR HOLES IN BOXES SHALL BE PLUGGED WITH SUITABLE BLANKING DEVICE.
- OUTLET BOXES SHALL BE 4 INCH SQUARE x 2-1/8" DEEP. OUTLET BOXES LOCATED ABOVE THE CEILING SHALL BE LEGIBLY IDENTIFIED WITH BRANCH CIRCUIT NUMBER OF CIRCUIT TERMINATED WITHIN BY MEANS OF BLACK PERMANENT MARKER.
- RECEPTACLES WITHIN (6) FEET OF A SINK SHALL HAVE GFCI PROTECTION.

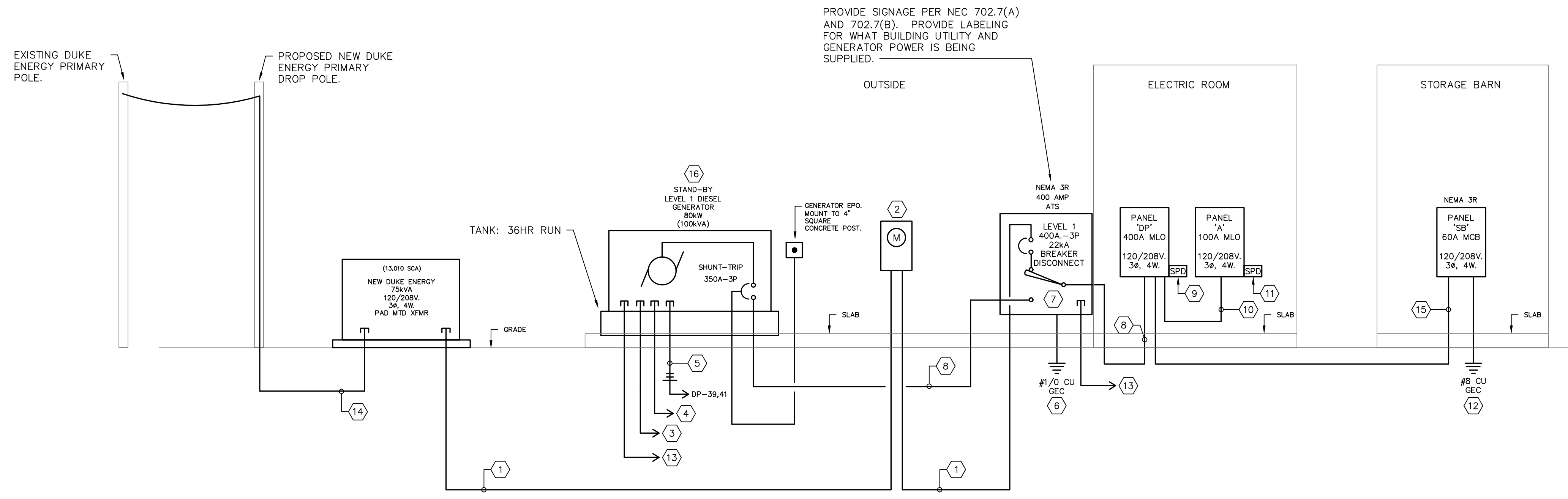
ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING
LED STRIP FIXTURE	LED STRIP FIXTURE	SEE FIXTURE SCHEDULE
2X4 LED FIXTURE	2X4 LED FIXTURE	SEE FIXTURE SCHEDULE
6" LED DOWNLIGHT	6" LED DOWNLIGHT	SEE FIXTURE SCHEDULE
BATTERY POWERED EMERGENCY LIGHTING UNIT	BATTERY POWERED EMERGENCY LIGHTING UNIT	SEE FIXTURE SCHEDULE
EXIT LIGHT / 2 HEAD EMERGENCY LIGHT WITH BATTERY PACK, WALL MTD./CEILING MTD.	EXIT LIGHT / 2 HEAD EMERGENCY LIGHT WITH BATTERY PACK, WALL MTD./CEILING MTD.	SEE FIXTURE SCHEDULE
QUAD RECEPTACLE (20A., 125V.)	QUAD RECEPTACLE (20A., 125V.)	M.H. 18" TO CENTERLINE
DUPLEX RECEPTACLE (20A., 125V.)	DUPLEX RECEPTACLE (20A., 125V.)	M.H. 18" TO CENTERLINE
DUPLEX RECEPTACLE (20A., 125V.)	DUPLEX RECEPTACLE (20A., 125V.)	M.H. 48" TO CENTERLINE UNLESS OTHERWISE NOTED
DUPLEX RECEPTACLE (20A., 125V.) RECESSED IN WALL FOR TV	DUPLEX RECEPTACLE (20A., 125V.) RECESSED IN WALL FOR TV	VERIFY M.H. WITH OWNER
Denotes HDMI 4" SQ. RECESSED OUTLET BOX WITH (2) 1 1/4" CONDUITS STUBBED UP ABOVE CEILING AND TERMINATED WITH INSULATING BUSHING.	Denotes HDMI 4" SQ. RECESSED OUTLET BOX WITH (2) 1 1/4" CONDUITS STUBBED UP ABOVE CEILING AND TERMINATED WITH INSULATING BUSHING.	VERIFY M.H. WITH OWNER
OWNER SUPPLIED/INSTALLED TELEPHONE/DATA 4" SQ. RECESSED OUTLET BOX WITH (1) 3/4" CONDUIT STUBBED UP ABOVE CEILING AND TERMINATED WITH INSULATING BUSHING.	OWNER SUPPLIED/INSTALLED TELEPHONE/DATA 4" SQ. RECESSED OUTLET BOX WITH (1) 3/4" CONDUIT STUBBED UP ABOVE CEILING AND TERMINATED WITH INSULATING BUSHING.	M.H. 18" TO CENTERLINE UNLESS OTHERWISE NOTED
Denotes GROUND FAULT INTERRUPTER TYPE RECEPTACLE	Denotes GROUND FAULT INTERRUPTER TYPE RECEPTACLE	
Denotes WEATHER-RESISTANT RECEPTACLE	Denotes WEATHER-RESISTANT RECEPTACLE	
Denotes RECEPTACLE WITH DIECAST ALUMINUM 'IN-USE' COVER.	Denotes RECEPTACLE WITH DIECAST ALUMINUM 'IN-USE' COVER.	
Denotes NIGHT LIGHT.	Denotes NIGHT LIGHT.	
Denotes DEVICE EXISTING TO REMAIN.	Denotes DEVICE EXISTING TO REMAIN.	
JUNCTION BOX OR OUTLET BOX, 4" SQUARE BOX UNLESS OTHERWISE NOTED	JUNCTION BOX OR OUTLET BOX, 4" SQUARE BOX UNLESS OTHERWISE NOTED	ABOVE CEILING / WALL
120/208V. 3Ø, 4W. POWER PANELBOARD	120/208V. 3Ø, 4W. POWER PANELBOARD	M.H. 6'-6" MAX. TO TOP
LOW VOLTAGE CABLE	LOW VOLTAGE CABLE	SUPPORT EVERY 4FT ABOVE CEILING
RACEWAY CONCEALED IN WALL OR CEILINGS	RACEWAY CONCEALED IN WALL OR CEILINGS	SEE GENERAL NOTES
RACEWAY CONCEALED UNDER FLOOR OR BENEATH GRADE	RACEWAY CONCEALED UNDER FLOOR OR BENEATH GRADE	SEE GENERAL NOTES
RACEWAY SURFACE MOUNTED ON WALL OR CEILING	RACEWAY SURFACE MOUNTED ON WALL OR CEILING	SEE GENERAL NOTES
HOMERUN TO PANEL, LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUIT. NOTE: ANY CIRCUIT WITHOUT FURTHER DESIGNATION INDICATES A TWO WIRE & EQUIP. GROUND CIRCUIT. A GREATER NUMBER OF WIRES IS INDICATED AS SHOWN: (3 WIRES & EQUIPMENT GROUND), (4 WIRES & EQUIPMENT GROUND), ETC.	HOMERUN TO PANEL, LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUIT. NOTE: ANY CIRCUIT WITHOUT FURTHER DESIGNATION INDICATES A TWO WIRE & EQUIP. GROUND CIRCUIT. A GREATER NUMBER OF WIRES IS INDICATED AS SHOWN: (3 WIRES & EQUIPMENT GROUND), (4 WIRES & EQUIPMENT GROUND), ETC.	AS NOTED

REVISIONS

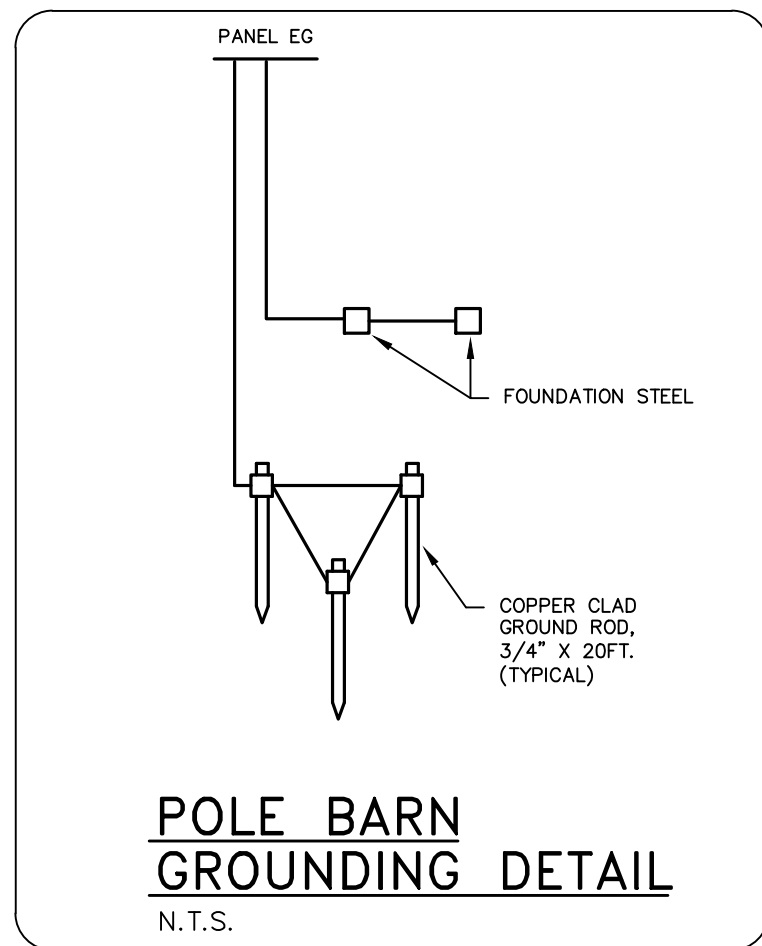
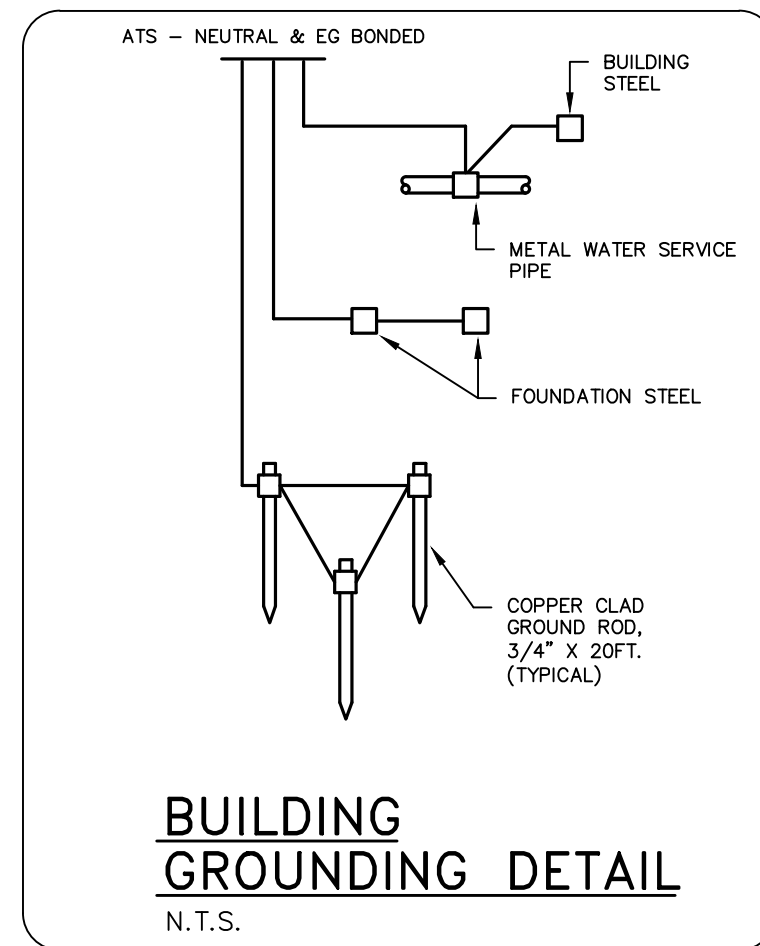
CONSTRUCTION	03/24/2023
APPROVAL	
REVIEW	
CHECKED BY	D.J.N





POWER RISER DIAGRAM
NTS

- RISER DIAGRAM NOTES:**
- (2) PARALLEL RUNS OF 4 NO. 3/0 - 2" C.
 - 400 AMP FEED THRU METER PER DUKE ENERGY SPECIFICATIONS. INSTALL GROUNDING PER DUKE ENERGY SPECIFICATIONS.
 - 1" CONDUIT WITH WATER-PROOF CAT 6 TO REMOTE MONITORING PANEL IN MECH/ELEC 113.
 - WATER-PROOF CAT 6 & CONTROL CONDUCTORS ROUTED IN 1" CONDUIT TO ATS.
 - 2 NO. 10 AND 1 NO. 10 E.G. - 3/4" CONDUIT FOR BATTERY CHARGER AND BLOCK HEATER CIRCUITS.
 - SEE BUILDING GROUNDING DETAIL THIS SHEET.
 - NEMA-3R, 400 AMP SERVICE RATED AUTOMATIC TRANSFER SWITCH. SEE SPECIFICATIONS ON SHEET E502.
 - (2) PARALLEL RUNS OF 4 NO. 3/0 AND 1 NO. 3 E.G. 2 1/2" C.
 - SURGE PROTECTION DEVICE, 80kA TYPE.
 - 4 NO. 3 AND 1 NO. 8 E.G. - 1 1/4" C.
 - SURGE PROTECTION DEVICE, 40kA TYPE.
 - SEE BUILDING GROUNDING DETAIL THIS SHEET.
 - WATER-PROOF CAT 6 ROUTED IN 1" CONDUIT TO DATA BACKBOARD IN MECH/ELEC 113.
 - PRIMARY CONDUIT INSTALLATION BY CONTRACTOR. COORDINATE EXACT QUANTITY, TYPE, AND DEPTH WITH DUKE ENERGY.
 - 4 NO. 4 AND 1 NO. 8 E.G. 1 1/4" C.
 - SEE SPECIFICATIONS ON SHEET E501.



FAULT STUDY

XFMR AFC VOLTAGE	13010			
	ATS	DP	A	SB
I _{SCA}	13010	10893	10387	10387
length	50	15	5	275
wire size	3/0	3/0	3	4
C VALUE	13923	13923	4811	3826
sets	2	1	1	1
f	0.1943	0.0488	0.0898	6.2093
M	0.8373	0.9535	0.9176	0.1387
FAULT	10893	10387	9531	1441

SERVICE ENTRANCE TRANSFER SWITCH

MAXIMUM AVAILABLE FAULT
AMPS (DATE)

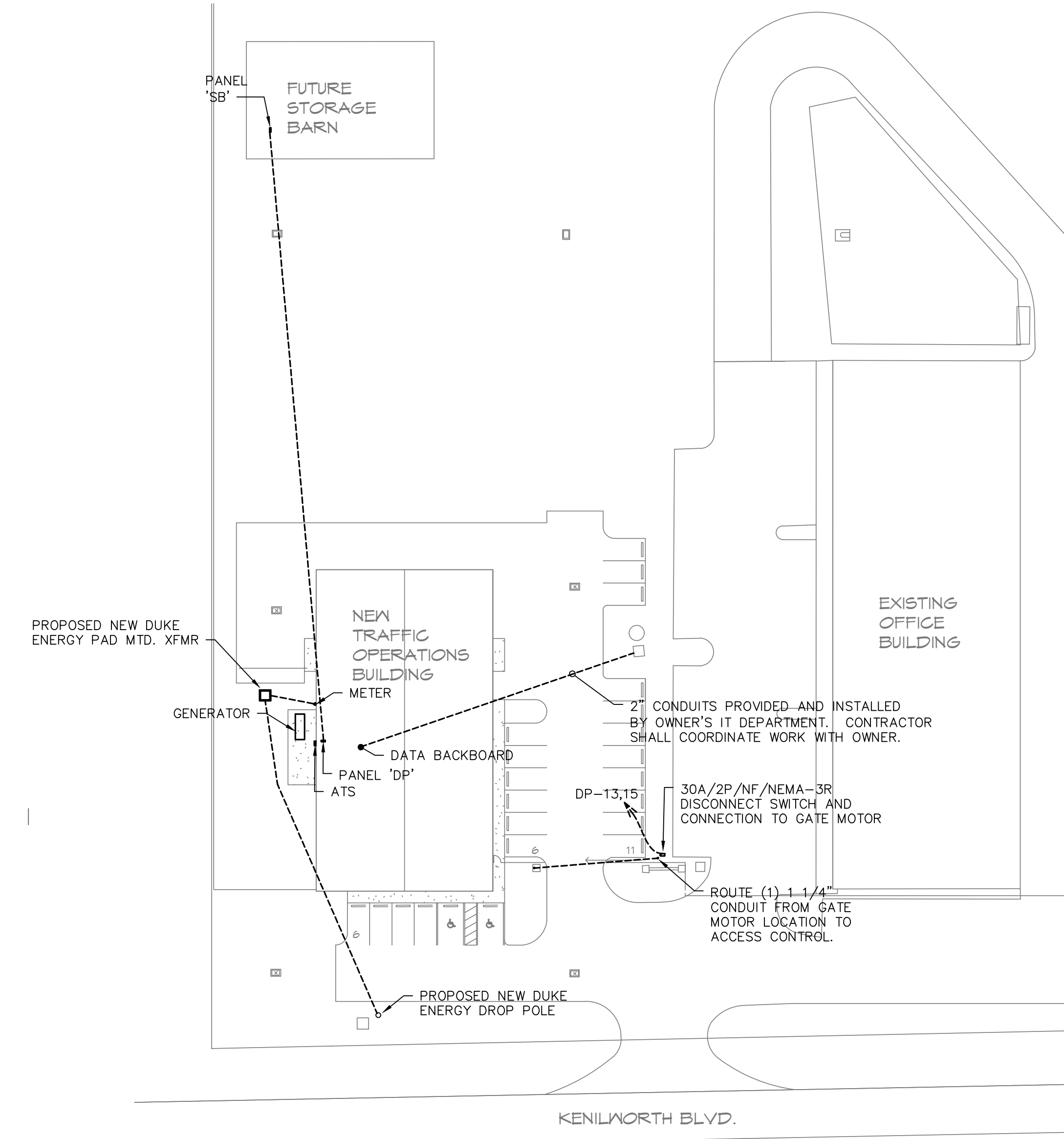
120/208V.
3Ø, 4W.

SERVICE PLACARD DETAIL
NTS

- NOTES:**
- ENGRAVED PLASTIC LAMINATE SIGNS: PROVIDE WEATHER-RESISTANT 1/8" THICKNESS ENGRAVING STOCK MELAMINE PLASTIC LAMINATE, SIZE AS REQUIRED WITH 1/8" THICKNESS, ENGRAVED WITH 3/16" LETTER STYLE AND WORDING INDICATED; BLACK FACE AND WHITE CORE PILES (LETTER COLOR) INDICATED; PUNCHED FOR MECHANICAL FASTENING. SECURE WITH SELF TAPPING STAINLESS STEEL SCREWS.

NOTES	REMARKS	PANEL SB VOLTAGE 120 / 208 V			SIZE 60A. MCB			CABINET SURFACE NEMA-3R			REMARKS	NOTES
		AMPS	P	PHASE	60A. BUS	RATING	10,000	AIC RATED				
	(FUTURE) RECS.	20	1	900						20	1	(FUTURE) LIGHTING
	(FUTURE) RECS.	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	SPARE	20	1							20	1	SPACE
	TOTAL			900			900			20		TOTAL

TABULATION MEASURED	TOTAL LOAD	DEMAND FACTOR	DEMAND LOAD
LIGHTING	1200	1.25	1500
COOLING			
HEATING			
RECEPTACLE	2700	1.00	2700
MISCELLANEOUS			
KITCHEN EQUIP			
LARGEST MOTOR			
TOTAL DEMAND LOAD			4200 VA
TOTAL DEMAND AMPS			11.7 A



ELECTRICAL SITE PLAN
SCALE: 1" = 40'

- GENERAL SITE NOTES:**
- ROUTE ALL CONDUITS 36" BELOW GRADE UNLESS OTHERWISE NOTED.

CMHM ARCHITECTS INC.
108 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA | 33803-1118
TELEPHONE 863-468-8882 | ikidarch.com

CMHM architects

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870

E201
19058

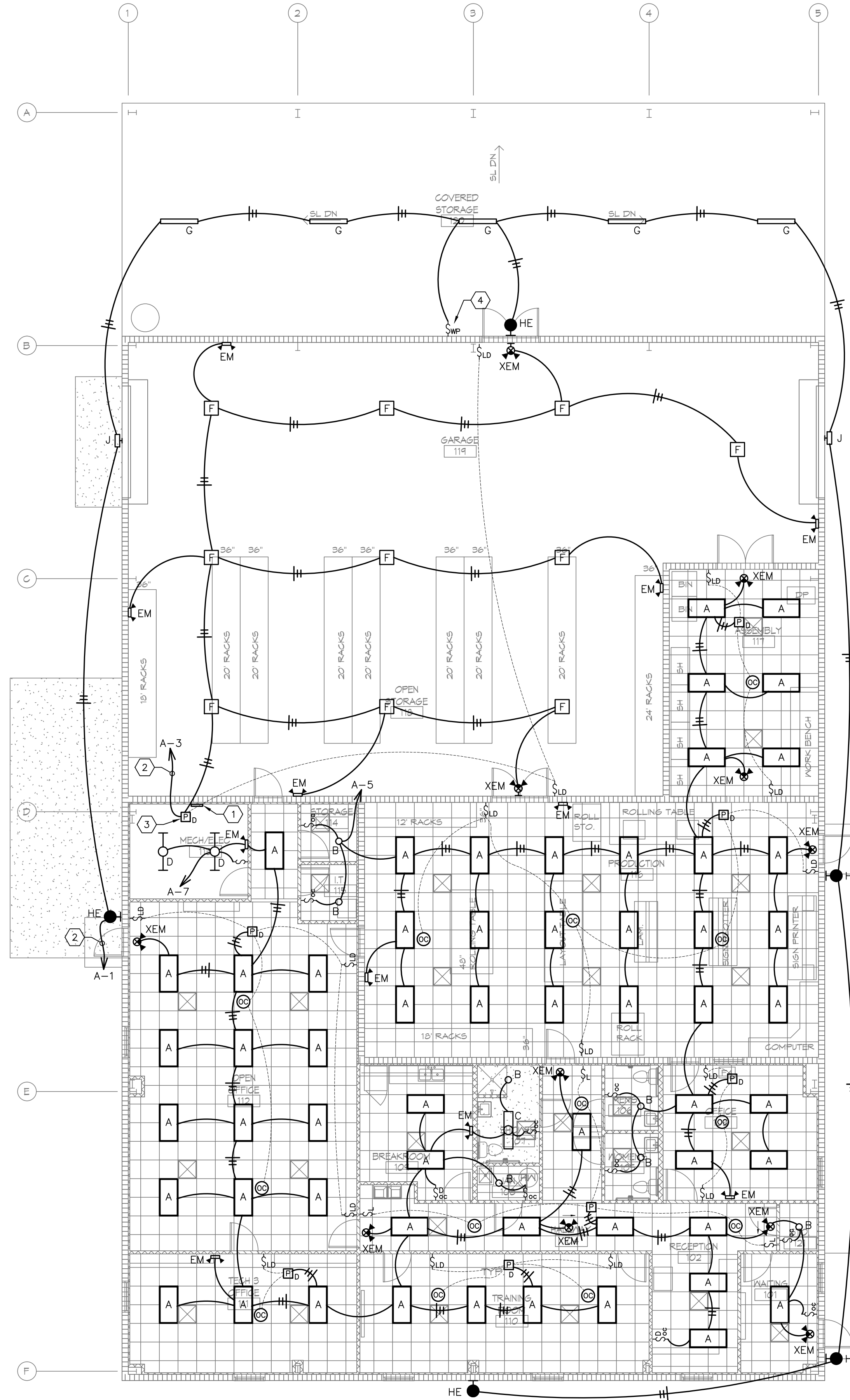
LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	CATALOG NO.	MOUNTING	VOLT	LAMP	REMARKS
A	METALUX	24FP4735C	LAY IN GRID	UNV	41W LED	DIMMABLE 2X4 FLAT PANEL LED FIXTURE
B	METALUX	PR6FS24D010	RECESSED	UNV	21W LED	6" DIA DIMMABLE DOWNLIGHT
C	METALUX	14FP4235C DF-14W-U	RECESSED	UNV	38W LED	1X4 FLAT PANEL LED FIXTURE WITH DRYWALL FRAME KIT
D	EATON	4ST2L4040R	SUSPENDED	UNV	40W LED	4' SUSPENDED LINEAR LED FIXTURE
EM	SURELITES	SEL25	WALL MOUNT 7'-6" AFF TO CENTERLINE	UNV	LED	EMERGENCY LIGHTING WALL PACK
F	METALUX	OHB-15SE-W-UNV-L740-CD-U	SUSPENDED 18' AFF	UNV	98W LED	SUSPENDED HIGHBAY LED FIXTURE
G	METALUX	VT4LED-LD5-12-PC-120-L840	SUSPENDED 18' AFF	UNV	93W LED	EXTERIOR RATED SUSPENDED HIGHBAY LED FIXTURE
HE	NEWSTAR	GWSC MD EL (COLOR PER ARCHITECT)	SURFACE WALL AT 7'-6" AFG	UNV	17W LED	EXTERIOR RATED WALL PACK WITH EMERGENCY DRIVER
J	COOPER	GWC-AF-1-LED-E1-T4FT-(FINISH PER ARCHITECTU)	SURFACE WALL ABOVE ROLL UP DOOR	UNV	67W LED	EXTERIOR RATED 7000 LUMEN LED WALL PACK
XEM	SURELITES	APC-7-R	CEILING/WALL MOUNTED AS SHOWN	UNV	LED	POLYCARBONATE SELF POWERED EXIT LIGHT/EMERGENCY LIGHT COMBO

TOTAL SQUARE FOOTAGE OF CEILING SPACE:	8,437 sf
TOTAL LIGHT FIXTURE WATTAGE:	3,419 W
WATTS/SF:	0.41 W/sf
FBC ALLOWANCE FOR BUILDING AREA - OFFICE:	0.79 W/sf

LIGHTING CONTROL SYMBOL LEGEND		
\$	SINGLE POLE SWITCH (20 AMP)	FLUSH IN WALL M.H. 40" TO BOTTOM
\$3	3-WAY SWITCH (20 AMP)	FLUSH IN WALL M.H. 40" TO BOTTOM
\$OC	WALL MOUNTED LINE VOLTAGE DUAL-TECH OCCUPANCY SENSOR	FLUSH IN WALL M.H. 40" TO BOTTOM
\$D \$OC	WALL MOUNTED LINE VOLTAGE DIMMER AND DUAL-TECH OCCUPANCY SENSOR	FLUSH IN WALL M.H. 40" TO BOTTOM
\$L	LOW VOLTAGE SWITCH.	FLUSH IN WALL M.H. 40" TO BOTTOM
\$# LD	LOW VOLTAGE, LED DIMMER CONTROL. # DENOTES AMOUNT OF CONTROL ZONES.	FLUSH IN WALL M.H. 40" TO BOTTOM
⊙	LOW VOLTAGE CEILING MOUNTED DIRECTIONAL OCCUPANCY SENSOR	CEILING SURFACE
⊙LV	LINE VOLTAGE CEILING MOUNTED DIRECTIONAL OCCUPANCY SENSOR	CEILING SURFACE
P	DIGITAL OCCUPANCY SENSOR POWER PACK RELAY	SEE DETAIL THIS SHEET
P#D	DIGITAL OCCUPANCY SENSOR DIMMER POWER PACK RELAY # DENOTES AMOUNT OF CONTROL ZONES.	SEE DETAIL THIS SHEET

LIGHTING CONTROL NOTES:

- WALL MOUNTED OCCUPANCY SENSOR/CONTROL BUTTON UNITS SHALL BE PROGRAMMED FOR MANUAL "ON" BY BUTTON ONLY, AUTOMATIC OFF BY OCCUPANCY SENSOR WITHIN 30 MINUTES OF OCCUPANT LEAVING SPACE. BUTTON SHALL ALSO OVERRIDE LIGHTS "OFF".
- SUPPLY/INSTALL NETWORK TIMECLOCK TO CONNECT TO ALL DIMMER RELAYS SHOWN. TIMECLOCK FUNCTIONS SHALL COMPLY WITH FBC ENERGY CONSERVATION SECTION C405.2.2.1. PROVIDE/INSTALL ALL NECESSARY NETWORK WIRING, POWER, LOW VOLTAGE CABLING, ETC. TO SUPPORT SYSTEM.



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

GENERAL NOTES:

- CONNECT EMERGENCY LIGHTING BATTERY PACKS, NIGHT LIGHTS AND EXIT LIGHTS TO UNSWITCHED LEG OF LIGHTING CIRCUIT.
- ALL WALL MOUNTED OCCUPANCY SENSORS REQUIRE NEUTRAL WIRE CONNECTION.
- SWITCHES AND DIMMERS SHOWN SHALL OVERRIDE "OFF" OCCUPANCY SENSOR CONTROL.
- FUNCTIONAL TESTING SHALL BE EXECUTED BY THIRD PARTY ON ALL CONTROL HARDWARE AND SOFTWARE, PER FBC ENERGY CODE C408.3.1.

DRAWING NOTES:

- 8 RELAY LIGHTING CONTROL PANEL.
- ROUTE CIRCUIT VIA LIGHTING CONTROL PANEL.
- ROUTE LOW VOLTAGE CAT 6 CABLE TO LIGHTING CONTROL PANEL TO OVERRIDE ON RELAY FOR 2 HOURS. RELAY SHALL HAVE TIMECLOCK/CONTROL PANEL OUTPUT CONTROL.
- SWITCH SHALL OVERRIDE OFF (5) TYPE 'G' LIGHT FIXTURES.



CMHM ARCHITECTS INC.
 JOHN R. CURTIS, AIA
 BENJAMIN F. HUNDT, JR., AIA, LEED AP
 C. KETH HUNNICUTT, AIA
 NEL G. MELBY, AIA, LEED AP

BID DOCUMENTS
 Highlands County Board of County Commissioners
 New Traffic Operations Building
 4490 Kenilworth Blvd.
 Sebring, FL 33870
 LIGHTING PLAN

REVISIONS

CONSTRUCTION: 03/24/2023
 APPROVAL:
 REVIEW:
 CHECKED BY: DJN

NEWPOWER
 CONSULTING, INC.
 15520 HIGH BELL PL, BROADENTON FL 34212
 PH: 813.489.9850, COA# 32011
 ENGINEERING

E301
 19058

PANEL	DP	VOLTAGE	120 / 208 V			SIZE	400A. MLO	CABINET	SURFACE	NEMA-1					
			PHASE	3	PH						4	100A. BUS	RATING	22,000	AIC RATED
NOTES	REMARKS	CKT.BKR.	VA PHASE LOAD			#	BUS	#	VA PHASE LOAD			CKT.BKR.	REMARKS	NOTES	
	PANEL 'A'	100	3	9789	10260	9680	1	X	2	1900	1900	30	2	AIR COMPRESSOR	
	PANEL 'SB'	60	3	2100	900	900	5	X	6	3350	3350	35	3	AHU-1	
	GATE MOTOR	20	2	920	920		13	X	14	3072	3072	35	3	AHU-2	
	SPACE	1					17	X	18			60	3	CU-1	
	SPACE	1					19	X	20	3744	3744				
	SPACE	1					21	X	22	3744	3744				
	SPACE	1					23	X	24	1930	1930				
	SPACE	1					25	X	26	1930	1930				
	SPACE	1					27	X	28	1930	1930				
	SPACE	1					29	X	30	2500	2500				
	SPACE	1					31	X	32	2619	2619				
	SPACE	1					33	X	34	2619	2619				
	SPACE	1					35	X	36	2619	2619				
	SPACE	1					37	X	38	2619	2619				
	GEN BLK HEATER & BATT CHARGER	20	2	1300	1300		39	X	40			30	3	SPD	
	TOTAL			12809	13380	11880				16615	16615	17215	TOTAL		

GFI = GROUND FAULT INTERRUPTER TYPE

TABULATION	TOTAL LOAD	DEMAND FACTOR	DEMAND LOAD
MEASURED			
LIGHTING	5269	1.25	6586
COOLING	17022		
HEATING	19266	1.00	19266
RECEPTACLE	26240	0.69	18120
MISCELLANEOUS	20717	1.00	20717
KITCHEN EQUIP			
LARGEST MOTOR			
TOTAL DEMAND LOAD			64689 VA
TOTAL DEMAND AMPS			179.6 A

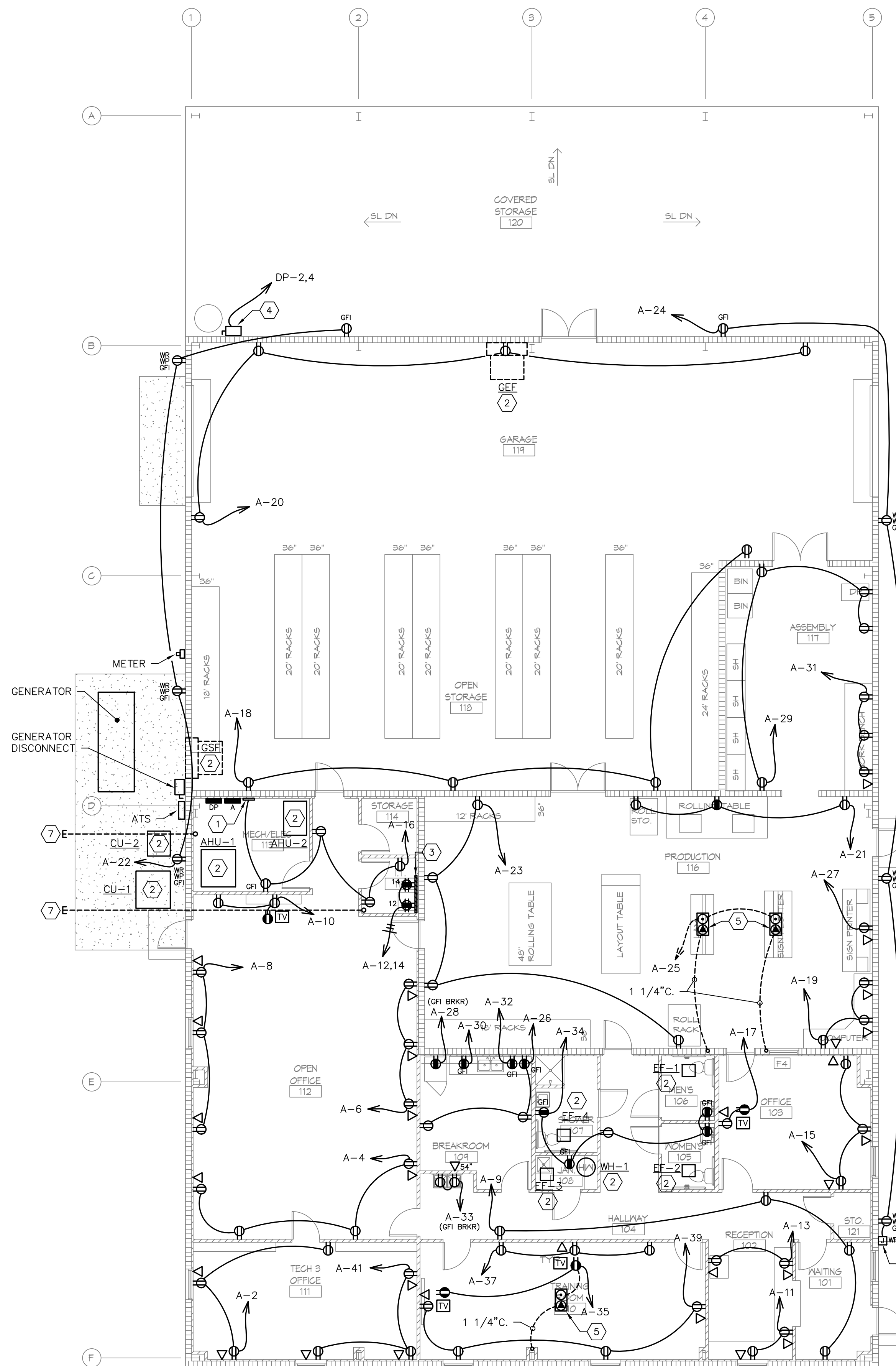
PANEL	A	VOLTAGE	120 / 208 V			SIZE	100A. MLO	CABINET	SURFACE	NEMA-1					
			PHASE	3	PH						4	100A. BUS	RATING	22,000	AIC RATED
NOTES	REMARKS	CKT.BKR.	VA PHASE LOAD			#	BUS	#	VA PHASE LOAD			CKT.BKR.	REMARKS	NOTES	
	EXTERIOR LTG.	20	1	650			1	X	2	540	540	20	1	OFFICE RECEPT.	
	GARAGE LTG.	20	1	980			3	X	4	720	720	20	1	OFFICE RECEPT.	
	ROOM LTG.	20	1	1340			5	X	6	540	540	20	1	OFFICE RECEPT.	
	ROOM LTG.	20	1	1419			7	X	8	540	540	20	1	OFFICE RECEPT.	
	GENERAL RECS.	20	1	720			9	X	10	540	540	20	1	OFFICE RECEPT.	
	RECEPTION RECS.	20	1	900			11	X	12	800	800	20	1	IT RECEPTACLE	
	OFFICE RECEPT.	20	1	540			13	X	14	800	800	20	1	IT RECEPTACLE	
	OFFICE RECEPT.	20	1	900			15	X	16	720	720	20	1	GENERAL RECS.	
	OFFICE RECEPT.	20	1	900			17	X	18	720	720	20	1	GARAGE RECS.	
	PRODUCTION RECS.	20	1	900			19	X	20	720	720	20	1	GARAGE RECS.	
	PRODUCTION RECS.	20	1	900			21	X	22	720	720	20	1	EXTERIOR RECS.	
	PRODUCTION RECS.	20	1	360			23	X	24	900	900	20	1	EXTERIOR RECS.	
	PRINTER	20	1	1000			25	X	26	900	1000	20	1	BREAK RECEPT.	
	ASSEMBLY RECS.	20	1	720			27	X	28	800	800	20	1	REFRIGERATOR	GFI
	ASSEMBLY RECS.	20	1	720			29	X	30	800	800	20	1	BREAK RECEPT.	
	ASSEMBLY RECS.	20	1	720			31	X	32	800	800	20	1	BREAK RECEPT.	
	GFI EWV RECEPT.	20	1	800			33	X	34	900	900	20	1	GENERAL RECS.	
	TRAINING RECEPT.	20	1	800			35	X	36			20	1	SPARE	
	TRAINING RECEPT.	20	1	540			37	X	38			20	1	SPARE	
	TRAINING RECEPT.	20	1	720			39	X	40			20	1	SPARE	
	OFFICE RECEPT.	20	1	540			41	X	42			20	1	SPARE	
	SPARE	20	1				43	X	44			20	1	SPARE	
	SPARE	20	1				45	X	46			20	1	SPARE	
	SPARE	20	1				47	X	48			20	1	SPARE	
	SPARE	20	1				49	X	50			20	1	SPARE	
	SPARE	20	1				51	X	52			30	3	SPD	
	SPARE	20	1				53	X	54						
	TOTAL			5489	5660	6100				4300	4600	3580	TOTAL		

GFI = GROUND FAULT INTERRUPTER TYPE

TABULATION	TOTAL LOAD	DEMAND FACTOR	DEMAND LOAD
MEASURED			
LIGHTING	4069	1.25	5086
COOLING			
HEATING			
RECEPTACLE	23540	0.71	16770
MISCELLANEOUS	2120	1.00	2120
KITCHEN EQUIP			
LARGEST MOTOR			
TOTAL DEMAND LOAD			23976 VA
TOTAL DEMAND AMPS			66.6 A

DESCRIPTION	ELECTRICAL CHARACTERISTICS			CIRCUIT DESIGNATION	BREAKER AMPS	POLES	FEEDER	EQUIP. GROUND	CONDUIT	DISCONNECT SWITCH	REMARKS
	VOLTS	PHASE	KW								
AHU-1	208	3		DP-6,8,10	35	3	(3) #8	#10	3/4"	60A/3P/NF/NEMA-1	
AHU-2	208	3		DP-12,14,16	35	3	(3) #8	#10	3/4"	60A/3P/NF/NEMA-1	
CU-1	208	3		DP-18,20,22	60	3	(3) #6	#10	1"	60A/3P/F/NEMA-3R	NOTE #1
CU-2	208	3		DP-24,26,28	35	3	(3) #8	#10	3/4"	60A/3P/F/NEMA-3R	NOTE #1
EWV	120	1	2.5	DP-30	30	1	(2) #10	#10	1/2"	30A/2P/NF/NEMA-1	
GEF	208	3		DP-32,34,36	30	3	(3) #10	#10	3/4"	30A/3P/F/NEMA-1	NOTE #3
GSF	208	3		DP-32,34,36	30	3	(3) #10	#10	3/4"	30A/3P/F/NEMA-1	NOTE #3
EF-1	120	1		NOTE #2			(2) #12	#12	1/2"	TOGGLE DISCONNECT	
EF-2	120	1		NOTE #2			(2) #12	#12	1/2"	TOGGLE DISCONNECT	
EF-3	120	1		NOTE #2			(2) #12	#12	1/2"	TOGGLE DISCONNECT	
EF-4	120	1		NOTE #2			(2) #12	#12	1/2"	TOGGLE DISCONNECT	

- NOTES:
 1. FUSE DISCONNECT PER UNIT NAMEPLATE MFS OR MOCF.
 2. CONNECT TO SWITCHED LEG OF ROOM LIGHTING CIRCUIT.
 3. DISCONNECT SWITCH TO HAVE DUAL PRIMARY SIDE LUGS. FUSE PER FAN NAMEPLATE MFS.

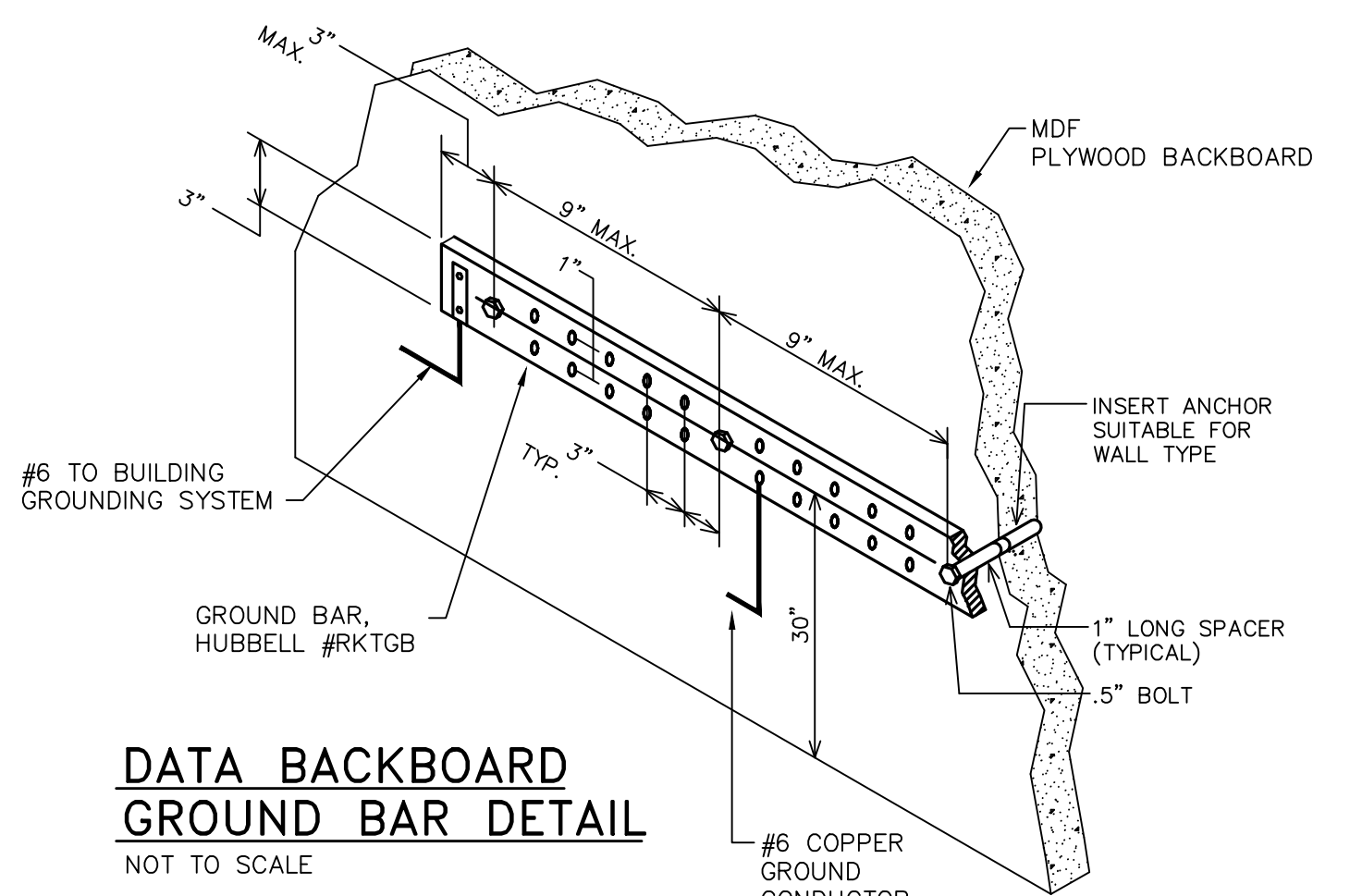


POWER & SYSTEMS PLAN
 SCALE: 1/8" = 1'-0"

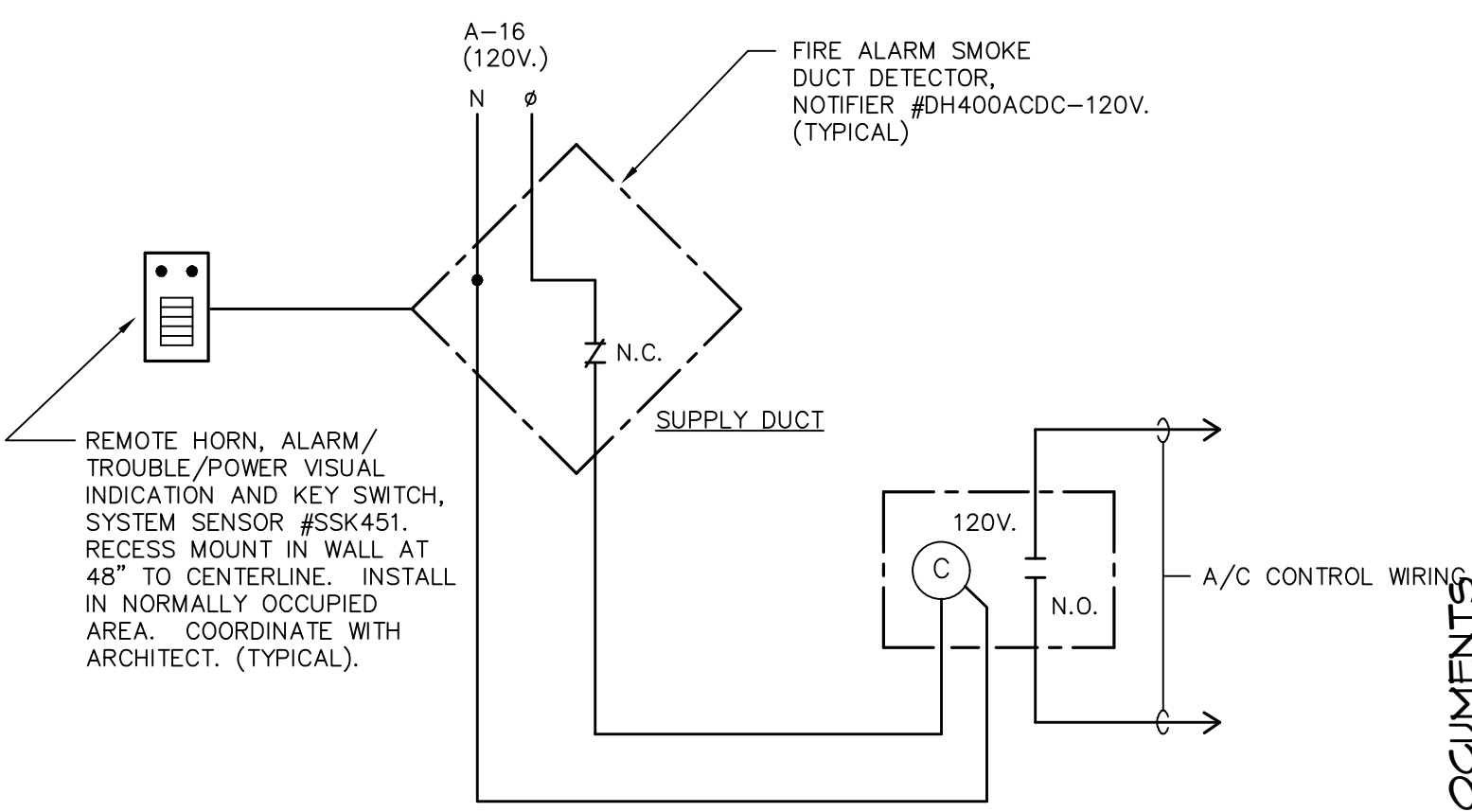
SPECIAL NOTE:
 CONTRACTOR SHALL COORDINATE WITH THE OWNER'S IT DEPARTMENT BEFORE POURING THE SLAB AND BEFORE INSTALLING ANY DRYWALL TO ALLOW AND CONFIRM ANY NECESSARY CONDUITS REQUIRED. THE OWNER'S IT DEPARTMENT SHALL SUPPLY/INSTALL ANY ADDITIONAL CONDUITS REQUIRED BEYOND WHAT IS SHOWN ON DRAWINGS.

DRAWING NOTES:

- 8 RELAY LIGHTING CONTROL PANEL.
- SEE MECHANICAL SCHEDULE THIS SHEET FOR POWER REQUIREMENTS.
- TELEPHONE/DATA BACKBOARD. SEE DETAIL THIS SHEET.
- NEMA 3R, 30A.-2P. DISCONNECT SWITCH AND CONNECTION TO COMPRESSOR. CIRCUIT: 2 NO. 10 AND 1 NO. 10 E.G. - 3/4".
- LEGRAND EVOLUTION RECESSED FLOOR BOX. ROUTE (1) 1 1/4" CONDUIT FOR DATA AND (1) 3/4" CONDUIT FOR POWER ABOVE NEARBY ACCESSIBLE CEILING. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION.
- RECESSED OUTLET BOX AND CONNECTION TO POWERED GATE. ROUTE CONDUIT DOWN INSIDE WALL, UNDERGROUND, AND CONNECT TO GATE.
- STUB-OUT 2" CONDUIT FOR FUTURE. CAP BOTH ENDS.



DATA BACKBOARD GROUND BAR DETAIL
 NOT TO SCALE



SMOKE DUCT DETECTOR ALARM/AHU-1 SHUT-DOWN WIRING DIAGRAM
 NO SCALE

NOTE: REQUIRED FOR AIR HANDLING UNITS WHERE SUPPLY AIR IS GREATER THAN 2,000 CFM.

SD080 | 4.5L | 80 kW
INDUSTRIAL DIESEL GENERATOR SET
EPA Certified Stationary Emergency

GENERAC INDUSTRIAL POWER

CONFIGURABLE OPTIONS

ENGINE SYSTEM
General
Oil Heater
Industrial Exhaust Silencer

Fuel System
Flexible fuel lines
Primary fuel filter

Engine Electrical System
10A UL battery charger
2.5A UL battery charger
Battery Warmer

ALTERNATOR SYSTEM
Alternator Upsizing
Anti-Condensation Heater
Tropical coating
Permanent Magnet Excitation

CIRCUIT BREAKER OPTIONS
Main Line Circuit Breaker
200 Main Line Circuit Breaker
Shunt Trip and Auxiliary Contact
Electronic Trip Breaker

GENERATOR SET
Gen-Link Communications Software (English Only)
IBC Seismic Certification
8 Position Load Center
5 Year Warranty
2 Year Extended Warranty
5 Year Warranty
5 Year Extended Warranty

ENCLOSURE
Weather Protected
Level 1 Sound Attenuation
Steel Enclosure
Aluminum Enclosure
150 MPH Wind Kit
12 VDC Enclosure Lighting Kit
120 VAC Enclosure Lighting Kit
AC/DC Enclosure Lighting Kit
Door Alarm Switch

TANKS (Size on last page)
Electrical Fuel Level
Mechanical Fuel Level
8" Fill Extension
13" Fill Extension
19" Fill Extension

CONTROL SYSTEM
21-Light Remote Annunciator
Remote Relay Panel (8 or 16)
Oil Temperature Sender with Indication Alarm
Remote E-Stop (Break Glass-Type, Surface Mount)
Remote E-Stop (Red Mushroom-Type, Flush Mount)
Remote Communication - Modem
Remote Communication - Ethernet
10A Run Relay
Ground Fault Indication and Protection Functions

ENGINEERED OPTIONS

ENGINE SYSTEM
Coolant heater ball valves
Block heaters
Fluid containment pans

ALTERNATOR SYSTEM
3rd Breaker Systems

CONTROL SYSTEM
Spare Inputs (x4) / outputs (x4) - H Panel Only
Battery Disconnect Switch

GENERATOR SET
Special Testing

TANKS
Overfill Protection Valve
UL 2085 Tank
UL C S-601 Tank
Stainless Steel Tank
Special Fuel Tanks (MDEQ and FL DEP/DERM, etc.)
Vent Extensions

ENCLOSURE
Motorized Dampers
Door switched for intrusion alert
Enclosure ambient heaters

RATING DEFINITIONS
Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.
Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. A 10% overload capacity is available for 1 out of every 12 hours. The Prime Power option is only available on International applications. Power ratings in accordance with ISO 8528-1, Second Edition

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SD080 | 4.5L | 80 kW
INDUSTRIAL DIESEL GENERATOR SET
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GENERAC INDUSTRIAL POWER

STANDARD FEATURES

ENGINE SYSTEM
General
Oil Drain Extension
Air Cleaner
Fan Guard
Stainless Steel flexible exhaust connection
Critical Exhaust Silencer (enclosed only)
Factory Filled Oil
Radiator Duct Adapter (open set only)

Fuel System
Fuel lockoff solenoid
Primary fuel filter
Closed Coolant Recovery System
UV/Ozone resistant hoses
Factory-installed Radiator
Radiator Drain Extension
50/50 Ethylene glycol antifreeze
120 VAC Coolant Heater

Engine Electrical System
Battery charging alternator
Battery cables
Battery tray
Solenoid actuated starter motor
Rubber-booted engine electrical connections

ALTERNATOR SYSTEM
UL2200 GEHydrotac™
12 leads (3-phase, non 600 V)
Class H insulation material
Ventilated rotor
2/3 pitch
Skewed stator
Auxiliary voltage regulator power winding
Amortisseur winding
Brushless Excitation
Sealed Bearings
Automated manufacturing (winding, insertion, lacing, varnishing)
Rotor dynamically spin balanced
Full load capacity alternator
Protective thermal switch

ENCLOSURE (IF SELECTED)
Rust-proof fasteners with nylon washers to protect finish
High performance sound-absorbing material
Gasketed doors
Stamped air-intake louvers
Air discharge hoods for radiator-upward pointing
Stainless steel lift off door hinges
Stainless steel lockable handles
Rhino Coat™ - Textured polyester powder coat

TANKS (IF SELECTED)
UL 142
Double wall
Vents
Sloped top
Sloped bottom
Factory pressure tested (2 psi)
Rupture basin alarm
Fuel level
Check valve in supply and return lines
Rhino Coat™ - Textured polyester powder coat
Stainless hardware

GENERATOR SET
Internal Genset Vibration Isolation
Separation of circuits - high/low voltage
Separation of circuits - multiple breakers
Silencer Heat Shield
Wrapped Exhaust Piping
Silencer housed in discharge hood (enclosed only)
Standard Factory Testing
2 Year Limited Warranty (Prime rated Units)
1 Year Limited Warranty (Standby rated Units)
Silencer mounted in the discharge hood (enclosed only)

CONTROL SYSTEM

Control Panel
Digital H Control Panel - Dual 4x20 Display
Programmable Crank Limiter
7-Day Programmable Exerciser
Special Applications Programmable PLC
RS-232/485
All-Phase Sensing DVR
Full System Status
Utility Monitoring
Low Fuel Pressure Indication
2-Wire Start Compatible
Power Output (kW)

Alarms
Oil Pressure (Pre-programmable Low Pressure Shutdown)
Coolant Temperature (Pre-programmed High Temp Shutdown)
Coolant Level (Pre-programmable Low Level Shutdown)
Low Fuel Pressure Alarm
Engine Speed (Pre-programmed Over speed Shutdown)
Battery Voltage Warning
Alarms & warnings time and date stamped
Alarms & warnings for transient and steady state conditions
Snap shots of key operation parameters during alarms & warnings
Alarms and warnings spelled out (no alarm codes)

Single point ground
15 channel data logging
0.2 msec high speed data logging
Alarm information automatically comes up on the display

Power Factor
kW Hours, Total & Last Run
Real/Reactive/Apparent Power
All Phase AC Voltage
All Phase Currents
Oil Pressure
Coolant Temperature
Coolant Level
Engine Speed
Battery Voltage
Frequency
Data/Time Fault History (Event Log)
Isynchronous Governor Control
Waterproof/sealed Connectors
Audible Alarms and Shutdowns
Not in Auto (Flashing Light)
Auto-On/Manual Switch
E-Stop (Red Mushroom-Type)
NPPA110 Level 1 and II (Programmable)
Customizable Alarms, Warnings, and Events
Modbus protocol
Predictive Maintenance algorithm
Sealed Boards
Password parameter adjustment protection

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SD080 | 4.5L | 80 kW
INDUSTRIAL DIESEL GENERATOR SET
EPA Certified Stationary Emergency

GENERAC INDUSTRIAL POWER

STANDBY POWER RATING
80 kW, 100 kVA, 60 Hz

PRIME POWER RATING*
72 kW, 90 kVA, 60 Hz

ISO 9001 **USA**

*Built in the USA using domestic and foreign parts.
*EPA Certified Prime ratings are not available in the U.S. or its Territories.
**Certain options or customization may not hold certification valid.

CODES AND STANDARDS
Generac products are designed to the following standards:

UL2200, UL508, UL142, UL498
NFPA70, 99, 110, 37
NEC700, 701, 702, 708
ISO9001, 8528, 3046, 7637, Pluses #2b, 4
NEMA ICS10, MG1, 250, ICS6, AB1
ANSI C82.41

POWERING AHEAD
For over 50 years, Generac has led the industry with innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial application under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

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CMHM ARCHITECTS INC.
106 SOUTH FLORIDA AVENUE
LAKELAND, FLORIDA | 33803-1118
TELEPHONE 863-468-8882 | info@cmhm.com

ARCHITECTS

JOHN R. CURTIS, AIA
BENJAMINE F. HUNDT, JR., AIA, LEED AP
C. KETH HUNTCUTT, AIA
NEL G. MELBY, AIA, LEED AP

SD080 | 4.5L | 80 kW
INDUSTRIAL DIESEL GENERATOR SET
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GENERAC INDUSTRIAL POWER

DIMENSIONS AND WEIGHTS*

OPEN SET

RUN TIME HOURS	USABLE CAPACITY GAL. (L)	L x W x H in (mm)	WT lbs (kg) - Tank & Open Set
ND TANK	-	93 (2362.2) x 40 (1016) x 49 (1244.6)	2425 (1100)
13	79 (299)	93 (2362.2) x 40 (1016) x 62 (1574.8)	2947 (1201)
30	189 (715.4)	93 (2362.2) x 40 (1016) x 74 (1879.6)	3183 (1444)
48	300 (1135.6)	93 (2362.2) x 40 (1016) x 86 (2184.4)	3407 (1545)
56	350 (1325)	110 (2794) x 40 (1016) x 86 (2184.4)	NA
81	510 (1930.5)	117 (2971.8) x 47 (1193.8) x 86 (2184.4)	3790 (1719)
93	589 (2229.6)	128 (3251.2) x 49 (1244.6) x 86 (2184.4)	4269 (1936)

STANDARD ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL. (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only
ND TANK	-	112 (2844.8) x 41 (1041.4) x 56 (1422.4)	Steel Aluminum
13	79 (299)	112 (2844.8) x 41 (1041.4) x 69 (1752.6)	
30	189 (715.4)	112 (2844.8) x 41 (1041.4) x 81 (2057.4)	
48	300 (1135.6)	112 (2844.8) x 41 (1041.4) x 93 (2362.2)	425 (193)
56	350 (1325)	112 (2844.8) x 41 (1041.4) x 93 (2362.2)	155 (70)
81	510 (1930.5)	117 (2971.8) x 47 (1193.8) x 93 (2362.2)	
93	589 (2229.6)	128 (3251.2) x 49 (1244.6) x 93 (2362.2)	

LEVEL 1 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL. (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only
ND TANK	-	130 (3302) x 41 (1041.4) x 56 (1422.4)	Steel Aluminum
13	79 (299)	130 (3302) x 41 (1041.4) x 69 (1752.6)	
30	189 (715.4)	130 (3302) x 41 (1041.4) x 81 (2057.4)	
48	300 (1135.6)	130 (3302) x 41 (1041.4) x 93 (2362.2)	450 (204)
56	350 (1325)	130 (3302) x 41 (1041.4) x 93 (2362.2)	285 (129)
81	510 (1930.5)	130 (3302) x 47 (1193.8) x 93 (2362.2)	
93	589 (2229.6)	130 (3302) x 49 (1244.6) x 93 (2362.2)	

LEVEL 2 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL. (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only
ND TANK	-	112 (2844.8) x 41 (1041.4) x 69 (1752.6)	Steel Aluminum
13	79 (299)	112 (2844.8) x 41 (1041.4) x 82 (2082.8)	
30	189 (715.4)	112 (2844.8) x 41 (1041.4) x 94 (2387.6)	
48	300 (1135.6)	112 (2844.8) x 41 (1041.4) x 106 (2692.4)	625 (284)
56	350 (1325)	112 (2844.8) x 41 (1041.4) x 106 (2692.4)	395 (180)
81	510 (1930.5)	117 (2971.8) x 47 (1193.8) x 106 (2692.4)	
93	589 (2229.6)	128 (3251.2) x 49 (1244.6) x 106 (2692.4)	

*All measurements are approximate and for estimation purposes only. Sound dBA can be found on the sound data sheet. Enclosure Only weight is added to Tank & Open Set weight to determine total weight.

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SD080 | 4.5L | 80 kW
INDUSTRIAL DIESEL GENERATOR SET
EPA Certified Stationary Emergency

GENERAC INDUSTRIAL POWER

OPERATING DATA

POWER RATINGS

Configuration	80 kW	Amps: 333
Single-Phase 120/240 VAC @0.8pf	80 kW	Amps: 278
Three-Phase 120/240 VAC @0.8pf	80 kW	Amps: 241
Three-Phase 277/480 VAC @0.8pf	80 kW	Amps: 120
Three-Phase 346/600 VAC @0.8pf	80 kW	Amps: 96

STARTING CAPABILITIES (xKVA)

Alternator	kW	480 VAC						208/240 VAC					
		10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	80	59	88	117	147	176	205	44	66	88	110	132	154
Upsize 1	100	79	118	157	197	236	275	59	89	118	148	177	206
Upsize 2	130	116	174	232	290	348	406	87	131	174	218	261	305

FUEL CONSUMPTION RATES*

Fuel Pump Lit. - ft (m)	Percent Load	Standby
3 (1)	25%	2.1 (7.9)
	50%	3.7 (14.0)
Total Fuel Pump Flow (Combustion + Return)	75%	5.2 (19.7)
13.6 gal/hr	100%	6.3 (23.8)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

Parameter	Standby
Coolant Flow per Minute	gal/min (l/min) 32.7 (123.8)
Coolant System Capacity	gal (L) 4.5 (17.44)
Heat Rejection to Coolant	BTU/hr 232,270
Inlet Air	cfm (m ³ /hr) 6390 (180)
Max. Operating Radiator Air Temp	F (C) 122 (50)
Max. Ambient Temperature (before derate)	F (C) 104 (40)
Maximum Radiator Backpressure	in H ₂ O 0.5

COMBUSTION AIR REQUIREMENTS

Flow at Rated Power	Standby
cfm (m ³ /min)	306 (8.67)

ENGINE EXHAUST

Parameter	Standby
Rated Engine Speed	rpm 1800
Horsepower at Rated kW**	hp 131
Piston Speed	ft/min (m/min) 1550 (475)
BMEP	psi 210
Exhaust Flow (Rated Output)	cfm (m ³ /min) 782 (22.14)
Max. Backpressure (Post Silencer)	inHg (kpa) 1.5 (5.1)
Exhaust Temp (Rated Output)	F (C) 887 (475)
Exhaust Outlet Size (Open Set)	mm (in) 76.2 (3.0)

** Refer to "Emissions Data Sheet" for maximum BHP for EPA and SCAMDO permitting purposes.

Derate - Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.
Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

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SD080 | 4.5L | 80 kW
INDUSTRIAL DIESEL GENERATOR SET
EPA Certified Stationary Emergency

GENERAC INDUSTRIAL POWER

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General	Inveco/FPT	Cooling System	Closed
EPA Emissions Compliance	Stationary Emergency	Water Pump	Belit Driven Centrifugal
EPA Emissions Reference	See Emissions Data Sheet	Fan Type	Pusher
Type	In-Line	Fan Speed (rpm)	2538
Displacement - L (cu in)	4.5 (274.6)	Fan Diameter mm (in)	660.4 (26)
Bore - mm (in)	105 (4.1)	Coolant Heater Wattage	1500
Stroke - mm (in)	132 (5.2)	Coolant Heater Standard Voltage	120 V /240 V
Compression Ratio	17.5:1		
Intake Air Method	Turbocharged/Aftercooled	Fuel System	
Cylinder Head Type	2 Valve	Fuel Type	Ultra Low Sulfur Diesel Fuel
Piston Type	Aluminum	Fuel Specifications	ASTM
Crankshaft Type	Forged Steel	Fuel Filtering (microns)	5
Engine Governing		Fuel Injection	Standbyne
Governor	Electronic Isochronous	Fuel Pump Type	Engine Driven Gear
Frequency Regulation (Steady State)	+/- 0.25%	Injector Type	Mechanical
Lubrication System		Fuel Supply Line mm (in)	12.7 (0.5) NPT
Oil Pump Type	Gear	Fuel Return Line mm (in)	12.7 (0.5) NPT
Oil Filter Type	Full Flow	Engine Electrical System	
Crankcase Capacity - L (qts)	13.6 (14.4)	System Voltage	12 VDC
		Battery Charging Alternator	20 A
		Battery Size	See Battery Index
		Battery Voltage	12 VDC
		Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	390	Standard Excitation	Synchronous Brushless
Poles	4	Bearings	One-Pre Lubed & Sealed
Field Type	Revolving	Coupling	Direct, Flexible Disc
Insulation Class - Rotor	H	Load Capacity - Standby	100%
Insulation Class - Stator	H	Prototype Short Circuit Test	Yes
Total Harmonic Distortion	<3%	Voltage Regulator Type	Digital
Telephone Interference Factor (TIF)	<50	Number of Sensed Phases	3
		Regulation Accuracy (Steady State)	±0.25%

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GENERATOR PAD NOTES:

- CONTRACTOR SHALL PROVIDE SIGNED AND SEALED STRUCTURAL ENGINEERING DRAWINGS FOR PAD DESIGN.
- USE 1/2" X 6" RED HEAD TYPE ANCHOR BOLTS FOR GENERATOR MOUNTING.
- PAD SHALL BE 8" LARGER THAN ACTUALLY EXTERIOR DIMENSIONS OF GENERATOR.

BID DOCUMENTS

Highlands County Board of County Commissioners
New Traffic Operations Building
4490 Kenilworth Blvd.
Sebring, FL 33870
GENERATOR SPECIFICATIONS

REVISIONS

CONSTRUCTION 03/24/2023

APPROVAL

REVIEW

CHECKED BY D.J.N.

E501

19058

NEWPOWER
CONSULTING, INC.
15520 HIGH BELL PL. BROADENON FL 34212
PH: 813.489.9850, CO.# 32011
ENGINEERING

