JEFFERSON COUNTY PURCHASING DEPARTMENT

Deborah L. Clark, Purchasing Agent

1149 Pearl Street
1st Floor, Beaumont, TX 77701

OFFICE MAIN: (409) 835-8593
FAX: (409) 835-8456

LEGAL NOTICE
Advertisement for Invitation for Bids

January 30, 2024

Notice is hereby given that sealed bids will be accepted by the Jefferson County Purchasing Department for Invitation for Bid **(IFB 24-005/MR) Crime Lab Vehicle Search/Investigation Building Renovation, Pursuant to Chapter 262, Texas Local Government Code, the County Purchasing Act and 2 CFR Sections 200.318-326.** Specifications for this project may be obtained from the Jefferson County website, https://www.co.jefferson.tx.us/Purchasing/ or by calling 409-835-8593.

Bids are to be sealed and addressed to the Purchasing Agent with the bid number and name marked on the outside of the envelope or box. Bidders shall forward an original and three (3) copies of their bid to the address shown below. Jefferson County does not accept bids submitted electronically. Late bids will be rejected as non-responsive. Bids will be publicly opened and read aloud in the Jefferson County Engineering Department Conference Room (5th Floor, Historic Courthouse) 1149 Pearl Street, Beaumont, Texas 77701, at the time and date below. Bidders are invited to attend the sealed bid opening.

BID NAME:	**Crime Lab Vehicle Search/Investigation Building Renovation, Pursuant to Chapter 262, Texas Local Government Code, the County Purchasing Act and 2 CFR Sections 200.318-326.**
BID NUMBER:	**IFB 24-005/MR**
DUE BY TIME/DATE:	**11:00 AM CT, Wednesday, March 20, 2024**
MAIL OR DELIVER TO:	**Jefferson County Purchasing Department** **1149 Pearl Street, 1st Floor** **Beaumont, Texas 77701**

There will be a **Pre-Bid Conference and Walk-Through** at **2:00 PM CT on Tuesday**, **February 13, 2024**, at Jefferson County Correctional Facility located at 5030 Hwy 69 S, Beaumont, TX 77705.

The County shall require the Bidder to furnish a Bid Security in the amount of five percent (5%) of the total contract cost. The bid bond must be executed with a surety company authorized to do business in the State of Texas.

Within ten (10) days after the date of contract execution and prior to the issuance of Notice to Proceed and/or Purchase Order, the Bidder shall furnish the following bonds: Performance Bond to the County for the full amount of the contract if the contract exceeds one hundred thousand dollars ($100,000). Payment Bond to the County for the full amount of the contract if the contract exceeds twenty-five thousand dollars ($25,000.00).

Any questions relating to these bid requirements should be directed to Mistey Reeves, Assistant Purchasing Agent at 409-835-8593 or via email at: mistey.reeves@jeffcotx.us. If no response in 72 hours, contact Deborah Clark, Purchasing Agent at 409-835-8593 or via email at: deb.clark@jeffcotx.us.

Jefferson County encourages Disadvantaged Business Enterprises (DBEs), Minority/Women Business Enterprises (M/WBEs), and Historically Underutilized Businesses (HUBs) to participate in the bidding process. Jefferson County does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment, or the provisions of services. Individuals requiring special accommodations are requested to contact our office at least seven (7) days prior to the bid due date at 409-835-8593.

All interested firms are invited to submit a bid in accordance with the terms and conditions stated in this bid.

Bidders are strongly encouraged to carefully read the entire invitation, as failure to return and/or complete all required documentation will result in a response being declared as non-responsive.

Deborah Clark

Deborah L. Clark, Purchasing Agent
Jefferson County, Texas

PUBLISH:
Port Arthur News:
January 31, 2024 & February 7, 2024
The Examiner:
February 1, 2024

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BID SUBMISSIONS:

One (1) Original and three (3) Bid Copies; with all copies to include a Completed Copy of this specifications packet (including technical specifications), in its entirety.

Each Bidder shall ensure that required parts of their bid submission are completed with accuracy and submitted as per the requirements within this specifications packet, including any addenda.

Additionally, Bidder shall monitor the Jefferson County Purchasing Department Website for any addenda, additional instructions, or bid updates. https://www.co.jefferson.tx.us/Purchasing/

Failure to return and/or complete all required documentation will result in a response being declared as non-responsive.

SECTION 1: GENERAL CONDITIONS OF BIDDING AND TERMS OF CONTRACT

By execution of this document, the Vendor accepts all general and special conditions of the contract as outlined below and, in the specifications, and plans.

1. BIDDING.

1.1 BIDS.
All bids must be submitted on the bid form furnished in this package.

1.2 AUTHORIZED SIGNATURES.
The bid must be executed personally by the Vendor, duly authorized partner of the partnership, or duly authorized officer of the corporation. If executed by an agent, a power of attorney or other evidence of authority to act on behalf of the Vendor shall accompany the bid to become a valid bid.

1.3 LATE BIDS.
Bids must be in the office of the Jefferson County Purchasing Agent before or at the specified time and date bids are due. Bids received after the submission deadline shall be rejected as non-responsive and returned unopened.

1.4 WITHDRAWAL OF BID PRIOR TO OPENING.
A bid may be withdrawn before the opening date by submitting a written request to the Purchasing Agent. If time allows, the Bidder may submit a new bid. Bidder assumes full responsibility for submitting a new bid before or at the specified time and date bids are due. Jefferson County reserves the right to withdraw a request for bids before the opening date.

1.5 WITHDRAWAL OF BID AFTER OPENING.
Bidder agrees that its offer may not be withdrawn or cancelled by the Vendor for a period of ninety (90) days following the date and time designated for the receipt of bids unless otherwise stated in the bid and/or specifications.

1.6 BID AMOUNTS.
Bids shall show net prices, extensions where applicable and net total. In case of conflict between unit price and extension, the unit price will govern. Any ambiguity in the bid as a result of omission, error, unintelligible or illegible wording shall be interpreted in the favor of Jefferson County.

1.7 EXCEPTIONS AND/OR SUBSTITUTIONS.
All bids meeting the intent of the specifications and plans will be considered for award. Vendors taking exception to the specifications and plans, or offering substitutions, shall state these exceptions in the section provided. If bid is made on an article other than the one specified, which a Bidder considers comparable, the name and grade of said article must be specified in the bid and sufficient specifications and descriptive data must accompany same to permit thorough evaluation. The absence of stated exceptions and/or substitutions shall indicate that the Vendor has not taken any exceptions to the specifications and shall be responsible to perform in strict accordance with the specifications. As a matter of practice, Jefferson County rejects exception(s) and /or substitutions as non-responsive but reserves the right to accept any and/or all of the exception(s) and/or substitution(s) deemed to be in the best interest of Jefferson County.

1.8 ALTERNATES.
The Invitation for Bid and/or specifications may expressly allow Bidder to submit an alternate bid. Presence of such an offer shall not be considered an indication of non-responsiveness.

1.9 DESCRIPTIONS.
Unless otherwise specified, any reference to make, manufacturer and/or model used in the bid specifications

is merely descriptive and not restrictive, and is used only to indicate type, style, or quality of material desired.

1.10 BID ALTERATIONS.
Bids cannot be altered or amended after submission deadline. Any interlineations, alterations, or erasures made before opening time must be initialed by the signer of the bid, guaranteeing authenticity.

1.11 TAX EXEMPT STATUS.
Jefferson County is exempt from federal excise tax and state sales tax. Unless the bid form or specifications specifically indicate otherwise, the bid price must be net, exclusive of above-mentioned taxes and will be so construed. Therefore, the bid price shall not include taxes.

1.12 QUANTITIES.
Quantities indicated are estimated quantities only and are not a commitment to buy. Approximate usage does not constitute an order, but only implies the probable quantity that will be used. Commodities will be ordered on an as-needed basis. Bidder is responsible for accurate final counts.

1.13 BID AWARD.
Award of contract shall be made to the most responsible, responsive Bidder, whose offer is determined to be the best value, taking into consideration the relative importance of price. Jefferson County reserves the right to be the sole judge as to whether items bid will serve the purpose intended.

Jefferson County reserves the right to award based upon individual line items, sections or total bid.

1.14 SILENCE OF SPECIFICATIONS FOR COMPLETE UNITS.
All materials, equipment and/or parts that will become a portion of the completed work, including items not specifically stated herein but, necessary to render the service(s) complete and operational per the specifications, are to be included in the bid price. Vendor may be required to furnish evidence that the service, as bid, will meet or exceed these requirements.

1.15 ADDENDA.
Any interpretations, corrections or changes to the specifications and plans will be made by addenda no later than forty-eight (48) hours prior to the bid opening. Addenda will be posted on the Purchasing web site. Vendors are responsible for monitoring the web site in order to remain informed on addenda. Vendors shall acknowledge receipt of all addenda with submission of bid.

1.16 GENERAL BID BOND/SURETY REQUIREMENTS.
Failure to furnish bid bond/surety, if requested, will result in bid being declared non-responsive. Non-responsive bids will not be considered for award.

1.17 GENERAL INSURANCE REQUIREMENTS.
Failure to furnish Affidavit of Insurance, if required in these specifications, will result in bid being declared non-responsive. Non-responsive bids will not be considered for award.

1.18 RESPONSIVENESS.
A responsive bid shall substantially conform to the requirements of this Invitation to Bid and/or specifications contained herein. Bidders who substitute any other terms, conditions, specifications and/or requirements or who qualify their bids in such a manner as to nullify or limit their liability to the contracting entity shall have their bids deemed non-responsive. Also, bids containing any clause that would limit contracting authority shall be considered non-responsive. Examples of non-responsive bids include but shall not be limited to: a) bids that fail to conform to required delivery schedules as set forth in the bid request; b) bids with prices qualified in such a manner that the bid price cannot be determined, such as with vague wording that may include “price in effect at the time of delivery,” and c) bids made contingent upon award of other bids currently under consideration.

1.19 RESPONSIBLE STANDING OF BIDDER.

To be considered for award, Bidder must at least: have the ability to obtain adequate financial resources, be able to comply with required or proposed delivery/completion schedule, have a satisfactory record of performance; have a satisfactory record of integrity and ethics, and be otherwise qualified and eligible to receive award.

1.20 CONFIDENTIAL/PROPRIETARY INFORMATION.

If any material in the bid submission is considered by Bidder to be confidential or proprietary information (including manufacturing and/or design processes exclusive to the Bidder), Bidder **must** clearly mark the applicable pages of bid submission to indicate each claim of confidentiality. Additionally, Bidder must include a statement on company letterhead identifying all Bid Submission section(s) and page(s) that have been marked as confidential. Jefferson County will protect from public disclosure such portions of a bid, unless directed otherwise by legal authority, including existing open records acts. Merely making a blanket claim that the entire bid submission is protected from disclosure because it contains some proprietary information is not acceptable, and will make the entire bid submission subject to release under the Texas Public Information Act.

By submitting a bid, Bidder agrees to reproduction by Jefferson County, without cost or liability, of any copyrighted portions of Bidder's bid submission or other information submitted by Bidder.

1.21 PUBLIC BID OPENING.

Bidders are invited to be present at the opening of bids. After the official opening of bids, a period of not less than one week is necessary to evaluate bids. The amount of time necessary for bid evaluation may vary and is determined solely by the County. Following the bid evaluation, all bids submitted are available for public review.

2. PERFORMANCE.

2.1 DESIGN, STRENGTH, AND QUALITY.

Design, strength, and quality of materials and workmanship must conform to the highest standards of manufacturing and engineering practices. The apparent silence of specifications and/or plans as to any detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications and/or plans shall be made on the basis of this statement.

2.2 AGE AND MANUFACTURE.

All tangible goods being bid must be new and unused, unless otherwise specified, in first-class condition, of current manufacture, and furnished ready to use. All items not specifically mentioned that are required for a complete unit shall be furnished.

2.3 DELIVERY LOCATION.

All deliveries will be made to the address(es) specified on the purchase order during normal office working hours of 8:00 am CT to 4:00 pm CT, Monday through Friday, unless otherwise authorized by the Purchasing Agent or designee.

2.4 DELIVERY SCHEDULE.

Delivery time may be an important consideration in the evaluation of best value. The maximum number of days necessary for delivery ARO shall be stated in the space, if provided, on the bid form.

2.5 DELIVERY CHARGES.

All delivery and freight charges, F.O.B. destination shown on Jefferson County purchase order, as necessary to perform contract are to be included in the bid price.

2.6 INSTALLATION CHARGES.

All charges for assembly, installation and set-up shall be included in the bid price. Unless otherwise stated, assembly, installation and set-up will be required.

2.7 OPERATING INSTRUCTIONS AND TRAINING.

Clear and concise operating instructions and descriptive literature will be provided in English, if requested. On-site detailed training in the safe and efficient use and general maintenance of item(s) purchased shall be provided as needed at the request of Jefferson County. Instructions and training shall be at no additional cost to the County.

2.8 STORAGE.

Bidder agrees to provide storage of custom ordered materials, if requested, for up to thirty (30) calendar days.

2.9 COMPLIANCE WITH FEDERAL, STATE, COUNTY, AND LOCAL LAWS.

Bids must comply with all federal, state, county and local laws, including, but not limited to, all applicable standard safety, emission, and noise control requirements. Any vehicles or equipment shall contain all standard safety, emission, and noise control requirements required for the types and sizes of equipment at the time of their manufacture. The Contractor agrees, during the performance of work or service, to comply with all applicable codes and ordinances of Jefferson County or the State of Texas as they may apply, as these laws may now read, or as they may hereafter be changed or amended.

2.10 OSHA.

The Bidder will certify all equipment complies with all regulations and conditions stipulated under the Williams-Steiger Occupational Safety and Health Act of 1971, as amended. The successful Bidder will further certify that all items furnished under this project will conform and comply with federal and State of Texas OSHA standards. The successful Bidder will agree to indemnify and hold harmless Jefferson County for any and all damages that may be assessed against the County.

2.11 PATENTS AND COPYRIGHTS.

The successful Vendor agrees to protect the County from claims involving infringements of patents and/or copyrights.

2.12 SAMPLES, DEMONSTRATIONS, AND TESTING.

At Jefferson County's request and direction, Bidder shall provide product samples and/or testing of items bid to ensure compliance with specifications. Samples, demonstrations and/or testing may be requested at any point prior to or following bid award. Samples, demonstrations and/or testing may be requested upon delivery and/or any point during the term of resulting contract. All samples (including return thereof), demonstrations, and/or testing shall be at the expense of the Bidder/Vendor.

2.13 ACCEPTABILITY.

All articles enumerated in the bid shall be subject to inspection by an officer designated for that purpose by Jefferson County. If found inferior to the quality called for, or not equal in value to the specifications, deficient in workmanship or otherwise, this fact shall be certified to the Purchasing Agent, who shall have the right to reject the whole or any part of the same. Items and/or work determined to be contrary to specifications must be replaced at the vendor's expense. Inferior items not retrieved by the vendor within thirty (30) calendar days, or an otherwise agreed upon time, shall become the property of the County. If disposal of such items warrants an expense, an amount equal to the disposal expense will be deducted from amounts payable to the vendor.

2.14 MAINTENANCE.

Maintenance required for equipment bid should be available in Jefferson County by a manufacturer authorized maintenance facility. Cost for this service shall be shown on the bid sheet as requested or on a separate sheet, as required. If Jefferson County opts to include maintenance, it shall be so stated in the purchase order and said cost will be included. Service will commence only upon expiration of applicable warranties and should be priced accordingly.

2.15 MATERIAL SAFETY DATA SHEETS.

Under the "Hazardous Communications Act," common known as the "Texas Right to Know Act," a Bidder must provide the user department, with each delivery, material safety data sheets which are applicable to hazardous substances

defined in the Act. Failure of the Bidder to furnish this documentation, will be cause to reject any bid applying thereto.

2.16 EVALUATION.

Evaluation shall be used as a determinant as to which services are the most efficient and/or most economical for the County. It shall be based on all factors having a bearing on price and performance of the items in the user environment. All bids are subject to tabulation by the Jefferson County Purchasing Department and recommendation to Jefferson County Commissioners' Court. Compliance with all bid requirements and needs of the using department are considered in evaluating bids. Pricing is not the only criteria for making a recommendation. The Jefferson County Purchasing Department reserves to right to contact any Bidder, at any time, to clarify, verify or requirement information with regard to this bid.

3. PURCHASE ORDERS AND PAYMENT.

3.1 PURCHASE ORDERS.

A purchase order(s) shall be generated by the Jefferson County Purchasing Agent to the successful vendor. The purchase order number must appear on all itemized invoices and packing slips. The County will not be held responsible for any work orders placed and/or performed without a valid current purchase order number. Payment will be made for all services rendered and accepted by the contract administrator for which a valid invoice has been received.

3.2 INVOICES.

All invoices shall reference the Purchase Order number. Invoices shall reference the bid item number or a detailed description for each item invoiced. If an item purchased and itemized on the invoice does not correspond to an item in any of the categories awarded to the vendor, invoice shall reference the item as "N/C" to indicate that it is a non-contract item. This requirement is to assist the County in verifying contract pricing on all invoices. Payment will be made under terms of net thirty (30) days unless otherwise agreed upon by seller and the purchasing department.

3.3 PROMPT PAYMENT.

In accordance with the State of Texas Prompt Payment Act, Article 601f V.T.C.S., payment will be made after receive and acceptance by the County of the merchandise ordered and of a valid invoice. Successful Bidder(s) is required to pay Subcontractors within ten (10) days after the successful Bidder receives payment from the County.

3.4 FUNDING.

Jefferson County is operated and funded on an October 1 to September 30 basis; accordingly, the County reserves the right to terminate, without liability to the County, any contract for which funding is not available.

4. CONTRACT.

4.1 CONTRACT DEFINITION.

The General Conditions of Bidding and Terms of Contract, Specifications, Plans, Bidding Forms, Addenda, and any other documents made a part of this bid shall constitute the complete bid. This bid, when duly accepted by Jefferson County, shall constitute a contract equally binding between the successful Bidder and Jefferson County.

4.2 CHANGE ORDER.

No different or additional terms will become part of this contract with the exception of a change order. No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract will be made in writing and at the discretion and approval of Jefferson County. No change order will be binding unless signed by an authorized representative of the County and the vendor.

4.3 PRICE RE-DETERIMINATION.

A price re-determination may be requested at the time of annual renewal. All requests for price re-determination

shall be in written form. Cause for such request, i.e., manufacturer's direct cost, postage rates, Railroad Commission rates, Federal/State minimum wage law, Federal/State unemployment taxes, F.I.C.A, Insurance Coverage Rates, etc., shall be substantiated in writing by the source of the cost increase. The Bidder's past experience of honoring contracts at the bid price will be an important consideration in the evaluation of the lowest and best bid. Jefferson County reserves the right to accept or reject any/all requests for price re-determination as it deems to be in the best interest of the County.

4.4 TERMINATION.

Jefferson County reserves the right to terminate the contract for default if the Bidder breached any of the terms therein, including warranties of Bidder or if the Bidder becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies which Jefferson County may have in law or equity. Default may be construed as, but not limited to, failure to deliver the proper goods and/or service within the proper amount of time, and/or to properly perform any and all services required to Jefferson County's satisfaction and/or to meet all other obligations and requirements. Contracts may be terminated without cause upon thirty (30) days' written notice to either party unless otherwise specified. Jefferson County reserves the right to award canceled contract to the next lowest Bidder. Bidder, in submitting this bid, agrees that Jefferson County shall not be liable to prosecution for damages in the event that the County declares the Bidder in default.

4.5 CONFLICT OF INTEREST.

Employees of the County are not permitted to maintain financial interest in, or receive payment, directly or indirectly, borrow from, lend to, invest in, or engage in any substantial financial transaction with any individual, organization, supplier, or Subcontractor who does business with the County without disclosure. When conflict of interest is discovered, it shall be grounds for termination of contract.

4.6 INTEREST BY PUBLIC OFFICIALS.

No public official shall have interest in this contract, in accordance with Texas Local Government Code.

4.7 PRE-AWARD/CONTRACT CONTACT BETWEEN COUNTY AND VENDORS.

The Jefferson County Purchasing Department may initiate discussions with selected vendors; however, discussions may not be initiated by vendors.

The Jefferson County Purchasing Department expects to conduct discussions with vendor's representatives authorized to contractually obligate the vendor with an offer.

Vendors shall not contact any Jefferson County personnel during the IFB process without the express permission from the Jefferson County Purchasing Agent. The Purchasing Agent will disqualify any vendor who has made site visits, contacted Jefferson County personnel, or distributed any literature without authorization from the Jefferson County Purchasing Department.

All correspondence relating to this IFB, from advertisement to award shall be sent to the Jefferson County Purchasing Department. All presentations and/or meetings between Jefferson County and the vendor relating to this IFB shall be coordinated by the Jefferson County Purchasing Department.

Selected vendors may be expected to make a presentation/product demonstration to an Evaluation Committee. Proposals, vendor presentations, and product/service evaluations may develop into negotiating sessions with the vendor(s) as selected by the Evaluation Committee. Jefferson County expects to conduct negotiations with vendor representatives authorized to contractually obligate the vendor with an offer. If vendor is unable to agree to contract terms and conditions, Jefferson County reserves the right to terminate contract negotiations with that vendor and initiate negotiations with another vendor. In addition to a presentation, visits by the Evaluation Committee to representative vendor client sites may be conducted where the proposed solution can be demonstrated in a production environment.

4.8 INJURIES OR DAMAGES RESULTING FROM NEGLIGENCE.

Successful vendor shall defend, indemnify and save harmless Jefferson County and all its officers, agents and employees from all suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful vendor, or of any agent, employee, Subcontractor or supplier in the execution of, or performance under, any contract which may result from bid award. Successful vendor shall pay any judgment with cost which may be obtained against Jefferson County growing out of such injury or damages.

4.9 WARRANTY.

The successful vendor shall warrant that all materials utilized in the performance of this contract shall conform to the proposed specifications and/or all warranties as stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title.

4.10 UNIFORM COMMERCIAL CODE.

The successful vendor and Jefferson County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.

4.11 VENUE.

This agreement will be governed and construed according to the laws of the State of Texas. This agreement is performable in the County of Jefferson, Texas.

4.12 SALE, ASSIGNMENT, OR TRANSFER OF CONTRACT.

The successful vendor shall not sell, assign, transfer or convey this contract, in whole or in part, without the prior written consent of Jefferson County.

4.13 SILENCE OF SPECIFICATIONS.

The apparent silence of these specifications as to any detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.

5. REJECTION OR WITHDRAWAL.

Submission of additional terms, conditions or agreements with the bid document are grounds for deeming a bid non-responsive and may result in bid rejection. Jefferson County reserves the right to reject any and all bids and to waive any informalities and minor irregularities or defects in bids. Bids may be withdrawn in person by a bidder or authorized representative, provided their identity is made known and a receipt is signed for the bid, but only if the withdrawal is made prior to the time set for receipt of bids. Bids are an irrevocable offer and may not be withdrawn within **90** days after opening date.

6. EMERGENCY/DECLARED DISASTER REQUIREMENTS.

In the event of an emergency or if Jefferson County is declared a disaster area, by the County, State, or Federal Government, this Acceptance of Offer may be subjected to unusual usage. Contractor shall service the county during such an emergency or declared disaster under the same terms and conditions that apply during non-emergency/disaster conditions. The pricing as specified in this Acceptance of Offer shall apply to serving the County's needs regardless of the circumstances. If Contractor is unable to supply the services under the terms of the Acceptance of Offer, then Contractor shall provide proof of such disruption and a copy of the invoice from Contractor's supplier(s).

Additional profit margin as a result of supplying services during an emergency or declared disaster shall not be permitted. In the event that additional equipment, supplies, and materials are required during the declared disaster, additional shipping, handling and drayage fees may apply.

7. AWARD.

The bid will be awarded to the responsible, responsive bidder(s) whose bid, conforming to the solicitation, will be most advantageous to Jefferson County – price and other factors considered. Unless otherwise specified in this IFB, Jefferson County reserves the right to accept a bid in whole or in part, and to award by item or by group, whichever is deemed to be in the best interest of Jefferson County. Any bidder who is in default to Jefferson County at the time of submittal of the bid shall have that bid rejected.

Jefferson County reserves the right to clarify any contractual terms with the concurrence of the Contractor; however, any substantial non-conformity in the offer, as determined by Jefferson County, shall be deemed non-responsive and the offer rejected.

In evaluating bids, Jefferson County shall consider the qualifications of the bidders, and, where applicable, operating costs, delivery time, maintenance requirements, performance data, and guarantees of materials and equipment.

In addition, Jefferson County may conduct such investigation as it deems necessary to assist in the evaluation of a bid and to establish the responsibility, qualifications, and financial ability of the bidders to fulfill the contract.

Jefferson County reserves the right to award this contract on the basis of **lowest and best bid** in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one offeror, and/or to reject any or all bids. In the event the lowest dollar offeror meeting specifications is not a awarded a contract, Offeror may appear before the Commissioners' Court and present evidence concerning Offeror responsibility after officially notifying the Office of the Purchasing Agent of Offeror's intent to appear.

8. CONTRACT.

A response to an IFB is an offer to contract with Jefferson County based upon the terms, conditions, and specifications contained in the IFB. Bids do not become contracts unless and until they are executed by Jefferson County, eliminating a formal signing of a separate contract. For that reason, all of the terms and conditions of the contract are contained in the IFB, unless any of the terms and conditions is modified by an IFB Amendment, a Contract Amendment, or by mutually agreed terms and conditions in the contract documents.

9. WAIVER OF SUBROGATION.

Bidder and bidder's insurance carrier waive any and all rights whatsoever with regard to subrogation against Jefferson County as an indirect party to any suit arising out of personal or property damages resulting from bidder's performance under this agreement.

10. FISCAL FUNDING.

A multi-year contract (if requested by the specifications) continuing as a result of an extension option must include fiscal funding out. If, for any reason, funds are not appropriated to continue the contract, said contract shall become null and void.

11. BID RESULTS.

Bid results are not provided in response to telephone inquiries. A preliminary tabulation of bids received will be posted on the Purchasing web page at https://www.co.jefferson.tx.us/Purchasing/ as soon as possible following bid opening. A final tabulation will be posted following bid award, and will also be available for review in the Purchasing Department.

12. CHANGES AND ADDENDA TO BID DOCUMENTS.

Each change or addendum issued in relation to this IFB document will be on file in the Office of the Purchasing Agent, and will be posted on the Purchasing web site as soon as possible. It shall be the bidder's responsibility to make inquiry as to change or addenda issued, and to monitor the web site. All such changes or addenda shall become part of the contract and all bidders shall be bound by such addenda. Information on all changes or addenda issued will be available at the Office of the County Purchasing Agent.

13. SPECIFICATIONS.

Unless otherwise stated by the bidder, the bid will be considered as being in accordance with Jefferson County's applicable standard specifications, and any special specifications outlined in the bid document. References to a particular trade name, manufacturer's catalogue, or model number are made for descriptive purposes to guide the bidder in interpreting the requirements of Jefferson County, and should not be construed as excluding bids on other types of materials, equipment, and supplies. However, the bidder, if awarded a contract, will be required to furnish the particular item referred to in the specifications or description unless departure or substitution is clearly noted and described in the bid.

Jefferson County reserves the right to determine if equipment/ product being bid is an acceptable alternate. All goods shall be new unless otherwise so stated in the bid. Any unsolicited alternate bid, or any changes, insertions, or omissions to the terms and conditions, specifications, or any other requirements of the bid, may be considered non-responsive.

14. DELIVERY.

Bids shall include all charges for delivery, packing, crating, containers, etc. Unless otherwise stated by the bidder (in writing on the included Bid Form), prices bid will be considered as being based on F.O.B. destination/delivered freight included.

15. INTERPRETATION OF BID AN/OR CONTRACT DOCUMENTS.

All inquiries shall be made within a reasonable time prior to the date and time fixed for the bid opening, in order that a written response in the form of an addendum, if required, can be processed before the bids are opened. Inquiries received that are not made in a timely fashion may or may not be considered.

16. CURRENCY.

Prices calculated by the bidder shall be stated in U.S. dollars.

17. PRICING.

Prices shall be stated in units of quantity specified in the bid documents. In case of discrepancy in computing the amount of the bid, the unit price shall govern.

18. NOTICE TO PROCEED/PURCHASE ORDER.

The successful bidder may not commence work under this contract until authorized to do so by the Purchasing Agent.

19. CERTIFICATION.

By signing the offer section of the Offer and Acceptance page, Bidder certifies:

- The submission of the offer did not involve collusion or other anti-competitive practices.
- The Bidder has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to any public servant in connection with the submitted offer.
- The Bidder hereby certifies that the individual signing the bid is an authorized agent for the Bidder and has the authority to bind the Bidder to the contract.

20. DEFINITIONS.

"County" – Jefferson County, Texas.
"Contractor" – The Bidder whose proposal is accepted by Jefferson County.

21. MINORITY-OWNED (MWBE), WOMEN-OWNED (WBE) AND HISTORICALLY UNDERUTILIZED (HUB)

BUSINESS ENTERPRISE PARTICIPATION.

It is the desire of Jefferson County to increase the participation of Minority-Owned (MBE) , Women-Owned (WBE), and Historically Underutilized (HUB) business enterprises in its contracting and procurement programs. While the County does not have any preference or set aside programs in place, it is committed to a policy of equitable participation for these firms.

SECTION 2: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) MANDATED CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY UNDER FEDERAL AWARDS REQUIRED BY 2 C.F.R. §200.326 APPENDIX II TO 2 CFR §200

2 CFR 200.327 Contract provisions. The non-Federal entity's contracts should contain applicable provisions described in Appendix II to Part 200—Contract Provisions for non-Federal Entity Contracts Under Federal Awards. The non-Federal entity's contracts must contain the provisions described in Appendix II to Part 200—Contract Provisions for non-Federal Entity Contracts Under Federal Awards, as applicable. ***Language as of August 31, 2022.**

THRESHOLD	PROVISION	CITATION
>$250,000 (Simplified Acquisition Threshold)	Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where Contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.	2 CFR 200 APPENDIX II (A)
>$10,000	All contracts in excess of $10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be affected and the basis for settlement.	2 CFR 200 APPENDIX II (B)
None	Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor." 41 CFR 60-1.4 Equal opportunity clause. (b) Federally assisted construction contracts. (1) Except as otherwise provided, each administering agency shall require the inclusion of the following language as a condition of any grant, contract, loan, insurance, or guarantee involving federally assisted construction which is not exempt from the requirements of the equal opportunity clause: The [recipient] hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause: During the performance of this contract, the Contractor agrees as follows: (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:	2 CFR 200 APPENDIX II I and 41 CFR §60-1.4(b)

	Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause. (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin. (3) The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information. (4) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. (5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor. (6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders. (7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.	

	(8) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States. The [recipient] further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the [recipient] so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract. The [recipient] agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of Contractors and Subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance. The [recipient] further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a Contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon Contractors and Subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the [recipient] agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the [recipient] under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such [recipient]; and refer the case to the Department of Justice for appropriate legal proceedings.	
>$2,000	Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, Contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages	2 CFR 200 APPENDIX II (D)

	specified in a wage determination made by the Secretary of Labor. In addition, Contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each Contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.	
>$100,000	Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each Contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.	2 CFR 200 APPENDIX II (E)
None	Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.	2 CFR 200 APPENDIX II (F)
>$150,000	Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended - Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).	2 CFR 200 APPENDIX II (G)
>$25,000	Debarment and Suspension (Executive Orders 12549 and 12689) - A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989	2 CFR 200 APPENDIX II (H)

	Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.	
>$100,000	Byrd Anti-Lobbying Amendment (31 U.S.C. 1352) - Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.	2 CFR 200 APPENDIX II (I) and 24 CFR §570.303
	See 2 CFR §200.323.	2 CFR 200 APPENDIX II (J)
	See 2 CFR §200.216.	2 CFR 200 APPENDIX II (K)
	See 2 CFR §200.322.	2 CFR 200 APPENDIX II (L)
>$10,000	A non-Federal entity that is a state agency or agency of a political subdivision of a state and its Contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.	2 CFR 200.323
>$100,000	*§135.38 Section 3 clause* *All section 3 covered contracts shall include the following clause (referred to as the section 3 clause):* A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing. B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations. C. The Contractor agrees to send to each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the Contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see	

	the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin. D. The Contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the Subcontractor is in violation of the regulations in 24 CFR part 135. The Contractor will not subcontract with any Subcontractor where the Contractor has notice or knowledge that the Subcontractor has been found in violation of the regulations in 24 CFR part 135. E. The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under 24 CFR part 135. F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts. G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).	
None	Section 889(b)(1) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (FY2019 NDAA) and 2 C.F.R. § 200.216, as implemented by FEMA Policy 405-143-1, Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services (Interim), prohibit the obligation or expending of federal award funds on certain telecommunication products or from certain entities for national security reasons. Effective August 13, 2020, FEMA recipients and subrecipients, as well as their Contractors and Subcontractors, may not obligate or expend any FEMA award funds to: Recipients and subrecipients are prohibited from obligating or expending loan or grant funds to: (1) Procure or obtain; (2) Extend or renew a contract to procure or obtain; or (3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).	2 CFR 200.216

	(i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities). (ii) Telecommunications or video surveillance services provided by such entities or using such equipment. (iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country. (b) In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained. (c) See Public Law 115-232, section 889 for additional information. (d) See also § 200.471.	
None	As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section: (1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. (2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.	2 CFR 200.322(a)(b)(1)(2)
None	The Federal awarding agency must establish conflict of interest policies for Federal awards. The non-Federal entity must disclose in writing any potential conflict of interest to the Federal awarding agency or pass-through entity in accordance with applicable Federal awarding agency policy.	2 CFR 200.112
None	The Federal awarding agency and the non-Federal entity should, whenever practicable, collect, transmit, and store Federal award-related information in open and machine-readable formats rather than in closed formats or on paper in accordance with applicable legislative requirements. A machine-readable format is a format in a standard computer language (not English text) that can be read automatically by a web browser or computer system. The Federal awarding agency or pass-through entity must always provide or accept paper versions of Federal award-related information to and from the non-Federal	2 CFR 200.336

	entity upon request. If paper copies are submitted, the Federal awarding agency or pass-through entity must not require more than an original and two copies. When original records are electronic and cannot be altered, there is no need to create and retain paper copies. When original records are paper, electronic versions may be substituted through the use of duplication or other forms of electronic media provided that they are subject to periodic quality control reviews, provide reasonable safeguards against alteration, and remain readable.	
None	Contracting with HUB, small and minority businesses, women's business enterprises, and labor surplus area firms. (a) The non-Federal entity must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. (b) Affirmative steps must include: (1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists; (2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources; (3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises; (4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; (5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and (6) Requiring the prime Contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (b)(1) through (5) of this section.	2 CFR 200.321
None	Financial records, supporting documents, statistical records, and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. The only exceptions are the following: (a) If any litigation, claim, or audit is started before the expiration of the 3-year period, the records must be retained until all litigation, claims, or audit findings involving the records have been resolved and final action taken. (b) When the non-Federal entity is notified in writing by the Federal awarding agency, cognizant agency for audit, oversight agency for audit, cognizant agency for indirect costs, or pass-through entity to extend the retention period. (c) Records for real property and equipment acquired with Federal funds must be retained for 3 years after final disposition. (d) When records are transferred to or maintained by the Federal awarding agency or pass-through entity, the 3-year retention requirement is not applicable to the non-Federal entity. (e) Records for program income transactions after the period of performance. In some cases, recipients must report program income after the period of performance. Where there is such a requirement, the retention period for the records pertaining to the earning of the program income starts from the end of the non-Federal entity's fiscal year in which the program income is earned.	2 CFR 200.334

	(f) Indirect cost rate proposals and cost allocations plans. This paragraph applies to the following types of documents and their supporting records: Indirect cost rate computations or proposals, cost allocation plans, and any similar accounting computations of the rate at which a particular group of costs is chargeable (such as computer usage chargeback rates or composite fringe benefit rates). (1) *If submitted for negotiation.* If the proposal, plan, or other computation is required to be submitted to the Federal Government (or to the pass-through entity) to form the basis for negotiation of the rate, then the 3-year retention period for its supporting records starts from the date of such submission. (2) *If not submitted for negotiation.* If the proposal, plan, or other computation is not required to be submitted to the Federal Government (or to the pass-through entity) for negotiation purposes, then the 3-year retention period for the proposal, plan, or computation and its supporting records starts from the end of the fiscal year (or other accounting period) covered by the proposal, plan, or other computation.	
None	CONTRACTS WITH COMPANIES ENGAGED IN BUSINESS WITH IRAN, SUDAN, OR FOREIGN TERRORIST ORGANIZATION PROHIBITED. A governmental entity may not enter into a governmental contract with a company that is identified on a list prepared and maintained under Section 2270.0052, 2270.0102, or 2270.0152. In accordance with Texas Government Code, Chapter 2252, Subchapter F, **Respondent** hereby represents and warrants that it is not a company identified on the lists prepared and maintained under Texas Government Code §§ 2270.0052 (companies with business operations in Sudan), 2270.0102 (companies with business operations in Iran), or 2270.0152 (companies known to have contracts with or provide supplies or services to a foreign terrorist organization). Notwithstanding the foregoing, a company that the United States government affirmatively declares to be excluded from its federal sanctions regime relating to Sudan, Iran, or to a foreign terrorist organization, is not subject to contract prohibition under this clause. A company claiming such exemption must submit the official copy of the declaration.	Texas Government Code 2252.152
>$100,000	PROVISION REQUIRED IN CONTRACT. (a) This section applies only to certain solicitations and contracts. Section 2271.002 of the Texas Government Code states the following: (a) This section applies only to a contract that: (1) is between a governmental entity and a company with 10 or more full-time employees; and (2) has a value of $100,000 or more that is to be paid wholly or partly from public funds of the governmental entity. (b) A governmental entity may not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract. Section 2271.001(2) of the Government Code defines “company" to be the meaning assigned by Section 808.001 of the Texas Government Code, except that the term does not include a sole proprietorship.	Texas Government Code 2271.002
Option Contract Language for contracts awarded prior to Grant Award	The contract award is contingent upon the receipt of federal funds. If no such funds are awarded, the contract shall terminate.	Optional

	Mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.	42 U.S.C. 6201
	The Firm agrees that no otherwise qualified individual with disabilities shall, solely by reason of his/her disability, be denied the benefits of, or be subjected to discrimination, including discrimination in employment, under any program or activity receiving federal financial assistance.	Section 504 of the Rehabilitation Act of 1973, as amended.

BYRD ANTI-LOBBYING CERTIFICATION

Certification for Contracts, Grants, Loans, and Cooperative Agreements-The undersigned certifies, to the best of his or her knowledge and belief, that:

1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor_____ certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C.Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

_____

Signature of Contractor's Authorized Official

_____

Name and Title of Contractor's Authorized Official

_____

Date

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

DEBARMENT/SUSPENSION CERTIFICATION

Non-Federal entities and Contractors are subject to the debarment and suspension regulations implementing Executive Order 12549, Debarment and Suspension (1986) and Executive Order 12689, Debarment and Suspension (1989) at 2 C.F.R. Part 180 and the Department of Homeland Security's regulations at 2 C.F.R. Part 3000 (No procurement Debarment and Suspension).

This requirement applies to all FEMA grant and cooperative agreement programs.

Federal Executive Order (E .O.) 12549 "Debarment" requires that all Contractors receiving individual awards, using federal funds, and all sub recipients certify that the organization and its principals are not debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency from doing business with the Federal Government. By signing this document, you certify that your organization and its principals are not debarred. Failure to comply or attempts to edit this language may disqualify your bid. Information on debarment is available at the following websites: www.sam.gov and https://acguisition.qov/far/index.html see section 52.209-6.

The Contractor _____ certifies or affirms by your signature that neither you nor your principal is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

_____

Signature of Contractor's Authorized Official

_____

Name and Title of Contractor's Authorized Official

_____

Date

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

CIVIL RIGHTS COMPLIANCE PROVISIONS

1. EQUAL EMPLOYMENT OPPORTUNITY (Equal Opportunity Clause)

(For all awarded contracts that meet the definition of "federally assisted construction contract" provided in 41 CFR Part 60-1.3)

During the performance of this contract, the Contractor agrees as follows:

1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

   Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

3) The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.

4) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or order this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

8) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of Contractors and Subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a Contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon Contractors and Subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

_____

Signature of Contractor's Authorized Official

_____

Name and Title of Contractor's Authorized Official

_____

Date

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

SECTION 3: SPECIAL REQUIREMENTS/BID SUBMISSION INSTRUCTIONS

The following requirements and instructions **supersede** General Requirements where applicable.

1. SUBMISSION OF BID.

Bidder is Responsible for Submitting:

One (1) Original and three (3) Bid Copies; with all copies to include a Completed Copy of this Specifications Packet (including technical specifications), **in its entirety.**

The County requests that bid submissions NOT be bound by staples or glued spines.

Each Bidder shall ensure that required parts of their bid submission are completed with accuracy and submitted as per the requirements within this specifications packet, including any addenda.

Additionally, Bidder shall monitor the Jefferson County Purchasing Department Website for any addenda, additional instructions, or bid updates. https://www.co.jefferson.tx.us/Purchasing/

Failure to return and/or complete all required documentation will result in a response being declared as non-responsive.

Bids must be submitted in complete original form by mail or messenger to the following address:
Jefferson County Purchasing Department
1149 Pearl Street, 1st Floor
Beaumont, TX 77701

BID PACKAGING: Bidder shall submit response in a tightly sealed opaque envelope or box, plainly marked "SEALED BID." The outside of the envelope of box shall also include the IFB Number, IFB Name, IFB Due Date, and the Bidder's Name and Address; and shall be addressed to the Purchasing Agent.

All submissions must be received by 11:00 am CT, Wednesday, March 20, 2024.

Bids will be accepted at the above address until the time and date specified herein, and immediately after will be publicly opened and read aloud.

Jefferson County will not accept any responsibility for bids being delivered by third party carriers.

Late bids will not be accepted and will be returned unopened to the Bidder.
Jefferson County shall not be responsible for any effort or cost expended in the preparation of a response to this IFB.

All bid responses submitted in response to this invitation shall become the property of Jefferson County and will be a matter of public record available for review.

All protests should be coordinated through the Purchasing Office prior to award recommendation to Commissioners' Court.

COURTHOUSE SECURITY: All visitors to the Courthouse must pass through Security. Respondents planning to hand deliver proposals must allow time to get through Security, as a delay in entering the Courthouse will not be accepted as an excuse for late submittal. Mondays and Tuesdays are particularly heavy days.
In response to the Covid-19 pandemic, Jefferson County has implemented precautionary measures as currently recommended by the CDC within its facilities. Bidders are strongly urged to plan accordingly.

COUNTY HOLIDAYS (2024):

January 15	(Monday)	Martin Luther King, Jr. Day
March 29	(Friday)	Good Friday
May 27	(Monday)	Memorial Day
June 19	(Wednesday)	Juneteenth
July 4	(Thursday)	Independence Day
September 2	(Monday)	Labor Day
November 11	(Monday)	Veteran's Day
November 28 & 29	(Thursday & Friday)	Thanksgiving
December 25 & 26	(Wednesday & Thursday)	Christmas
January 1, 2025	(Wednesday)	New Year's

Submissions During Time of Inclement Weather, Disaster, or Emergency:

In case of inclement weather or any other unforeseen event causing the County to close for business on the date of a bid/proposal/statement of qualifications submission deadline, the IFB closing will automatically be postponed until the next business day that County offices are open to the public. Should inclement weather conditions or any other unforeseen event cause delays in courier service operations, the County may issue an addendum to all known vendors interested in the project to extend the deadline. It will be the responsibility of the vendor to notify the county of their interest in the project should these conditions impact their ability to submit a bid/proposal/statement of qualifications submission before the stated deadline. The County reserves the right to make the final judgement call to extend any deadline.

Should an emergency or unanticipated event interrupt normal County processes, and bid/proposal/statement of qualifications submissions cannot be received by the Jefferson County Purchasing Department's office by the exact time specified in the IFB and urgent County requirements preclude amendment to the IFB, the time specified for receipt of Statements of Qualifications will be deemed to be extended to the same time of day specified in the solicitation on the first business day on which normal County processes resume.

2. PRE-BID MEETING AND WALK-THROUGH.

There will be a Pre-Bid Meeting and Walk-Through on Tuesday, February 13, 2024, at 2:00 PM CT, at Jefferson County Correctional Facility located at 5030 Hwy 69 S, Beaumont, Texas 77705.

3. QUESTIONS/DEADLINE FOR QUESTIONS.

Questions may be emailed to **Mistey Reeves, Assistant Purchasing Agent** at: mistey.reeves@jeffcotx.us. If no response in 72 hours, contact **Deborah Clark, Purchasing Agent** at: deb.clark@jeffcotx.us. The Deadline for asking questions or requesting additional information (in writing) is 5:00 pm, CT, Friday, March 8, 2024**.**

4. VENDOR REGISTRATION (System for Award Management).

Vendors doing business with Jefferson County are **required** to be registered with The System for Award Management (SAM), with an "active" status. The System for Award Management (SAM) is the Official U.S. Government system that consolidated the capabilities of CCR/FedReg, ORCA, and EPLS. There is NO fee to register for this site. Entities may register at no cost directly from the SAM website at: https://www.sam.gov

In instances where a vendor has either an "Inactive" SAM Registration or is not currently registered with the System for Award Management, the Purchasing Department may *initially* accept proof (printout from the SAM website) that the vendor has begun the registration process in order for the IFB/RFQ/RFP submission to be considered as "responsive" to the specifications for the project.

However, the SAM Registration must be completed (showing "active" status, with no exclusions) prior to the award and/or execution of an agreement or contract for the project.

BIDDER: INSERT PROOF OF SYSTEM FOR AWARD MANAGEMENT (SAM) BEHIND THIS PAGE.

5. FORM 1295 (Texas Ethics Commission) SUBMISSSION REQUIREMENT/INSTRUCTIONS FOR BIDDERS.
All Non-Exempt Bidders are required to submit a completed FORM 1295 with bid submission.

1. Submit a FORM 1295 online via the Texas Ethics Commission website link below.
Vendors must enter the required information on Form 1295, and print a copy of the completed form.
The form will include a certification of filing that will contain a unique certification number.

2. Submit a FORM 1295 hard copy (completed & signed by an Authorized Agent of the Awarded Vendor), to the Jefferson County Purchasing Department **with bid submission.**

FORM 1295, Completion Instructions, and Login Instructions are available via the Texas Ethics Commission Website at: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

A sample of a completed FORM 1295 is included on **PAGE 30**.

FORM 1295 Implementation Background:
In accordance with House Bill 1295 (passed January 1, 2016), Vendors entering into contracts and professional agreements with Jefferson County will be required to complete a Certificate of Interested Parties (FORM 1295), **unless contract is considered exempt as described below.**

In 2017, the Texas legislature amended the law to require Form 1295 to include an "unsworn declaration" which includes, among other things, the date of birth and address of the authorized representative signing the form. The unsworn declaration, including the date of birth and address of the signatory, replaces the notary requirement that applied to contracts entered into before January 1, 2018. The TEC filing application does not capture the date of birth or street address of the signatory and it will not appear on forms that are filed using the TEC filing application.

Changes to the law requiring certain businesses to file a Form 1295 are in effect for contracts entered into or amended on or after January 1, 2018. The changes exempt businesses from filing a Form 1295 for certain types of contracts and replace the need for a completed Form 1295 to be notarized. Instead, the person filing a 1295 needs to complete an "unsworn declaration."

Question: Will the date of birth and address provided appear on the TEC's website when the form is filed?

Answer: No. The TEC filing application does not capture the date of birth or street address of the signatory and it will not appear on forms that are filed using the TEC filing application. Although the TEC does not capture the date of birth and street address of the signatory, the contracting state agency or governmental agency will have a physical copy of the form that includes the date of birth and address of the signatory. The TEC cannot answer whether the contracting state agency or governmental agency may release such information. Questions regarding the Texas Public Information Act may be directed to the Office of the Attorney General. See also Paxton v. City of Dall., No. 03-13-00546-CV, 2015 Tex. App. LEXIS 5228, at *10-11 (App.—Austin May 22, 2015) (mem. op.) (pet. denied) (available here)

FORM 1295 EXEMPTIONS:
What type of contracts are exempt from the Form 1295 filing requirement under the amended law?
The amended law adds to the list of types of contract exempt from the Form 1295 filing requirement.

A completed Form 1295 is not required for:
- a sponsored research contract of an institution of higher education
- an interagency contract of a state agency or an institution of higher education
- a contract related to health and human services if: the value of the contract cannot be determined at the time the contract is executed; and any qualified vendor is eligible for the contract
- a contract with a publicly traded business entity, including a wholly owned subsidiary of the business entity
- a contract with an electric utility, as that term is defined by Section 31.002, Utilities Code
- a contract with a gas utility, as that term is defined by Section 121.001, Utilities Code

SAMPLE COMPLETED FORM 1295

VENDOR: FORM 1295 MUST BE COMPLETED/SUBMITTED ON TEXAS ETHICS COMMISSION WEBSITE. HARD COPY OF FORM 1295 IS TO BE PRINTED, COMPLETED, SIGNED, AND SUBMITTED WITH BID/PROPOSAL/AGREEMENT/CONTRACT.

JEFFERSON COUNTY WILL CONFIRM RECEIPT OF COMPLETED HARD COPY WITH THE TEXAS ETHICS COMMISSION.

CERTIFICATE OF INTERESTED PARTIES

FORM **1295**

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

VENDOR:ENTER YOUR BUSINESS NAME, CITY, STATE, AND COUNTRY HERE

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

JEFFERSON COUNTY, TEXAS

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

VENDOR: ENTER BID/PROPOSAL/CONTRACT/AGREEMENT REF# AND TITLE HERE.

4 Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary
VENDOR: ENTER EACH PERSON HAVING INTEREST, OWNERS ARE THE CONTROLLING PARTIES.		X	
VENDOR: WORKERS (OR NON-OWNERS) IN YOUR COMPANY ARE INTERMEDIARY PARTIES.			X

5 Check only if there is NO Interested Party. **CHECK BELOW IF APPLICABLE** ☐

6 UNSWORN DECLARATION **VENDOR: COMPLETE, DATE, AND SIGN THIS DECLARATION SECTION.**

My name is _____, and my date of birth is _____.

My address is _____, _____, _____, _____, _____.
(street) (city) (state) (zip code) (country)

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

Executed in _____ County, State of _____, on the _____ day of _____, 20_____.
(month) (year)

_____
Signature of authorized agent of contracting business entity
(Declarant)

ADD ADDITIONAL PAGES AS NECESSARY

Form provided by Texas Ethics Commission www.ethics.state.tx.us Revised 12/22/2017

NOTE: JEFFERSON COUNTY WILL KEEP A COPY OF THIS FORM ON FILE FOR EACH BID/PROPOSAL/CONTRACT/AGREEMENT AND EACH VENDOR RESPONDING TO BIDS/PROPOSALS.

BIDDER: INSERT COMPLETED FORM 1295 BEHIND THIS PAGE.

6. MULTIPLE VENDOR AWARD.

Jefferson County reserves the right to award this contract to more than one vendor at the County's discretion.

7. DELIVERY.

If delivery is required, all items must be packaged so as to be protected from damage during shipping and handling. Any item(s) damaged in shipping must be replaced in kind, or repaired, by the Contractor, at the discretion of, and at no additional charge to, Jefferson County.

8. PAYMENT.

Jefferson County will pay original invoices that clearly itemize the goods and/or services provided as to quantity, part number, description, price, applicable discount (if any), labor charges showing time differential, if applicable and if previously agreed to, and delivery, installation, and set-up costs, if applicable and if previously agreed to. Only charges as stated on the Bid Form(s) submitted as a part of the bid will be considered.

Invoices must indicate Jefferson County as applicable, the address to which the product(s) and/or service(s) were delivered, and the applicable purchase order number. Invoices will be matched to delivery tickets prior to payment; therefore, all delivery tickets should have an accurate description of the product(s) and/or service(s).

Invoices shall be submitted to:
Jefferson County Auditing Department
Attention: Accounts Payable
1149 Pearl Street, 7th floor
Beaumont, TX 77701.

9. USAGE REPORTS.

Jefferson County reserves the right to request, and receive at no additional cost, up to two (2) times during the contract period, a usage report detailing the products and/or services furnished to date under a contract resulting from this IFB. The reports must be furnished no later than five (5) working days after written request and itemize all purchases to date by Jefferson County department, description of each item purchased, including manufacturer, quantity of each item purchased, per unit and extended price of each item purchased, and total amount and price of all items purchased.

10. INSURANCE.

The Contractor (including any and all Subcontractors as defined in Section 11.1.3 below) shall, at all times during the term of this contract, maintain insurance coverages with not less than the type and requirements shown below. Such insurance is to be provided at the sole cost of the Contractor. These requirements do not establish limits of the Contractor's liability.

All policies of insurance shall waive all rights of subrogation against the County, its officers, employees and agents; a copy of the policy wording or endorsement is required.

Contractor shall furnish Jefferson County with Certificate of Insurance naming Jefferson County as additional insured and will provide the actual policy wording or endorsement showing as such.

All insurance must be written by an insurer licensed to conduct business in the State of Texas.

Minimum Insurance Requirements:

Public Liability, including Products & Completed Operations	$1,000,000
Excess Liability	$1,000,000

Property Insurance (policy below that is applicable to this project):
Improvements & Betterments Policy: Improvements/Remodeling (for Lease Tenants)
Builder's Risk Policy: Structural Coverage for Construction Projects
Installation Floater Policy: Improvements/Alterations to Existing Structure

Workers' Compensation Statutory Coverage (See Section 9 Below)

11. WORKERS' COMPENSATION INSURANCE

11.1 Definitions:

11.1.1 **Certificate of coverage ("Certificate")** – A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement, DWC-81, DWC-82, DWC-83, or DWC-84 showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

11.1.2 **Duration of the project** – Includes the time from the beginning of the work on the project until the Contractor's/person's work on the project has been completed and accepted by the governmental entity.

11.1.3 **Persons providing services on the project ("Subcontractor") in article 406.096** – Includes all persons or entities performing all or part of the services under the Contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent Contractors, Subcontractor, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" includes, without limitation, providing, hauling or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

11.2 The Contractor shall provide coverage, based on proper reporting of classification code and payroll amounts and filing any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the Contractor providing services on the project, for the duration of the project.

11.3 The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract – **refer to Section 10 above**.

11.4 If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

11.5 The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

11.5.1 A certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

11.5.2 No later than seven (7) days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate ends during the duration of the project.

11.6 The Contractor shall retain all required certificates of coverage for the duration of the project and for one (1) year thereafter.

11.7 The Contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

11.8 The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Department of Workers' Compensation, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

11.9 The Contractor shall contractually require each person with whom it contracts to provide services on a project to:

11.9.1 Provide coverage, based on reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all its employees providing services on the project, for the duration of the project.

11.9.2 Provide to the Contractor, prior to that person beginning work on the project a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project.

11.9.3 Provide the Contractor, prior to the end of coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

11.9.4 Obtain from each person with whom it contracts, and provide to the Contractor:

11.9.4.1 A certificate of coverage, prior to the other person beginning work on the project; and

11.9.4.2 the coverage period, if the coverage period shown on the current certificate of a new certificate of coverage showing extension of coverage, prior to the end of coverage ends during the duration of the project.

11.9.5 Retain all required certificates of coverage on file for the duration of the project and for one (1) year thereafter.

11.9.6 Notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

11.9.7 Contractually require each person with whom it contracts to perform as required by paragraphs **11.1. – 11.7**., with the certificates of coverage to be provided to the person for whom they are providing services.

11.10 By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the governmental entity that all employees of the Contractor who will provide services of the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

11.11 The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the governmental entity to declare the contract void if the Contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the governmental entity.

<u>BIDDER</u>: INSERT COPY OF CERTIFICATE OF INSURANCE (COI) BEHIND THIS PAGE.

Note: For bid purposes, a general COI will suffice. However, a COI that includes the notation that "Jefferson County as an additional insured" will be required from Awarded Bidder(s) prior to the issuance of a Purchase Order.

BIDDER INFORMATION FORM

Instructions: Complete the form below. Please provide legible, accurate, and complete contact information. PLEASE PRINT.

Bid Number & Name: (IFB 24-005/MR) Crime Lab Vehicle Search/Investigation Building Renovation

Bidder's Company/Business Name: _____

Bidder's TAX ID Number: _____

If Applicable: **HUB Vendor No**. _____ **DBE Vendor No**. _____

Contact Person: _____ **Title:** _____

Phone Number (with area code): _____

Alternate Phone Number if available (with area code):_____

Fax Number (with area code):_____

Email Address: _____

Mailing Address (Please provide a <u>physical address for bid bond return</u>, if applicable):

_____
Address

_____
City, State, Zip Code

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

SECTION 4: MINIMUM SPECIFICATIONS

The following requirements and specifications supersede General Bid Requirements where applicable. Any questions relating to bid submission or bid item specifications requirements should be directed to Mistey Reeves, Assistant Purchasing Agent at 409-835-8593 or via email at: mistey.reeves@jeffcotx.us. If no response in 72 hours, contact Deborah Clark, Purchasing Agent at 409-835-8593. Please reference Bid Number: IFB 24-005/MR.

SCOPE OF PROJECT:

Jefferson County is soliciting bids for the renovation of the Jefferson County Crime Lab Vehicle Search/Investigation Building. This building was formerly the Morgue Building. This building is being renovated to accommodate vehicle searches and other investigation needs of the Crime Lab. The scope of this project includes construction materials and work including, but not limited to:

- Concrete work
- Conventional framed structural steel and metal building components
- Standard hollow metal frames and doors
- Acoustical lay-in ceilings
- Resilient flooring and base
- Signage
- Electrical
- Mechanical
- Plumbing
- Drywall
- Ceramic tile
- Painting
- Gutters and downspouts
- Prefabricated carport canopy
- Concrete flatwork/paving

TERMS:

The awarded contractor is responsible for all permits, license and fees associated with the project. Any changes to the Project Plans must be approved by Jefferson County Commissioners' Court and the Project Architect Burns Architecture, LLC.

PROJECT MANUAL:

The Project Manual for this project may be found starting on page 58 of this Invitation for Bid.

BID FORM:

The Bid Form for this project is on page 42 of this Invitation for Bid.

OFFER AND ACCEPTANCE FORM
OFFER TO CONTRACT

To Jefferson County:

We hereby offer and agree to furnish the materials or service in compliance with all terms, conditions, specifications, and amendments in the Invitation for Bid and any written exceptions in the offer.

We understand that the items in this Invitation for Bid, including, but not limited to, all required certificates are fully incorporated herein as a material and necessary part of the contract.

The undersigned hereby states, under penalty of perjury, that all information provided is true, accurate, and complete, and states that he/she has the authority to submit this bid, which will result in a binding contract if accepted by Jefferson County.

We acknowledge receipt of the following amendment(s): _____, _____, _____, _____.

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder:

	For clarification of this offer, contact:
Company Name	
Address	Name & Title
City State Zip	Phone Fax
Signature of Person Authorized to Sign	E-mail
Printed Name	
Title	

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

ACCEPTANCE OF OFFER

The Offer is hereby accepted for the following items: Crime Lab Vehicle Search/Investigation Building Renovation. The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the Invitation for Bid, including all terms, conditions, specifications, amendments, etc., and the Contractor's Offer as accepted by Jefferson County.

This contract shall henceforth be referred to as Contract No. (IFB 24-005/MR), for Crime Lab Vehicle Search/Investigation Building Renovation. The Contractor has not been authorized to commence any billable work or to provide any material or service under this contract until Contractor receives a purchase order and/or a notice to proceed from the Jefferson County Purchasing Agent.

COUNTERSIGNED:

Jeff R. Branick, County Judge **JEFFERSON COUNTY, TEXAS**	**Date**

ATTEST:

Roxanne Acosta Hellberg, County Clerk **JEFFERSON COUNTY, TEXAS**	**Date**

BIDDER: INSERT ALL ADDENDA BEHIND THIS PAGE.
PLEASE BE SURE TO COMPLETE, SIGN, ATTEST, AND DATE EACH ADDENDUM.

<u>BIDDER</u>: INSERT BID SECURITY BEHIND THIS PAGE.

Description	Unit	Bid Amount
Base Bid per Specifications	Lump Sum	$

BIDDER ACKNOWLEDGEMENT OF BID ADDENDA (IF APPLICABLE):

Addendum 1 _____ Date Received_____

Addendum 2 _____ Date Received_____

Addendum 3 _____ Date Received_____

BIDDER: INCLUDE FULL, SIGNED, & ATTESTED COPY OF EACH ADDENDUM ISSUED WITH BID SUBMISSION.

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

VENDOR REFERENCES FORM

Bidder: Please list at least three (3) companies or governmental agencies (preferably a municipality) where the same or similar products and/or services as contained in this specification package were recently provided.

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

REFERENCE ONE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Email Address: _____ Contract Period: _____

Scope of Work:

REFERENCE TWO

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Email Address: _____ Contract Period: _____

Scope of Work:

REFERENCE THREE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Email Address: _____ Contract Period: _____

Scope of Work: _____

SIGNATURE PAGE

As permitted under Article 4413 (32c) V.A.C.S., other governmental entities may wish to participate under the same terms and conditions contained in this contract (i.e., piggyback). In the event any other entity participates, all purchase orders will be issued directly from and shipped directly to the entity requiring supplies/services. Jefferson County shall not be held responsible for any orders placed, deliveries made or payment for supplies/services ordered by another entity. Each entity reserves the right to determine their participation in this contract.

Would Bidder be willing to allow other governmental entities to piggyback off this contract, if awarded, under the same terms and conditions? .....**Yes** ☐ **No** ☐

This bid shall remain in effect for ninety (90) days from bid opening and shall be exclusive of federal excise and state and local sales tax (exempt).

The undersigned agrees, if this bid is accepted, to furnish any and all items upon which prices are offered, at the price and upon the terms and conditions contained in the Invitation for Bid, Conditions of Bidding, Terms of Contract, and Specifications and all other items made a part of the accepted contract.

The undersigned affirms that they are duly authorized to execute the contract, that this company, corporation, firm, partnership or individual has not prepared this bid in collusion with any other Bidder, and that the contents of this bid as to prices, terms or conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any other Bidder or to any other person(s) engaged in this type of business prior to the official opening of this bid. And further, that neither the Bidder nor their employees nor agents have been for the past six (6) months directly nor indirectly concerned in any pool or agreement or combination to control the price of goods or services on, nor to influence any person to bid or not to bid thereon.

Bidder (Entity Name)	Signature
Street & Mailing Address	Print Name
City, State & Zip	Date Signed
Telephone Number	Fax Number
E-mail Address	

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

_____

Signature of Contractor's Authorized Official

_____

Name and Title of Contractor's Authorized Official *(Please Print)*

_____

Date

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.**

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information in this section is being disclosed.**

_____
Name of Officer

This section (item 3 including subparts A, B, C, & D) must be completed for each officer with whom the vendor has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more?

☐ Yes ☐ No

D. Describe each employment or business and family relationship with the local government officer named in this section.

4

_____ _____
Signature of vendor doing business with the governmental entity Date

Adopted 8/7/2015

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

LOCAL GOVERNMENT OFFICER CONFLICTS DISCLOSURE STATEMENT

FORM CIS

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This is the notice to the appropriate local governmental entity that the following local government officer has become aware of facts that require the officer to file this statement in accordance with Chapter 176, Local Government Code.

OFFICE USE ONLY

Date Received

1 **Name of Local Government Officer**

2 **Office Held**

3 **Name of vendor described by Sections 176.001(7) and 176.003(a), Local Government Code**

4 **Description of the nature and extent of employment or other business relationship with vendor named in item 3**

5 **List gifts accepted by the local government officer and any family member, if aggregate value of the gifts accepted from vendor named in item 3 exceeds $100 during the 12-month period described by Section 176.003(a)(2)(B).**

Date Gift Accepted _____ Description of Gift _____

Date Gift Accepted _____ Description of Gift _____

Date Gift Accepted _____ Description of Gift _____

(attach additional forms as necessary)

6 **AFFIDAVIT**

I swear under penalty of perjury that the above statement is true and correct. I acknowledge that the disclosure applies to each family member (as defined by Section 176.001(2), Local Government Code) of this local government officer. I also acknowledge that this statement covers the 12-month period described by Section 176.003(a)(2)(B), Local Government Code.

_____
Signature of Local Government Officer

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said _____, this the _____ day of _____, 20 _____, to certify which, witness my hand and seal of office.

_____ _____ _____
Signature of officer administering oath | Printed name of officer administering oath | Title of officer administering oath

Adopted 8/7/2015

THIS FORM IS FOR OFFICE USE ONLY

GOOD FAITH EFFORT (GFE) DETERMINATION CHECKLIST

Bidder intends to utilize Subcontractors/Subconsultants in the fulfillment of this contract (if awarded).
☐ Yes ☐ No

Instructions: In order to determine if a "Good Faith Effort" was made in soliciting HUBs for subcontracting opportunities, the following checklist and supporting documentation shall be completed by the Prime Contractor/Consultant, and returned with the Prime Contractor/ Consultant's bid. This list contains the **minimum** efforts that should be put forth by the Prime Contractor/Consultant when attempting to achieve or exceed the goals of HUB Subcontractor participation. The Prime Contractor/Consultant may extend his/her efforts in soliciting HUB Subcontractor participation beyond what is listed below.

Did the Prime Contractor/Consultant . . .?

☐ Yes ☐ No 1. To the extent practical, and consistent with standard and prudent industry standards, divide the contract work into the smallest feasible portions, to allow for maximum HUB Subcontractor participation?

☐ Yes ☐ No 2. **Notify** in writing a reasonable number of HUBs, allowing sufficient time for effective participation of the planned work to be subcontracted?

☐ Yes ☐ No 3. **Provide** HUBs that were genuinely interested in bidding on a Subcontractor, adequate information regarding the project (i.e., plans, specifications, scope of work, bonding and insurance requirements, and a point of contract within the Prime Contractor/Consultant's organization)?

☐ Yes ☐ No 4. **Negotiate** in good faith with interested HUBs, and not reject bids from HUBs that qualify as lowest and responsive Bidders?

☐ Yes ☐ No 5. **Document** reasons HUBs were rejected? Was a written rejection notice, including the reason for rejection, provided to the rejected HUBs?

☐ Yes ☐ No 6. If Prime Contractor/Consultant has zero (0) HUB participation, **please explain the reasons why.**

If "No" was selected, please explain and include any pertinent documentation with your bid.
If necessary, please use a separate sheet to answer the above questions.

Printed Name of Authorized Representative	Signature
Title	Date

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

NOTICE OF INTENT (NOI) TO SUBCONTRACT WITH HISTORICALLY UNDERUTILIZED BUSINESS (HUB)

Bidder intends to utilize Subcontractors/Subconsultants in the fulfillment of this contract (if awarded).
☐ Yes ☐ No

Instructions for Prime Contractor/Consultant: Bidder shall submit this form with the bid; however, the information below may be submitted after contract award, but prior to beginning performance on the contract.

Please submit one form for each HUB Subcontractor/Subconsultant with proper signatures, per the terms and conditions of your contract.

Contractor Name: _____ HUB: ☐ Yes ☐ No

Address: _____
Street City State Zip

Phone (with area code): _____ Fax (with area code): _____

Project Title & No.: _____

Prime Contract Amount: $ _____

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: ☐ Tx. Bldg & Procurement Comm. ☐ Jefferson County ☐ Tx Unified Certification Prog.

Address: _____
Street City State Zip

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: $ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

_____

Printed Name of Contractor Representative	Signature of Representative	Date
Printed Name of HUB	Signature of Representative	Date

Note: Nothing on this Notice of Intent Form is intended to confer any rights, expressed or implied, to any third parties.

Pre-Approval for Subcontractor Substitutions must be obtained from the Jefferson County Purchasing Agent's Representative. The "HUB Subcontractor/Subconsultant Change Form" must be completed and faxed to 409-835-8456.

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

HISTORICALLY UNDERUTILIZED BUSINESS (HUB)
SUCONTRACTING PARTICIPATION DECLARATION FORM

Bidder intends to utilize Subcontractors/Subconsultants in the fulfillment of this contract (if awarded).
☐ Yes ☐ No

Prime Contractor: _____ HUB: ☐ Yes ☐ No

HUB Status (Gender & Ethnicity): _____

Address: _____
Street City State Zip

Phone (with area code): _____ Fax (with area code): _____

Project Title & No.: _____ IFB/RFP No.: _____

Total Contract: $ _____ Total HUB Subcontract(s): $ _____

Construction HUB Goals: 12.8% MBE:: _____ % 12.6% WBE: _____ %

Sub-goals: 1.7 African-American, 9.7% Hispanic, 0.7% Native American, 0.8% Asian American.
Use these goals as a guide to diversify.

FOR HUB OFFICE USE ONLY:

Verification date HUB Program Office reviewed and verified HUB Sub information Date: _____ Initials: _____

PART I. HUB SUBCONTRACTOR DISCLOSURE

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: ☐ Texas Bldg & Procurement Comm. ☐ Texas Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: $ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

HISTORICALLY UNDERUTILIZED BUSINESS (HUB)
SUBCONTRACTING PARTICIPATION DECLARATION FORM

HUB Subcontractor Disclosure

PART I: Continuation Sheet (Duplicate as Needed)

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: ☐ Tx. Bldg & Procurement Comm. ☐ Jefferson County ☐ Tx Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: $ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

_____

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: ☐ Tx. Bldg & Procurement Comm. ☐ Jefferson County ☐ Tx Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: $ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

_____

All HUB Subcontractor Participation may be verified with the HUB Subcontractor(s) listed on Part I.

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

HISTORICALLY UNDERUTILIZED BUSINESS (HUB)
SUCONTRACTING PARTICIPATION DECLARATION FORM

PART II: STATEMENT OF NON-COMPLIANCE FOR NOT MEETING HUB SUBCONTRACTING GOALS

Instructions to Bidder: Please complete Good Faith Effort (GFE) Checklist and attach any supporting documentation.

Our firm was unable to meet the HUB goals for this project for the following reasons:

- ☐ All Subcontractors to be utilized are "Non-HUBs." *(Complete Part III)*
- ☐ HUBs were solicited but did not respond.
- ☐ HUBs solicited were not competitive.
- ☐ HUBs were unavailable for the following trade(s):
- ☐ Other: _____

Was the Jefferson County HUB Office contacted for assistance in locating HUBs? ☐ Yes ☐ No

PART III: DISCLOSURE OF OTHER "NON-HUB" SUBCONTRACTS

The Bidder shall use this area to provide a listing of all "Non-HUB" Subcontractors, including suppliers, that will perform under this project. A list of those "Non-HUB" Subcontractors the Bidder selects, after bid submission, shall be provided to the Purchasing Office not later than five (5) calendar days after being notified that Bidder is the apparent low Bidder. A list of those "Non-HUB" Subcontractors that are selected after contract award must be provided **immediately** after their selection.

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: $ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: $ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

HISTORICALLY UNDERUTILIZED BUSINESS (HUB)
SUBCONTRACTING PARTICIPATION DECLARATION FORM

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: $ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: $ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

I hereby certify that I have read the *HUB Program Instructions and Information*, truthfully completed all applicable parts of this form, and **attached any necessary support documentation as required**. I fully understand that intentionally falsifying information on this document may result in my not receiving a contract award or termination of any resulting contract.

Name (print or type): _____

Title: _____

Signature: _____

Date: _____

E-mail address: _____

Contact person that will be in charge of invoicing for this project:

Name (print or type): _____

Title: _____

Date: _____

E-mail address: _____

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

RESIDENCE CERTIFICATION/TAX FORM

Pursuant to Texas Government Code §2252.001 *et seq*., as amended, Jefferson County requests Resident Certification. §2252.001 *et seq*. of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

(3) "Non-resident Bidder" refers to a person who is not a resident.

(4) "Resident Bidder" refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

☐ I certify that _____ [company name] is a Resident Bidder of Texas as defined in Government Code §2252.001.

☐ I certify that _____ [company name] is a Nonresident Bidder as defined in Government Code §2252.001 and our principal place of business is _____ _____ (city and state).

Taxpayer Identification Number (T.I.N.):	
Company Name submitting bid/proposal:	
Mailing address:	
If you are an individual, list the names and addresses of any partnership of which you are a general partner:	

Property: List all taxable property owned by you or above partnerships in Jefferson County.

Jefferson County Tax Acct. No.*	Property address or location**

* This is the property amount identification number assigned by the Jefferson County Appraisal District.

** For real property, specify the property address or legal description. For business property, specify the address where the property is located. For example, office equipment will normally be at your office, but inventory may be stored as a warehouse or other location.

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

HOUSE BILL 89 VERIFICATION

I, _____, the undersigned representative of (company or business name)_____ (heretofore referred to as company) being an adult over the age of eighteen (18) years of age, after being duly sworn by the undersigned notary, do hereby depose and verify under oath that the company named above, under the provisions of Subtitle F, Title 10, Government Code Chapter 2270:

1. Does not boycott Israel currently; and
2. Will not boycott Israel during the term of the contract.

Pursuant to Section 2270.002, Texas Government Code:

1. "**Boycott Israel**" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made ordinary business purposes; and

2. "**Company**" means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or an limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business association that exist to make a profit.

_____
Signature of Company Representative

_____
Date

On this _____ day of _____, 20____, personally appeared

_____, the above-named person, who after by me being duly sworn, did swear and confirm that the above is true and correct.

Notary Seal

_____
Notary Signature

_____
Date

REQUIRED FORM
Bidder: Please complete this form and include with bid submission.

SENATE BILL 252 CERTIFICATION

On this day, I, Deborah L. Clark, Purchasing Agent for Jefferson County, Texas, pursuant to Texas Government Code, Chapter 2252, Section 2252.152 and Section 2252.153, certify that I did review the website of the Comptroller of the State of Texas concerning the listing of companies that is identified under Section 806.051, Section 807.051, or Section 2253.253 and I have ascertained that the below named company is not contained on said listing of companies which do business with Iran, Sudan, or any Foreign Terrorist Organization.

_____

Company Name

_____

IFB/RFP/RFQ number

Certification check performed by:

_____

Purchasing Representative

_____

Date

THIS FORM IS FOR OFFICE USE ONLY

BID AFFIDAVIT

The undersigned certifies that the bid prices contained in this bid have been carefully reviewed and are submitted as correct and final. Bidder further certifies and agrees to furnish any and/or all commodities upon which prices are extended at the price offered, and upon the conditions contained in the specifications and the Notice to Bidders.

STATE OF_____ COUNTY OF_____

BEFORE ME, the undersigned authority, a Notary Public in and for the State of _____,

on this day personally appeared _____, who
(name)
after being by me duly sworn, did depose and say:

"I, _____ am a duly authorized officer of/agent
(name)
for _____ and have been duly authorized to execute the
(name of firm)
foregoing on behalf of the said_____.
(name of firm)

I hereby certify that the foregoing bid has not been prepared in collusion with any other Bidder or other person or persons engaged in the same line of business prior to the official opening of this bid. Further, I certify that the Bidder is not now, nor has been for the past six (6) months, directly or indirectly concerned in any pool or agreement or combination, to control the price of services/commodities bid on, or to influence any person or persons to bid or not to bid thereon."

Name and address of Bidder:_____

_____

Fax: _____ Telephone#_____

by: _____ Title:_____
(print name)

Signature:_____

SUBSCRIBED AND SWORN to before me by the above-named

_____ on

this the _____ day of_____, 20___.

REQUIRED FORM
<u>Bidder</u>: Please complete this form and include with bid submission.

_____
Notary Public in and for
the State of _____

PROJECT MANUAL

JEFFERSON COUNTY VEHICLE SEARCH/INVESTIGATION BUILDING (RENOVATION OF FORMER MORGUE)

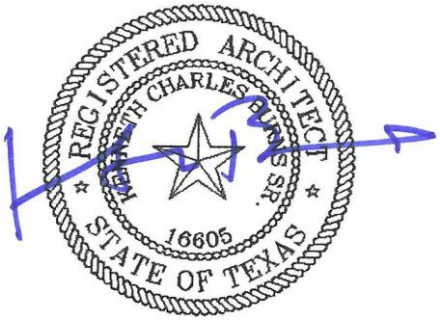
5030 HWY 69 SOUTH

BEAUMONT, TX 77705

Burns Architecture, LLC

JOB NO.: JCVIB-23

DATE: 10/18/2023



10/18/2023

Architect

BURNS ARCHITECTURE, LLC
ARCHITECTS · ADVISORS · CONSULTANTS

SECTION 000102
PROJECT DIRECTORY

JEFFERSON COUNTY VEHICLE SEARCH/INVESTIGATION BUILDING
(RENOVATION OF FORMER MORGUE)
BEAUMONT, TEXAS

October 18, 2023

COUNTY JUDGE JEFF BRANICK

COUNTY COMMISSIONERS

PRECINCT 1	VERNON PIERCE
PRECINCT 2	CARY ERICKSON
PRECINCT 3	MICHAEL SINEGAL
PRECINCT 4	EVERETTE "BO" ALFRED

ARCHITECT:

Burns Architecture, LLC
PO Box 2639
Galveston, TX 77553
Principal: Kenneth C. Burns, AIA
Phone: (817) 247-6640
Email: kburns@burns3.com

10/18/2023

CIVIL/STRUCTURAL/MEP ENGINEER:

Goodwin-Lasiter-Strong, Inc.
1609 Chestnut, Suite 202
Lufkin, TX 75901
PM: Zach Parker, P.E.
Phone: (936) 637-4900
Fax:
Email: zparker@glstexas.com

SECTION 000103
TABLE OF CONTENTS FOR
JEFFERSON COUNTY VEHICLE SEARCH/INVESTIGATION BUILDING
(RENOVATION OF FORMER MORGUE)
BEAUMONT, TEXAS

10/18/2023

DIVISION 26 & 27– ELECTRICAL

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

None this project

DIVISION 31 - EARTHWORK

DIVISION 32 – EXTERIOR IMPROVEMENTS

None this project.

DIVISION 33 – UTILITIES

DIVISION 44 – POLLUTION AND WASTE CONTROL EQUIPMENT

None this project.

SECTION 011000
PROJECT DESCRIPTION

JEFFERSON COUNTY VEHICLE SEARCH/INVESTIGATION BUILDING
(RENOVATION OF FORMER MORGUE)
BEAUMONT, TEXAS

This project is the renovation of the former county morgue to create a new Vehicle Search/Investigation Building.

Construction materials and work required include but is not limited to:

Concrete work, conventional framed structural steel and metal building components, standard hollow metal frames and doors, standard door hardware, acoustical lay-in ceilings, resilient flooring and base, signage, electrical, mechanical, plumbing, drywall, ceramic tile, painting, gutters and downspouts, and prefabricated carport canopy.

The site work includes concrete flatwork/paving.

SECTION 012100
ALLOWANCES

PART 1 GENERAL

1.1. ALLOWANCE FOR PRODUCTS

A. Purchase products under each Allowance as directed by Architect.

B. Include the following amounts in bid, for materials only, for inclusion in contract sum:
   1. Graphics: Allow lump sum of $1,000 (One Thousand Dollars) for room signage and graphics. (Specification Section 104000)
   2. Hardware: Allow $750 (Seven Hundred Fifty Dollars) per door leaf for finish hardware on all standard hardware sets.
   3. Ceramic Tile: Refer to Section 093013 Ceramic Tile Work for allowance.

C. Amount of the Allowance includes:
   1. Net cost of product.

D. In addition to amount of allowance, include in the base bid, for inclusion in base contract sum, cost for all other expenses required to obtain and complete the installation.

1.2. SELECTION OF PRODUCTS

A. Architect shall:
   1. Consult with Contractor/Construction Manager (CM) in considerations of products and supplies.
   2. Make selection, designate products to be used.
   3. Notify Contractor, in writing, designating:
      a. Product model and finish
      b. Accessories and attachments
      c. Approved Supplier

B. CM will:
   1. Assist Architect in determining qualified suppliers.
   2. Obtain proposals from suppliers.
   3. Make recommendations for consideration by Architect.
   4. Notify Architect of any effect anticipated by selection of product or supplier under consideration on:
      a. Construction schedule
      b. Contract sum
   5. On notice of approval, enter Purchase Agreement with designated supplier.

1.3. DELIVERY

A. CM's responsibility:
   1. Arrange for delivery and unloading.
   2. Promptly inspect products for damage or defects.
   3. Submit claims for transportation damage.

1.4. ADJUSTMENT OF COSTS

A. Do not exceed allowances without Architect's approval and Owner’s authorization.

B. Should actual approved purchase cost be more or less than specified amount of allowance, contract sum will be adjusted by change order equal to amount of differences.

END OF SECTION

SECTION 013100
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1. SECTION INCLUDES

A. Progress meetings

B. Construction progress schedule

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION

3.1. PROGRESS MEETINGS

A. Construction Manager (CM) shall schedule and administer meetings throughout progress of the Work on a monthly basis.

B. CM shall make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

C. Attendance Required: CM, Contractors and Suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems which impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Maintenance of progress schedule.
7. Corrective measures to regain projected schedules.
8. Planned progress during succeeding work period.
9. Maintenance of quality and work standards.
10. Effect of proposed changes, Owner progress schedule and coordination.
11. Other business relating to Work.

E. Record minutes and distribute copies within five days after meeting to participants, with one copy to Architect, Owner, participants, and those affected by decisions made.

3.2. CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days for Work, with a general outline for remainder of Work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.

1. Include written certification that major contractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule at each monthly progress meeting.

END OF SECTION

SECTION 013300
SUBMITTALS AND SUBSTITUTIONS

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.

B. Related Work
   1. Individual requirements for submittals also may be described in other pertinent Sections of this Project Manual.

C. Work not included:
   1. Unrequired submittals will not be reviewed by the Architect.
   2. The CM may require contractors to provide drawings, setting diagrams, and similar information to help coordinate the work; but such data shall remain between the CM and contractors and will not be reviewed by the Architect.

1.2. QUALITY ASSURANCE

A. Coordination of submittals:
   1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
   2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
   3. By affixing the **CM Signature** to each submittal, certify that this coordination has been performed.

B. Substitutions:
   1. The Contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when approved by the Architect at time of bidding. Acceptance of the contractor's bid does not constitute automatic approval of the proposed substitution. No additional monies will be paid to the contractor when proposed substitutes are not approved, and the original item or product specified is required to be installed.
   2. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this work by the Architect.
   3. In the event a contractor, sub-contractor, supplier, installer, and/or vendor intends to provide and/or install materials other than specified, he/she may do so provided the substitution complies with the contract document’s requirements in each and all respects.

C. "Or equal":
   1. Where the phrase "or equal," occurs in the contract documents, the bidder may propose equal products. The burden rests upon the bidder to confirm products are Equal. Architect will not review and provide written approval to bidder. Should

any product be proposed that proves to not be Equal, bidder shall provide an equal product at no additional cost to Owner.

1.3. SUBMITTALS

A. Make submittals of Shop Drawings, Samples, substitution requests, and other items in accordance with the provisions of this Section. Provide all long lead items to Architect within 20 days after Notice to Proceed.

PART 2 PRODUCTS

2.1. SHOP DRAWINGS

A. Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large enough to show all pertinent aspects of the item or items and its method of connection to the work.

B. Drawing and Data Submittals:
   1. Submit one (1) set electronically. Contractor shall establish a system of tracking and handling submittals electronically.
   2. If drawings cannot be submitted electronically, submit two (2) complete sets; 1 set will be retained by the Architect, 1 set will be returned to the CM.

C. Review comments of the Architect will be shown on the shop drawings when it is returned to the CM. The CM may make and distribute such copies as are required for his purposes.

2.2. MANUFACTURER'S LITERATURE

A. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show, which portions of the contents is being submitted for review.

B. Submit the number of copies, which are required to be returned plus, one copy which will be retained by the Architect and an additional copy when consultants are included.

2.3. SAMPLES

A. Provide Sample or Samples identical to the precise article proposed to be provided. Identify as described under "Identification of Submittals" below.

B. Number of Samples required:
   1. Unless otherwise specified, submit actual samples in the quantity, which is required to be returned, plus two, which will be retained by the Architect.
   2. By pre-arrangement in specific cases, a single Sample may be submitted for review and, when approved, be installed in the work at a location agreed upon by the Architect.

2.4. COLORS AND PATTERNS

A. Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit

accurate color samples and pattern charts to the Architect for selection. Photocopies of color charts or samples printed from the manufacturer's website are not acceptable.

B. Construction Manager and Contractors shall not release any materials for fabrication until all material colors have been selected and confirmed with the Architect and Owner.

PART 3 EXECUTION

3.1. IDENTIFICATION OF SUBMITTALS

A. Consecutively number all submittals.
   1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.
   2. On re-submittals, cite the original submittal number for reference.

B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.

C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number, specification section, and drawing in which the item was included.

D. Maintain an accurate submittal log for the duration of the work, showing current status of all submittals at all times. Make the submittal log available to the Architect for his review at each monthly meeting.

3.2. GROUPING OF SUBMITTALS

A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
   1. Partial submittals may be rejected as not complying with the provisions of the Contract and of this section.
   2. Submit in one package, physical samples of all materials requiring a color selection. No color selections will be made until all color samples requiring selection have been submitted.
   3. Color selections for exterior and interior may be submitted as two distinct groupings.

3.3. TIMING OF SUBMITTALS

A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.

B. In scheduling, allow at least fifteen (15) calendar days for review by the Architect and Architect's consultants following his receipt of the submittal.

3.4. ARCHITECT'S/ARCHITECT'S CONSULTANT'S REVIEW

A. Review by the Architect or Architect's Consultant's does not relieve the sub-contractor from responsibility for errors, which may exist in the submitted data.

B. Revisions:
   1. Make revisions required by the Architect or Architect's Consultants.
   2. Make only those revisions directed or approved by the Architect or Architect's Consultants.

3.5. COORDINATION DRAWINGS

A. Provide information required by Project Coordinator for preparation of coordination drawings.

B. Review drawings prior to submission to Architect.

3.6. SUBMITTALS FOR REVIEW

A. Submit the following for individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.
   4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed only for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Division 1.

3.7. SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field report.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.8. SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout:
   1. Project record documents.

2. Operation and Maintenance data.
3. Warranties.
4. Bonds.
5. Other types as indicated.

B. Submit for Owner's benefit during and after project completion.

C. Submit two copies of project close out documents.

END OF SECTION

SECTION 014100
TESTING LABORATORY SERVICES

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included:
   1. Cooperate with the Owner's selected testing agency and all others responsible for construction materials testing and inspecting the work.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Requirements for testing may be described in various Sections of these Specifications.
   3. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may require such testing to be performed under current pertinent standards for testing. Payment for such testing will be made as described in this Section.

C. Work not included:
   1. Selection of testing laboratory: The Owner will select a prequalified independent testing laboratory.
   2. Payment for initial testing: The Owner will pay for all initial services of the testing laboratory as further described in Article 2.1 of this Section.

1.2. QUALITY ASSURANCE

A. The testing laboratory will be qualified to the Owner's approval.

B. Testing, when required, will be in accordance with all pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.

1.3. PRODUCT HANDLING

A. Comply with pertinent provisions of Division 1.

B. Promptly process and distribute required copies of test reports and related instructions to assure necessary retesting and replacement of materials with the least possible delay in progress of the work.

PART 2 PRODUCTS

2.1. PAYMENT FOR TESTING

A. Initial services:
   1. The Owner will pay for initial testing services specified and/or requested by the Owner Contract Documents.
   2. When initial tests indicate non-compliance with the Contract Documents, subsequent tests associated with that non-compliance shall be performed by the same testing agency at no additional cost to the Owner. CM will assess cost for non-conforming tests or re-testing at cost to the responsible subcontractor or supplier of the work in question.

2.2. CODE COMPLIANCE TESTING

A. Inspections and tests required by codes or ordinance, or by a plan approval authority, and which are made by a legally constituted authority, other than construction materials testing and special testing required by the plans and specifications, shall be the responsibility of and shall be paid for by the CM and or subcontractors, unless otherwise provided for in the Contract Documents.

2.3. CONTRACTOR'S CONVENIENCE TESTING

A. Inspecting and testing performed exclusively for the Contractor's convenience shall be the sole responsibility and expense of the Contractor.

2.4. SPECIFIC TESTS, INSPECTIONS AND METHODS REQUIRED

A. Perform all tests and inspections required by other specification sections.

PART 3 EXECUTION

3.1. COOPERATION WITH TESTING LABORATORY

A. Representatives of the testing laboratory shall have access to the work at all times and at all locations where the work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.

3.2. TAKING SPECIMENS

A. All specimens and samples for testing, unless otherwise provided for in the Contract Documents, shall be taken by the testing personnel. All sampling equipment and personnel will be provided by the testing laboratory. All deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

3.3. SCHEDULES FOR TESTING

A. Establishing schedule:

1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
2. Provide all required time within the construction schedule.

B. Revising schedule: When changes of construction schedule are necessary during construction, coordinate all such changes with the testing laboratory as required.

C. Adherence to schedule: When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the work, all extra charges for testing attributable to the delay will be back-charged to the Contractor and shall not be borne by the Owner.

END OF SECTION

SECTION 014500
QUALITY CONTROL

PART 1 GENERAL

1.1. SUMMARY

A. Related Documents: Provisions established in General and Supplementary Conditions of the Contract, Division 1 General Requirements, and the Drawings are collectively applicable to this Section.

B. Section Includes:
1. Quality control of products and workmanship.
2. Manufacturer's instructions.
3. Manufacturer's certificates and field services.
4. Mockups.
5. Field samples.
6. Owner provided testing laboratory services.
7. Selection and payment.
8. Laboratory responsibilities.
9. Laboratory reports.
10. Limits on testing laboratory authority.
11. Contractor responsibilities.
12. Schedule of inspections and tests.

1.2. DESCRIPTION

A. Maintain quality control over supervision, subcontractors, suppliers, manufacturers, products, services, workmanship, and site conditions, to produce Work in accordance with Contract Documents.

1.3. DEFINITIONS

A. Field Samples: Partial installation of selected materials installed at project site for Owner's Representative's review and approval of visual features and workmanship.

B. Mock-ups: Full size assemblies that incorporate several materials or elements of construction erected for Owner's Representative's review and approval of visual features and workmanship. Mock-ups represent quality of materials and workmanship required for Work. Provide mock-ups as required by other sections of these Specifications.

1.4. PERFORMANCE REQUIREMENTS

A. Workmanship:
1. Comply with industry standards of the region except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
2. Provide suitably qualified personnel to produce Work of specified quality.

3. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
4. Provide finishes to match approved samples.

B. Manufacturer's Instructions:
1. Require compliance with instructions in full detail, including each step in sequence. Do not omit preparatory steps or installation procedures unless specifically modified or exempted by Contract Documents.
2. Maintain one complete set of instructions at Project Site during installation and until completion.
3. Should instruction conflict with Contract Documents, request clarification from Owner's Representative before proceeding.

C. Manufacturer's Certificates:
1. When required in individual Specifications section, submit manufacturer's certificate, in duplicate, certifying that products meet or exceed specified requirements, executed by responsible officer.

D. Manufacturer's Field Services and Reports:
1. Submit reports in accordance in accordance with Section 013300.
2. Submit qualifications of field observer 30 days in advance of required observations; observer is subject to approval of Owner's Representative.
3. When specified in individual Specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces, quality of workmanship, and conditions of installation as applicable, and to initiate instructions when necessary.
4. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.
5. Submit reports within 7 days of observation. Distribute copies to Owner's Representative, Project site file, subcontractor, and other entities requiring information.
6. Provide one additional copy of reports for record documents file; refer to Section 017839.

1.5. QUALITY ASSURANCE

A. Supervise performance of Work in such manner and by such means to ensure that Work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

B. Ensure that persons performing Work are qualified to produce workmanship of specified quality.

C. Monitor quality control over products, suppliers, manufacturers, services, site conditions, and workmanship to ensure Work complies with Contract Documents.

D. Comply with specified reference standards as minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.6. EXAMINATION OF CONDITIONS

A. Examine substrates and conditions under which Work is to be performed. Do not commence work over unsatisfactory conditions detrimental to proper and timely execution of Work.

B. Do not proceed with Work until unsatisfactory conditions have been corrected.

C. Commencement of installation constitutes acceptance of conditions and cost of any corrective measures are responsibility of Contractor.

1.7. MOCKUPS

A. General:
   1. Use materials, fabrication and installation methods identical with those indicated for Work. Simulate actual construction conditions as accurately as possible.
   2. Provide mock-ups required by individual Specification sections and of the building exterior showing its various components.
   3. Approval:
      a. Obtain Owner's Representative's written approval for each mock-up.
      b. Do not start production of materials for final Project site erection until Project Manager's approval of mock-ups has been obtained.
      c. Approved mock-ups will serve as standard of quality and workmanship of Work; maintain mock-ups until completion of relevant Work.
   4. Upon completion of relevant Work or when directed by Owner's Representative, demolish and remove mock-ups.

B. Visual Mock-up
   1. Provide full-scale mock-up for review of Owner's Representative.
   2. Unless specified or directed otherwise, erect visual mock-ups at Project site at location acceptable to Owner's Representative.
   3. Obtain Owner's Representative approval of visual mock-up prior to fabrication and construction of test mock-up.

1.8. FIELD SAMPLES

A. General:
   1. Provide field samples at site required by individual Specification sections.
   2. Erect at location acceptable to Owner's Representative; perform Work in accordance with applicable Specification sections.
   3. Construct complete, including Work of related trades required in finished Work.
   4. Make adjustments necessary to obtain approval from Owner's Representative. Do not proceed with further work until sample installation has been approved by Owner's Representative.
   5. Approved samples will serve as standard of quality and workmanship of Work; maintain samples until completion of relevant Work.
   6. Upon completion of Work or when directed by Owner's Representative, demolish field samples and remove from site, unless accepted by Owner's Representative as part of completed Work.

1.9. TESTING LABORATORY SERVICES

A. General:
   1. Where terms "Laboratory", "Inspector", "Inspection Laboratory", "Laboratory", or "Testing Laboratory" are used, they mean and refer to officially designated and accredited testing laboratory.
   2. Provide testing laboratory with one set of Contract Documents and relevant approved submittals.

B. Selection and Payment:
   1. Owner will employ services of an independent testing laboratory to perform specified inspection and testing.
   2. Employment of testing laboratory in no way relieves obligation to perform Work in accordance with requirements of Contract Documents. Contractor will pay testing required by local authorities having jurisdiction.

C. Testing Laboratories Responsibilities:
   1. Cooperate with Owner's Representative and Contractor.
   2. Comply with requirements of ANSI/ASTM E 329 and ANSI/ASTM D 3740.
   3. Maintain a fulltime registered Engineer on staff to review services.
   4. Authorized to operate in State where project is located.
   5. Calibrate testing equipment once each year with devices of an accuracy traceable to either NBS Standards or accepted values of natural physical constants.
   6. Test samples of mixes submitted by Contractor.
   7. Provide qualified personnel at site. Cooperate with Contractor and Owner's Representative in performance of services.
   8. Perform specified inspection, sampling, and testing of products in accordance with specified standards and technical sections of these Specifications.
   9. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   10. Promptly notify Owner's Representative and Contractor of observed irregularities or non-conformance of Work or products.
   11. Perform additional inspections and tests required by Owner's Representative.
   12. Attend Pre-construction Conference.

D. Laboratory Reports:
   1. After each inspection and test, promptly submit copies of laboratory report directly to Owner's Representative, applicable consultant, and Contractor.
   2. Include: Date issued, project title and number, name of inspector, date and time of sampling or inspection, identification of product and Specifications section, location in the Project, type of inspection or test, date of test, results of tests, and conformance with Contract Documents.
   3. When requested by Owner's Representative, provide interpretation of test results.

E. Limits on Testing Laboratory Authority:
   1. May not release, revoke, relax, alter, or enlarge on requirements of Contract Documents.
   2. May not approve or accept any portion of the Work.
   3. May not assume any duties of Contractor.

4. Has no authority to stop Work.

1.10. CONTRACTOR RESPONSIBILITIES

A. Deliver to laboratory at designated location adequate samples of materials proposed to be used which require testing, together with proposed mix designs.

B. Cooperate with laboratory personnel, and provide access to Work and to manufacturer's facilities.

C. Provide incidental labor and facilities to provide access to work to be tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, and for storage and curing of test samples.

D. Notify laboratory of material sources and furnish necessary quantities of representative samples of materials proposed for use, which are required to be tested.

E. Notify Owner's Representative and laboratory 24 hours prior to expected time for operations requiring inspection and testing services.

F. Advise laboratory in a timely fashion to complete required inspection and testing prior to subsequent work being performed.

G. Pay for subsequent re-testing of products or systems found to be defective or otherwise not in accordance with specification requirements. Remove rejected products and replace with products of specified quality.

H. Furnish copies of product tests or mill test reports as specified or required.

I. Furnish incidental labor and facilities:
   1. To provide access to Work to be tested.
   2. To obtain and handle samples at Project site or at source of product to be tested.
   3. To facilitate inspections and tests.
   4. For storage and curing of test samples.

J. Notify Owner's Representative and laboratory 48 hours prior to expected time for operations requiring inspection and testing services.

K. When inspections or tests can not be performed after proper notification and at no fault of laboratory, reimbursement costs for laboratory expenses incurred will be charged to Contractor by deducting charges from Contract Sum.

1.11. SUBMITTALS

A. Provide submittals in accordance with Section 013300.

B. Laboratory Reports:
   1. Include with each report:
      a. Date issued.
      b. Project title and number.

c. Testing laboratory name, address, and telephone number.
d. Record of temperature and weather conditions.
e. Names of individuals making tests and inspections. Name and signature of person submitting report.
f. Dates, times, and locations of sampling, testing, and inspection.
g. Identification of specification section and products.
h. Location in Project.
i. Type of inspection or test.
j. Reference standards used for test.
k. Name of material suppliers.
l. Results of tests and interpretation of test results.
m. Professional opinion of whether tested and inspected Work complies with Contract Documents.
n. Certified Statement signed and sealed by testing laboratory attesting to accuracy of testing results.
o. Number pages.

2. Submit test reports within 2 weeks of test date.
3. After each inspection and test, promptly submit copies of written reports in electronic format to the following:
   a. Owner's Representative
   b. Applicable Consultant
   c. Code Officials: where applicable
   d. Contractor
4. When requested by Owner's Representative, provide interpretation of test results and suggested remedies.

1.12. FAILURES AND RETESTING

A. When initial inspections and tests indicate Work does not comply with Contract Documents, subsequent testing will be performed by same Testing Agency and will be done at Contractor's expense and deducted from Contract Sum.

B. Removal and replacement of Work necessitated by such non-compliance of Contract Documents shall be at Contractor's expense.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

SECTION 015000
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: provide temporary facilities and controls needed for the work including, but not necessarily limited to:
   1. Temporary utilities such as heat, water, electricity, telephone, and email capabilities;
   2. Field office for the CM's personnel and working space for Owner/Architect/Contractor meetings;
   3. Sanitary facilities;
   4. Enclosures such as tarpaulins, barricades, and canopies;
   5. Temporary fencing of the construction site;
   6. Erosion Control.

B. Related work:
   1. Except that equipment furnished by subcontractors shall comply with requirements of pertinent safety regulations, such equipment normally furnished by the individual trades in execution of their own portions of the work is not part of this Section.
   2. Permanent installation and hookup of the various utility lines are described in other Sections.

1.2. PRODUCT HANDLING

A. Maintain temporary facilities and controls in proper and safe condition throughout progress of the work.

PART 2 PRODUCTS

2.1. UTILITIES

A. Water:
   1. Provide necessary temporary piping and water supply and, upon completion of the work, remove such temporary facilities.
   2. Owner should provide water.

B. Electricity:
   1. Provide necessary temporary meter and wiring and, upon completion of the work, remove such temporary facility.
   2. Provide area distribution boxes so located that the individual trades may furnish and use 100 ft. maximum length extension cords to obtain power and lighting at points where needed for work, inspection, and safety.
   3. Owner should provide power.

C. Heating: Provide and maintain heat necessary for proper conduct of operations needed in the work.

D. Telephone:
   1. Make necessary arrangements and pay costs for installation and operation of telephone service to the CM's office at the site.
   2. Make the telephone available to the Architect for use in connection with the work.

E. E-Mail:
   1. Maintain e-mail capabilities on site and install additional communication line (if required) separate from voice communications.

2.2. FIELD OFFICES AND SHEDS

A. CM's facilities:
   1. Provide a field office building and sheds adequate in size and accommodation for CM's offices, meeting space for Owner/Architect/Contractor (OAC) meetings supply and storage.
   2. Provide large screen TV monitor to project plans and other documents during OAC meetings.

B. Sanitary facilities:
   1. Provide temporary sanitary facilities in the quantity required for use by all personnel.
   2. Maintain in a sanitary condition at all times.

2.3. ENCLOSURES

A. Provide and maintain for the duration of construction all scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges, and other temporary construction necessary for proper completion of the work in compliance with pertinent safety and other regulations.

2.4. TEMPORARY SANITARY FACILITIES

A. The CM shall provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. New permanent facilities may not be used during construction operations.

2.5. BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

2.6. FENCING

A. Construction: Commercial grade chain link fence.

B. The CM shall provide 8 foot high fence as necessary to secure the site, materials and for the public's protection; equipped with vehicular and pedestrian gates with locks.

2.7. SECURITY

A. Provide security and facilities to protect Work.

2.8. VEHICULAR ACCESS AND PARKING

A. Coordinate access and haul routes with governing authorities and Owner.

B. Provide and maintain access to fire hydrants, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

E. Do not park vehicles on or use neighboring properties for access to the site, maneuvering vehicles or storing materials without the written approval of the property owner(s).

2.9. WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Dispose of waste off-site periodically.

C. Do not allow debris to be placed or blown onto any neighboring property.

D. Do not allow pumped water to drain on to neighboring property.

PART 3 EXECUTION

3.1. MAINTENANCE AND REMOVAL

A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the work.

B. Remove such temporary facilities and controls as rapidly as progress of the work will permit, or as directed by the Architect.

END OF SECTION

SECTION 015650
CLEANING

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Throughout the construction period, maintain building and site in a standard of cleanliness as described in this Section.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other Sections of these Specifications.

1.2. QUALITY ASSURANCE

A. Conduct daily inspection, and more often if necessary, to verify that requirements for cleanliness are being met.

B. In addition to the standards described in this Section, comply with pertinent requirements of governmental agencies having jurisdiction.

PART 2 PRODUCTS

2.1. CLEANING MATERIALS AND EQUIPMENT

A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.2. COMPATIBILITY

A. Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

PART 3 EXECUTION

3.1. PROGRESS CLEANING

A. General:
   1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.
   2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this work.

3. At least once each week, and more often if necessary, completely remove all scrap, debris, and waste material from the job site. CM will coordinate and plan clean-up of all trades present on the job-site. Each trade will be responsible for the clean-up of their own construction debris to a central location on the project site.
4. Provide adequate storage for all items awaiting removal from the job site, observing the requirements for fire protection and protection of the ecology.

B. Site:
1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site. Restack, tidy, or otherwise service arrangements to meet the requirements of subparagraph 3.1-A-1 above.
3. Maintain the site in a neat and orderly condition at all times.
4. Control temporary drainage erosion as required.
5. Do not allow debris to be placed or blown onto any neighboring property.
6. Do not allow pumped water to be drained onto any neighboring property.

C. Structures:
1. Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often if necessary, sweep interior spaces clean.
   a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a hand-held broom.
3. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the necessary cleanliness.
4. Following the installation of finish floor material, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials are installed.
   a. "Clean", for the purpose of this subparagraph shall be interpreted as meaning free from foreign material which, in the opinion of the Architect, may be injurious to the finish floor material.
   b. Finish materials shall be protected from remaining work when occurring in heavy traffic areas.

3.2. FINAL CLEANING

A. "Clean", for the purpose of this Article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.

B. Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.1 above.

C. Site:
   1. Unless otherwise specifically directed by the Architect, broom clean paved areas on the site and public paved areas adjacent to the site.
   2. Completely remove resultant debris.

D. Structures:
   1. Exterior:
      a. Visually inspect exterior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.
      b. Remove all traces of splashed materials from adjacent surfaces.
      c. If necessary to achieve a uniform degree of cleanliness, hose down the exterior of the structure.
      d. In the event of stubborn stains not removable with water, the Architect may require light sandblasting or other cleaning at no additional cost to the Owner.
   2. Interior:
      a. Visually inspect interior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.
      b. Remove all traces of splashed material from adjacent surfaces.
      c. Remove paint drippings, spots, stains, and dirt from finished surfaces.
   3. Glass: Clean inside and outside.
   4. Polished surfaces: To surfaces requiring routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished.
   5. Sealed Concrete: Apply 1 coat wax, polish, and buff.

E. Schedule final cleaning as approved by the Architect to enable the Owner to accept a completely clean work.

F. Pest Control: Engage an experienced exterminator to make a final inspection, and rid the Project of rodents, insects, and other pests.

G. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

H. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
   1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

3.3. CLEANING DURING OWNER'S OCCUPANCY

A. Should the Owner occupy the work or any portion thereof prior to its completion by the CM and acceptance by the Owner, responsibilities for interim and final cleaning shall be as determined by the Architect.

END OF SECTION

SECTION 016000
MATERIAL AND EQUIPMENT CONTROLS

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Protect products scheduled for use in the work by means including, but not necessarily limited to, those described in this Section.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary conditions, and Sections in Division 1 of these Specifications.
   2. Additional procedures also may be prescribed in other Sections of these Specifications.

1.2. QUALITY ASSURANCE

A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.3. MANUFACTURERS' RECOMMENDATIONS

A. Except as otherwise approved by the Architect, determine and comply with manufacturer's recommendations on product handling, storage, and protection.

1.4. PACKAGING

A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
   1. Maintain packaged materials with seals unbroken and labels intact until time of use.
   2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.

B. The Architect may reject as non-complying such material and products that do not bear identification satisfactory to the Architect as to manufacturer, grade, quality, and other pertinent information.

1.5. PROTECTION

A. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.

B. Provide protection for finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.

C. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

1.6. REPAIRS AND REPLACEMENTS

A. In the event of damage, promptly make replacements and repairs to the approval of the Architect and at no additional cost to the Owner.

B. Additional time required to secure replacements and to make repairs will not be considered by the Architect to justify an extension in the Contract Time of Completion.

END OF SECTION

SECTION 01 73 19

INSTALLATION – MECHANICAL

PART 1—GENERAL

1.1 SCOPE

The scope of the mechanical phase of this project shall include all labor, materials, equipment, etc., required to fulfill the intent of the Contract Documents and shall include the work specified under the subsequent sections of these specifications.

1.2 RELATED DOCUMENTS

All applicable provisions of Divisions 0 and 1 govern work under this Division. Refer to these articles in the specifications for additional information.

1.3 REFERENCE STANDARDS

A. All work shall be performed in full accord with the latest editions of the applicable state, and national building codes and local ordinances.

B. Refer to each section for applicable codes and reference standards.

1.4 FEES, PERMITS AND TAXES

The Contractor shall make arrangements for and pay for all inspection fees, connections fees permits required by local authorities. The Contractor shall also pay all taxes levied for labor and materials associated with work under this Division.

1.5 SUBMITTALS

A. The symbol "<S>" indicates a requirement for submittals.

B. Refer to SECTION 01300 for additional information on submittals.

C. Refer to AIA General Conditions.

D. In addition to the requirements of the above referenced portions of this specification, all Subcontractors proposing to do work under this Division shall comply with the following additional requirements:

1. These specifications and drawings are intended to indicate a standard of quality for materials and equipment which is established by the listing of manufacturers' names and catalog numbers and/or by referenced standards. Materials and equipment that do not comply with these standards of quality will not be considered for substitution.
2. As soon as practicable and within thirty (30) days after the award of the contract and before beginning the fabrication of any material or the installation of any equipment, data shall be submitted for approval on equipment and materials where noted. Materials (pipe, fittings, etc.) may be enlisted with the name of the

manufacturer and identifying catalogue numbers. Data for equipment shall include manufacturer's name, catalogue data, diagrams, drawings and other descriptive data as required or requested by the Architect/Engineer for evaluation.

3. Notwithstanding any reference in the specifications to any article, device, product, material, fixture, form or type of construction by name, make or catalogue number, such references shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition; and the Contractor, in such cases, may at his option use any article, device, product material, fixture, form or type of construction which in the judgment of the Architect/Engineer expressed in writing, is equal to that specified.
4. All data shall be carefully examined and shall be forwarded for approval with a signed certification to the effect that the data has been carefully checked and found to be correct with respect to dimensions and available space and that the equipment complies with all requirements for the specifications.
5. Point out in writing all deviations between the plans and specifications and the materials submitted.
6. It is understood that proof of equality is the responsibility of the Contractor and/or supplier and that it is not the responsibility of the Architect/Engineer to prove the inequality of the proposed substitutions. Furthermore the decisions of the Architect/Engineer are final.

E. While it is not the intention of the Architect/Engineer to discriminate against any manufacturer of equipment which is equal to specified equipment, a strict interpretation of such equality will be exercised by the Architect/Engineer in considering any equipment offered as a substitute for equipment offered as a substitute for equipment named in the specification. It shall be the responsibility of the Contractor to submit with each request for approval of substitute material or equipment, sufficient data to show conclusively that it is equal to the material or equipment specified.

F. Contractor shall submit shop drawings and/or diagrams for approval and for job coordination in all cases where significant deviations from the contract drawings are contemplated because of job conditions, interferences, or substitutions of equipment, or when requested by the Architect/Engineer for purposes of clarification of the Contractor's intent. He shall also submit detailed shop drawings, rough-in sheets, etc., for all special or custom built items of equipment.

G. Should any substitute items be submitted and disapproved, then those items must be furnished exactly as described herein.

H. The Architect/Engineer's review of shop drawings and/or submittal data shall not relieve the Contractor of responsibility for deviations from the contract drawings or specifications.

I. The size of mechanical equipment shown on the drawings is based on the dimensions of a particular manufacturer. While other manufacturers may be acceptable, it is the responsibility of the Contractor to determine if the equipment he proposes to furnish will fit in the space. Shop drawings shall be prepared when required by the Architect/Engineer or Owner to indicate a suitable arrangement.

J. Space allocations and utility rough-ins have been designed on the basis of equipment items named by manufacturer and model number. If any equipment not so named is offered which differs substantially in dimension or configuration from the named equipment, provide scaled shop drawings showing that the substitute can be installed in

the same space available without interfering with other trades or with access for operation and maintenance in the completed project. The Installer shall coordinate final rough-in locations with actual equipment furnished.

1.6 OPERATING AND MAINTENANCE MANUALS AND INSTRUCTIONS

A. The symbol "<OM>" indicates a requirement for operating and maintenance manuals to be furnished.

B. The Owner's operating personnel shall be instructed by the Contractor on how to start and operate each item of equipment. Safety features shall be pointed out, particularly the possible trouble shooting which might be done to remedy operating problems.

C. The Owner's operating personnel shall be thoroughly instructed in the operation of the control system. Instruction should include an explanation of the control system and system sequence of operation, the proper set points of each thermostat, etc., and how to change the settings to accommodate overheating and overcooling, or incorrect humidity. Instructions shall include an explanation of components which should not be tampered with or control settings which should not be changed except by authorized personnel of the Control Manufacturer. Thermostat keys shall be turned over to the Owner.

D. Relative to the air conditioning system, instruct the Owner's operating personnel in the following:

1. Removal of service access panels from equipment. If special tools are required, turn over to the Owner at last one set.
2. Method of removing air filters.
3. Method of cleaning permanent type air filters.
4. How to drain and fill all piping and equipment.
5. How to vent air from the system.
6. Location of concealed valves, traps, air splitters, automatic valves and dampers, etc., requiring periodic maintenance and location of access to them.

E. Provide (2) two copies of operating and maintenance manuals. Manuals shall be bound in large ring, loose-leaf binders and contain the following:

1. Manufacturer's instructions and/or installation manual.
2. Manufacturer's service manual.
3. Manufacturer's lubrication chart listing types of lubricant to be used on each item of equipment and recommended frequency of lubrication.
4. Electrical diagrams of each equipment "packaged" control system.
5. Diagrams of automatic temperature control systems, identifying each item by name, location and number showing sequence of operation. Each component of a control system shall be identified. All diagrams shall be up-to-date, reflecting any on-the-job changes.
6. Parts lists and identifying part numbers with prices of each part. The name and address of the nearest distributor from which parts can be obtained.

1.7 WARRANTY

Contractor shall warrant all workmanship, material, equipment systems etc., provided by him for a period of one year after substantial completion of the project. This warranty means that Contractor shall make good to the Owner, at no cost, any defects that become apparent during

the year following substantial completion. This warranty is in addition to any other guarantees or warranties and is not intended to limit such other guarantees or warranties.

1.8 DEFINITIONS

The following words and phrases as used herein are hereby defined:

A. "Provide": Furnish and install all material and labor required for a complete installation ready for operation in accordance with the intent of the Contract Documents.

B. "As required": Indicates that the Contractor shall perform the work or provide the material as indicated in accordance with manufacturer's installation instructions; and in accordance with applicable codes or regulations; and in a workmanlike manner as defined by good local practice.

C. "Or equal": Indicates that the Contractor may substitute equipment by another manufacturer if the features of the equipment indicated by manufacturer's name and/or described are, in the judgment of the Architect/Engineer, adequate. Submittals for approval are required where indicated.

D. "Contractor": Where the word "Contractor" is used, then refer to the Contractor engaged to execute the work under this division of the specifications only, even though he maybe technically described as a sub-contractor.

E. "Intent of the Contract Documents": The specific intent of these documents is to provide to the Owner, in a thoroughly functional condition, all the various systems, equipment, etc., indicated herein. Final authority over interpretation of the "intent" shall rest with the Architect/Engineer.

F. "Shall": Indicates a mandatory requirement.

1.9 INSPECTION OF THE SITE

A. The drawings are prepared from the best information available and reflect all conditions commensurate with this information. However, the contractor should visit the site prior to submitting a proposal and should verify the locations, sizes, depths, pressures, etc., of all existing utilities and familiarize himself with working conditions, hazards, existing grades, soil conditions will impair the proper operation of the utilities, the Architect/Engineer should be notified in writing.

B. All proposals shall take these existing conditions and any revision required into consideration.

1.10 CONSTRUCTION REQUIREMENTS

A. The Contractor shall be responsible for getting his material and apparatus into the building and shall carefully lay out his work at the site to conform to the structural conditions, to provide proper grading of lines, to avoid all obstructions and to conform to the details of the installation supplied by the manufacturer of the equipment to be installed. Furnish all necessary pipe lines and control lines whether indicated on the drawings or not. The drawings do not give exact details as to elevations of pipe lines nor do they show exact locations of pipe to scale.

B. Piping elevations shall be handled by giving precedence to pipes which require a stated grade for proper operation. Devices necessary for installation and support of pipes, and equipment(such as sleeves, inserts, etc.) shall be located and installed as the construction progresses in order to allow completion of each phase of the work in the proper sequence.

C. Drawings showing the extent and arrangement of the work of a particular trade shall be used together with drawings showing extend and arrangement of work of other trades to insure that the Contractor in laying out and installing his work shall do so in a manner such that the work of the several trades may progress in the most direct, workmanlike and harmonious manner.

D. The Contractor shall be responsible for the proper location and size of slots, holes or openings in the building structure pertaining to his work, and for the correct location of pipe sleeves. The drawings indicate the extend and general arrangement of the various systems, but if any departures from these drawings are deemed necessary by the Contractor, detailed drawings and descriptions of these departures and a statement of the reasons therefore shall be submitted to the Architect/Engineer as soon as practicable.

No departures from the arrangements shown on the drawings shall be made without prior written approval of Architect/Engineer.

E. In general, piping and ductwork in finished areas of the building shall be run concealed unless noted and directed otherwise. Should any conditions arise which would cause any piping or ductwork to be exposed in finished areas, it shall be immediately called to the Architect/Engineer's attention. In unfinished spaces such as equipment rooms, all pipe and duct shall be run as high as possible, shall be run to a continuous grade and shall be grouped wherever it is feasible to do so.

F. Equipment shall be installed in such a manner to make oiling devices and parts requiring service and maintenance readily accessible.

G. All pipe, duct, etc., shall be cut accurately to measurements established at the building and shall be worked into place without springing or forcing. All ducts and pipes run exposed in machinery and equipment rooms shall be installed parallel to the building planes except that the lines shall be sloped to obtain the proper pitch. Piping and ducts run above furred ceilings, etc., shall be similarly installed, except as otherwise shown. All pipe openings shall be kept closed during construction until the systems are closed with final connections.

H. The construction details of the building are illustrated on the Architectural and Structural drawings. The trades shall acquaint themselves with the details before submitting their bid as no allowance will be made because of unfamiliarity with these details. For new construction, place all inserts to accommodate the ultimate installation of pipe hangers in the forms before concrete is poured and set sleeves in forms before construction. For existing construction, all required inserts shall be "drilled-in" and all openings required through concrete or masonry shall be "saw-cut" or "core drilled" with tools specifically designed for this purpose. Explosive or compression driven inserts shall only be allowed for use as approved by SMACNA and the manufacturer of these devices. All concealed lines shall be installed as required by the pace of the job to precede the general construction.

I. The mechanical plans do not give exact locations of outlet, fixtures, equipment items, etc.

The exact location of each item shall be determined by reference to the general plans and to all detail drawings, equipment drawings, roughing-in drawings, etc., by measurements at the building and in cooperation with other trades. Minor relocations necessitated by the conditions at the site or directed by the Owner shall be made without additional cost to the Owner.

J. All oiling devices and all parts of equipment requiring adjustment shall be easily accessible. Equipment shall be so located and installed as to permit convenient and safe maintenance and future replacement. The trade furnishing the equipment shall be responsible prior to ordering same in the event that equipment specified and/or approved is incompatible with this requirement.

1.11 SLEEVES

A. Each and every pipe and duct, regardless of material, which passes through a concrete slab, (except slab on grade), masonry wall, roof or other portion of the building structure shall be free from the structure and shall pass through a sleeve furnished and installed by the Subcontractor responsible for the work involved.

B. Above grade and dry location sleeves shall be constructed from 20 to 22 gauge galvanized steel and shall be flush on both sides of wall surface penetrated. The sleeves shall be sized to allow free passage of the pipe to be inserted, and when this pipe is to be insulated, the sleeves shall be large enough to pass the insulation. Floor sleeves located in pipe chases shall extend up two inches (2") above the floor slab.

C. Sleeves passing through walls or floors on or below grade and/or in moist areas shall be constructed of galvanized steel, schedule 40 pipe and shall be designed with suitable flange in the center of the floor or wall to form a waterproof passage. After the pipes have been installed in the sleeves, void space around the pipe shall be caulked to insure a waterproof penetration. Fire ratings of rated walls and floors shall be maintained by the use of approved materials.

1.12 ISOLATION

A. Transmission of perceptible vibration, structure-borne noise, or objectionable air borne noise to occupied areas by equipment installed under this contract will not be permitted.

B. The isolation supplier shall be a firm or individual capable of dealing effectively with vibration and noise characteristics, effects and criteria and have facilities and capabilities for measuring and evaluating such disturbances and the preparation of drawing and installation instructions.

1.13 CONSTRUCTION SAFETY

Contractor assumes all responsibility regarding the safety of his personnel on the project during construction. The Contract Documents do not include materials, procedures, components, etc., required to insure construction safety. Refer to General Conditions and Supplementary General Conditions for additional information.

1.14 DAMAGE

A. Contractor shall be responsible for damage to project caused by Contractor's failure to

recognize hazards associated with items such as leaks, scheduling of work, inexperienced workmen, excessive cutting, etc.

B. Contractor shall repair, at no expense to the Owner, any such damage to the satisfaction of the Owner.

C. Contractor shall familiarize himself with working conditions to the extent that he shall be responsible for damage to concealed piping, wiring and other equipment to remain and shall repair any damage caused by his negligence at no cost to the Owner.

1.15 FLOOR, CEILING AND WALL PLATES

In addition to the requirements of the above referenced portions of this specification, all Subcontractors shall furnish a chromium plated sectional escutcheon in each finished space on each pipe of hanger rod penetrating a wall, floor or ceiling. Escutcheons shall be sized to fit snugly to all lines and where the lines are insulated, the escutcheons shall be fit snugly over the insulation. Where required, these plates shall be provided with set screws so that they fit snugly against the finished surface. All equipment rooms are classified as finished space.

1.16 SAFETY GUARDS

Contractor shall furnish and install all safety guards required. All belt driven equipment, projecting shafts and other rotating parts shall be enclosed or adequately guarded.

1.17 STORAGE OF MATERIALS

Each Contractor shall provide space for storage of materials, equipment or tools at ground level. Any storage contemplated within the building will be allowed only upon specific approval of the Architect/Engineer.

1.18 LOCAL CUSTOMS

Each Sub-contractor shall comply with local customs as to which particular trade shall install any part or parts of any work or equipment specified herein.

1.19 MANUFACTURER'S DIRECTIONS

The manufacturer’s published directions shall be followed in the delivery, storage, protection, installation, piping and wiring of all equipment and material. The Contractor shall promptly notify the Architect/Engineer in writing of any conflict between the requirements of the contract documents and the manufacturer’s directions and shall obtain the Architect/Engineer's instructions before proceeding with the work. Any such work performed that does not comply with the manufacturers' directions shall have deficiencies corrected at no cost to the Owner.

PART 2—PRODUCTS

2.1 MATERIALS

All materials shall be new and free from defects at the time of installation. Materials or equipment damaged in shipment or otherwise damaged prior to installation shall not be repaired at the job site, but shall be replaced with new materials.

2.2 MANUFACTURER'S REQUIREMENTS

When a manufacturer's name appears in these specifications, it is not to be construed that the manufacturer does not have to meet the full requirements of the specifications or that his standard cataloged item will be acceptable.

2.3 SERVICE AND REPAIR PARTS

All equipment installed on this project shall have local representation, local factory authorized service, and a local stock of repair parts.

2.4 FLAME SPREAD PROPERTIES OF MATERIALS

All materials and adhesives used for air conditioning filters, acoustical lining, and insulation shall conform to NFPA and UL life, safety and flame spread properties of materials. The composite classifications shall not exceed 25 for a flame spread rating and 50 for a smoke developed rating for these classifications as listed for the basic materials. The finishes, adhesives, etc., specified for each system and shall be such when completely assembled.

2.5 ACCESS PANELS

Provide flush mounted metal access panels and frames with concealed hinges and key actuated locks for all concealed and otherwise inaccessible valves, parts, fittings, equipment, filters, etc. and as required for inspection or service.

PART 3—EXECUTION

3.1 WORKMANSHIP

A. All work shall be done by experienced craftsmen skilled in the applicable trade.

B. Unprofessional and incomplete work shall be rejected and corrected at no additional expense.

3.2 PROTECTION OF EQUIPMENT

A. The Contractor shall continuously maintain adequate protection of stored materials and installed equipment. Fixtures and equipment, whether located inside or outside, shall be tightly covered with sheet polyethylene or waterproof tarpaulin as protection against dirt, rust, moisture and abuse from other trades. Adequate air circulation shall be provided under any protective sheet to prevent condensate build up.

B. Materials and equipment shall not be stored directly on the ground. Ductwork, piping and equipment shall not be used by other trades as supports for scaffolds or personnel. At the completion of the work, equipment, fixtures, exposed supports and piping shall be cleaned of loose dirt, construction debris, over spray, etc., to the satisfaction of the Architect/Engineer. Repairs made necessary by damage shall be paid for by the Contractor.

3.3 PROTECTION OF STRUCTURE

Contractor in performing his work shall take particular care not to damage the structure. All finished floors and step treads shall be covered to prevent any damage by workmen or their tools

and equipment during the construction of the building. In addition, each Contractor shall protect any materials on the job site whether a part of this contract or the property of another Contractor.

3.4 FOUNDATIONS

Equipment shall be set in place on the bases, leveled and aligned by means of shims, piped, then grouted in, in that order. After grouting, the forms shall be removed and the surfaces of the foundation shall be hand-rubbed with carborundum. Concrete work shall conform to the requirements of General Specifications, Concrete Work, of this specification.

3.5 CONFLICTS, INTERFERENCES AND COORDINATION BETWEEN TRADES

A. The drawings are not to be construed as shop drawings, but indicate the extent, general location, arrangement, etc., of piping systems and equipment.

B. Each trade shall coordinate its work with that of the other trades. Piping interference shall be handled by giving precedence to pipe lines which require a stated grade for proper operation. Where space requirements conflict, the following order of precedence shall be observed:

1. Building lines
2. Structural members
3. Soil and drain piping
4. Vent piping
5. Refrigerant piping
6. Condensate piping
7. Supply ductwork
8. Exhaust ductwork
9. Domestic water
10. Electrical conduit
11. Natural gas piping

C. In the event of conflicts between specifications and drawings, drawings shall take precedence over specifications except in matters pertaining to quality, applications, and coordination between trades, which shall be governed by specifications.

D. In the event of conflict between codes, as interpreted by the authority having jurisdiction and the contract documents, the codes shall govern.

E. In the event of conflict between manufacturer's installation instructions and the drawings, the manufacturer's installation instructions shall govern.

3.6 CUTTING AND PATCHING

A. Contractor shall not cut any structural element or any finished work without permission from the Architect/Engineer.

B. Contractor shall cut and patch all paving as required by the installation of buried piping, including utilities.

3.7 CONCRETE WORK

All forming, reinforcing and concrete as indicated such as equipment bases, plumbing stack support pads, grease interceptors, catch basin and headwalls, shall conform to applicable portion of Division 3 CONCRETE.

3.8 PAINTING

A. All exposed piping, equipment, etc., shall be left clean and free from rust or grease and ready for the paint.

B. Where equipment finishes are damaged, Contractor shall obtain matching color touch-up paint from the equipment's manufacturer and paint as required.

3.9 LUBRICATION

Contractor shall provide all lubricants for the operation of all equipment until acceptance. The Contractor shall be required to protect all bearings during the installation and shall thoroughly grease steel shafts to prevent corrosion. All motors and other equipment shall be provided with covers as required for proper protection during construction. All equipment bearings requiring periodic lubrication shall be provided with proper fittings for this purpose. Where equipment requiring such lubrication is not readily accessible due to location, copper tubing extensions shall be provided in addition to lubrication fittings.

3.10 ELECTRICAL WORK

The electrical design and drawings are based on the equipment scheduled and shown on the drawings and should any mechanical equipment requiring changes to the electrical design be approved, the required electrical changes shall be made at the expense of the trade furnishing the changed equipment and at no cost to the Owner.

3.11 EQUIPMENT CONNECTION

Contractor shall bring required services to equipment items furnished under other sections of this specification or by the Owner, Make final connections, and leave equipment ready for operation. Where it is necessary for Contractors performing work covered by this section to make final connections to items of equipment being furnished by Contractors under other sections, all such work shall be performed in a neat and workmanlike manner and all materials shall be of quality and finish normally used for such installation.

3.12 OPERATING PRIOR TO COMPLETION

When any piece of mechanical or electrical equipment is operable and it is to the advantage of the Contractor to operate the equipment, he may do so providing that he properly cleans the equipment, installs clean filter media, properly adjusts and completes all punch list items before final acceptance by the Owner. The date of acceptance and the start of the warranty may not be the same date.

3.13 EQUIPMENT AND ARRANGEMENTS

All equipment shall be installed in a manner to permit access to all surfaces requiring access. All valves, motors, drives, lubrication devices, filters and other necessary items shall be installed in a position to allow removal for service without disassembly of another part.

3.14 EXECUTION OF WORK

The Contractor shall plan, schedule and execute his work and that of any of his Subcontractors so as not to interfere with the work of other trades or Contractors in the building or on the premises.

3.15 FLASHING AND WATERPROOFING

All building penetrations to outside shall be flashed and counter flashed as required to eliminate leaks.

3.16 TESTS

All tests shall be made by Contractor and repeated until approved by the Architect/Engineer. Piping systems shall not be covered or otherwise concealed until tests have been made and approvals obtained. Notify the Architect/Engineer four days prior to tests to allow for scheduling. Test the piping systems as indicated in applicable articles.

3.17 FINAL OBSERVATIONS

It shall be the duty of the Contractor to make a careful inspection trip of the entire project, assuring himself that the work on the project is ready for final acceptance, before calling upon the Architect/Engineer to make a final observation.

3.18 DEMOLITION AND SALVAGE

A. Where demolition of equipment or materials is required Contractor shall minimize cutting and exercise all due caution to leave undamaged surfaces, material and equipment meant to remain.

B. All existing items that are to be removed shall remain the property of the Owner unless declared as unsalvageable. Unsalvageable materials shall become the property of the Contractor and be removed from the site. Items declared as Owner's property shall be neatly stored on the site as directed by the Owner.

END OF SECTION

SECTION 017700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
   1. Inspection procedures
   2. Project record document submittal
   3. Operating and maintenance manual submittal
   4. Submittal of warranties
   5. Final cleaning

B. Related Work: Work related to this section that is described in other sections include but is not limited to the following:
   1. Specification Section 015650 – Cleaning.
   2. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions-2 through -44.

1.2 SUBSTANTIAL COMPLETION

A. Substantial completion is achieved when the construction is sufficiently complete that the building can be used for its intended function.

B. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
   1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
   2. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
   3. Advise Owner of pending insurance change-over requirements.
   4. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
   5. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates, and similar releases.
   6. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
   7. Deliver tools, spare parts, extra stock, and similar items.
   8. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
   9. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary

facilities from the site, along with construction tools, mock-ups, and similar elements.

10. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

C. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the CM that work must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the Work has been substantially completed.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.3 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and the list has been endorsed and dated by the Architect.
4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
5. Submit consent of surety to final payment.
6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: The Architect will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

1. Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance, or advise the CM of
   a. Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
   b. If necessary, re-inspection will be repeated.

PART 2 - PRODUCTS

(NOT APPLICABLE)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals
2. Record documents
3. Spare parts and materials
4. Tools
5. Lubricants
6. Fuels
7. Identification systems
8. Control sequences.
9. Hazards: Including the following documents as required:
    a. Asbestos Free Certificates
    b. Lead Free Certificates
    c. Hazardous Material Free Certificates
10. Cleaning
11. Warranties and bonds: One Year Warranty Letters written on contractor letter-head, and including contractor’s name, address, telephone and fax numbers, contractor scope of work, emergency telephone numbers and contact names for any emergency service at all times including nights, weekends, and holidays. Contractor warranty begins on the date of substantial completion.
12. Maintenance agreements and similar continuing commitments.
13. Material, safety, and data sheets for all materials utilized on the project.
14. Provide video of training sessions for kitchen, laundry, detention and security electronics equipment maintenance and operation.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Start-up
2. Shutdown
3. Emergency operations
4. Noise and vibration adjustments
5. Safety procedures
6. Economy and efficiency adjustments
7. Effective energy utilization

C. Pest Control: Engage an experienced exterminator to make a final inspection, and rid the Project of rodents, insects, and other pests.

D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION

SECTION 017823
OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: To aid the continued instruction of operating and maintenance personnel, and to provide a positive source of information regarding the products incorporated into the work, furnish and deliver the data described in this Section and in pertinent other Sections of these Specifications.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Required contents of submittals also may be amplified in pertinent other Sections of these Specifications.

1.2. QUALITY ASSURANCE

A. In preparing data required by this Section, use only personnel who are thoroughly trained and experienced in operation and maintenance of the described items, completely familiar with the requirements of this Section, and skilled in technical writing to the extent needed for communicating the essential data.

1.3. SUBMITTALS

A. Comply with pertinent provisions of Division 1.

B. Submit preliminary draft of the proposed Manual or Manuals to the CM who will forward them to the Architect for review and comments.

C. Unless otherwise directed in other Sections or in writing by the Architect, submit the final Manual to the CM prior to indoctrination of operation and maintenance personnel.

PART 2 PRODUCTS

2.1. INSTRUCTION MANUALS

A. Where instruction Manuals are required to be submitted under other Sections of these Specifications, prepare in accordance with the provisions of this Section.

B. Format:
   1. Size: 8½"×11"
   2. Paper: White bond, at least 20 lb. weight
   3. Text: Neatly written or printed.
   4. Drawings: 11" in height preferable; bind in with text; foldout acceptable but fold to fit within the Manual and provide a drawing pocket inside rear cover or bind in with text.
   5. Flysheets: Separate each portion of the Manual with neatly prepared flysheets briefly describing contents of the ensuing portion; flysheets may be in color.
   6. Binding: Use heavy-duty plastic or fiberboard covers with binding mechanism concealed inside the Manual; 3-ring binders will be acceptable; all binding is subject to the Architect's approval.

7. Measurements: Provide all measurements in U.S. Standard units such as feet and inches, lbs. and cfm; where items may be expected to be measured within ten years in accordance with metric formulas, provide additional measurements in the "International System of Units" (SI).

C. Provide front and back covers for each Manual, using durable material approved by the Architect, and clearly identified on or through the cover with at least the following information:

OPERATING AND MAINTENANCE INSTRUCTIONS

Name and Address of Work

Name of Contractor

General Subject of this Manual

D. Contents: Include at least the following:
1. Neatly typewritten index near the front of the Manual, giving immediate information as to location within the Manual of all emergency information regarding the installation.
2. Complete instructions regarding operation and maintenance of all equipment involved including lubrication, disassembly, and re-assembly.
3. Complete nomenclature of all parts of all equipment.
4. Complete nomenclature and part number of all replaceable parts, name, and address of nearest vendor, and all other data pertinent to procurement procedures.
5. Copy of all guarantees and warranties issued.
6. Manufacturer's bulletins, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturer's data with which this installation is not concerned.
7. Such other data as required in pertinent Sections of these Specifications.

PART 3 EXECUTION

3.1. INSTRUCTION MANUALS

A. Preliminary:
1. Prepare a preliminary draft of each proposed Manual.
2. Show general arrangement, nature of contents in each portion, probable number of drawings and their size, and proposed method of binding and covering.
3. Secure the Architect's and CM’s approval prior to proceeding.

B. Final: Complete the Manuals in strict accordance with the approved preliminary drafts and the Architect's and CM’s review comments.

C. Revisions:
1. Following the indoctrination and instruction of operation and maintenance personnel, review all proposed revisions of the Manual with the Architect and CM.

END OF SECTION

SECTION 017839
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included:
   1. Throughout progress of the work, maintain an accurate record of changes in the Contract Documents on a weekly basis.
   2. Upon completion of the work, transfer the recorded changes to a set of Record Documents and submit to Architect and Owner in electronic format.
   3. Architect will verify work completed on visits to site, review document mark ups and pay application content for each project meeting.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Other requirements affecting Project Record Documents may appear in pertinent other Sections of these Specifications.

1.2. QUALITY ASSURANCE

A. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as approved by the Architect.

B. Accuracy of records:
   1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other documents where such entry is required to show the change properly.
   2. Accuracy of records shall be such that future searches for items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Documents.

C. Make entries within 24 hours after receipt of information that the change has occurred.

1.3. SUBMITTALS

A. The Architect's approval of the current status of Project Record Documents may be a prerequisite to the Architect's approval of requests for progress payment and request for final payment under the Contract. Record Documents will be examined by the Architect and CM at each on-site construction meeting. Subcontractors who are required to update record documents are expected to be current in their as-built requirements as a condition of payment of that month's progress payment. Failure of any subcontractor to accurately and timely update as-built drawings will result in withholding payment until the documents are in acceptable condition.

B. Prior to submitting each request for progress payment, secure the Architect's approval of the current status of the Project Record Documents.

C. Prior to submitting request for final payment, submit the final Project Record Documents to the Architect and secure his approval.

D. Provide Record Documents in electronic format, one copy to the Architect and four copies to the owner.

1.4. PRODUCT HANDLING

A. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the work and transfer of all recorded data to the final project Record Documents.

B. In the Event of loss of recorded data, use means necessary to again secure the data to the Architect's approval.
   1. Such means shall include, if necessary in the opinion of the Architect, removal, and replacement of concealing materials.
   2. In such case, provide replacements to the standards originally required by the Contract Documents.

PART 2 PRODUCTS

2.1. RECORD DOCUMENTS

A. Job set: Promptly following receipt of the Owner's Notice to Proceed, secure from the Architect at no charge to the CM one complete set of all Documents comprising the Contract in electronic format.

PART 3 EXECUTION

3.1. MAINTENANCE OF JOB SET

A. Immediately upon receipt of the job set described in Paragraph 2.1-A above, identify each of the Documents with the title, "Record Documents - Job Set".

B. Preservation:
   1. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the approval of the Architect.
   2. Do not use the job set for any purpose except entry of new data and for review by the Architect, until start of transfer of data to final Project Record Documents.
   3. Maintain the job set at the site of work as that site is designated by the Architect.

C. Making entries on drawings:
   1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required.
   2. Date all entries.
   3. Call attention to the entry by a "cloud" drawn around the area or areas affected.
   4. In the event of overlapping changes, use different colors for the overlapping changes.

D. Make entries in the pertinent other Documents as approved by the Architect.

E. Conversion of schematic layouts:
   1. In some cases on the Drawings, arrangements of conduits, circuits, piping, ducts, and similar items, are shown schematically and are not intended to portray precise physical layout.
      a. Final physical arrangement is determined by the Contractor, subject to the Architect's approval.
      b. However, design of future modifications of the facility may require accurate information as to the final physical layout of items which are shown only schematically on the Drawings.
   2. Show on the job set of Record Drawings, by dimension accurate to within one inch, the centerline of each run of items such as are described in subparagraph 3.1-E-1 above.
      a. Clearly identify the item by accurate note such as "cast iron drain," "galv. water," and the like.
      b. Show, by symbol or note, the vertical location of the item ("under slab," "in ceiling plenum," "exposed," and the like).
      c. Make all identification sufficiently descriptive that it may be related reliably to the Specifications.
   3. The Architect may waive the requirements for conversion of schematic layouts where, in the Architect's judgment, conversion serves no useful purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the Architect.

3.2. FINAL PROJECT RECORD DOCUMENTS

A. The purpose of the final Project Record Documents is to provide factual information regarding all aspects of the work, both concealed and visible, to enable future modification of the work to proceed without length and expensive site measurement, investigation, and examination.

B. Transfer of data to drawings:
   1. Carefully transfer change data shown on the job set of Record Drawings to the corresponding transparencies coordinating the changes as required.
   2. Clearly indicate at each affected detail and other Drawing a full description of changes made during construction, and the actual location of items described above.
   3. Call attention to each entry by drawing a "cloud" around the area or areas affected.
   4. Make changes neatly, consistently, and with the proper media to assure longevity and clear reproduction.

C. Transfer of data to other documents:
   1. If the Documents other than Drawings have been kept clean during progress of the work, and if entries thereon have been orderly to the Documents other than Drawings, they will be accepted as final Record Documents.
   2. If any such Document is not so approved by the Architect, secure a new copy of that Document form the Architect at the Architect's usual charge for reproduction and handling, and carefully transfer the change data to the new copy to the approval of the Architect.

D. Review and submittal:
   1. Submit the completed set of Project Record Documents to the Architect as described in Paragraph 1.3-D above.
   2. Participate in review meetings as required.
   3. Make required changes and promptly deliver the final Project Record Documents to the Architect.

3.3. CHANGES SUBSEQUENT TO ACCEPTANCE

A. The Contractor has no responsibility for recording changes in the work subsequent to Final Completion, except for changes resulting from work performed under warranty.

END OF SECTION

SECTION 024119
SELECTIVE DEMOLITION

PART 1 GENERAL

1.1. RELATED DOCUMENTS

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

1.2. SUMMARY

A. This Section includes the following if not already removed by the owner:
   1. Demolition and removal of selected portions of a building or structure.
   2. Demolition and removal of selected site elements.
   3. Repair procedures for selective demolition operations.

1.3. DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse, if required.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4. MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from project site.

B. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.
   1. Coordinate with Owner's historical adviser, who will establish special procedures for removal and salvage.

1.5. SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time-frame for their operation. Identify options if proposed measures are later determined to be inadequate.

C. Schedule of Selective Demolition Activities: Indicate the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
   2. Interruption of utility services.
   3. Coordination for shutoff, capping, and continuation of utility services.
   4. Use of elevator and stairs.
   5. Locations of temporary partitions and means of egress.
   6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

D. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.

E. Pre-demolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.

F. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes. Maintain weight tickets from all solid waste disposal sites (C&D landfills and recycling yards) as well as for hazardous waste disposal slips.

1.6. QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI A10.6 and NFPA 241.

D. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

E. Pre-demolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition including, but not limited to, the following:
   1. Inspect and discuss condition of construction to be selectively demolished.
   2. Review structural load limitations of existing structure.
   3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

1.7. PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
   1. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.

C. Owner assumes no responsibility for condition of areas to be selectively demolished.
   1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
   1. Hazardous materials will be removed by Owner before start of the Work.
   2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Hazardous Materials: Hazardous materials are present in building to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
   1. Hazardous material remediation is specified elsewhere in the Contract Documents.
   2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

F. Storage or sale of removed items or materials on-site will not be permitted.

G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

1.8. WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

2.1. REPAIR MATERIALS

A. Use repair materials identical to existing materials.
   1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
   2. Use materials whose installed performance equal or surpasses that of existing materials.

B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 EXECUTION

3.1. EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2. UTILITY SERVICES

A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.

B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
   1. Provide at least 72 hours' notice to Owner if shutdown of service is required during changeover.

C. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished.
   1. Owner will arrange to shut off indicated utilities when requested by Contractor.
   2. Arrange to shut off indicated utilities with utility companies.
   3. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building.
   4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

D. Utility Requirements: Refer to Division 15 and 16 Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3. PREPARATION

A. Dangerous Materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

B. Pest Control: Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.

C. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
   2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
   3. Protect existing site improvements, appurtenances, and landscaping to remain.
   4. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

D. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
   2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
   3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
   4. Cover and protect furniture, furnishings, and equipment that have not been removed.

E. Temporary Enclosures: Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
   1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

F. Temporary Shoring: Provide and maintain shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
   1. Strengthen or add new supports when required during progress of selective demolition.

3.4. POLLUTION CONTROLS

A. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.5. SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.
10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

B. Removed and Salvaged Items: Comply with the following:
1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items: Comply with the following:
1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.

4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

E. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.

F. Crush and re-use demolished concrete as clean fill, or provide to a recycler in accordance with Section 01350.

G. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

H. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.6. DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly recycle or dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials and legally dispose of them.

END OF SECTION

SECTION 03 30 00

CONCRETE STRUCTURES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This item governs for construction of concrete structures, foundations, paving and slabs-on-ground.

1.2 RELATED WORK

A. 00300 – INFORMATION AVAILABLE TO BIDDERS (Subsurface Exploration)

B. 01410 – TESTING LABORATORY SERVICES

C. 02220 – STRUCTURAL EXCAVATION AND BACKFILL

D. 07190 – WATERPROOFING

1.3 SUBMITTALS

A. Submit mix designs for strength.

B. Samples – Submit samples of the following for testing:
   1. Aggregate samples indicating full range of size and type.
   2. Admixtures proposed for use.
   3. Cement proposed for use.

C. Tests – Make test specimens maintain check on concrete strength throughout job. Refer to SECTION 01410 – TESTING LABORATORY SERVICES.

D. Provide manufacturer literature on any proposed additive, including accelerators, retarders, and curing agents. Do not use any additive until approved by Engineer.

E. Contractor assumes responsibility for design of concrete.

1.4 REFERENCE STANDARDS

ACI 117	Standard Specifications for Tolerances for Concrete Construction and Materials
ACI 211	Recommended Practice for Selecting Proportions for Normal Weight Concrete
ACI 301	Specifications for Structural Concrete for Buildings
ACI 305	Recommended Practice for Hot Weather Concreting
ACI 306	Recommended Practice for Cold Weather Concreting
ACI 315	Detailing Reinforced Concrete Structures
ACI 318	Building Code Requirements for Reinforced Concrete
ASTM A185	Specifications for Welded Wire Fabric
ASTM A615	Specifications for Deformed Reinforcing Steel
ASTM C33	Specifications for Concrete Aggregates

ASTM C94 Specifications for Ready Mixed Concrete
ASTM C150 Specifications for Portland Cement
ASTM C260 Specifications for Air Entraining Admixtures for Concrete

PART 2 - PRODUCTS

2.1 CONCRETE

Ready mixed conforming to ASTM C94 or site mixed.

A. Cement – ASTM C150, Type 1; no caked cement; one brand for one structure; deliver in bags for site mixing. No fly ash or cement substitute is allowed to replace required cement content.

B. Water – Free from oils, acids, alkalis, organic matter, salts, or other deleterious substances.

C. Coarse Aggregate – ASTM C33. Refer to ACI 301-3.6 for maximum size, other than the following:
1. Slabs-on-Ground: 1-inch maximum.
2. Grade Beams: 1-inch maximum.
3. Drilled Piers: 1-inch maximum.
4. Above Ground Floor Slabs: ½-inch maximum.

D. Fine Aggregate N a t u r a l sand meeting requirements of ASTM C33.

E. Admixture
1. Water Reducer and Set Retarder – ASTM C494; A, B, or D. Do not use chlorides.
2. Air Entrainer – ASTM C260.
3. Approved Manufacturers – Obtain written approval for admixture manufacturers other than:
   a. W.R. Grace.
   b. Sika Chemical Corp.
4. Super Plasticizer – (Contractor's Option) Provide a high range water reducer conforming to ASTM C494, Type F. Use amount recommended by the manufacturer.
   a. "WRDA 19" as manufactured by W.R. Grace.
   b. "Sikament" as manufactured by Sika Chemical Corp.

F. Classification

Class	Type	Min. 28-day Compress. Strength (lbs./in^2)	Max. Water/ Cement Ratio	Min. Cement (lbs./yd^3)	Consistency Range in Slump (in.)	Air Content (%)
A	Structural Foundations, Slab-on-Ground, Concrete Structures, Floor Slabs	3,000	0.55	470 (5bags)	3to6	4to6
A	Curbs, Walks, Paving, Slope Paving	3,000	0.55	470 (5 bags)	3 to 6	4 to 6
C	Fill, Pipe Blocking, Seal Slabs	2,000	0.74	376 (4 bags)	3 to 6	3 to 5

Include in maximum water, free water in aggregate minus absorption of aggregate based on a thirty-minute absorption period. Class A Structural concrete is to be used for structures, foundations, and slabs unless otherwise specified on plans. Slump ranges may be exceeded when super plasticizers are used.

2.2 REINFORCING STEEL

A. Bars – ASTM A615 (Deformed).
   1. No. 3 Bars, Stirrups and Ties – Grade 40
   2. No. 3 Bars, Main Reinforcing – Grade 60
   3. No. 4 and Larger Bars – Grade 60

B. Welded Wire Fabric – ASTM A185.

2.3 EXPANSION JOINT

A. Unless otherwise shown expansion joint material to be asphalt or asphalt impregnated fiber joint in accordance with ASTM D994 or ASTM D1751-83 respectively.

B. Performed rubber or cork in accordance with ASTM D1752-84, per Reflex of J.D. Russell Co., (800) 826-7008.

2.4 CURING MATERIAL

A. Water - Free from oils, acids, alkalis, salts, or other deleterious materials.

B. Cotton Mats - Filling material of cotton "bat" (min. 12 oz. per sq. yd.) with unsized cloth covering (min. 6 oz. per sq. yd.)

C. Curing Agents
   1. Sonneborn “Kure-N-Seal,” or approved equal, may be used at exterior applications where floor finishes are not scheduled. Products which discolor when exposed to sunlight are prohibited. Follow manufacturer’s requirements.

2.5 FLOOR HARDENER

A. Use two coats Lapidolith as manufactured by Sonneborn Building Products; apply as follows: Clean floors of all concrete, plaster, stains, etc. use steel wool or sandpaper as required. New concrete shall thoroughly cure and dry for a full 28 days prior to application of Lapidolith solution.
   First Coat – 1 part Lapidolith, 3 parts water. Flush on floor and distribute with long handled brush. Mop up excess solution. Allow floor to dry before second application.
   Second Coat – 2 parts Lapidolith to one part water applied as for the first coat.
   Installed as soon as concrete finish is dry enough to receive Lapidolith. Do not wait until equipment is installed in the rooms or until grease is on the floors. Follow manufacturer’s instructions in all cases and conditions.
   Use in interior locations where in the Room Finish Schedule” is Sealed Concrete (SC) Finish.
   Do not delay application of floor hardener.

2.6 FORM LUMBER

A. Seasoned, of good quality, and free from loose or unsound knots, knot holes, twists, shakes or decay.

2.7 GROUT

A. Grout - One part Portland Cement to two parts sand.

B. Non-Shrinking Grout - Pre-mixed grout which is non-metallic, non-corrosive, and non-staining; containing specially selected silica sands, cement, shrinkage compensating agents, plasticizing and water reducing agents.
   1. Conform to requirements of Corps of Engineers CRD-C588. Test method CRD-C589.
   2. Yield of 0.9 cubic foot to 1.0 cubic foot per 100 pounds.
   3. Mixing water per 100 pounds: - Stiff - 2 gallons
      - Plastic - 2.25 gallons
      - Flowable - 2.5 gallons
   4. Minimum 28-day compressive strength of 8,000 psi.
   5. Maintain grout temperature during placement between 50ºF and 90ºF.

2.8 PERMANENT MOISTURE BARRIER

A. Moisture barrier shall be per Section 07190.

2.9 CONCRETE BONDING AGENT

A. "Daraweld-C" as manufactured by W.R. Grace and Company, or "Bond Crete-S" as manufactured by Burke Concrete Accessories, Inc.

PART 3 - EXECUTION

3.1 FORMS

A. Lumber - Mortar tight; smooth surface; true to line and grade, and adequately braced.

B. Provide plywood or masonite surfaces for concrete faces to be rub finished.

C. Remove dirt, sawdust, nails, and other foreign material from formed spaces.

3.2 BUILT-IN ITEMS

A. Install pipe, sleeves, bolts, anchors, and other cast-in-place items securely. Use templates to set built-in items accurately.

3.3 JOINTS

A. No horizontal joints will be permitted in concrete work except as shown on the drawings. Make stops in concrete placing with vertical bulkheads at locations approved by the Engineer prior to placement.

3.4 REINFORCING STEEL

A. Bend, clean, place and tie in accordance with ACI Standards. Support slab steel on chairs as approved by Engineer.

B. Splice bars with calculated stress in accordance with ACI Standards, Class C, unless noted.

C. Lap welded wire fabric by one full pattern width in each direction.

3.5 OBSERVATION

A. Do not place concrete until forming, reinforcement, and built-in items have been field observed and approved by the Engineer.

3.6 SUBGRADE

A. Dampen subgrades not covered with membrane by sprinkling immediately before placing concrete. Omit when subgrade is already damp.

B. Dry out soggy subgrade before placing slabs unless wetting is uniform and placing can be done without damage to subgrade.

C. Place slab screeds to precise elevations.

D. Obtain the Engineer's approval of subgrade and screeds prior to concrete placement.

3.7 MIXING CONCRETE

A. Mix and deliver in accordance with ASTM C94.

B. Clean and maintain equipment for good operation.

C. Job mix concrete in approved type mixer for minimum of one and one-half minutes for one cubic yard batch. Add 15 seconds for each half yard increase over one yard batch.

3.8 PLACING CONCRETE

A. General Requirements
   1. Give notice before placement.
   2. Place in daylight hours.
   3. Discharge within one hour after start of mixing.

B. Handling and Transporting
   1. Use method to prevent segregation.
   2. Use buckets, chutes, buggies, pipes, troughs, or pumping.
   3. Protect against sun and wind, to prevent loss of slump and workability.
   4. Use of aluminum equipment not permitted.

C. Depositing
   1. Continuous horizontal layers twelve inches thick in structures and foundations.
   2. Concrete shall not be placed when the temperature is below 40° F and falling, or when the temperature is above 95° F and rising. Concrete may be placed when the temperature is between 40° F and 95° F. Excavations and reinforcing shall be

free of all frost.

3. Slabs and Flatwork:
   a. Drop concrete in position; do not draw or rake concrete laterally to position.
   b. Place concrete continuously in any one part of the work. If a whole part of the work cannot be placed monolithically, place to construction joints indicated on drawings, or as approved. Retighten forms, clean hardened surfaces, and cover with bonding compound before placing against hardened concrete.
   c. Place sloped concrete from bottom up.
   d. Use temporary screeds to maintain levels and slopes as required. Provide adequate support for screeds to maintain accurate elevations.
4. Limit free fall to five feet.
5. Use tremies for free fall over five feet.
6. Maintain temperature above 40°F.
7. Use retarding agent for air temperatures above 85°F.
8. Provide thermometer for temperature verification.
9. In forms over 8" deep, vibrate concrete after placement. DO NOT USE VIBRATOR TO CAUSE CONCRETE TO FLOW. Extend wand full depth of pour, allowing wand to vibrate a maximum of 5 seconds per extension. Vibrate placement every 12 to 18 inches, depending on depth and width of form.

3.9 CURING CONCRETE

A. Cure for six consecutive curing days.

B. Cure high-early-strength concrete for three consecutive curing days.

C. "Curing Day" is a calendar day whose temperature is above 50°F for at least 19 hours.

3.10 FORM REMOVAL

A. Remove forms under slabs, beams, or girders after seven days.

B. Remove all other forms after two days.

3.11 PATCHING CONCRETE

A. Patch honeycomb and tie holes.

3.12 DEFECTIVE WORK

A. Repair or replace immediately after form removal at contractor's expense.

3.13 SLAB FINISH

A. Slope – Confirm lack of slope before proceeding, when the plans show walks, drives, paving or gutters without slope.
   1. Walk cross slope not to be greater than 1.5%, or less than 1.0%.
   2. Landing shall not be greater than 1.5%.

B. Edging – 3/8” radius edging shall be provided at walk and paving edges, expansion joints

and other places where needed to form neat appearance.

C. Jointing for Walks and Paving
   1. Expansion Joint Width – ¾-inch thick with wrapped, smooth dowels to maintain alignment.
   2. Control Joint Depth – 1/5 of the slab thickness unless shown otherwise. Control joints in concrete slabs to be saw cut within 6 to 10 hours of concrete placement.
   3. Tool joints in sidewalks for good appearance and then saw if necessary to achieve 1/5 of slab thickness to control cracking.

D. Finishes
   1. Floor Slabs
      a. Steel trowel finish, class BX
      b. Depression in floor between high spots shall not be greater than 1/8-inch below a 3 foot straight edge. Level slabs shall not vary more than ½-inch in 30 feet.
      c. Slope floor at 1/8" per linear foot toward floor drain.
   2. Walks, Curbs, Steps – Steel trowel with soft broom finish.
   3. Paving Ramps and Drives
      a. Stiff broom finish.
      b. Score ramps as shown on the drawings.
   4. Foundations – Wood Float finish.

3.14 RUB-FINISHED SURFACES

A. Rub-finished exposed vertical and battered surface from six inches below final ground line or low water to top.

B. Provide two (2) rubbings.
   1. First with No.16 carborundum stone.
   2. Second with No.30 carborundum stone.

C. Finish to provide clean, smooth, uniform surface.

3.15 CLEAN-UP

A. Clean area from time to time during construction and clean area completely after completion of concrete work.

END OF SECTION

SECTION 061000
ROUGH CARPENTRY

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Provide wood, wood blocking, nails, bolts, screws, framing anchors and other rough hardware, and other items needed, and perform rough carpentry.

1.2. QUALITY ASSURANCE

A. Codes and standards:
   1. In addition to complying with the pertinent codes and regulations of governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Architect, comply with:
      a. "Product Use Manual" of the Western Wood Products Association for selection and use of products included in that manual.
      b. "Plywood Specification and Grade Guides" of the American Plywood Association.

1.3. PRODUCT HANDLING

A. Protection:
   1. Deliver the materials to the job site and store, in a safe area, out of the way of traffic, and stored up off the ground surface.
   2. Identify framing lumber as to grades, and store each grade separately from other grades.
   3. Protect metals with adequate waterproof outer wrapping.
   4. Use extreme care in off-loading of lumber to prevent damage, splitting, and breaking of materials.

PART 2 PRODUCTS

2.1. GRADE STAMPS

A. Identify framing lumber by the grade stamp of the West Coast Lumber Inspection Bureau, or such other grade stamp as is approved in advance by the Architect.

B. Identify plywood as to species, grade, and glue type by the stamp of the American Plywood Association.

C. Identify other materials of this Section by the appropriate stamp of the agency approved in advance by the Architect.

2.2. MATERIALS

A. Provide materials in the quantities needed for the work shown on the Drawings or specified herein, meeting or exceeding the following standards of quality:
   1. Horizontal framing members: Douglas Fir-Hemlock, Table 1, Construction Grade.
   2. Vertical framing members: Douglas Fir-Hemlock, Table 1, Standard grade.
   3. Rough hardware:
      a. Steel items:
         1) Comply with ASTM Standards.
         2) Use galvanized at exterior locations.
      b. Machine bolts: Comply with ASTM Standards.
      c. Lag bolts: Comply with Fed Spec FF-B-561.
      d. Nails:
         1) Use common except as otherwise noted.
         2) Use galvanized at exterior locations.
   4. Fire-Retardant Treated Lumber
      a. Mark each piece in accordance with AWPA M6, except pieces that are to be natural or transparent finished.
      b. Labels of nationally recognized independent testing agency will be accepted as evidence of conformance to the fire-retardant requirements of AWPA M6.
      c. Fire retardant treated wood shall be pressure treated in accordance with AWPA C20 for lumber and AWPA C27 for plywood.
      d. Material used shall be defined in AWPA C20 and AWPA C27 for Interior Type and Exterior Type.
      e. Treatment and performance inspection shall be by an independent and qualified testing agency that established performance ratings.
      f. Each piece or bundle of treated material shall bear identification of the testing agency to indicate performance in accordance with such rating.

2.3. OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 EXECUTION

3.1. SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2. DELIVERIES

A. Stockpile materials sufficiently in advance of need to assure their availability in a timely manner for this work.

B. Make as many trips to the job site as are needed to deliver materials of this Section in a timely manner to ensure orderly progress of the work.

3.3. COMPLIANCE

A. Do not permit materials not complying with the provisions of this section to be brought onto or to be stored at the job site.

B. Promptly remove non-complying materials from the job site and replace with materials meeting the requirements of this Section.

3.4. WORKMANSHIP

A. Produce joints which are tight, true, and well nailed, with members assembled in accordance with the drawings and with pertinent codes and regulations.

B. Selection of lumber pieces:
   1. Carefully select the members.
   2. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing, and will allow making of proper connections.
   3. Cut out and discard defects which render a piece unable to serve its intended function.
   4. Lumber may be rejected whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.

C. Do not shim any framing component.

3.5. GENERAL FRAMING

A. General:
   1. In addition to framing operations normal to the fabrication and erection indicated on the Drawings, install wood blocking and backing required for the work of other trades or where items must be anchored to the face of drywall.
   2. Set horizontal and sloped members with crown up.
   3. Do not notch, cut, or bore members for pipes, ducts, or conduits, or for other reasons except as shown on the Drawings.

B. Bearings:
   1. Make bearings full unless otherwise indicated on the drawings.
   2. Finish bearing surfaces on which structural members are to rest so as to give sure and even support.
   3. Where framing members slope, cut or notch the ends as required to give uniform bearing surface.

3.6. BLOCKING AND BRIDGING

A. Install blocking as required to support items of finish and to cut off concealed draft openings, both vertical and horizontal, between ceiling and floor areas.

3.7. ALIGNMENT

A. On framing members to receive a finished surface, align the finished subsurface to vary not more than 1/8" from the plane of surfaces of adjacent furring and framing members.

END OF SECTION

SECTION 07 10 00

WATERPROOFING

PART 1—GENERAL

1.1 DESCRIPTION

This section governs for furnishing all labor and materials concerning moisture protection. Refer to the drawings for applicable system and location.

1.2 SUBMITTALS

Provide manufacturers product data for each applicable waterproofing system listed below. Provide samples upon request.

PART 2—PRODUCTS

2.1 SLABS ON GRADE WATERPROOFING

A. Provide vapor barrier under all building slabs over smooth rolled subgrade. All joints shall be lapped under grade beams as indicated on the drawings and as recommended by manufacturer. All joints shall have 6" minimum lap. Joints and penetrations shall be sealed with manufacturer recommended tape or mastic at pipe penetrations. Corner of intersecting grade beams shall be neatly placed. Wadding of material at intersections is not acceptable. Rips or tears shall be repaired per manufacturer's instructions. Use red tape to repair tears, at all joint laps and pipe penetrations.

B. Materials:

Vapor barrier shall have all of the following qualities:

1. Meet 8.3 of ASTM E1745
2. Maintain permeance of less than 0.01 Perms [grains / (ft^2 hr inHg)] as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
3. Other performance criteria:
   a. Strength: ASTM E1745 Class A.
   b. Thickness: 15mils minimum
4. Provide third party documentation that all testing was performed on a single production roll per ASTM E1745 Section 8.1.

C. Product/manufacturers:

1. Stego Wrap 15mil by Stego Industries. www.stegoindustries.com
3. Vaporflex 15mil by Layfield. www.layfieldgroup.com
3. Perminator 15mil by W.R. Meadows. www.wrmeadows.com
4. Vapor Block 15mil by Raven Industries. www.ravenefd.com
5. **No Substitutions.**

D. Submit sample of all material including joint tape and sealant for approval.

2.2 CAVITY THRU-WALL FLASHING

Provide 24" wide flashing per W. R. Meadows “Air Shield”, 40 mil, at base of all exterior cavity walls. Prepare and prime substrate per approved manufacturer’s methods. Lap all seams 12" min. Apply Bitumen to vertical primed surfaces as recommended by the manufacturer.

2.3 EXTERIOR RETAINING WALL WATERPROOFING, BASEMENTS AND FOUNDATION WALL WATERPROOFING

A. At exterior masonry retaining walls, concrete retaining walls, basement and foundation walls, provide liquid cold-applied elastomeric waterproofing membrane system per “Sonneborn, Sonoshield Waterproofing Systems”, HLM 5000 for “High Build” system, or W. R. Grace “Bituthene” Liquid Membrane, or approved equal meeting ASTM C836. Extend waterproofing membrane a minimum of 6" onto adjoining surfaces to prevent moisture penetration of joints and walls. Apply and protect membrane in strict accordance with manufacturer’s instructions and recommendations. Do not backfill until waterproofing has been properly cured. Notify architect prior to backfilling. Install drainage systems behind walls as shown on drawings.

B. Where drain board is indicated on the drawings provide “Sonneborn Sonoshield DBS 6200 Drain Board,” or W. R. Grace “Preprufe Membrane Sheet System” or approved equal. Apply and protect drain board in strict accordance with manufacturer’s instructions and recommendations. Lap all joints in strict accordance with manufacturer’s instruction and recommendations. Do not backfill until waterproofing has been properly cured. Notify architect prior to backfilling.

2.4 MASONRY CAVITY WALL WATERPROOFING

On cavity face of exterior masonry walls above grade, provide cold-applied emulsified asphalt damproofing per “MasterSeal HLM 5000”, MasterSeal 614, or MasterSeal 615 approved equal. Extend waterproofing membrane to adjoining surfaces to prevent moisture penetration of walls. Apply and protect membrane in strict accordance with manufacturer’s instructions and recommendations.

2.5 GYPSUM SHEATHING JOINTS

Strip all joints, angles, and corners in exterior gypsum sheathing with one ply of fiberglass fabric 4” wide set in 1/16” bed of Manville Bestile.

2.6 VAPOR BARRIER

Provide vapor barrier per Dupont Tyvek Commercial Wrap.

PART 3—EXECUTION

3.1 WORKMANSHIP

Run continuous as much as possible. Seal all joints. Seal all edges and seams per manufacturer's recommendations; seal all plumbing through slab; seal or plug all open plumbing to protect against foreign matter entering lines during construction. Apply and protect membrane in strict accordance with manufacturer’s instructions and recommendations. Do not install

excessive amounts of materials that cannot be completed or protected.

Do not puncture the membrane to support reinforcing or floating forms. Utilize manufacturer's accessories to support items above the membrane.

END OF SECTION

SECTION 072100
BUILDING INSULATION

PART 1 GENERAL

1.1. DESCRIPTION

A. Work Included:
   1. Exterior Wall Insulation
   2. Insulation above ceilings.
   3. Sound Control Insulation

1.2. PRODUCT HANDLING

A. Protection:
   1. Deliver materials to site; store in dry place with labels intact.
   2. Protect materials before, during, and after installation.
   3. Protect installed work of other trades.

B. Replacements: In event of damage, make necessary repairs and replacements.

PART 2 PRODUCTS

2.1. BUILDING INSULATION

A. Insulation shall be the product indicated or an equal approved in advance by the Architect.

B. Exterior Drywall Insulation and insulation above ceilings:
   1. Provide 6” thermal batt insulation.

C. Sound control insulation shall be an un-faced product specifically designed to reduce sound transmission, equal to "Thermafiber Sound Attenuation Blankets", as manufactured by Owens Corning, 3 ½" thick at 3 ⅝” drywall, 2 ½” thick at 2 ½” drywall, 6” thick at 6” drywall, and 5” thick above ceilings. Provide in drywalls surrounding Restroom A117.

2.2. ADHESIVE

A. Adhesive: Type recommended by insulation manufacturer.

2.3. OTHER MATERIALS

A. Fasteners, retainers or other materials not specifically described shall be as selected by Contractor and approved by Architect.

PART 3 EXECUTION

3.1. SURFACE CONDITIONS

A. Inspection:
   1. Prior to work of this Section, inspect installed work and verify that this installation may properly commence.
   2. Verify that insulation may be installed in accordance with original design and manufacturer's recommendations.

B. Discrepancies:
   1. In event of discrepancy, notify Architect.
   2. Do not proceed until discrepancies have been resolved.

3.2. INSTALLATION

A. General: Thermal insulation shall be installed as a complete enclosure, without interruption, from roof to floor.

B. Thermal insulation at walls:
   1. All batten type insulation shall be abutted with ends pressed closely together and fit carefully around and behind mechanical and electrical devices, blocking, etc., retained in position by friction, wire mesh insulation retainers, or whatever means to eliminate displacement.
   2. Install all vapor barriers facing exterior.
   3. All wall insulation shall extend full height where no ceiling occurs.
   4. Provide continuous vinyl retainer for wall insulation not held in place by gypsum board surface.

3.3. INSPECTION

A. Verify that all insulation work is properly installed and complete.

END OF SECTION

SECTION 079200
JOINT SEALANTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes joint sealants for the following locations:
   1. Exterior joints in vertical surfaces and non-traffic horizontal surfaces as indicated below:
      a. Control and expansion joints in cast-in-place concrete.
      b. Control and expansion joints in unit masonry.
      c. Joints between different materials.
      d. Perimeter joints between materials listed above and frames of doors and windows.
      e. Control and expansion joints in ceiling and overhead surfaces.
      f. Other joints as indicated.
   2. Exterior joints in horizontal traffic surfaces as indicated below:
      a. Control, expansion, and isolation joints in cast-in-place concrete slabs.
      b. Other joints as indicated.
   3. Interior joints in vertical surfaces and horizontal non-traffic surfaces as indicated below:
      a. Control and expansion joints on exposed interior surfaces of exterior walls.
      b. Perimeter joints of exterior openings where indicated.
      c. Tile control and expansion joints.
      d. Perimeter joints between interior wall surfaces and frames of interior doors, windows, casework, and countertops.
      e. Perimeter joints of plumbing fixtures.
      f. Other joints as indicated.
   4. Interior joints in horizontal traffic surfaces as indicated below:
      a. Control, sawn, and expansion joints in cast-in-place concrete slabs.
      b. Control, sawn, and expansion joints in tile flooring
      c. Other joints as indicated.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.

B. Provide joint sealants for interior applications that have been produced and installed to establish and maintain airtight continuous seals that are water resistant and cause no staining or deterioration of joint substrates.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed joint sealant applications similar in material, design and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.

B. Single Source Responsibility for Joint Sealant Materials: Obtain joint sealant materials from a single manufacturer for each different product required.

C. Preconstruction Compatibility and Adhesion Testing: Submit to joint sealant manufacturer(s) samples of materials that will contact or affect joint sealants for compatibility and adhesion testing.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instruction for multi-component materials.

B. Store and handle materials in compliance with manufacturer's recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer or below 40ºF.
   2. When joint substrates are wet.

B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than allowed by joint sealant manufacturer for application indicated.

C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

PART 2 – PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors: Provide color of exposed joint sealants to comply with the following:
   1. Provide selections made by Architect from manufacturer's full range of colors for products of type indicated.

2.2 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing elastomeric sealants that comply with ASTM C 920 and other requirements indicated on each Elastomeric Joint Sealant Data Sheet at end of this Section, including those requirements referencing ASTM C 920 classifications for Type, Grade, Class, and Uses.
   1. Additional Movement Capability: Where additional movement capability is specified in Elastomeric Joint Sealant Data Sheet, provide products with the capability, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, to withstand the specified percentage change in the joint width existing at time of installation and remain in compliance with other requirements of ASTM C 920 for Uses indicated.

B. Products: Subject to compliance with requirements, provide one of the products specified in each Elastomeric Joint Sealant Data Sheet.

2.3 LATEX JOINT SEALANTS

A. General: Provide manufacturer's standard one-part, non-sag, mildew-resistant, paintable latex sealant of formulation indicated that is recommended for exposed applications on interior locations and that accommodates indicated percentage change in joint width existing at time of installation without failing either adhesively or cohesively.

B. Acrylic-Emulsion Sealant: Provide product complying with ASTM C 834 that accommodates joint movement of not more than 5 percent in both extension and compression for a total of 10 percent.

C. Silicone Emulsion Sealant: Provide product complying with ASTM C 834 and, except for weight loss measured per ASTM C 792, with ASTM C 920 that accommodates joint movement of not more than 25 percent in both extension and compression for a total of 50 percent.

D. Multi-Part Non-sag Orethane Sealant for Use NT: Type M, Grade NS, Class 25, and complying with the following requirements for Uses:

E. Products: Subject to compliance with requirements, provide one of the following:
   1. Acrylic-Emulsion Sealant:
      a. "AC-20", Pecora Corp.
      b. "Sonolac", Sonneborn Building Products Div., ChemRex, Inc.
      c. "Tremco Acrylic Latex 834", Tremco, Inc.
   2. Silicone-Emulsion Sealant:
      a. "Trade Mate Paintable Glazing Sealant", Dow Corning Corp.
   3. Multi-Part Nonsag Urethane Sealant for Use NT:
      a. "Chem-Caulk 500", Bostik Construction Products Division
      b. "Vulkem 227", Mameco International, Inc.
      c. "Vulkem 922", Mameco International, Inc.
      d. "Dualthane", W.R. Meadows
      e. "Duynatrol II", Pecora Corporation
      f. "Permapol RC-2", Products Research and Chemical Corporation
      g. "SikaFlex-2c NC", Sonneborn Building Products Division, Rexnord Chemical Products, Inc.

h. "Dymeric", Tremco, Inc.

2.4 JOINT SEALANT BACKING

A. General: Provide sealant backings of material and type that are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Plastic Foam Joint Fillers: Performed, compressible, resilient, non-staining, non-waxing, non-extruding strips of flexible plastic foam of material indicated below and of size, shape, and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
   1. Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, non-outgassing in un-ruptured state.
   2. Proprietary, reticulated, closed-cell polymeric foam, non-outgassing, with a density of 2.5 pcf (40 kg/cu.m.) and tensile strength of 35 psi (240 kPa) per ASTM D 1623, and with water absorption less than 0.02 g/cc per ASTM C 1083.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing material, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.

C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer.

B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealant manufacturer based on preconstruction joint sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealant manufacturer's printed installation instruction applicable to products and applications indicated, except where more stringent requirements apply.

B. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
   1. Install join fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
      a. Do not leave gaps between ends of joint fillers.
      b. Do not stretch, twist, puncture, or tear joint fillers.
      c. Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.
   2. Install bond breaker tape between sealants where backer rods are not used between sealants and joint fillers or back of joints.

C. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.

D. Tooling of Non-sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
   1. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
      a. Use masking tape to protect adjacent surfaces of recessed tolled joints.

3.4 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that and installations with repaired areas are indistinguishable from original work.

3.6 JOINT SEALANT SCHEDULE

Joint Sealers	Location Where Sealant is Applied
Multi-Part Non-Sag Urethane Sealant NT	Exterior and interior joints in vertical and horizontal surfaces of concrete; between metal and concrete, mortar, cast stone, and masonry.
One-Part Neutral Cure Silicone Sealant	Exterior and interior joints in vertical surfaces of concrete and masonry; between concrete masonry and cast stone; between metal and concrete, mortar, or cast stone; interior and exterior perimeter joints of metal frames in exterior walls; exterior overhead joints.
One-Part acid-Curing Silicone Sealant	Exposed joints within glazed curtain wall framing systems, skylight framing systems, and aluminum entrance framing systems.
One-Part Mildew-Resistant Silicone Sealant	Interior joints in vertical surfaces of ceramic tile in toilet rooms, showers, and kitchens
Acrylic-Emulsion Sealant	Interior joints in field-printed vertical and overhead surfaces at perimeter of hollow metal door frames; in gypsum drywall, plaster, concrete, and concrete masonry; and all other interior joints not indicated otherwise.
Acoustical Sealant	Top, bottom, and control joints of interior partitions noted as sound walls.

END OF SECTION

SECTION 081113
STANDARD HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Provide hollow metal doors and metal door frames, which are not specifically described in other sections of these Specifications, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation. Fully welded hollow metal frames shall be utilized for all standard doors.

1.2. QUALITY CONTROL

A. Galvaneal materials shall conform to ASTM A653 / A653M-95 and ASTM A924 / A924M-95.

PART 2 PRODUCTS

2.1. METAL DOORS

A. Type and design: Provide full-flush and full glass design, in dimensions and types shown on the Drawings, labeled or non-labeled as indicated on the Door Schedule, in 18 gage metal unless scheduled otherwise, properly reinforced for the finish hardware described in Division 8 of these Specifications.

B. Finish: Pre-clean and shop prime each door for finish painting which will be performed at the job site under Division 9 of these Specifications.

C. Exterior Doors: Form exterior doors and components from galvaneal steel.

D. Acceptable products: Standard products of the Steelcraft manufacturing Company, Amweld Division of American Welding and Manufacturing Company, Ceco Corporation.

2.2. METAL FRAMES

A. Type and design: Provide door and window frames of the types and dimensions shown on the Drawings, labeled or non-labeled as indicated on the Door/Window Schedule, in 16 gage metal unless scheduled otherwise, properly reinforced for the finish hardware described in Division 8 of these Specifications.
   1. Schedule and size frames according to wall type conditions.

B. Finish: Pre-clean and shop prime each frame for finish painting which will be performed at the job site under Division 9 of these Specifications.

C. Exterior Frames: Form exterior frames and components from galvaneal steel.

2.3. FINISH HARDWARE

A. Secure templates from the finish hardware supplier, and accurately install, or make provision for, all finish hardware at the factory.

PART 3 EXECUTION

3.1. SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

B. Materials of galvaneal shall receive one coat of primer appropriate for galvaneal materials prior to shipment.

3.2. INSTALLATION

A. Placing frames:
   1. Where practical, place frames prior to construction of enclosing walls and ceiling.
   2. Set frames accurately into position, plumbed, aligned, and braced securely until permanent anchors are set.
   3. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
   4. At in-place construction, set frames and secure to adjacent construction with machine screws and suitable anchorage devices. Provide "z" fillers at each screw location.
   5. When installed in prepared openings in concrete or masonry construction, provide sealant between frame and concrete or masonry in accordance with provisions of Division 7 of these Specifications.

3.3. ADJUST AND CLEAN

A. Final adjustments:
   1. Check and readjust operating finish hardware items in hollow metal work just prior to final inspection.
   2. Leave work in complete and proper operating condition.
   3. Remove defective work and replace with work complying with the specified requirements.

B. Immediately after erection, sand smooth all rusted and damaged areas of prime coat, and apply touchup of compatible air-drying primer.

END OF SECTION

SECTION 083113
ACCESS DOORS

PART 1 GENERAL

1.1. SUMMARY

A. This Section includes access doors for installation in the following types of construction:
   1. Gypsum board

B. Provide painted steel access door where indicated, scheduled, or otherwise required elsewhere in these specifications.

1.2. QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain access doors for entire project from one source from a single manufacturer.

B. Size Variations: Obtain Architect's acceptance of manufacturer's standard size units, which may vary slightly from sizes indicated.

C. Coordination: Furnish insets and anchoring devices that must be built into other work for installation of access doors. Coordinate delivery with other work to avoid delay.

1.3. PROJECT CONDITIONS

A. Verification: Obtain specific locations and sizes for required access doors from trades requiring access to concealed equipment, and indicate on submittal schedule.

B. Special-Size Access Doors: Use where required, requested or indicated on plan or in schedule.

C. Rated Doors: Provide rated doors where located in walls and ceilings of rated assemblies.

PART 2 PRODUCTS

2.1. MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering access doors that may be incorporated in the work are:
   1. Bar-Co., Inc.
   2. Cesco Products
   3. J.L. Industries
   4. Karp Associates, Inc.
   5. Milcor, Inc.
   6. Nystrom, Inc.
   7. The Williams Brothers Corp.

2.2. MATERIALS AND FABRICATION

A. General: Furnish each access door assembly manufactured as an integral unit, complete with all parts and ready for installation.

B. Steel Access Doors and Frames: Fabricate units of continuous welded steel construction unless otherwise indicated. Grind welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels to types of support shown. Provide minimum size of 24"×24" or as otherwise shown on the drawings. Field verify rough openings before fabrication. Provide shop drawing for each wall access door.

C. Frames: Fabricate from 16-gage steel.
   1. Fabricate frame with exposed flange nominal 1-inch wide around perimeter of frame for units installed in the following construction:
      a. Exposed masonry.
   2. For installation in masonry construction, furnish frames with adjustable metal masonry anchors.

D. Flush Panel Doors: Fabricate from not less than 14-gage sheet steel, with concealed spring hinges or concealed continuous piano hinge set to open 175 degrees. Finish with manufacturer's factory-applied prime paint. Final painting by painting contractor.

E. Hardware Set, Locking Devices:
   1. Provide one cylinder lock per access door. Furnish 2 keys per lock. Key all locks alike, unless otherwise scheduled.

PART 3 EXECUTION

3.1. INSTALLATION

A. Comply with manufacturer's instructions for installation of access doors.

B. Coordinate installation with work of other trades.

C. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.

3.2. ADJUST AND CLEAN

A. Adjust hardware and panels after installation for proper operation.

B. Remove and replace panels or frames that are warped, bowed, or otherwise damaged.

3.3. ACCESS DOOR SCHEDULE

A. Provide and install access doors in drywall for access to plumbing valve chases or any other plumbing fixtures requiring maintenance or access where a standard size door is not provided and for electrical devices located above drywall requiring access. Refer to mechanical and electrical drawings and specifications for related plumbing and electrical work and locations of such work. Provide doors as required for complete access.

B. Provide and install access doors in drywall at plumbing chases. Set bottom of doors minimum of 2'-0" A.F.F. if not shown on drawings or not in conflict with another item.

END OF SECTION

SECTION 083300
ROLLING SERVICES DOORS

PART 1 GENERAL

1.1. SECTION INCLUDES

A. Advanced rolling service doors.

1.2. RELATED SECTIONS

A. Section 099123 - Painting: Field applied finish.

B. Division 26 - Raceway and Boxes: Conduit from electric circuit to door operator and from door operator to control station.

C. Division - Wiring Connections: Power to disconnect.

1.3. REFERENCES

A. ANSI/DASMA 108 - American National Standards Institute Standard Method For Testing Sectional Garage Doors And Rolling Doors: Determination Of Structural Performance Under Uniform Static Air Pressure Difference.

B. NFRC 102 - Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.

C. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Element.

D. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

E. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

F. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

G. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

H. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

I. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

J. NEMA MG 1 - Motors and Generators.

1.4. DESIGN / PERFORMANCE REQUIREMENTS

A. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.5. SUBMITTALS

A. Submit under provisions of Section 013300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Details of construction and fabrication.
4. Installation instructions.

C. Shop Drawings: Include detailed plans, elevations, details of framing members, anchoring methods, required clearances, hardware, and accessories. Include relationship with adjacent construction.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6. QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of five years experience in the fabrication and installation of security closures.

B. Installer Qualifications: Installer Qualifications: Company specializing in performing Work of this section with minimum three years and approved by manufacturer.

1.7. DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.

C. Store materials in a dry, warm, ventilated weathertight location.

1.8. PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9. COORDINATION

A. Coordinate Work with other operations and installation of adjacent materials to avoid damage to installed materials.

1.10. WARRANTY

A. Warranty: Manufacturer’s limited door system warranty for 5 years on door system materials and workmanship.

B. PowderGuard Finish

1. PowderGuard Premium Applied to curtain, guides, bottom bar, headplates: Man

PART 2 PRODUCTS

2.1. MANUFACTURERS

A. Acceptable Manufacturer: Overhead Door Corporation, 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E- mail: info@overheaddoor.com.

B. Substitutions: Equal products.

2.2. ADVANCED PERFORMANCE ROLLING SERVICE DOORS

A. RapidSlat Model 611 Rolling Services Doors by Overhead Door Corporation.

1. Curtain: Interlocking roll-formed slats as specified with endlocks attached to each end of alternate slats to prevent lateral movement.
   a. Flat profile type F-265 for doors up to240 feet wide fabricated of:
      1) 22 gauge galvanized steel.
   b. Curtain Finish:
      1) PowderGuard Max powder coat.
         a) Color as selected by Architect.
2. Bottom Bar: Two metal angles, minimum thickness 3/16 inch, bolted back to back to reinforce curtain in the guides.
   a. Material:
      1) Steel
3. Guides: Three Structural steel angles provided with high usage guide wear strip minimize wear and reduce sound.

a. Material:
    1) Steel

4. Brackets:
    a. Hot rolled prime painted steel to support counterbalance, curtain and hood.
5. Finish: Bottom Bar, Guides, Headplate and Brackets:
    a. PowderGuard Premium powder coat in black color.
6. Motor: Direct drive, integrated gear motor/brake assembly sized for openings. Provide with a manual hand chain for operation during power outages. Operator and drive assembly is factory pre-assembled and provided with all wiring harnesses needed director from the factor.
    a. Opening Speed: Up to 24 inches per second
    b. Closing Speed: 12 inches per second.
    c. Provide properly sized operator for door unit specified.
    d. Left hand mount.
7. Control Panel: Provide electronic Variable Frequency drive controller with microprocessor self-diagnostics. LCD readout indicates door action, alarm conditions, and fault conditions. Timer to close programming options and non-resettable cycle counter are included. Enclosure is NEMA 4X rated. Control system is UL508A certified. Junction box is PI67 rated.
8. Door Roll: Directly driven, springless roll shall be steel tube with integral shafts, keyed on the drive End and supported by self-aligning greaseable sealed bearings. Door shall not require any counterbalance device.
9. 9Hood: Protecting drive motor, barrel, chain, and sprocket from dirt and debris and extending between the support brackets. Fabricated of:
    a. Material:
        1) Steel.
        2) PowderGuard Premium powder coat, color as selected by Architect.
    b. Provide with sloped top for exterior mounting.
10. Safety Devices: Provide door with following safety devices:
    a. Photoelectric sensors that cast an invisible beam across the door opening and reverses the downward motion of the door when an object entere the path of the beam.
    b. Wireless, monitored safety edge reverses downward motion upon impact.
    c. Built-in (to motor assembly) brake mechanism eliminates uncontrolled curatin travel independent of other safeties.
11. Actuators:
    a. One Open/Close/Stop push button station incorporated into Control Panel.
    b. Interior Key switch.
    c. Exterior Key switch.
12. Wind Load Design:
    a. Standard wind load shall be 20 PSF.

PART 3 EXECUTION

3.1. EXAMINATION

A. Verify opening sizes, tolerances and conditions are acceptable.

B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2. PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3. INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

D.

E. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

F. Coordinate installation of electrical service with Division 26. Complete wiring from disconnect to unit components.

G. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 079200.

H. Install perimeter trim and closures.

I. Instruct Owner's personnel in proper operating procedures and maintenance schedule.

3.4. ADJUSTING

A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.

B. Adjust hardware and operating assemblies for smooth and noiseless operation.

3.5. CLEANING

A. Clean curtain and components using non-abrasive materials and methods recommended by manufacturer.
B. Remove labels and visible markings.
C. Touch-up, repair or replace damaged products before Substantial Completion.

3.6. PROTECTION

A. Protect installed products until completion of project.

END OF SECTION

SECTION 087100
STANDARD DOOR FINISH HARDWARE

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included:
   1. Propose and furnish finish hardware required to complete the work as shown on the drawings as specified herein, and/or as required for a complete and functional installation. Refer to Section 012100 Allowances for pricing information.
   2. Furnish trim attachments and fastenings, specified or otherwise required, for proper and complete installation.
   3. Deliver to the job site those items of finish hardware scheduled to be installed at the job site, and deliver to other points of installation those items of finish hardware scheduled to be factory installed.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Installation of finish hardware is described in other Sections of these Specifications.
   3. The following hardware is listed elsewhere in these specifications and shall not be a requirement of this division.
      a. Cabinet Hardware
      b. Locker Hardware
      c. Toilet Partitions
      d. All Rough Hardware
      e. Transformers, Junction Boxes, Wire and Hook-up of Electrical Detectors
      f. Shelf Hardware

1.2. QUALITY ASSURANCE

A. Hardware has been specified herein by manufacturer's name, brand, and catalog numbers for the purpose of establishing a basis of quality, finish, design, and operational function. Finish of all hardware shall be uniform in color/appearance.

B. To insure a uniform basis of acceptable materials, it is the intention that only manufacturer's items specified as "Acceptable and Approved" be furnished for use on this project.

C. Items specified "NO SUBSTITUTION" shall be provided exactly as listed in this specification and/or in the door/window schedule.

D. Deviation from or modification of items will be permitted only for special instances caused by reason of construction characteristics and for the purpose of providing proper operational function. The CM shall be responsible for checking any necessary deviations in order that hardware shall fit and function properly.

E. Substitutions: Products equal to those specified may be substituted.

F. Supplier: A recognized builder's hardware supplier who has been furnishing hardware not less than two (2) years, and who is, or has in employment, an Architectural Hardware Consultant (AHC) in good standing as certified by the Society of Architectural Hardware Consultants Council.

1.3. REFERENCES

A. Listed Hardware: Hardware, which is to be installed in or on fire, labeled doors and frames, Class A or lesser, single or pairs, shall be tested and listed by Underwriters Laboratories (UL). Exit devices which are to be used as panic hardware shall be tested and listed in Underwriters Laboratories "Accident Equipment List - Panic Hardware."

B. All listed hardware shall be in compliance with the following:
   1. NFPA 80 – Standards for Fire Doors and Windows
   2. NFPA 101 – Life Safety Code
   3. Local authorities having jurisdiction.
   4. Texas Accessibility Standards

1.4. SUBMITTALS

A. Comply with pertinent provisions of Division 1.

B. The finish hardware supplier shall, after award of a formal contract, submit to the Architect complete typewritten copies of the proposed finish hardware schedule with manufacturer's cut sheets for approval. This schedule shall be prepared using the "Sequence and Format for the Hardware Schedule" as approved and recommended by the Door and Hardware Institute (DHI). After approval of the schedule, the hardware supplier shall provide copies of this approved schedule to the Architect for file and distribution purposes. Hardware will not be ordered by the hardware supplier until an approved schedule has been received. The cost for this service shall be included with the cost of materials at the time of bidding.

C. Samples: As part of this contract, provide to the Architect if requested, one sample of each item of finish hardware that is to be furnished for this project. These samples will be held by the Architect until completion of the project.

1.5. PRODUCT HANDLING

A. Comply with pertinent provisions of Division 1.

B. Individually package each unit of finish hardware, complete with proper fastenings and appurtenances, clearly marked on the outside to indicate contents and specific locations in the work.

C. All items of hardware to be delivered to the job site shall be completely packaged with all necessary screws, bolts, miscellaneous parts, instructions and where necessary installation templates for manufacturer's suggested installation. They are to be clearly labeled so as to conveniently identify them and their intended location in the building.

D. A representative of the General Contractor shall receive the hardware delivered at the job site. A dry locked storage place complete with shelving, shall be set aside for the purpose of unpacking, sorting out, checking and storage.

E. Finish hardware shall be delivered to the General Contractor by the hardware supplier. Direct factory shipments to the job site are not acceptable.

F. The hardware shall be jointly inventoried by representatives of the General Contractor and the hardware supplier.

G. All hardware shall be handled in a manner to minimize marring, scratching, or damage.

H. Items damaged in shipment shall be replaced promptly and with proper material without additional cost to the Owner.

I. Hardware supplier will coordinate with access control systems supplier and detention hardware supplier to provide adequate keying and electrically compatible devices.

1.6. WARRANTY

A. The finish hardware shall carry a limited warranty against defects in workmanship and operation for a period of one year from date of substantial completion. No liability is to be assumed where damage of faulty operation is due to abuse, improper usage, improper installation, or failure to exercise normal maintenance.

PART 2 PRODUCTS

2.1. MATERIALS

A. Hinges: Ball bearing, full mortise hinges as specified. Approved manufacturers are Ives, Hager, Stanley, or McKinney. Provide 3 hinges per door leaf for doors up to 36" in width, provide 4 hinges per door leaf for doors over 36" in width.

B. Continuous Hinges: Provide continuous aluminum geared type hinges of the type and function specified in the hardware sets. Hinges shall be machined for bearings prior to anodizing.

C. Cylindrical Locksets: Single lock chassis shall accommodate 1¾" to 2¼" thick doors and be non-handed. Lockset shall have separate anti-rotation through bolts, and shall have no exposed mounting screws. When the outside lever is locked, it shall rotate freely and it shall return to its horizontal position when released. All cylindrical locksets shall heavy duty grade one (1). Remodel projects lock/latches shall match existing locks/latches and keying.

1. Acceptable Manufacturers: Typical Functions (Other functions available)
   a. Entrance Lockset
      1) Best 93KAB 15D LM
      2) Schlage ND92 RHO
      3) Sargent FW-10G05 L
2. Privacy Lockset
      1) Best 93K L 15D
      2) Schlage ND40S RHO
      3) Sargent 10U15 L 15D
3. Storeroom Lockset
      1) Best 93KD 15D LM
      2) Schlage ND96 RHO
      3) Sargent FW-10G04 L 15D

4. Passage Latchset

1)	Best	93KN 15D
2)	Schlage	ND10S RHO
3)	Sargent	10U65 L 15D

D. Exit Devices: Provide push-pad type exit device with stainless steel overlapping "T" style touchpad to prevent pinching of fingers. For safety, touch pad shall not extend full length of device. Provide heavy duty forged steel escutcheon and solid forged lever or pull trim at exterior locations. As specified in hardware sets. Provide style and functions as specified in hardware sets. Lever trim to match locksets and latchsets at interior locations. When the outside lever is locked, it shall rotate freely and it shall return to its horizontal position when released.

1. Acceptable Manufacturers:

a.	Stanley phi	2000 series x 630 Stainless Steel
b.	Von Duprin	98 series x 630 Stainless Steel
c.	Sargent	80 series x 630 Stainless Steel

2. Electric Exit Devices required shall be of the same manufacturer as all exit devices.
   a. Provide Power Transfer and Power Supply as required for hardware sets.

E. Closers: Provide non-handed, non-sized cast iron or aluminum body door closers with steel piston and O-ring compatible. Regular and parallel arm mounting or top jamb where indicated in hardware sets. Furnish all required brackets, spacers, and plates. Mount closers out of line of site (nonpublic side). Rack and pinion construction with compression spring, fully hydraulic. Closing and latching controlled by independently operated valves. Pressure relief valves not allowed. Adjustable spring power allowing adjustment up to 50 percent in field to suit individual door conditions. Adjustable back-check for interior and exterior units. Provide standard hold open on non-rated doors. Labeled closers required at all rated openings. Closers exposed to inmates shall be concealed.

1. Acceptable Manufacturers: Concealed Closer

a.	LCN	2011	Finish to match other hardware.
b.	Norton	7900	Finish to match other hardware.

2. Acceptable Manufacturers: Surface Closer

a.	LCN	4040	Finish to match other hardware.
b.	Norton	7700	Finish to match other hardware.
c.	Stanley Comm.	QDC100	Finish to match other hardware.

3. Acceptable Manufacturers: Concealed Surface Security Closer at all doors inside security perimeter where closer is exposed to inmates.

a.	LCN	2030 Series
b.	Norton	7900 Series

F. Push Pull Bars: Provide ANSI J504, .1” Dia. Pull and push bar. Provide proper fasteners for door construction.

1. Acceptable Manufactures
   a. Trimco
   b. Ives
   c. Hager

G. Protection Plates: Provide kick, push and armor plates of 0.050-inch thick stainless steel with flat countersunk , tamper resistant screws. Coordinate plates with exit devices and sound seals. Provide where noted on door schedule. Install on push side.
   1. Acceptable Manufacturers:
      a. Ives
      b. Trimco (Triangle Brass)
      c. Hager
   2. Armor plates shall be 48" high x door width at locations inside the jail secure perimeter.
   3. Kick plates shall be 8" high x door width at locations outside the jail secure perimeter.

H. Stops: Provide wall stops of stainless steel. Provide fasteners of the type required for each particular wall construction. Provide stainless steel overhead stops at all locations where wall stops cannot be used. Do not use floor stops.
   1. Acceptable Manufacturers: Wall Stops
      a. Ives WS407 x 630
      b. Trimco 1270 x 630
      c. Hager 234W x 630
   2. Acceptable Manufacturers: Overhead Stops (where wall stops are not feasible)
      a. Concealed:
      b. Rixson Firemark No. 1 Series x 630
      c. ABH 1000 Series x 630
      d. Glynn Johnson 100 Series x 630
   3. Acceptable Manufacturers: Overhead Stops (where concealed overhead stops are not feasible)
      Surface:
      a. Rixson Firemark No. 9 Series x 630
      b. ABH 9000 Series x 630
      c. Glynn Johnson 90 Series x 630

I. Electronic Access: Bored locks, mortise locks, and exit device trim. Device to have the ability to be Network adaptable without removing device from door. Device to have ability to change credential reader technologies without being removed from door. Furnish devices with field configurable functions classroom/storeroom 70, apartment 60, office 50, privacy 40 without being removed from door. (None this project)
      a. Schlage Electronics AD Series
      b. Best Access systems WIQ 93K Series

J. Electric Strikes
   1. Provide electric strikes as required.
      a. For Exit Devices – HES 9500 or 9600 as required
      b. Trine equivalent
      c. For Locksets – HES Type as required.
      d. Trine Equivalent

K. Thresholds: Provide type, style, profile, and thickness of thresholds as specified in hardware sets or as required for labeled openings or smoke enclosures. Thresholds shall be manufactured by National Guard Products, or Zero.

L. Sound Seals: Provide exact units as specified in hardware sets and as manufactured by Zero or National Guard Products depending on each individual hardware set.

M. Provide all wiring diagrams for all electric operated hardware supplied under this section. Coordinate electric hardware with other trades involved with installation.

N. Security Fasteners: Provide center pin, tork head fasteners for all exposed connections located within the secure perimeter of this facility.

2.2. KEYING

A. Keying: Key system shall be per Owner's instructions. Provide bitting list direct to Owner's representative from manufacturer, no exceptions.

B. Keying Schedule: Submit separate detailed schedule for owners review after hardware schedule has been approved by Architect.

C. Consult with owner and key all locks and cylinders as instructed. Furnish visual key control and stamp all keys as instructed.

D. Provide all locksets and cylinders construction keyed for this project with change out of cylinders for Owner's use at substantial completion.

E. All keys to be of nickel silver material in following Quantities:
   1. Construction Master Key: Five (5)
   2. Grand Master Keys / Master Keys: Three (3)
   3. Change Keys per Lock:
      a. Two (2)
      b. One additional key for each lock type to be placed in control room key cabinet.

2.3. FINISH

A. Finish Hardware shall be as follows: Unless noted otherwise in hardware sets.

1.	Hinges: Exterior	US32D (630)	Interior	US26D (626)
2.	Locksets:	US26D (626)		
3.	Exit Devices:	US32D (630)		
4.	Door closers:	Spray Painted to match other hardware: (689)		
5.	Protection Plates:	US32D (630)		
6.	Over Head Stops:	US32D (630)		
7.	Misc. Flatgoods:	US32D (630) or US26D (626)		

PART 3 EXECUTION

3.1. EXAMINATION

A. Verify that doors and frames are ready to receive work and dimensions are as instructed by the manufacturer.

B. Verify that electric power is available to power operated devices and is of the correct characteristics.

3.2. INSTALLATION

A. Install hardware in accordance with manufacturer's instructions.

B. Use templates provided by hardware item manufacturer.

C. Mounting heights for hardware from finished floor to center line of hardware item refer to:
   1. DH WDMS.3.
   2. DHI A115 Series.
   3. Texas Accessibility Standards.

3.3. FIELD QUALITY CONTROL

A. Architectural hardware supplier will inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

B. Change out construction cylinders for owner occupancy at substantial completion of project.

3.4. ADJUSTING

A. Adjust hardware for smooth operation.

3.5. PROTECTION OF FINISHED WORK

A. Do not permit adjacent work to damage hardware or finish.

3.6. FINISH HARDWARE SCHEDULE

A. Furnish each door leaf with hardware items similar to scheduled sets below. Provide size, type, and quality as specified in Part 2. Furnish specific function or component as scheduled below or as required to function with all specific door details. Additionally, supplier shall provide any other hardware or accessories necessary for the door to perform as intended.

SH-1 Entrance (Hollow Metal Door)	SH-2 Individual Toilet Room
Entry Lock Set	Privacy Lock Set
Furnish exit device as required by occupancy.	Butts
Butts	Silencers
Silencers	Closer
Closer	Stop
Threshold	Closer
Kick plate	
Weather-strip	
Bottom drip/sweep	

END OF SECTION

SECTION 092900
DRYWALL

PART 1 GENERAL

A. Standard Provisions, conditions of the Contract and Division 1, as indexed, apply to this section.

1.1. DESCRIPTION

A. Furnish all labor, materials, equipment and services for a complete installation of all drywall work as shown on the drawings and as hereinafter specified, including, but not limited to, the following:
   1. All metal stud framing for interior partitions.
   2. All metal framing for all drywall furrings, ceilings, etc.
   3. All bracing required, specified, or detailed for all walls and partitions.
   4. All metal trim detailed or required where interior partitions intersect exterior walls.
   5. All gypsum board.
   6. All expansion joints located in drywall.
   7. All other accessories implied or required.
   8. All metal stud framing and suspension system for gypsum board ceilings.
   9. All drywall joint treatment, tape, bed, float finish. (Level 3 finish, wall texture by painter. Refer to Section 099123)

B. Refer to Specification Section 083113 for access doors provided by others to be installed by drywall sub-contractors.

C. Comply with all current gypsum board manufacturers and IBC code requires for mold prevention and proper installation requirements.

PART 2 PRODUCTS

2.1. MATERIALS

A. Gypsum board:
   1. ½” and ⅝" thick "Firecode" gypsum board, 48" wide, tapered edge, lengths as required or scheduled.
   2. Provide water-resistant type "W/R" in rooms where moisture is present.

B. Metal drywall studs and track: Formed from hot-dipped galvanized steel with a minimum yield strength of 40,000 psi, and a minimum G60 coating.
   1. All exterior metal studs: Refer to structural.
   2. Interior metal stud partitions:
      a. 6” interior studs and track, galvanized
         600S125-27 @16” O.C. up to 19’
         600S125-30 @16” O.C. up to 20’
         600S125-43 @16” O.C. up to 22’-6”
         600S125-45 @16” O.C. up to 24’-6”

600S125-54 @16” O.C. up to 26’-6”

b. 3⅝” interior studs and track: 25 gauge, galvanized
c. 2½” interior studs and track: 25 gauge, galvanized

3. Provide expansion track at metal stud partitions which extend to structure or roof deck and other locations required by structural documents.

C. Furring channels: Standard gauge, roll formed, electro galvanized steel, size as required.

D. Metal intersecting wall trim: 16 gauge, formed to shape detailed, with sharp corners to fit snugly over partition end.

E. Screws: USG, 1" and 1¼" self-drilling drywall screws, Type S-12, bugle head, cadmium, or zinc plated.

F. Trim: USG Dur-A-Bead at all exterior corners and at all other locations detailed.

G. Control joints: USG control joint #093. Provide at all door, window, and wall openings each side of wall, full height of wall.

H. Mastic: "Bestile" as manufactured by Manville Co.
1. Hanger Wire - No. 12 gauge galvanized wire.

I. Ceiling and Soffit Framing System:
1. Chicago Metallic 630 Drywall Furring System.
2. Project Conditions / Environmental Requirements:
a. Verify weather-tightness of area to receive suspension system prior to installation.
b. Wet trades work to be thoroughly dry and complete prior to installation.
c. Installation to begin only when temperature and humidity conditions closely approximate interior conditions which will exist when area is complete and occupied.
d. Heating and air conditioning systems to be operating prior to, during, and after installation.
3. Maintenance: Furnish additional material equal to 2 percent of ceiling area.
4. Suspension System Components:
a. Main Runners:
(1) Manufactured from 0.024 inch thick, $^{15}/_{16}$ inch wide by 1½ inches high by 144 inches long with factory punched furring channel slots, cross tee slots, hanger holes, and integral bayonet-style and couplings.
(2) Coated with factory-applied baked-on enamel paint finish.
b. Furring Cross Channels:
(1) Manufactured from 0.020 inch thick steel 1⅜ inch wide by ⅞ inches high by 48 inches long with knurled faced and straight locking end tabs.
c. Cross Tees:

(1) Manufactured from (0.024) inch thick steel $^{15}/_{16}$ inch wide by 1⅜ inches high by (48) inches long with integral snap grid end couplings, factory punched cross tee slots, and hanger holes.
(2) Coated with factory-applied baked-on enamel paint finish.

d. Wall Track:
(1) Manufactured from 0.020 inch thick steel (1⅝) inches high by 120 inches long with a 1 inch top and bottom flange.

2.2. DELIVERY AND STORAGE

A. Deliver all materials to the job site in original unopened containers or bundles bearing the brand name of the manufacturer.

B. Building shall be completely enclosed prior to delivery of gypsum board. Board shall be neatly stacked flat, with first sheet elevated minimum 1½" above floor.

PART 3 EXECUTION

3.1. INSTALLATION OF WALL AND PARTITION FRAMING

A. General Requirements: Install steel stud system in accordance with manufacturer's published or written instructions and recommendations to meet required structural criteria. Frame both sides of expansion and control joints, as shown for the wall system, with separate studs and do not bridge the joint with components of the stud system.

B. Track:
1. Align track accurately at floor and anchor to concrete with approved power driven fasteners spaced not more than 24" o.c.
2. Locate top track as follows:
a. Interior Partitions: Align top track 4" above highest scheduled ceiling height where partition occurs. Brace all track to building framing members at 48"o.c., staggered where possible, utilizing metal stud sections screwed to track and screwed or anchored to building structure with power driven fasteners.

C. Studs shall be spaced no greater than 16" o.c.
1. Position all studs vertically in the runners. Anchor studs to bottom and top track as follows:
a. Interior Partitions: Screw attachment of stud to track is not required, except at corners, door or window openings, partition intersections, etc.
2. Studs at jambs - Locate studs no more than 2" from all door frame jambs, abutting partitions, partition corners, and other construction.
3. Install double studs at all door jambs and at leading edge of all wing walls.

D. Miscellaneous - frame head and sill of openings through partitions with cut to length section of track, screw attached through overlapping flanges into adjacent studs.

3.2. INSTALLATION OF CEILING, FURRING AND SOFFIT FRAMING

A. Installation – Non-Fire-Rated System:
   1. Main Runners: Installed 48 inches on center, by direct suspension from existing structure, with not less than 12 gage hanger wires spaced 48 inches on center along main runner length. Wrap hanger wires tightly 3 full turns at each end.
   2. Furring Tees Cross Channels: Installed perpendicular to main runners 24 inches on center to form 2' x 4' modules.
   3. Cross Tees: Installed adjacent to each unsupported side of recessed fixtures.
   4. Wall Track: Installed on vertical surfaces, intersecting suspension components, by appropriate method in accordance with industry-accepted practice.
   5. Additional Hanger Wires: Wrapped tightly 3 full turns to structure and component at locations where imposed loads could cause deflection exceeding 1/360 span.

B. Installation – Fire-Rated System:
   1. Suspension System Components: Installed in accordance with U.L. design number guidelines.

3.3. GYPSUM BOARD ERECTION

A. In cold weather, during the application of gypsum board, the building shall be heated to maintain a uniform temperature in the range of 55 to 70 degrees and ventilated to eliminate excessive moisture.

B. Apply gypsum wallboard of proper type with long dimensions parallel to studs. All abutting ends and edges shall occur over stud or channel flanges. All end joints shall be neatly fitted and staggered. No butt joints will be allowed in wall surfaces with a ceiling height of 12' or less. Joints on opposite sides of partitions shall be arranged to occur on different studs. Where possible, board shall extend full height and be attached to runner of each partition. Stagger edge and end of face layer of gypsum board. Fasteners for attachment to metal studs shall be spaced a maximum of 24" o.c. for base layer and 16" o.c. for face layer of two layer partitions. For single layer applications, fasteners shall be spaced 12" o.c. in the field of the board and 8" o.c. staggered along the vertical abutting edges.

C. Apply material for ceilings and furrings of maximum practical length with the long dimension at right angles to the furring channel. Fasten at 12" o.c. in the field of the board and along abutting ends. All abutting ends or edge joints shall occur over the web surface of furring channel and shall be fitted neatly around all cut-outs and openings. Use board of maximum practical lengths. All ceiling material shall abut wall material.

D. Screws shall be power driven with an electric screw driver and screw heads shall provide a slight depression below the surface of the wall board. Fasteners shall not be driven closer than 3/8" from edges of the board.

E. All chase walls shall be constructed following implicitly the recommended approved procedures of the United States Gypsum Company, supplemented by the details on the drawings.

3.4. DRYWALL JOINT TREATMENT AND FINISH

A. All treatment of jointing and finish shall be of standard practice and shall conform to standards of the Gypsum Association and the American Society for Testing and Materials (ASTM).

3.5. ACCESSORIES

A. Furnish and install accessories as directed and as required.

B. Apply corner bead at all exterior corners. Exposed edges and ends of all board abutting other materials (i.e. masonry) except at floor, shall be treated with metal casing trim.

C. In all rooms with a scheduled ceiling height of less than 12'-0", install control joints from top corner of each door or borrowed light frame not extending to ceiling, on both sides of frame, and both sides of partition (4 per door or borrowed light). Control joint shall align with outer edge of frame and extend minimum 2" above scheduled ceiling or to top of furring.

D. Install expansion joints, control joints, edge beads, and miscellaneous accessories, where indicated on the drawings or as otherwise required by standard practice. All accessories shall be adequately anchored by screw attachment to steel framing back-up to prevent displacement.

END OF SECTION

SECTION 093013
CERAMIC TILE WORK

PART 1 GENERAL

1.1. DESCRIPTION

A. Tile floors and walls.

1.2. QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Provide manufacturer's Master Grade Certificate stating type and location of each tile material in this Section.

1.3. SAMPLES

A. Submit samples of each type of material specified to the Architect for approval.

1.4. COORDINATION

A. Coordinate with other trades whose work affects, connects with, or is concealed by tile installations. Before proceeding, make certain all required inspections have been made.

1.5. DELIVERY AND STORAGE

A. Deliver all manufactured materials in original, unbroken containers bearing name of manufacturer, brand, and grade seals. Keep materials dry, clean and protected against deterioration in any form.

1.6. PREPARATION AND ACCEPTANCE OF SURFACES

A. All surfaces to receive tile work shall be clean and free of dirt and debris, oil, grease, paint, curing compounds, or other material that would affect the bond. Concrete subfloor shall be a smooth plane. All subfloor adjacent to the floor drains shall slope uniformly to drains, and top of drains shall be installed level with tile surface. The drains shall also be installed such that no water will pond on the completed surface. All imperfections shall be corrected by approved methods prior to commencing the application.

B. Examine materials to ascertain compatibility of material with installation method specified.

C. Report to the Architect any and all conditions that might adversely affect the work herein and thereby preclude ability to deliver the "highest class" job. No waiver of responsibility for incomplete, inadequate, and defective underlying work will be considered unless notice of such unsatisfactory condition has been filed and acceded to, in writing, by the Architect before the Contractor begins any part of the work.

1.7. STANDARDS

A. Conform with all applicable requirements of the American Standards Association Specifications (A108 Series) and the "Handbook for Ceramic Tile Installation" of the Tile Council of America. Have tile bear the seal of the Tile Council of America, Inc. and be equal to or exceed Standard Grade. Have all tiles set by expert journeymen tile setters.

PART 2 PRODUCTS

2.1. MATERIALS

Materials listed shall establish the type, level of quality, and price range to be included in the contractor's bid. The owner reserved the right to substitute different tile that falls within the established price range.

A. Restroom:
   1. 2" x 2" floor tile at restrooms as selected by Owner. Allow $6.00 / s.f. for tile. Contractor to include costs for accessories and installation in their bid.
      a. Maximum of 2 colors may be selected by Architect.
      b. Acceptable Manufacturer: Dal-Tile or Equal.
   2. 12" x 24" wall tile at restrooms as selected by Owner. Allow $7.00 /s.f. for tile. Contractor to include costs for accessories and installation in their bid.
      a. Maximum of 2 colors may be selected by Architect.
      b. Acceptable Manufacturer: Dal-Tile or Equal.
   3. Solid surface threshold shall be equal to Corian or Wilsonart products.
   4. Provide corner trim at all outside corners of walls.
      a. Acceptable manufacturer: Schluter Systems
      b. Product: Rondec, anodized aluminum

B. Provide manufacturer's Master Grade Certificate stating type and location of each tile material in this Section.

C. Portland cement: Shall be standard brand complying with ASTM C-150.

D. Lime: Type S.

E. Water: Clean and free of deleterious materials.

F. Sand: Complying with ASTM Standards.

G. Bond Coat
   1. All floors and base: Portland cement paste on a plastic bed; L&M Surco "Polycrete", or equal, latex - Portland cement on a cured bed or for thin-set applications.

H. Grout
   1. All floors: L&M Surco "Acid-R", colored.
   2. Use grout with sealer within grout mix.

2.2. SETTING BED MIXTURE (BY VOLUME)

A. Comply with pertinent recommendations contained in the Tile Council of America "Handbook for Ceramic Tile Installation" 2002 Edition (or latest edition). Method F-122-02 for flooring material, and method W-243-02 and W-242-02 for wall materials.

2.3. SETTING AND GROUTING

A. All materials and workmanship shall be in strict accordance with the currently accepted installation practices of the Domestic Tile Industry, published by the Tile Council of America, Inc. Other installation specifications, as issued by the manufacturer of the setting material or as indicated herein shall be implicitly followed. Refer to other sections of specifications for preparation of walls or surfaces to receive tile.
   1. All other floors: Tile Council Installation Method F113-89.
   2. All walls and base with masonry backup: Tile Council Installation Method W-202-89.
   3. All other walls and bases: Tile Council Installation Method - W242-89 utilizing organic adhesive on gypsum board.

B. Work shall be carefully laid out in an endeavor to center the tile and to avoid small cuts. All cuts shall be rubbed smooth and even. Wall and base tile shall be flush at their meeting point.

C. Grouting: Mix and/or apply in strict accordance with manufacturer's recommendations, thoroughly forced into all joints so that the joint is filled to its entire depth. All inside corners at wall intersections shall be filled flush with approved sealant matching grout color.

PART 3 EXECUTION

3.1. SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2. INSTALLATION

A. General:
   1. Comply with ANSI A108.1, ANSI A108.2, and the "Handbook for Ceramic Tile Installation" of the Tile Council of America, except as otherwise directed by the Architect or specified herein.
   2. Maintain minimum temperature limits and installation practices recommended by materials manufacturers.

B. Limits of Tile:
   1. Extend tile into recesses and under equipment and fixtures to form a complete covering without interruptions.

2. Terminate tile neatly at obstructions, edges, and corners, without disruption of pattern or joint alignment.

C. Joining Pattern:
1. Lay tile in grid pattern unless otherwise indicated on the drawings or directed by the Architect. Notify Architect prior to beginning lay-out.
2. Align joints when adjoining tiles on floor, base, trim, and walls are the same size.
3. Layout tile work, and center the tile fields both directions in each space or on each wall area.
4. Adjust to minimize tile cutting.
5. Provide uniform joint widths.

D. Provide expansion and control joints where occur in concrete slab, and where otherwise recommended by the "Handbook for Ceramic Tile Installation" of the Tile Council of America.

E. Install solid surface thresholds at doors or openings where ceramic tile meets a dissimilar floor finish. Solid surface thresholds are not required where metal weather thresholds are to be installed.

F. Cleaning:
1. Upon completion of placing and grouting, clean the work of this Section in accordance with recommendations of the manufacturers of the materials used.
2. Protect metal surfaces, cast iron, and vitreous items from effects of acid cleaning.
3. Flush surfaces with clean water before and after cleaning.

G. Provide tile surfaces clean and free from cracked, broken, chipped, un-bonded, and otherwise defective units.

H. Provide required protection of tile surfaces to prevent damage and wear prior to acceptance of the work by the Owner.

I. Provide consistent slope across areas shown on the drawings as floor slopes and slope to drains.

3.3. CLEANING AND PROTECTION

A. Wipe surfaces clean after grouting; remove all traces of mortar and grout. Do not use acid solution for cleaning glazed tile.

B. Close spaces to traffic or other work until tile is firmly set. Protect from damage until acceptance. Repair all damaged work at no additional cost to Owner.

END OF SECTION

SECTION 095123
SUSPENDED PANEL CEILINGS

PART 1 GENERAL

A. Standard Provisions, Conditions of the Contract and Division 1, as indexed, apply to this section.

1.2. DESCRIPTION

A. Furnish all materials, labor, equipment, and services for the complete installation of suspended panel ceilings and glued-on acoustical tiles, as scheduled and detailed on the drawings, and hereinafter specified.

1.3. WORK NOT INCLUDED

A. All phases of electrical work. Electrical fixtures shall be supported in the ceiling system with hangers and accessories provided by the electrical contractor.

B. All phases of the air conditioning and ventilation work. Location of the mechanical systems shall be coordinated with and complimentary to the ceiling system and the electrical fixtures. Support of the mechanical systems shall be independent from the ceiling and provided by the mechanical contractor.

1.4. COORDINATION

A. Work hereunder requires coordination with trades whose work connects with, is affected by, or is concealed by this work. Before proceeding, make certain all required inspections have been made.

1.5. SAMPLES

A. Submit samples of each type of material specified to the Architect for approval.

1.6. INSPECTION

A. The ceiling contractor shall be responsible for the examination and acceptance of all surfaces and conditions affecting the proper installation of his materials. Commencement of work will constitute acceptance of surfaces.

1.7. DELIVERY AND STORAGE

A. Deliver all manufactured materials in original containers bearing manufacturer's name and brand. Use only one brand and one lot number for each type of unit through job. Store materials within building in locations directed by General Contractor.

B. Extra Stock - Provide one extra unopened carton of each type lay-in panel and store at site at a location directed by the Owner.

1.8. APPLICATOR

A. The installation shall be made by a contractor approved by the manufacturer of the products used.

1.9. JOB CONDITIONS

A. All wet work shall be completed and dried out to the satisfaction of the Architect before work is started. No work shall begin until building is enclosed and temperature and humidity are controlled.

PART 2 PRODUCTS

2.1. MATERIALS

A. General: All suspended panel ceilings shall be 24"×24" size exposed grid type, with lay-in panels. Refer to drawings for locations.

B. Suspension system shall be exposed T & T type. Main T-runners and T-splines required for the system shall be solid continuous rolled form shapes as manufactured by National Rolling Mills, Co., or approved equal, double web construction, grid color white.
   1. Type 1 ceilings:
      a. Main Runners and Main Beam Cross T - ML 6000 series, 15/16" exposed face, minimum 1-1/2" web height, with a minimum load carrying capacity of 7.5#/LF for a five (5) foot simple span.
      b. Cross T - ML 6148, 15/16" exposed face, minimum 1-1/2" web height, with a minimum load carrying capacity of 14.9#/LF for a four (4) foot simple span.
      c. Wall edge molding: Channel or angle shaped section, hemmed edge, fabricated from .020 thick steel.
      d. Reveal edge molding - "W" type section, hemmed edge, fabricated from .020" thick steel.
   2. Type 2 (fire-rated) ceilings:
      a. Main Runners and Main Beam Cross T - FST 6000 series, 15/16" exposed face, minimum 1-1/2" web height, with a minimum load carrying capacity of 7.5#/LF for a five (5) foot simple span.
      b. Cross T - FST 6148, 15/16" exposed face, minimum 1-1/2" web height, with a minimum load carrying capacity of 14.9#/LF for a four (4) foot simple span.
      c. Wall edge molding: Channel or angle shaped section, hemmed edge, fabricated from .020 thick steel.
      d. Reveal edge molding: "W" type section, hemmed edge, fabricated from .020 thick steel.
      e. Hold down clips shall be installed at ceiling of Type 2 as required to maintain UL classification of assembly.

C. 24"×24" Lay-in Panels:
   1. All panels of each type shall be from one lot number of manufacturer.

2. All acoustical lay-in panels shall be non-combustible mineral fiber type, meeting the requirements of Fed. Specification No. SS-S-118a, class 25, as tested and reported by the Acoustical Materials Association.
   a. Ceilings shall have panels equal to Armstrong Minaboard "Cortega Angled Tegular #704", 24"×24"×5/8" size, white.

PART 3 EXECUTION

3.1. GRID INSTALLATION FOR SUSPENDED PANEL CEILINGS

A. Install main tee runners on 48" centers supported every 48" by No. 12 ga. wire hangers.

B. In addition to procedures described in (A) above, all ceiling grid for fire-rated ceilings shall additionally have one hanger wire at the midpoint of all 4' cross tees and at all four corners of all 2'×4' light fixtures.

C. T-splines intersecting moldings shall be locked in place. All main T-runners and cross T-splines shall be straight in alignment and flush at intersections. The assembled grid shall be leveled to within 1/8" in 12'. Edge molding shall be installed wherever the suspended grid abuts walls, columns and other vertical surfaces.

D. No instructions on drawings or herein stated shall delete or modify the U.L. requirements set forth for fire-rated ceilings.

3.2. LAY-IN PANEL INSTALLATION

A. Install all panels in each room or space in same direction.

B. Install hold down clips as required for fire rating, to prevent uplift for ceilings.

C. Completed installation shall be clean and free of finger marks, damage, or variation in panel color, texture, and pattern.

3.3. SURFACE APPLIED INSTALLATION

A. Adhesive: Subcontractor shall install ceiling tile by glue-up method to concrete planks using acoustical tile cement.

B. Trim projecting tongue from exposed edged panels after installation. Provide vinyl edge trim at all exposed edges.

C. Provide general areas of coverage as shown on the drawings. Apply tile joints to align with concrete plank jointing. Do not allow tiles to span joints in concrete planks.

3.4. LIGHTING FIXTURE ENCLOSURES

A. Install gypsum board or ceiling panel enclosures above all lighting fixtures as required to achieve fire-rating consistent with ceiling system. Enclosure shall conform to an approved U.L. rated assembly.

3.5. CEILING GRID LAYOUT

A. Ceiling grid layout for each room shall be to accomplish best spacing of lighting and provide equal and balanced grid spacing at all sides of room.

3.6. LIGHTING DIFFUSER INSTALLATION

A. Install wall edge molding as specified for lay-in ceilings for all lighting diffusers.

B. Install diffusers after completion of lighting enclosures. Align and interlock all diffuser unit joints.

C. Light fixtures within grids shall be suspended from structure at each corner of fixture.

END OF SECTION

SECTION 096519
RESILIENT TILE FLOORING AND BASE

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Provide resilient tile flooring and base.

1.2. QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

PART 2 PRODUCTS

2.1. MATERIALS, GENERAL

A. Provide colors and patterns as selected by the Architect from standard colors and patterns of the approved manufacturer.

B. Adhesives:
   1. Provide waterproof and stabilized type adhesive as recommended by the manufacturer of the material being installed.
   2. Asphalt emulsions and other non-waterproof adhesives will not be acceptable.
   3. Asbestos reinforced adhesives will not be acceptable.

C. Concrete slab primer: Provide non-staining type as required and as recommended by the manufacturer of the material being installed.

2.2. RESILIENT MATERIALS

A. Reinforced vinyl tile:
   1. Dimension: Provide 12"×12"×1/8".
   2. Acceptable products:
      a. Armstrong "Standard Excelon"
      b. Equal products of other manufacturers.
      c. Maximum of 6 standard colors shall be selected for field and accent. Color selected by Architect.

B. Resilient Wall Base:
   1. Vinyl Wall Base: Products complying with FS SS-W-40, Type II, standard top-set cove, 1/8" gauge, 4 inches tall.
      a. Maximum of 3 standard colors shall be selected.
   2. Acceptable products:
      a. Johnsonite
      b. Equal products of other manufacturers.

c. Maximum of 3 standard colors shall be selected for field and accent. Color selected by Architect.

2.3. OTHER MATERIALS

A. Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect at no additional cost to the Owner.

B. Comply with Texas Accessibility Standards for floor surfaces, transitions, and edge trims.

PART 3 EXECUTION

3.1. SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2. PREPARATION

A. Subfloors:
1. Verify that substrata is smooth, level, at required finish elevation, and without more than 1/8" in 10'-0" variation from level or slopes shown on the Drawings.
2. Prior to laying materials, thoroughly clean the surfaces to be covered and inspect the subfloors.

B. Priming:
1. Apply concrete slab primer if so recommended by the resilient flooring manufacturer.
2. Apply in accordance with the manufacturer's recommendations as approved by the Architect.

3.3. INSTALLATION

A. General:
1. Install materials only after finishing operations, including painting, have been completed, and after permanent heating system is operating.
2. Verify that moisture content of concrete slabs, building air temperature, and relative humidity are within the limits recommended by the manufacturers of the materials used.
3. Maintain reference markers, holes, and openings that are in place or plainly marked for future cutting by repeating on the finish surface as marked on the sub-floor. Use chalk or other non-permanent marking device.

B. Installing resilient tiles:
1. Place units with adhesive cement in strict compliance with the manufacturer's recommendations as approved by the Architect.
a. Butt units tightly to vertical surfaces, nosings, edgings, and thresholds.

b. Scribe as necessary around obstructions and to produce neat joints.
c. Place tiles tightly laid, even, and in straight parallel lines.
d. Extend units into toe spaces, door reveals, and in closets and similar spaces.

2. Lay units from center marks established with principal walls, discounting minor offsets, so that units at opposite edges of the room are of equal width.
   a. Adjust as necessary to avoid use of cut widths less than 3" wide at room perimeters.
   b. Lay units square to axis of the room or space.
3. Match units for color and pattern by using materials from cartons in the same sequence as manufactured and packaged.
4. Lay in pattern with adjacent tiles having grain in alternating directions unless otherwise directed by the Architect.
5. Place resilient edge strips tightly butted to units and secured with adhesive, providing at all unprotected edges unless otherwise shown.
6. Provide and install accent color tile as directed by the Architect at no additional cost to the owner.
7. Replace tiles where debris below tile telegraphs through to the surface.

C. Installing base:
1. Install base where shown on the Drawings or scheduled, using adhesive recommended by the base manufacturer.
2. Install base in straight level pieces in runs as long as possible to minimize joints.
3. Butt end joints tight, but do not compress material causing buckling.
4. Provide minimum of 16" length at corner turns.

3.4. CLEANING AND PROTECTING

A. Remove excess adhesive and other blemishes from exposed surfaces, using neutral cleaner recommended by the manufacturer of the resilient materials.

END OF SECTION

SECTION 099123
PAINTING

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Paint and finish the exterior and interior exposed surfaces listed on the Painting Schedule in Part 3 of this Section, including wall texture as specified herein, and as needed for a complete and proper installation.
   1. Provide painting of exposed surfaces for all mechanical and electrical equipment at pre-finished metal roof and fascia conditions. Color shall match surrounding surfaces.
   2. Provide final painting of doors, frames, etc.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, general Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Priming or priming and finishing of certain surfaces may be specified to be factory-performed or installer performed under pertinent other Sections.

C. Work not included:
   1. Unless otherwise indicated, painting is not required on surfaces in concealed areas and inaccessible areas such as furred spaces, foundation spaces, utility tunnels, pipe spaces, and duct shafts.
   2. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require painting under this Section except as may be so specified.
   3. Do not paint moving parts of operating units, mechanical or electrical parts, such as valve operators, linkages, sensing devices, and motor shafts, unless otherwise indicated.
   4. Do not paint over required labels or equipment identification, performance rating, name, or nomenclature plates.
   5. Do not paint pre-finished metals, except where shown on the Drawings.

D. Definitions:
   1. "Paint", as used herein, means coating systems materials including primers, emulsions, epoxy, enamels, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats.

1.2. QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Paint coordination:
   1. Provide finish coats which are compatible with the prime coats actually used.

2. Review other Sections of these Specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.
3. Upon request, furnish information on the characteristics of the specific finish materials to assure that compatible prime coats are used.
4. Provide barrier coats over non-compatible primers, or remove the primer and re-prime as required.
5. Notify the Architect in writing of anticipated problems in using the specified coating systems over prime coatings supplied under other Sections.

1.3. JOB CONDITIONS

A. Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 45 degrees F, unless otherwise permitted by the manufacturer's printed instructions as approved by the Architect.

B. Weather conditions:
1. Do not apply paint in snow, rain, fog, or mist, or when the relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by the manufacturer's printed instructions as approved by the Architect.
2. Applications may be continued during inclement weather only within the temperature limits specified by the paint manufacturer as being suitable for use during application and drying periods.

1.4. EXTRA STOCK

A. Upon completion of the work of this Section, deliver to the Owner an extra stock equaling 2% (with a minimum of 1 gallon and maximum of 5 gallons) of each color, type, and gloss of paint used in the work, tightly sealing each container, and clearly labeled with contents and location where used.

PART 2 PRODUCTS

2.1. PAINT MATERIALS

A. Acceptable materials:
1. The Painting Schedule in Part 3 of this Section is based, on products of Pittsburgh Paints.
2. Equal products of GLIDDEN, Sherwin Williams, Kelly-Moore, Monarch Paint, or other manufacturers approved in advance by the Architect, may be substituted in accordance with provisions of the Contract.
3. Where products are proposed other than those specified by name and number in the Painting Schedule, provide under the product data submittal required by Article 1.3 of this Section a new painting schedule compiled in the same format used for the Painting Schedule included in this Section.
4. All paint products used on the interior of the building shall meet Class A requirements for interior finish materials (flame spread 0-25, smoke developed 0-450 in accordance with NFPA 255).

B. Undercoats and thinners:
   1. Provide undercoat paint produced by the same manufacturer as the finish coat.
   2. Use only the thinners recommended by the paint manufacturer, and use only to the recommended limits.
   3. Insofar as practicable, use undercoat, finish coat, and thinner material as parts of a unified system of paint finish.

2.2. COLOR SCHEDULES

A. The Architect will prepare a color schedule with samples for guidance in painting.

B. The Architect may select, allocate, and vary colors on different surfaces throughout the work, subject to the following:
   1. Exterior work: A maximum of three different colors will be used, with variations for trim, doors, miscellaneous work, and metalwork.
   2. Interior work: A maximum of three different pigmented colors will be used, with variations for trim and wall surfaces and wainscots.
   3. Dark tones: A maximum of two dark tones will be used as accent colors for interior, to include painted bases of walls.

2.3. APPLICATION EQUIPMENT

A. For application of the approved paint, use only such equipment as recommended for application of the particular paint by the manufacturer of the particular paint, and as approved by the Architect.

B. Prior to use of application equipment, verify that the proposed equipment is actually compatible with the material to be applied, and that integrity of the finish will not be jeopardized by use of the proposed equipment.

C. Use rollers to apply masonry block filler and block filler applied to exposed concrete plank ceilings. Filler must be applied thoroughly. Visible holes are not acceptable.

2.4. OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect at no additional cost to the Owner.

PART 3 EXECUTION

3.1. SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2. MATERIALS PREPARATION

A. General:
   1. Mix and prepare paint materials in strict accordance with manufacturers' recommendations.
   2. When materials are not in use, store in tightly covered containers.
   3. Maintain containers used in storage, mixing, and application of paint in a clean conditions, free from foreign materials and residue.

B. Stirring:
   1. Stir materials before application, producing a mixture of uniform density.
   2. Do not stir into the material any film which may form on the surface, but remove the film and, if necessary, strain the material before using.

3.3. SURFACE PREPARATION

A. General:
   1. Perform preparation and cleaning procedures in strict accordance with the paint manufacturer's recommendations.
   2. Apply masonry block filler and block filler applied to exposed concrete ceilings with rollers and verify no porous conditions remain prior to applying paint.
   3. Remove removable items which are in place and are not scheduled to receive paint finish, or provide surface applied protection prior to surface preparation and painting operations.
   4. Following completion of painting in each space or area, reinstall the removed items by using workmen who are skilled in the necessary trades.
   5. Clean each surface to be painted prior to applying paint of surface treatment.
   6. Remove oil and grease with clean cloths and cleaning solvent of low toxicity and flash point in excess of 200ºF, prior to start of mechanical cleaning.
   7. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall onto wet newly painted surfaces.

B. Preparation of wood surfaces:
   1. Clean wood surfaces until free from dirt, oil, and other foreign substance.
   2. Smooth finished wood surfaces exposed to view, using the proper sandpaper. Where so required, use varying degrees of coarseness in sandpaper to produce a uniformly smooth and unmarred wood surface.
   3. Unless specifically approved by the Architect, do not proceed with painting of wood surfaces until the moisture content of the wood is 12% or less.

C. Preparation of metal surfaces:
   1. Thoroughly clean surfaces until free from dirt, oil, and grease.
   2. Allow to dry thoroughly before application of paint.
   3. For galvanized metal, etch the surface with galvaprep type acid and allow to dry thoroughly.

3.4. PAINT APPLICATION

A. General:
   1. Touch-up shop-applied prime coats which have been damaged, and touch-up bare areas prior to start of finish coats application.
   2. Slightly vary the color of succeeding coats.
      a. Do not apply additional coats until the completed coat has been inspected and approved.
      b. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.
   3. Sand and dust between coats to remove defects visible to the unaided eye from a distance of five feet.
   4. On removable panels and hinged panels, paint the back sides to match the exposed sides.

B. Drying:
   1. Allow sufficient drying time between coats, modifying the period as recommended by the material manufacturer to suit adverse weather conditions.
   2. Consider oil-base and oleo-resinous solvent-type paint as dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and when the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

C. Brush applications:
   1. Brush out and work the brush coats onto the surface in an even film.
   2. Cloudiness, spotting, holidays, laps, brush mark runs, sags, ropiness, and other surface imperfections will not be acceptable.

D. Spray applications:
   1. Except as specifically otherwise approved by the Architect, confine spray application to metal framework and similar surfaces where hand brush work would be inferior.
   2. Where spray application is used, apply each coat to provide the hiding equivalent of brush coats.
   3. Do not double back with spray equipment to build up film thickness of two coats in one pass.

E. For completed work, match the approved samples as to texture, color, and coverage. Remove, refinish, or repaint work not in compliance with the specified requirements.

F. Miscellaneous surfaces and procedures:
   1. Exposed mechanical items:
      a. Finish electric panels, access doors, roof top units, hoods, conduits, pipes, ducts, grilles, registers, vents, and items of similar nature to match the adjacent wall and ceiling surfaces, or as directed.
      b. Paint visible duct surfaces behind vents, registers, and grilles flat black.
      c. Wash metal with solvent, prime, and apply two coats of alkyd enamel.
   2. Exposed pipe and duct insulation:
      a. Apply one coat of latex paint on insulation, which has been sized or primed under other Sections; apply two coats on such surfaces when unprepared.

b. Match color of adjacent surfaces.
c. Remove band before painting, and replace after painting.

3. Hardware: Paint prime coated hardware to match adjacent surfaces.
4. Wet surfaces:
   a. In toilet rooms and contiguous areas, add an approved fungicide to paints.
   b. For oil base paints, use 1% phenylmercuric or 4% tetrachlorophenol.
   c. For water emulsion and glue size surfaces use 4% sodium tetrachlorophenate.
5. Interior: Use "stipple" or "sand" finish where enamel is specified.
6. Exposed vents: Apply two coats of heat-resistant paint approved by the Architect.

3.5. SCHEDULE OF FINISHES

A. General - All materials shall be products and manufacturers as scheduled or approved equal. Where more than one product is listed, it is the Contractor's option as to which product to use.

B. Exterior Surfaces:

1. All exposed galvanized metal shall be given: **(None this project)**

1 coat Latex Galvanized Primer:	Kelly-Moore 1722
2 coats Latex Flat:	Kelly-Moore 1240,P&L Vapex House Paint, Moore's Flat Exterior Latex and Masonry House Paint, Pittsburgh Speedhide Acrylic Latex House Paint, GLIDDEN 2200 or Monarch Aquagleem 2200.

2. All exposed ferrous metal including door frames and miscellaneous metals shall be given:
   Spot prime as required, or if unprimed, prime with:

1 coat Alkyd Rust Inhibitive Primer:	Kelly-Moore Alkyd Metal Primer 1710/11, P&L Tech-Guard S-4551, BM Alkyd Metal Primer M06, Pittsburgh Speedhide Red Lead Primer, Monarch Primer 5515, or GLIDDEN Alkyd Metal Primer 4100.
2 coats Alkyd Gloss Enamel:	Kelly-Moore Alkyd Gloss Enamel 1700, P&L Effecto Enamel, BM Impervo Enamel, Pittsburgh Speedhide Gloss-Oil Exterior Enamel, Monarch Alkyd Gloss 5100 or GLIDDEN Alkyd Gloss Enamel 4308.

3. Exterior CMU (Split-Face and Smooth-Face) – DO NOT PAINT colored pigmented units. Provide Kel-Seal 77 in a flood application as recommended by the manufacturer to achieve absorption requirements. **(None this project)**
4. All cementious siding and trim: **(None this project)**

1 coat Acrylic Wall Primer:	Glidden Gripper Primer
2 or more coats Acrylic Flat:	Glidden Premium Exterior Paint

C. Interior Surfaces:

1. All gypsum board walls scheduled to be painted shall be spray applied gypsum "orange peel" or “splatter drag” texture and given:

1 coat Latex Wall Primer:	P&L Vapex Wall Primer, Moore's Latex Quick Dry Prime Seal, Pittsburgh Speedhide Quick Drying Latex Primer-Sealer, GLIDDEN 1000-1200 Dulux Latex Wall Primer, Monarch 5517 Wall Primer or Kelly-Moore 971 Acry-Prime Sealer.
2 or more coats Latex Semi-Gloss:	P&L Accolade SG, Moore's Regal Aquaglo, Pittsburgh Satinhide Latex Low-Lustre Wall and Trim Enamel, GLIDDEN Dulux SG 140, Monarch 3400 Primer Semi-Gloss, or Kelly-Moore Acry-Plex SG 1650.

2. All gypsum board friezes, ceilings, and furrings shall be spray applied gypsum "orange peel" or “splatter drag” texture and given:

1 coat Latex Wall Primer:	P&L Vapex Wall Primer, Moore's Latex Quick Dry Prime Seal, Pittsburgh Speedhide Quick Drying Latex Primer-Sealer, GLIDDEN 1000-1200 Dulux Latex Wall Primer, Monarch 5517 Wall Primer, or Kelly-Moore 971 Acry-Prime Sealer.
2 or more coats Latex Flat:	P&L Vapex Flat Wall Finish,Moore's Regal Wall Satin, Pittsburgh Wallhide Interior Wall Flat Latex,, GLIDDEN Ultra-Hide 1210, Monarch 6100 Primer Flat, or Kelly-Moore Super Latex Flat 550.

3. All exposed ferrous metal, including door frames, miscellaneous metals, etc., shall be given:

1 coat Alkyd Rust-Inhibitive Primer:	P&L Tech-Guard S-4551 (if factory primed, touch up as required), BM Ironclad Retardo Rust Inhibitive Paint, Pittsburgh Speedhide Red Inhibitive Primer, GLIDDEN Alkyd Metal Primer 4100, Monarch 5515 Primer or Kelly-Moore Alkyd Metal Primer 1710/11.
2 or more coats Acrylic DTM:	PPG 90-474 PittTech DTM, BM M29 DTM, Monarch 3800 Premier DTM, or GLIDDEN Acrylic DTM.

4. All wood doors and trim shall be given: **(None this project)**

1 coat Alkyd Oil Stain:	P&L Tonetic Wood Stain, Moore's Interior Wood Penetrating Stain, Pittsburgh Rez Semi-Transparent Alkyd Oil Interior Stain, GLIDDEN Woodpride Stain 1700, Monarch 5525 Oil Stain, or Kelly-Moore Modern Wood Finish Stain 1281.

1 coat Alkyd Sanding Sealer:	P&L Sanding Sealer, Moore's Interior Wood Sanding Sealer, GLIDDEN Sanding Sealer 1916, Monarch 7700 Alkyd sanding sealer or Kelly-Moore Seal-N-Finish 2163.
2 or more coats Alkyd Clear Finish:	P&L 38 Clear Finish Satin, Moore's Benwood Satin Finish Varnish, or Pittsburgh Rez Varnish Satin, GLIDDEN WoodPride Satin Varnish 1902, Monarch 7790 Clear or Kelly-Moore Kel-Thane Satin Varnish 22, **or at Architect's option**.
1 coat Alkyd Undercoater:	P&L Interior Trim Primer, Moore's Alkyd Enamel Underbody, Pittsburgh Speedhide Quick Drying Enamel Undercoater, GLIDDEN Ultra-Hide Interior Wood Undercoat 1120, Monarch 4695 Alkyd Undercoater or Kelly-Moore Flo-Cote Alkyd Undercoat 985.
2 coats Alkyd Satin Enamel:	P&L Cellu-Tone Satin 05-0100, BM Satin Impervo Low Lustre Enamel, Pittsburgh Satinhide Alkyd Low-Lustre Enamel, GLIDDEN Ultra-Hide Alkyd Eggshell 1512, Monarch 4200 Regal Satin, or Kelly-Moore Eggshell 1620.

END OF SECTION

SECTION 102800
TOILET ROOM ACCESSORIES

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Provide standard and detention grade toilet room accessories where indicated on the Drawings, as specified herein, and as needed for a complete and proper installation. Refer to Section 125500 for detention grade toilet room accessory information.

B. Related work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2. QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

PART 2 PRODUCTS

2.1. TOILET ROOM ACCESSORIES

A. Provide products as scheduled or equal as approved in advance.

B. Verify compliance of each toilet accessory with the Texas Accessibility Standards prior to installation.

PART 3 EXECUTION

3.1. SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2. INSTALLATION

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Install each item in its proper location, firmly anchored into position level and plumb, and in accordance with the bolts to anchor all devices. Provide all required blocking for adequate anchorage.

C. Installation of all toilet room accessories shall comply with mounting height regulations of Texas Accessibility Standards.

D. Provide security fasteners for all installed locations within the secure perimeter.

E. All products required in inmate occupied areas must be detention type.

F. Schedule of Toilet Room Accessories (all accessories listed may not apply to this contract):

1. Grab Bars/Showers:
   a. Model Numbers:
      (1) American Specialties: 3100 series
      (2) Equal Products.
   b. Description: 1½" diameter, 24" long at end walls and 54" long at side wall, stainless steel, concealed security screw attached mounting and anchorage No. 4 satin finish. Minimum 900 pound supporting capacity.
   c. Provide at new roll-in handicap shower.

2. Grab Bars/Toilets:
   a. Model Numbers:
      (1) American Specialties: 3100 series
      (2) Equal Products.
   b. Description: 1-1/2 inch diameter 36 inch long at rear wall and 42 inch long at side wall, horizontal, 1-1/2 inch wall clearance. Type 304 minimum 18-gage stainless steel. Concealed security screw attached mounting and anchorage. No. 4 satin finish. Minimum 900 pound supporting capacity.
   c. Provide at new handicap water closet.

3. Surface-Mounted Multi-Roll Tissue Dispenser:
   a. Model Numbers:
      (1) American Specialties: 0030 series.
      (2) Equal Products.
   b. Description: Minimum 22 gage Type 304 stainless steel cabinet. Minimum 18 gage drawn one-piece Type 304 stainless steel unit front with pivot hinge and tumbler lockset. No. 4 satin finish. Holds 2 standard core 5 inch diameter tissue rolls. Reserve roll drops in-place by automatic release. Theft-resistant spindles. Provide at new water closet.

4. Surface Mounted Paper Towel Dispenser
   a. Model Numbers:
      (1) American Specialties: 0210 series.
   b. Description: 4" projection from wall. Minimum 22 gage Type 304 stainless steel. Stainless steel piano hinge and tumbler lock at towel dispenser door. No. 4 satin finish. Hemmed towel tray opening. Capacity minimum 400 C-fold or 525 multi-fold paper towels.
   c. Provide at new lavatory.
   d. Contractor shall verify all wall conditions.

5. Surface Mount Coat Hook: **(None this project)**
   a. Model Numbers:
      (1) American Specialties: Series 7382S

(2) Equal Products.

b. Description: Type 304 - 18 gage minimum stainless steel. Concealed mounting and anchorage. No. 4 satin finish

6. Surface Mounted Liquid Soap Dispenser:
   a. Model Numbers:
      (1) American Specialties: 0347.
      (2) Equal Products.
   b. Description: Horizontal tank type for all-purpose liquid soap. Minimum 20 gage Type 304 stainless steel. Drawn one-piece construction. No. 4 satin finish. Concealed stainless steel wall plate. Clear plastic refill indicator window. Locked hinged stainless steel lid for top filling. Minimum 40-ounce capacity – provide at new lavatory/sink.

7. Mop and Broom Holder: **(None this project)**
   a. Model Numbers:
      (1) American Specialties: 8215-4.
      (2) Equal Products.
   b. Description: 36 inches long, 3-inch projection, 4 holders. Minimum 20 gage, Type 304 stainless steel hat channel. Spring loaded rubber cam-type mop holders. No. 4 Satin finish.
   c. Provide one at each janitor sink.

8. Pipe insulation and Padding Insulation Kits:
   a. Model Numbers:
      (1) Trubro Inc.: Handi Lav-Guard
   b. Description: Pipe covers at H.C. Lavatories for hot and cold water supply lines and drains, white molded resilient vinyl exterior, anti-microbial interior insulation, provide readily accessible caps to all shut off valves, provide maintenance joint and cap at all p-traps. Provide all fasteners and hardware necessary for complete installation. This item to be provided at new lavatory and shall be installed to meet all ADA/TAS requirements.

9. MOP Sink splash plate: **(None this project)**
   a. Product description: Provide 18-8, type 304, 22-gauge, stainless steel to 48" A.F.F, above all adjacent walls of mop sink. Secure to wall with perimeter security screws at 8" O.C., caulk joints between sink and splash.

10. Mirror with Stainless Steel Channel Frame:
    a. Model Numbers:
       (1) American Specialties: 0620.
       (2) Equal Products.
    b. Description: 18"W×36"H. Minimum 20 gage stainless steel; all joints mitered, welded, and ground smooth. Type 430 – No. 4 satin finish. Galvanized steel back with slots for mounting screws and integral screw-head lock. Back protected by shock-absorbing water-resistant padding.
       (1) Mirror to be fabricated of plate glass. Provide at new lavatory.

11. Curved Shower Rod at new Shower
    a. Model Number: American Specialties: 1201
       (1) Satin Finish Stainless Steel

12. Shower Curtain at new Shower
    a. Model Number:
        (1) American Specialties: 1200-Y
        (2) Provide curtain hooks.

13. Wire Soap Basket at new Shower
    a. Model Number:
        (1) American Specialties: 7322
        (2) Equal Products

14. Pedestal Dressing Bench **(None this project)**
    a. Model Number:
        (1) Bradley: Lenox Pedestal Bench
        (2) Equal Products
    b. Description: 24"W×42"L×18½"H
        (1) Benchtop: Constructed of 1½" thick High Density Polyethylene (HDPE) with homogeneous color and a matte finish texture.
        (2) Pedestal: 17" Black anodized aluminum pedestal with welded aluminum flanges. Anchored to floor and bench top with hardware provided.

15. Baby Changing Station **(None this project)**
    a. Model Number:
        (1) American Specialties: 9012
    b. Description: 36” wide x 22” high x 4” deep (closed), set bottom @ 27” A.F.F.

END OF SECTION

SECTION 104000
IDENTIFYING DEVICES

PART 1 GENERAL

1.1. DESCRIPTION

A. Work included: Provide identifying devices where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to:
   1. Door signs and room identification as required by the Texas Accessibility Standards
   2. Signs & graphics, adhesive vinyl
   3. Handicap parking signs
   4. Painted cell and door identification.
   5. Building plaque.
   6. Building signage.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2. QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. All signage shall comply with the Texas Accessibility Standards.

1.3. SUBMITTAL

A. Furnish to Architect 30 days after notice-to-proceed samples and literature for shop drawing approval.

PART 2 PRODUCTS

2.1. ROOM SIGNAGE (Base Bid – Not Covered by Allowance – Section 012100)

A. Provide standard products manufactured by Corpus Christi Stamp Works (CCSW), 361.884.4801, www.ccswsignsystems.com or equal product.

B. Provide all products of this Section from a single manufacturer.

C. Provide framed door sign plaques with the following attributes:
   1. Size 6"×6" nominal size
   2. Type style: "Helvetica Medium" - 1" for message
   3. Plaque color: As selected by Architect

4. Type color: As selected by Architect
5. Frame: Plastic ⅛" wide × ½" deep, color as selected by Architect
6. Margins: As selected by Architect
7. Mounting: Screw mount or double-sided $^{1}/_{32}$" thick vinyl tape, where screw mounting is not appropriate for mounting devices by supplier. Provide appropriate mounting on glazing for proper appearance from each side.
8. Braille copy
9. Message: To be provided by Architect.
10. Locations: To be provided by Architect.
11. Corners to be radiused.
12. Plaque thickness: ⅛"

D. Handicap restrooms shall have the attributes listed above plus have the international graphic symbols.

PART 3 EXECUTION

3.1. INSTALLATION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

B. Install the work of this Section in strict accordance with the manufacturers' recommendations as approved by the Architect, using only the approved mounting materials, and locating all components firmly into position, level and plumb. Mount in locations and at heights as directed by the Architect.

C. Mount room signage on the latch side of the door, and in accordance with Texas Accessibility Standards (TAS) requirements.

END OF SECTION

SECTION 107310
PREFABRICATED METAL CANOPIES

PART 1 GENERAL

1.1. WORK INCLUDED

A. Furnish and install prefabricated metal carport canopy.

1.2. RELATED WORK

A. Concrete: General contractor shall block out openings in concrete slab at each column location and provide footing/pier.

1.3. REFERENCES

A. ASTM A-500 - Specification for Structural Tubing for construction of bridges and buildings.

B. ASTM A-653 – Specification for Steel Sheet, zinc coated by the hot-dip process, structural quality.

C. ASTM A-924 – General requirements for Steel Sheet, metallic coated by the hot-dip process.

D. AISI – Specification for the Design of Cold-Formed steel structural members.

1.4. SYSTEM DESCRIPTION

A. Design of canopy shall be in accordance with applicable local building Codes and certified by a registered Professional Engineer employed by the manufacturer.

1.5. QUALITY ASSURANCE

A. Manufacturer: Shall have a minimum of 10 years experience in the manufacture and supplying of steel canopies.

B. Installer: Shall have a minimum of 5 years experience installing pre-engineered steel canopies. Installation shall be in accordance with manufacturers shop drawings.

1.6. REGULATORY REQUIREMENTS

A. Conform to the Local Building Code Requirements.

1.7. SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 013300.

B. Submit samples of Deck panels, soffit panels and fascia trim under provisions of Section

013300.

C. Submit two 2” x 3” color samples for selection of roof deck, soffit panels and trim.

D. Submit manufacturer’s certificate under provisions of Section 013300 that materials meet or exceed these specifications.

1.8. DELIVERY STORAGE AND HANDLING

A. Deliver products to site under provisions of Section 016000.

B. Store and protect products under provision of Section 016000.

C. Store materials on site in a manner so they will not be damaged. Materials shall be placed so water will drain and not accumulate.

1.9. WARRANTY

A. Provide one year manufacturer’s warranty under provisions of Section from date of Substantial completion.

B. Warranty: Includes coverage of materials and workmanship.

PART 2 PRODUCTS

2.1. ACCEPTABLE MANUFACTURERS

A. Childers Carports & Structures, Inc., Houston, Texas (713) 460-2181.
   1. Model: Newport NE-9, 10’-0” clear height required. Clear height required must be confirmed prior to fabrication and installation.
   2. Equal products.

2.2. MATERIALS

A. Roof Deck, soffit panels and trim shall be pre-painted, hot-dip galvanized steel meeting ASTM Specification A-653. Grade 50, 50,000 psi yield. Galvanizing shall meet ASTM Specification A-924, G-90 Class. Paint shall be factory applied baked polyester with a full coat on color side and a uniform wash coat on reverse.

B. Roof beams shall meet ASTM Specification A-653 Grade 50, 50.000 psi yield. Galvanizing shall meet ASTM specification A-924. G-90 Class.

C. Columns shall be square tubes meeting ASTM Specification A500. Grade B. Columns shall be hot-dip galvanized after fabrication with a minimum zinc coating of 2 ounces per square foot.

PART 3 EXECUTION

3.1. INSPECTION

A. Verify that canopies are installed straight and true.

3.2. INSTALLATION

A. Install canopy in accordance with manufacturer's drawings and specifications.

3.3. TOLERANCES

A. Maximum Variation From Plan of Location Indicated on Drawings: None.

B. Maximum Offset From True Alignment between Adjacent Members Butting or In Line: None.

3.4. FIELD QUALITY CONTROL

A. Field inspection and testing will be performed per manufacturer's requirements.

3.5. ADJUSTING AND CLEANING

A. Clean up site and remove excess material.

3.6. PROTECTION

A. Protect finished installation under provisions of Section 016000.

SECTION 22 11 16

DOMESTIC WATER PIPING - PEX-A TUBING

PART 1 GENERAL

1.1 SUMMARY

Section Includes: ASTM F876/F877 SDR9 crosslinked polyethylene (PEX-A) piping and ASTM F1960 cold-expansion fittings for use in potable water distribution and water service systems for buildings of any type construction allowed under the applicable code.

1.2 REFERENCES

A. ASTM International

1. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
2. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials
3. ASTM E814 Standard Test Method for Fire Tests of Through-Penetration Fire Stops
4. ASTM F876 Standard Specification for Cross-linked Polyethylene (PEX) Tubing
5. ASTM F877 Standard Specification for Cross-linked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems
6. ASTM F1960 Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Crosslinked Polyethylene (PEX) Tubing
7. ASTM D2765 Test Methods for Determination of Gel Content and Swell Ratio of Cross-linked Ethylene Plastics
8. ASTM D6394 Specification for Sulfone Plastics (SP)

B. American Water Works Association - AWWA C904 Standard for Cross-linked Polyethylene (PEX) Pressure Pipe, ½ in. Through 3 in., for Water Service

C. American National Standards Institute (ANSI)/National Sanitation Foundation (NSF)

1. ANSI/NSF Standard 14 Plastics Piping System Components and Related Materials
2. ANSI/NSF Standard 61 Drinking Water System Components - Health Effects

D. American National Standards Institute (ANSI)/Underwriters Laboratories, Inc. (UL) - ANSI/UL 263 Standard for Safety for Fire Tests of Building Construction and Materials

E. Canadian Standards Association (CSA) - CAN/CSA B137.5 Cross-linked Polyethylene (PEX) Tubing Systems for Pressure Applications

F. International Code Council (ICC) - International Plumbing Code (IPC)

G. International Association of Plumbing Officials (IAPMO) - Uniform Plumbing Code (UPC)

H. National Association of Plumbing, Heating and Cooling Contractors (NAPHCC) - National Standard Plumbing Code (NSPC)
I. Plastics Pipe Institute (PPI) - PPI Technical Report TR-4/06

J. PEX Manufacturer
1. Applicable Installation Guide
2. Applicable Plumbing Design Manual

1.3 SYSTEM DESCRIPTION

A. Design Requirements

Standard grade hydrostatic pressure ratings from Plastics Pipe Institute (PPI) in accordance with TR-3 as listed in TR-4. The following three standard-grade hydrostatic ratings are required.
1. 200°F (93°C) at 80 psi (551 kPa)
2. 180°F (82°C) at 100 psi (689 kPa)
3. 73.4°F (23°C) at 160 psi (1,102 kPa)

B. Performance Requirements: To provide a PEX-a potable water distribution and/or water service system, which is manufactured, fabricated and installed to comply with regulatory agencies and to maintain performance criteria stated by the PEX-a piping manufacturer without defects, damage or failure.
1. Comply with ANSI/NSF Standard 14.
2. Comply with ANSI/NSF Standard 61.
3. Show compliance with ASTM F877.
4. Show compliance with ASTM F876.
5. Show compliance with ASTM E119 and ANSI/UL 263 through certification listings with Underwriters Laboratories, Inc. (UL).
6. Show compliance with ASTM E84.
7. Show compliance with ASTM E814.

1.4 SUBMITTALS

Product Data: Submit manufacturer's product submittal data and installation instructions.

1.5 QUALITY ASSURANCE

Installer Qualifications: Use an installer possessing documentation proving successful completion of PEX plumbing installation training by the PEX piping manufacturer.

1.6 DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged packaging with identification labels intact, or alternative, secure packaging provided by distributor.

B. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

1. Store PEX piping in original packaging or under cover to avoid dirt or foreign material from being introduced into the piping.
2. Do not expose PEX piping to direct sunlight for more than 30 days. If construction delays are encountered, provide cover to portions of piping exposed to direct sunlight.

1.7 WARRANTY

A. Piping system warranty shall apply to potable water distribution and water service systems constructed of pipe and fitting products sourced from the same manufacturer.
B. Manufacturer system warranty shall cover pipe and fittings for duration of 25 years.

PART 2 PRODUCTS

2.1 PEX-A POTABLE WATER DISTRIBUTION AND WATER SERVICE SYSTEMS
Approved Manufacturer:

1. Uponor, Inc.

2. Or approved equivalent; subject to compliance with project and specification requirements.

2.2 MATERIALS

A. Piping: ¼ inch through 3 inch nominal pipe size
1. SDR9 crosslinked polyethylene manufactured using the Engel method (PEX-a) Minimum degree of cross-linking shall be between 70-89% when tested in accordance with ASTM D2765, Method B.
2. Manufactured in accordance with ASTM F876 and ASTM F877 and tested for compliance by an independent, third-party agency.
Piping to have a minimum material designation of PEX 5106
3. Potable water piping shall comply with NSF 14 and NSF 61 and bear the “NSF-pw” marking
4. Temperature and pressure requirements in accordance with PPI TR-3: 73.4°F at 80psi, 180°F at 100psi and 200°F at 80psi.

B. Manufactured Joint: ⅜ inch through 3 inch nominal pipe size
1. ASTM F1960 cold-expansion fitting manufactured from the following material types
a. UNS No. C69300 Lead-free (LF) Brass
b. 20% glass-filled polysulfone as specified in ASTM D6394
c. Unreinforced polysulfone (group 01, class 1, grade 2) as specified in ASTM D6394
d. Polyphenylsulfone (group 03, class 1, grade 2) as specified in ASTM D6394
e. Blend of polyphenylsulfone (55-80%) and unreinforced polysulfone (rem.) as specified in ASTM D6394
2. Reinforcing cold-expansion rings shall be manufactured from the same source as PEX-a piping and marked “F1960”.

3. Potable water fittings shall comply with NSF 14 and NSF 61 and bear the "NSF-pw" marking.

C. Mechanical Joint: ¼ inch through 3 inch nominal pipe size
1. SDR9 compression-type fitting consisting of a nut, compression ring and insert.
2. Compression fitting shall comply with ASTM F877, NSF 14 and NSF 61.

D. Mechanical Joint: 1 inch through 3 inch nominal pipe size
1. SDR9 compression type fitting consisting of a double o-ring insert with a compression sleeve tightened around the pipe and insert.
2. Compression fitting shall comply with ASTM F877, NSF 14 and NSF 61.

2.3 INSULATION

A. Insulate all hot and cold water piping above slab with closed-cell elastomeric insulation, 1" thick. Maximum thermal conductivity (K) to be 0.27 as tested by ASTM C-518.

B. Install insulation using factory pre-fabricated pipe fitting insulation of the same material and thickness at elbows, tees, and p-traps. All joints shall be glued, taped and sealed in strict accordance with Manufacturer's recommendation.

C. Insulate all exposed piping under all lavatories in the Restrooms with insulation designed for that purpose, such as by Truebro.

D. Where water lines must run below slab, all hot and cold water piping shall be insulated.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

Comply with manufacturer's product data, including product technical bulletins, design drawings and installation manuals.

END OF SECTION

SECTION 22 11 17

DOMESTIC WATER PIPING - PEX-B TUBING

PART 1—GENERAL

1.1 DESCRIPTION

This section governs for hot and cold water PEX-B tubing, inside building, under foundation, in walls, and within 5 feet of building.

1.2 REFERENCES

1. ASTM F876 specification for Cross-linked Polyethylene (PEX) tubing
2. ASTM F877 specification for Cross-linked Polyethylene (PEX) plastic hot and cold water distribution systems.
3. ASTM F2023 test method for evaluating the oxidative resistance of Cross-linked (PEX) tubing and systems to hot chlorinated water.
4. ASTM F1807 specification for metal insert fittings utilizing a copper crimp ring for SDR9 Cross-linked Polyethylene (PEX) tubing
5. ASTM F2159 specification for plastic insert fittings utilizing a copper crimp ring for SDR9 Cross-linked Polyethylene (PEX) tubing
6. NSF 14 – plastic piping component and related materials
7. NSF 61 – drinking water system components – health effects
8. AWWA C651 standard for disinfecting water mains
9. ICC International Plumbing Code
10. ICC International Mechanical Code
11. NAPHCC National Standard Plumbing Code

PART 2—PRODUCTS

2.1 PEX TUBING

The PEX tubing system shall comply with the following.

1. The fittings and tubing shall all be from the same manufacturer. The tubing, fittings, and clamps shall all have been tested and certified as a system.
2. The tubing shall be manufactured to ASTM F876/877 standards and listed to ANSI/NSF Standards 14 and 61. All tubing shall be listed to the minimum chlorine resistance standard CL-TD and the CL-R listing. All tubing shall have CL-R listing stenciled onto the tubing.
3. In the event tubing is installed in a plenum, the tubing shall have the ASTM E84 listing, and this shall be stenciled directly on all tubing installed into the plenum.
4. All fittings shall have the water contact surface made bronze.
5. The installers shall all be trained by the manufacturer for the system being used and shall adhere strictly to the published guidelines of that manufacturer.

2.2 FITTINGS

1. PEX Press fittings shall be manufactured from UNS C83600, C87700, or C87710 Bronze

and shall meet the requirements of ASTM F877 tested as a system with the tubing. The PEX press sleeve shall be manufactured out of a 304 grade or better stainless steel.

2. Copper press fittings 1/2" to 2" shall have press surface on each side of the seal (no outboard seals allowed). Fittings 2-1/2" – 4" shall have a SS grip ring to maximize the mechanical strength of the connection.
3. Copper press fittings for potable water shall have "NSF 61" stamped onto the fittings to confirm compliance.
4. Fittings from various manufacturers shall not be mixed. The fittings shall all be from the same manufacturer, and the fitting tool used shall be recommended by the fitting manufacturer.
5. The installation instructions of the manufacturer shall be strictly adhered to, and the installers shall be specifically trained on the fitting system being used.

2.3 UNIONS

Provide wherever necessary for removal of equipment, valves, etc. Ground joint brass construction.

2.4 FLANGES

Where required, companion flanges with brass nuts and bolts.

2.5 AIR CHAMBERS/SHOCK ABSORBERS

Provide 18-inch long air chambers at each water connection to fixtures, or approved shock absorbers with access. Install per PDI recommendations.

2.6 INSULATION

1. Insulate all hot and cold water piping above slab with closed-cell elastomeric insulation, 1" thick. Maximum thermal conductivity (K) to be 0.27 as tested by ASTM C-518.
2. Install insulation using factory pre-fabricated pipe fitting insulation of the same material and thickness at elbows, tees, and p-traps. All joints shall be glued, taped and sealed in strict accordance with Manufacturer's recommendation.
3. Insulate all exposed piping under all lavatories in the Restrooms with insulation designed for that purpose, such as by Truebro.
4. Where water lines must run below slab, all hot and cold water piping shall be insulated.

PART 3—EXECUTION

3.1 Cross-linked Polyethylene tubing shall be cut with a PEX tubing cutter. The tubing shall be cut squarely and neatly to permit a proper connection between the tubing and fitting.

3.2 Pressure Rating: Install components having a pressure rating equal to or greater than the system operating pressure.

3.3 Install PEX tubing that is free of blemishes, cuts, gouges, kinks or noticeable fading of color.

3.4 Changes in Direction: PEX tubing shall not exceed an eight times the tubing outside diameter (OD) free bend radius or a five times the tubing OD supported bend radius, with use of a manufacturer approved bend support. Install fittings for changes in direction where any minimum

bend radius is exceeded and branch connections.

3.5 PEX Connections: Bronze PEX Press fittings shall be made in accordance with the manufacturer's installation instructions.

3.6 Threaded Joints: Threaded joints shall have a potable water listed joint sealant tape applied to the male threads only. Tighten joint with a wrench and backup wrench as required.

3.7 PEX Tubing Protection: Protect PEX tubing from exposure to direct and indirect sunlight exposure. PEX tubing shall be stored under cover, shielded from direct and indirect sunlight when material is stored for any length of time.

3.8 Penetration Protection: Provide allowance for thermal expansion and contraction of PEX tubing passing through a wall, floor, ceiling or partition by wrapping with pipe insulation, or by installing through an appropriately sized sleeve. Penetrations of fire resistance rated assemblies shall maintain the rating of the assembly.

3.9 Horizontal Support: PEX tubing must be supported every 32" horizontally with approved suspension clips or plastic insulators.

3.10 Vertical Support: PEX tubing must be supported at each floor or ceiling penetration and every four feet in between.

3.11 Field Quality Control

1. Water Testing: The PEX tubing system shall be pressure tested in accordance with local code after installation or to at least minimum system working pressure, no less than 40 psi, and for a period of no less than 15 minutes. Water used for this testing shall come from a potable water source. Test should not exceed pressure rating of PEX tubing and shall have no leaks.
2. Air Testing: In lieu of a water test, the PEX tubing system shall be air tested in accordance with local code after installation, or at least system working pressure, no less than 40 psi and no greater than 100 psi. The test shall be conducted for a period of no less than 15 minutes and shall have no leaks.

3.12 Cleaning Disinfection: The PEX hot and cold water distribution system require system disinfection. Follow the time limitations and exposure levels listed below:

1. Flush the system with potable water until discolored water does not appear at any of the outlets.
2. Fill the system with a water chlorine solution containing at least 50 parts per million of chlorine. The system shall be valved in the closed position and to stand for 24 hours. Alternatively, the system shall be filled with water chlorine solution containing at least 200 parts per million of chlorine. The System shall be valved in the closed position and allowed to stand for 3 hours.
3. Following the standing time, the system shall be flushed with water until the chlorine is purged from the system.

3.13 Each of the tubing systems shall be concealed in chases and above ceilings and in walls in all finished areas and shall be run exposed only as specifically specified or as shown on the Drawings in machinery spaces or unfinished areas.

3.14 Exposed tubing shall be held close to the walls and ceilings and necessary fittings shall be provided and installed to allow for offsets to hold the tubing close to wall and ceilings. Where these lines run exposed a clearance shall be obtained from the Architect in writing before making the installation.

3.15 All valves shall be so located as to make the removal of their bonnets possible. All flanged valves shown in the horizontal positions shall be mounted with valve stem inclined one bolt hole above the horizontal lines shall be "made-up" with valve stem inclined at an angle of thirty (30) degrees above the horizontal position. All valve stems must be true and straight at the time the system is tested for final appearance.

3.16 Tubing shall be cut accurately to measurements established at the site and worked into place without springing or forcing.

3.17 Provide clearance for installation of insulation and for access to valves, air vents, drain, and unions.

3.18 Locate and suspend tubing in such a manner so as to minimize transmission of vibration and noise. Follow manufacturer's recommendations.

3.19 All tubing penetrations through fire rated ceilings, walls, or floors shall be fire stopped using approved materials to maintain the fire rating of the ceiling, wall, or floor structure.

3.20 All tubing connections to equipment and fixtures shall contain flanges or unions to allow easy removal whether or not shown on plans.

3.21 To the greatest extent possible run all water tubing above the slab.

3.22 Pitch all water tubing to a drainable location; make all tubing drainable.

3.23 Buried water tubing and piping shall be a minimum of 24" deep, bedded in sand. Follow the manufacturer's instructions as regard buried tubing.

END OF SECTION

SECTION 22 11 18

DOMESTIC WATER PIPING - COPPER TUBING

PART 1—GENERAL

1.1 DESCRIPTION

This section governs for hot and cold water piping, inside building, under foundation, in walls, and within 5 feet of building.

PART 2—PRODUCTS

2.1 TUBING

Copper water tube with outside diameter 1/8-inch greater than nominal size. Type L hard copper above slab unless otherwise noted conforming to ASTM B88. Piping below slab shall be Type K soft copper to a point 12" A.F.F. – no joints in tubing below slab.

2.2 FITTINGS

A. Solder pattern, seamless wrought copper or cast bronze, furnished by the same manufacturer as tubing.

B. Joints and fittings not permitted under foundation or slab.

C. No solder containing lead shall be used.

D. Dielectric insulating couplings shall be provided between ferrous and copper piping systems.

E. Water piping connections to fixtures or equipment shall be made by use of brass pipe or nipples, chrome plated where exposed to view in finished areas, screwed into copper to IPS adaptor fittings. Ferrous piping connections shall not be used in copper piping systems.

F. For screwed connections, use adapter and Teflon tape on male threads.

2.3 UNIONS

Provide wherever necessary for removal of equipment, valves, etc. Ground joint brass.

2.4 FLANGES

Solder and companion flanges with brass nuts and bolts.

2.5 SOLDER

95% tin and 5% antimony solder, having a melting point of not less than 460° F. All flux shall conform to ANSI/NSF 61 for water distribution systems.

2.6 WATER HAMMER ARRESTORS

Provide water hammer arrestors conforming to the requirements of ASSE 1010 with access. Install per manufacturers instructions and PDI recommendations.

2.7 INSULATION

Insulate all hot and cold water piping above slab with 1" thick, molded fiberglass with a maximum thermal conductivity (K) of 0.27, as tested by ASTM C-518. Install insulation with mitered corners to fit the piping. This insulation material shall be furnished with a “universal” white vapor barrier jacket with flap. All jacket materials shall be factory applied. All joints shall be taped and sealed with all service jacket insulation facing tape UL listed meeting HHB-100B. Provide PVC covered fitting insulation at all fittings and valves. Insulate all exposed piping under all lavatories in the Restrooms with insulation designed for that purpose, such as by Truebro. Where water lines must run below slab, all hot and cold copper water piping shall be insulated with thermacel seam seal polyethylene foam insulation and taped at all joints with 20 mil butt joint tape.

PART 3—EXECUTION

3.1 Cut ends with tool cutter, remove burrs, and shall ream pipe ends.

3.2 Clean all ends and apply flux before soldering.

3.3 Thoroughly clean all soldered joints before the application of the solder. Cut pipe square with burrs removed, and shall ream pipe ends.

3.4 Each of the piping systems shall be installed to provide for expansion and contraction and the joints shall be soldered at such time that the system is not under strain.

3.5 Each of the piping systems shall be concealed in chases and above ceilings and in walls in all finished areas and shall be run exposed only as specifically specified or as shown on the Drawings in machinery spaces or unfinished areas.

3.6 Exposed piping shall be held close to the walls and ceilings and necessary fittings shall be provided and installed to allow for offsets to hold the piping close to wall and ceilings. Where these lines run exposed a clearance shall be obtained from the Architect in writing before making the installation.

3.7 All valves shall be so located as to make the removal of their bonnets possible. All flanged valves shown in the horizontal positions shall be mounted with valve stem inclined one bolt hole above the horizontal lines shall be “made-up” with valve stem inclined at an angle of thirty (30) degrees above the horizontal position. All valve stems must be true and straight at the time the system is tested for final appearance.

3.8 Pipe shall be cut accurately to measurements established at the site and worked into place without springing or forcing.

3.9 Provide clearance for installation of insulation and for access to valves, air vents, drain, and unions.

3.10 Locate and suspend piping in such a manner so as to minimize transmission of vibration and

noise.

3.11 Isolate all bare copper pipe from ferrous supports or sleeves using non-metallic sheeting (1/16" minimum thickness) that wraps completely around pipe's circumference and with a width of at least 2" wider than width of pipe support or pipe sleeve length. Tape is not an acceptable isolator. Secure sheeting in place on piping w/multiple 40 lb. tensile force (min. rating) plastic cable ties.

3.12 All piping penetrations through fire rated ceilings, walls, or floors shall be fire stopped using approved materials to maintain the fire rating of the ceiling, wall, or floor structure.

3.13 All piping connections to equipment and fixtures shall contain flanges or unions to allow easy removal whether or not shown on plans.

3.14 To the greatest extent possible run all water piping above the slab.

3.15 Pitch all water piping to a drainable location; make all piping drainable.

3.16 Buried water piping shall be a minimum of 24" deep, bedded in sand.

END OF SECTION

SECTION 22 13 16

SANITARY WASTE AND VENT PIPING

PART 1—GENERAL

1.1 WORK INCLUDED

A. Furnish and install piping in buildings and underground lateral lines.

1.2 REFERENCES

A. ASTM B88 Seamless Copper Water Tube

B. AWS A5.8 Brazing Filler Metal

C. AWWA C601 Standard Methods for the Examination of Water and Waste Water.

1.3 REGULATORY REQUIREMENTS

A. Perform work in accordance with State and Local plumbing codes

B. TCEQ.

PART 2—PRODUCTS

2.1 DRAIN, WASTE, AND VENT PIPING

A. Drain, waste and vent piping below grade, below slab, and above slab shall be PVC Sch 40, Type I, DWV, ASTM D-2665, 1120, 160 psi at 73 degrees F pipe and fittings. Solvent cement shall meet ASTM No. D-2564 for PVC-DWV plastic pipe and pipe fittings.

B. Trap Primer/Trap Guard – At floor drains, hub drains and other locations where trap primers are required, “ProSet – Trap Guard” may be used in lieu of trap primers if allowed by the local jurisdiction.

C. Soil lines 5 ft. and more outside building shall be SDR 35 PVC pipe.

D. Drain piping from Student Laboratory tables shall be CPVC certified for Chemical Waste Drainage Systems (per IAPMO IGC 210 & ICC-ES PMG-1018) equal to that manufactured by Spears Manufacturing (LabWaste CPVC Corrosive Waste Drainage Systems).

E. Roof Jacks - Provide "Deck Tight" flashing at all round roof penetrations.

F. Air Admittance Valves – if allowed by the local jurisdiction provide Studor, Inc. TEC-VENT air admittance valves may be used; otherwise, vent through the roof.

PART 3 – EXECUTION

3.1 GRADE

A. Slope horizontal pipe grade of ¼" per foot where possible, but not less than latest edition of applicable Plumbing Code requirements, unless otherwise shown.

3.2 DRAIN PIPE AND FITTINGS

A. Offsets and fittings
1. Use reduction fittings to connect two pipes of different diameter
2. Change directions by appropriate use of 45 degree wyes, long-sweep quarter-bends and sixth, eights, and sixteenth bends. Sanitary tees can be used on vertical stacks. Use long sweeps at the base of risers.
3. Provide separate trap at each fixture, unless a trap is built into the fixture. Provide a deep seal trap at each floor drain and hub drain. Place traps so that the discharge from any fixture will pass through only one trap before reaching a building drain.

B. Hub Drains. Install hub drains where indicated, with the top of the hub ½" above the finished floor or plenum, unless otherwise indicated on the drawings.

C. Cleanouts.
1. Install cleanouts the same size as the soil waste lines in which the cleanouts are placed; however, no cleanout should be larger than 4" in diameter.
2. Where cleanouts occur in pipe chases, bring the cleanouts through the walls and install covers. Where cleanouts occur in floor slabs, set flush.
3. Provide cleanouts where soil lines change direction, every 50" on long runs, or as shown on the drawings, at the end of each continuous waste line, and at the base of each riser.

D. Floor Drains. Locate floor drains ½" below finish floor elevation unless otherwise shown.

3.3 VENT PIPING

A. Make vent connections to vent stacks with inverted wye fittings. Extend full-size vents through the roof to at least 8" above the roof. Offset penetrations to be in the **middle** of the roof panel, avoiding the standing seam.

B. Flashing shall comply with the roofing manufacturer's requirements.

C. Install air admittance valves (see Section 2.1F above) a minimum of 4 inches above the horizontal branch drain or fixture drain being vented. Install in an upright position. Extend a minimum of one vent to open atmosphere for each building drainage system. Connect valves to piping per Manufacturer's instructions.

3.4 TESTING

A. Below Floors
1. Test pipe below floors before backfilling and connecting to sewers.
2. Maintain not less than 10' of hydrostatic head for 30 minutes without a leak. Bleed off all air before testing.

END OF SECTION

SECTION 22 42 00

COMMERCIAL PLUMBING FIXTURES

PART 1—GENERAL

PART 2—PRODUCTS

2.1 FIXTURES

A. American Standard fixtures and figure numbers are scheduled on the project drawings, given as a guide. Similar fixtures by Elkay, Kohler, or Eljer, will be acceptable, subject to the approval of Architect/Engineer. Contractor shall submit brochures with cuts of proposed fixtures, etc., to Architect/Engineer for approval.

B. All fixtures shall be the best of their respective makes and shall be properly stored and handled, carefully uncrated, and set in place. On completion, fixtures shall be thoroughly cleaned with soap and water, adjusted and left in readiness for use. The Contractor shall assume all responsibility for the protection of all fixtures to insure that same shall be in good condition on job completion.

C. All fixtures shall be plainly marked with the manufacturer's name or trade mark for purposes of identification. All fixtures must bear a seal to show conformance to ANSI/NSF 61.

D. Exposed metal parts of all fittings, unless otherwise noted, shall be polished chrome finish on nickel plated brass.

2.2 FIXTURE SCHEDULE: REFER TO DRAWINGS

A. Water Closets: As Scheduled on drawings.

B. Lavatories: As Scheduled on drawings.

C. Urinals: As Scheduled on drawings.

D. Sinks: As scheduled on drawings.

E. Electric drinking Fountain: As scheduled on drawings.

F. Water Heaters: As scheduled on drawings.

G. Wall Hydrant: As scheduled on drawings.

2.3 CLEANOUTS

A. Cleanouts shall be furnished for various locations as noted below, similar and approved equal to Zurn catalog numbers.

B. Finished area: Walls - Z-1441 cleanout with cast iron frame and 5" cover secured with tamper-proof screws. Floors - ZN-1400 cleanout with nickel bronze frame and cover secured with tamper-proof screws.

C. Unfinished Area Z-1400 cleanout with non-slip vandal proof cover; cover to have anchoring lugs. Where not located in pavement, cleanouts shall be set in concrete pad 6" thick, flush with finished grade, 18" square and finished smooth on top.

D. Cleanouts that comply with the specification except for the lead seal as manufactured by Wade, J.R. Smith, Tyler, or Josam are acceptable. All cleanouts shall have brass plug.

2.4 FLOOR DRAINS

Furnish and install floor drains as shown on the drawings. Drains shall be provided with deep seal "P-traps". Floor drain shall be Zurn Model Z-415-N in unfinished areas and Model Z-415 in finished areas, with heel-proof grate and vandal proof screws or equal by Josam, J.R. Smith, or Wade.

2.5 HOSE BIBB

Hose Bibb shall be furnished where noted on drawings. Unless noted otherwise on plans, provide chrome plated, removable key, with integral vacuum breaker, 3/4-inch threaded outlet, flanged 3/4-inch I.P.S. female inlet; Chicago Faucet Company Model #952 or approved equal.

PART 3 – INSTALLATION

3.1

A. All rough-in pipe openings, for final connections with all supply waste soil and vent systems shall be closed with cops or plugs during early stages of construction and installation. Tape shall not be considered sufficient protection.

B. Plumbing fixtures shall be supported by a concealed chair carrier where required to properly support the fixture specified. Carrier shall have a cast iron block type foot support with pipe uprights. Wade, Zurn or Josam or approved equal will be acceptable. All carriers to be securely mounted, bolted, and checked prior to concealment.

C. Caulk around fixtures with best grade white caulking. Do not use grout.

D. All handles on supply and drainage fittings or other brass items shall be properly lined up and adjusted. Fittings shall not be left in any haphazard manner.

E. All fixtures shall have individual cut-off stops on supply lines. Where same are not specified as a part of the fixture trim, they shall be installed as close to fixtures as possible in the hot and cold water supply.

F. Water heater flues shall be ANSI, Type “B”, double wall pipe, sized in accordance with manufacturer’s recommendations and installed in accordance with local codes and/or the Standard Gas Code. Flue cap shall be by the same manufacturer as the flue pipe.

END OF SECTION

SECTION 23 00 00

HEATING, VENTILATION AND AIR CONDITIONING

PART 1—GENERAL

1.1 DESCRIPTION

This Section governs for furnishing and installing complete heating and air conditioning systems including ventilation.

1.2 RELATED SECTIONS

Requirements of this Section must also comply with the following sections:

01 73 19 - Installation – Mechanical
23 30 00 - HVAC Air Distribution

1.3 SCOPE

This contract includes furnishing of all necessary supervision, labor, material, tools and equipment required to install a complete heating and air conditioning system in accordance with the accompanying drawings. The systems include, but are not limited to:

A. Air-cooled condensing units with air handlers, which include DX evaporator coils and electric heat as shown.

B. Automatic temperature control systems for each unit.

C. Exhaust Fans and Exhaust and Intake Grilles & Louvers as shown.

D. Ductwork as shown, including vibration isolation, fire dampers, turning vanes, splitters, balancing dampers, access doors, grilles, registers and diffusers, and insulation.

E. All required refrigerant tubing, drain piping, insulation, conduit, wiring, transformers, cabinets, relays and contactors to provide complete and working systems.

1.4 CODES, PERMITS AND ORDINANCES

Work to be executed in accordance with all local or state codes and regulations, applicable to the particular class of work. The Contractor shall hold a valid Texas Air Conditioning Contractor's License. The Contractor shall pay all applicable service charges, fees, permits, royalties, taxes and other similar costs. If the drawings or specifications are at variance with the above-mentioned codes and regulations, the Contractor shall promptly notify the Architect in writing. If the Contractor performs any work that is contrary to such codes and regulations, he shall bear all costs required to correct the work.

1.5 DRAWINGS AND COORDINATION

The drawings show the work intended, and reasonable care has been taken to prevent

interference between the trades. However, the Contractor shall examine all drawings and coordinate his work with that of the other Contractors on the job so that there will be no delay in the proper installation and completion of the work. If, during the course of construction, any such discrepancies are noted, the Contractor shall promptly report them to the Architect.

1.6 SUBMITTALS

Provide 6 sets for approval of the following items:

A. Provide manufacturer's cut sheets of all schedules equipment and other major items as required by the specifications. Clearly mark each item by tag number if applicable and indicate sizes, capacities, etc., to allow verification of conformance to the project requirements. Failure to do so can be cause for rejection.

B. Shop drawings showing details of proposed installation with interface of ducts and other equipment, if different than shown on project drawings.

C. Complete Operating and Maintenance manuals for all equipment, including installation and startup information.

1.7 QUALITY CONTROL

The manufacturer and model numbers shown on equipment schedules on the project drawings are shown to establish a minimum quality standard. Any substitutions must be furnished with all items that are furnished as standard for the scheduled item.

1.8 GUARANTEE <S> <OM>

Unless otherwise noted above, all parts, equipment, and workmanship shall be guaranteed for a period of one year from the date of substantial completion. The compressors, condensing unit parts and air handling unit/furnace parts (including evaporator coil) shall carry an additional four (4) years PARTS ONLY manufacturer's warranty for a total parts only warranty of five (5) years from the substantial completion date. Furnaces shall carry manufacturer's standard extended (9-year) heat exchanger warranty.

1.9 WORKMANSHIP

All work shall be performed in a workmanlike manner and shall present a neat appearance when completed. All materials shall be of the same type, quality, and rating as prescribed in the specifications or on the plans. Where materials and equipment are indicated by manufacturer's name, type, model or catalog number, such items are descriptive and approved equal products will be acceptable.

1.10 CUTTING AND PATCHING

The Contractor shall perform all cutting and patching required for the introduction and placement of his work. To perform all patching work, he shall employ men who are skilled in the particular trade involved. The Contractor at his expense shall do cutting and patching required as a result of the omission of an opening in construction.

1.11 PROTECTION OF WORK

The Contractor shall protect his work at all times from damage by freezing, breakage, dirt, foreign materials, etc. and shall replace all work so damaged. The Contractor shall use every precaution to protect the work of others, and he will be held responsible for all damage to other work caused by his work or through the neglect of his workmen.

1.12 CLEAN UP

The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by his employees at work. Upon completion of the work, the Contractor shall remove all surplus materials, tools, etc. and shall leave the premises “broom clean”.

PART 2—PRODUCTS

2.1 EQUIPMENT

A. To the maximum extent possible, provide equipment from a single manufacturer.

B. All heating and cooling equipment installed shall meet the minimum efficiency requirement of the latest edition of ASHRAE/IES 90.1 Energy Code for Commercial and High-Rise Residential Buildings.

2.2 CU’s (Air Cooled Condensing Units) <S> <OM>

A. Furnish and install the air-cooled condensing units as scheduled on the project drawings. Contractor is responsible for locating and installing condensing units so as to provide the Manufacturer’s recommended operating clearances as well as the NEC requirements for “dedicated electrical space” and “electrical working space”. Coordinate exact size requirements of condensing pads prior to pouring.

B. Capacity and efficiency of units shall not be less than those published for the above listed equipment. Unit electrical power requirements shall be as shown above. Control power shall be 24 volts, single-phase 60Hz.

C. Identify units, as shown on the plans, with engraved plastic laminated taps glued to the equipment. Letters on the tags shall be at least 1/4" high.

D. Furnish and install at least four rubber vibration isolators under each condensing unit. All condensing units shall be installed level and aligned with the building. All units shall be rated for operation at outdoor temperatures down to 35° F. Provide factory optional evaporator defrost control and TXV.

E. Acceptable manufacturers are Trane, Carrier, Daikin Applied, Lennox, York, or SureComfort/Rheem/Ruud. If equipment other than that listed above is furnished (Substitutions must be approved by Engineer.), it is the Contractor’s responsibility to furnish electrical design data to the Engineer for approval and to pay for any additional costs associated with furnishing electrical power to the units.

F. All units shall be U.L. listed and labeled.

2.3 AH UNITS (Air Handlers with Electric Heat) <S> <OM>

A. Furnish and install air handlers with blower, DX cooling coil and electric heating coil as scheduled on the drawings.

B. Capacity and efficiency of units shall not be less than those published for the scheduled equipment. Unit electrical power requirements shall be as shown on the plans. Control power shall be 24 volts, single phase, 60 Hz. Cooling coil capacity shall be with matching condensing unit as scheduled on the project drawings.

C. Filters shall be FARR 30/30,or equal, 1" or 2" pleated type as scheduled, having 25-30% average efficiency per ASHRAE 52.1-92. The pleated media shall be non-woven cotton fabric with 2.3 sq. ft. of media per 1 sq. ft. of face area for the 1" thick filters and 4.6 sq. ft. of media for the 2" thick filters. The initial pressure drop shall not exceed 0.25" w.c. at 350 fpm face velocity for the 1" thick filters and 0.28" w.c. at 500 fpm for the 2" thick filters. Exception: Filters for 5-ton and below units to be 1” nominal thickness, MERV 4, disposable fiberglass media filters w/0.15 in wg initial resistance @ 500 cfm airflow (Purolator Model F312 or equal). Access to the filters shall not require hand tools. Provide wing nuts or other mechanism at front access panel or filter rack that can be manipulated by hand.

D. Outside air of quantity scheduled for each unit shall be drawn into the AHU’s through soffit grilles or wall louvers as shown. The grilles shall be equipped with insect screen. Furnish a motorized damper and a manual damper in the outside air duct to each air handling unit. Motorized dampers shall be 24 VAC compatible with the thermostat listed in the Controls section of the specifications.

E. Air handling units with factory furnished electric heaters shall have a single point electrical connection. Each air handling unit shall have a factory installed fan contactor so that no field furnished starter in necessary.

F. Each factory furnished electric heater shall be integral to the unit and shall be suitable for installation directly on the fan discharge. Capacity and stages of heating shall be as scheduled on the drawings. Each heater shall have heavy-duty nickel-chromium elements and shall be either wye or delta connected for equal phase loading. Fusing and over-temperature protection shall be per the latest requirements of the National Electric Code.

G. All air handling units shall have either spring or rubber vibration isolators. Reference the project drawings for details.

H. Identify units, as shown on the plans, with engraved plastic laminated tags glued to the equipment. Letters on the tags shall be at least 1/2" high.

I. Acceptable manufacturers are Trane, Carrier, Daikin Applied, Lennox, York, or SureComfort/Rheem/Ruud. If equipment other than that listed above is furnished (Substitutions must be approved by Engineer.), it is the Contractor’s responsibility to furnish electrical design data to the Engineer for approval and to pay for any additional costs associated with furnishing electrical power to the units.

J. All units shall be U.L. listed and labeled per UL 465 and shall be AHRI certified and

labeled per AHRI Standard 210/360 or 365.

2.4 EXHAUST FANS <S> <OM>

A. Furnish and install all exhaust fans as schedule on the project drawings. Provide all accessory items shown on the schedule.

B. Acceptable manufacturers are Dayton, Loren Cook, Penn Ventilator Co., Acme, Carnes, Greenheck, and Twin City. All fans shall meet or exceed the performance requirements listed, and shall be approved by the manufacturer for the type of service required. All fans shall be equipped with disconnects. Direct drive exhaust fans shall also be equipped with speed controllers, and backdraft dampers.

C. All units shall be U.L. listed and labeled, shall carry the AMCA seal, certified for air and sound (AMCA 211 and 311).

PART 3—EXECUTION

3.1 DUCTWORK & INSULATION

This work is covered under Section 15890 or Section 15891.

3.2 REFRIGERANT PIPING

A. Furnish and install piping in accordance with ASHRAE standards and manufacturer's recommendations. All refrigerant tubing shall be type ACR hard copper with wrought fittings. All elbows shall be long sweep. Solder shall be equal to "Sil-Fos" and all soldering or brazing shall be performed with a nitrogen purge.

B. All refrigerant tubing for units shall be routed inside the exterior wall into the attic or mechanical room, to the evaporator coil. Coordinate the exact routing of vertical runs with the Architect/Engineer. All piping shall be installed parallel or perpendicular to the building construction. All piping shall be installed so as to allow for thermal expansion.

C. After the refrigerant piping has been completed, the refrigerant system shall be pressure tested at a pressure of 150 psi on the low side and 300 psi on the high side. Pressures shall be maintained on the system for a minimum of 2 hours.

D. Special care shall be used in sizing and routing the refrigerant tubing to all units. Follow the manufacturer's recommendations in all cases.

E. Use the manufacturer's and ASHRAE recommendations to size piping based on the total equivalent length of pipe. Slope all piping for proper oil return to the compressor. Install oil traps in all suction-piping risers. Avoid "trap" or underground piping between the building and the condensing unit if at all possible to minimize the possibility of "slugging" the compressor with condensed refrigerant upon startup.

3.3 PIPING INSULATION

Insulate refrigerant suction lines with closed-cell insulation equal to Rubatex Insul-tube 180 or Armstrong "AP Armaflex." Insulate refrigerant suction lines with closed-cell insulation equal to

Rubatex Insul-tube 180 or Armstrong “AP Armaflex.” Lines less than 1” diameter shall be insulated with ½” thick insulation minimum. Lines 1” dia and larger shall be insulated with 1” thick insulation. Paint all closed-cell insulation exposed to sunlight with two coats of Armstrong type “WB” finish, or equal. All pipe insulation joints shall be sealed with Armstrong #520 adhesive, or equal. Taping of pipe insulation joints is not permitted.

3.4 PIPING SUPPORTS

A. Anchors and supports shall be installed in accordance with ASHRAE standards. All piping shall be anchored and supported in such a way that thermal expansion and contraction does not damage either the piping or the building. Anchors and supports shall be specifically compatible with the materials to which they are attached.

B. All piping shall be supported from the building structure in a neat and workmanlike manner, and wherever possible, parallel runs of horizontal piping shall be grouped together on trapeze type hangers. The use of wire or perforated metal supports shall not be permitted. Spacing of pipe supports shall not exceed 8 ft. for pipes up to 1-1/4” and 10 ft. on all other piping. Hangers shall pass around the insulation and an 18 gauge steel protective band, 12” long, shall be inserted between the hangers and the insulation.

C. Support exterior refrigerant piping using galvanized “unistruts” with tie downs. Do not allow bare copper tubing to contact the galvanized support, but provide an aluminum shield or saddle under the piping. Do not “skip” the piping insulation at support tie-downs but provide continuous insulation under the tie down. Where straps or ties are used to bundle the piping, provide sheet metal shields to prevent the insulation from being crushed. The use of “duct” tape for any reason is prohibited.

3.5 CONDENSATE PIPING

Condensate drain piping shall be fabricated from schedule 40 PVC and supported in accordance with local codes. Insulate condensate drain lines with 3/8" wall closed cell insulation equal to Rubatex Insul-tube 180. Condensate from units shall discharge into a hub drain furnished by the plumbing contractor as shown on the PLUMBING PLANS and details. **No PVC piping shall be present in any return air plenum or platform.** Provide p-trap with vacuum breaker and clean-outs at all condensate drain connections. Provide float lockout switch in the pan to shut down the unit in the event of an overflow condition.

3.6 GRILLES, REGISTERS, DIFFUSERS, FIRE DAMPERS & RELIEF DAMPERS <S>

This work is covered under Section 23 30 00.

3.7 LOUVERS <S>

This work is covered under Section 23 30 00.

3.8 CONTROLS AND SAFETIES <S> <OM>

A. Furnish and install a complete, low voltage (24 VAC) control system for each unit. The HVAC Contractor is responsible for all control work, including all wiring and conduit, which must be installed in accordance with Section 16 of the specifications. Condensing unit control wiring shall be routed parallel to the associated refrigerant tubing. Tie-strap loose

control wires to the refrigerant tubing.

B. Furnish and install a U.L. listed duct-mounted firestat with factory setting of 135F, for units delivering 2000 cfm or less, to shut down the blowers when fire is detected.

C. Furnish and install Wi-Fi 7-day programmable thermostats Honeywell Vision Pro Model TH8321WF1001 Wi-Fi thermostat.

D. Furnish and install Wi-Fi 7-day programmable thermostats Honeywell Vision Pro Model TH8321WF1001 Wi-Fi thermostats. Thermostats shall be configurable for 1-stage cooling/1-stage heating or 2-stage cooling/2-stage heating with auxiliary contact for the outside air damper, and with keypad lock-out feature. Note: If units have dehumidification capability provide Manufacturer's recommended 7-day programmable thermostat/humidistat with a dehumidification mode. **Note: If thermostat/humidistat does not have auxiliary contacts to control outside air damper actuator, provide and install control relays as required for outside air damper actuation.**

E. Thermostats shall be mounted where shown on the Mechanical Plans at 48" AFF. Thermostats in public areas shall have locking access panel or clear plastic locking cover, except in schools, where metal covers are required. All covers must be keyed the same.

F. Provide remote space sensor when shown on the plans. Tie the sensor to the thermostat to provide “average” temperature control of the heating/cooling unit.

G. Each motorized outside air 24V damper will be controlled by the thermostat to remain closed during the unoccupied periods, even if the fan cycles on for night-set back. During the occupied period, interlock the outside air damper to the supply air fan so the damper will open when the fan is running. When CO2 demand control ventilation is included, interlock the outside air damper with both the CO2 monitor and the thermostat such that during the occupied period the outside air damper opens only when both the unit is running and the CO2 monitor calls for fresh air. Where CO2 monitors are shown on plans, HVAC Contractor shall furnish & install a 24V CO2 monitor <S>, powered from equipment’s electrical system, and all required associated wiring and interconnections; refer to Plans for locations. **Note: For DOAS systems, equipment, as provided by the Mfgr, shall comply with the IECC Energy Code (i.e., outdoor air intake dampers shall be configured to close when the systems are not in use; no additional motorized dampers are required.**

H. Label thermostats with the number of the unit controlled. Labels shall be engraved plastic laminate tags glued to the equipment with letters on the tags at least 1/4" high.

I. The Contractor shall furnish and install all contactors, transformers and relays required to provide a complete and working system. All control wiring shall be color-coded using a minimum of 18-gage wire. All exposed control wiring shall be in conduit. All enclosures shall be suitable for the location where installed.

3.9 FILTERS

A. Provide 2 complete sets of filters for all furnaces and air handling units. After substantial building construction is complete and prior to final air balancing, replace the first set of filters with clean filters.

3.10 TESTING AND BALANCING <S>

A. Contractor will employ services of a qualified independent firm to perform testing, adjusting, and balancing. To be approved by Architect/Engineer. Work does not have to be performed by an individual certified by the AABC (American Air Balance Council).

B. Furnish complete documentation of start-up and checkout including refrigerant system temperature and pressure data, electrical data and air balance.

All work shall be performed by an individual experienced in equipment start-up and air balancing.

NOTE: REFRIGERANT SHALL BE HANDLED ONLY BY EPA CERTIFIED TECHNICIANS. THE CONTRACTOR SHALL FURNISH DOCUMENTATION OF THIS CERTIFICATION TO THE Architect/Engineer BEFORE STARTING WORK.

C. Reports will be submitted by the independent firm to the Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with the requirements of the Contract Documents.

D. Cooperate with independent firm, furnish assistance as requested.

E. Re-testing required because of non-compliance to specified requirements will be “charged to the Contractor”.

F. All air volumes shall be adjusted to equal those shown on the drawings +/- 5%. A detailed report, showing the air volumes at each grille, register, diffuser, relief damper and exhaust fan, plus start-up values for all motor bearing equipment furnished under this section of the specifications, shall be submitted to the Architect/Engineer for review and approval.

3.12 OPERATION AND MAINTENANCE MANUALS

A. Submit two copies of the Operation and Maintenance (O & M) Manual to the Architect/Engineer. O & M Manuals shall include repair procedures, replacement parts information on each piece of equipment, start-up information and warranties.

END OF SECTION

SECTION 23 30 00

HVAC AIR DISTRIBUTION

PART 1—GENERAL

1.1 GENERAL

A. Where any reference to "sheet metal work" or "ductwork" appears in this section of these specifications or on the drawings, it shall be construed to include exhaust ducts, relief ducts, plenums, casings for air handling units, duct taps, grille taps and diffuser connections and all other related pieces and parts of the air conveying systems.

B. Before starting shop drawings or fabrication of any ductwork, the Contractor must have an approved reflected ceiling plan with which he can coordinate location of air outlets, lights, tile patterns, etc.

1.2 SCOPE OF WORK

Furnish and install all labor, materials, equipment, tools and services and perform all operations required in connection with or properly incidental to the construction of complete Ductwork and Accessories System as indicated on the drawings, reasonably implied therefrom or as specified herein unless specifically excluded.

1.3 SHOP DRAWINGS

Shop drawings shall be submitted on all items of sheet metal work only as specified hereinafter.

1.4 REFERENCE STANDARDS

ASHRAE	-	Guide and Data Books.
SMACNA	-	HVAC Duct System Design, Latest Edition.
NFPA	-	90A, 90B, 91, 96, 204
SMACNA	-	HVAC Duct Construction Standards, Latest Edition.

1.5 RELATED SECTIONS

Requirements of this section must also comply with the following sections: 09900-Painting.

PART 2— PRODUCTS

2.1 MATERIAL

All sheet metal duct, plenum and casing construction, unless otherwise specified herein, shall be constructed of new, prime grade, continuous hot dip mill galvanized, lock forming quality steel sheets, per ASTM A 924 and shall have a galvanized coating of 0.90 ounces total for both sides of 1 sq. ft. of a sheet, in accordance with G90 per ASTM A653 and ASTM A 90. Construction shall be in strict accordance with the construction details and installation details in the referenced SMACNA and NFPA standards as specified.

2.2 LABELING AND GAUGE

Each sheet shall be stenciled with manufacturer's name and gauge. If coil steel is used, coils shall be stenciled throughout on ten foot (10') centers with manufacturer's name and gauge. Sheet metal must conform to the tolerances listed in SMACNA HVAC Duct Construction Standards, First Edition, 1985. All duct systems penetrating 1 hour fire walls shall be of minimum 24 Ga. construction.

2.3 LOW PRESSURE DUCTWORK CONSTRUCTION

A. Rectangular low pressure ducts shall be constructed and reinforced in accordance with table 1-5 2" W.G. "Rectangular Duct Reinforcement" of SMACNA HVAC Duct Construction Standards, Latest Edition, and NFPA 90A AND 90B.

B. <S> Low pressure flexible ducts shall be in accordance with SMACNA HVAC Duct Construction Standards, Latest Edition, NFPA 90A and 90B. Flexible duct shall be equal to Genflex Type IL-1, or ATCO Flex-Aire Series 30, UPC #36, with an R-value of 6.0 with couplings and end connections as required for proper installation and compatibility with ductwork system in which they are installed.

1. All flexible ducts shall have positive interior seal, permanently bounded to a zinc coated high carbon spring steel helix completely sheathed in a Class 1 vapor barrier factory sealed at both ends. The composite assembly including vapor barrier shall meet the Class 1 requirements of NFPA for use in a return air plenum, and be labeled by Underwriters Laboratories, Inc. 181 with a flame spread rating of 25 or less and a smoke developed rating of 50 or under.

2. Low pressure flexible duct shall be rated to 1-1/2" w.g. working pressure.

3. Flexible duct taps into low-pressure plenums or main ducts shall be made with “spin-in’ side take-offs with air diverter or “scoop”. Provide rigid round duct with damper, Young or equal bearings, Young or equal operators, and raised bead for tight, positive flex duct connection. Use insulation guard for internally lined ductwork.

2.4 JOINTS

A. All joints shall be sealed airtight with duct sealer equal to United duct sealer in a manner compatible with type joint being sealed as recommended in the SMACNA HVAC Duct Construction Standards, Latest Edition.

B. All sealed ducts shall be pressure tested at a developed and maintained system pressure. Leaks that whistle or are excessive shall be repaired and the test repeated. See Part 3 Execution.

C. As a Contractor option, transverse duct joints may be made with Ductmate System or approved equal with the following stipulation: "Ductmate or equal system may be employed only after Contractor personnel have been properly instructed by a manufacturer's representative in the application and installation of said system." Duct gauges shall be in strict accordance with Ductmate instructions.

2.5 DUCT SUPPORTS

A. All horizontal and vertical ducts shall be supported in accordance with SMACNA HVAC Duct Construction Standards, Latest Edition.

B. Flexible Ducts shall be free of sags and kinks and supported on minimum of 36" center with 3/4" wide flat banding material. Perforated strap will not be acceptable.

2.6 DUCT LINER

A. All supply and return air ductwork as noted on the plans or with dashed lines drawn inside the duct, and all exposed ductwork, including ductwork exposed in mechanical rooms, shall have integral lining in accordance with SMACNA HVAC Duct Construction Standards, Latest Edition, and NFPA 90A and 90B. Liner shall have a minimum density of 1-1/2 pound per cubic foot.

EXCEPTION: Outside ductwork for rooftop packaged units rated 20 tons and above shall have faced fiberglass or faced closed cell foam insulation board on the outside of the duct with a Polyguard Products Alumaguard (or approved equal) flexible weatherproofing jacket installed per manufacturer's recommendations.

B. R-Value
1. ASTM C177 or ASTM C518 Standards apply.
2. Liner installed in supply or return air ducts located inside the building shall have a min. R-value of 6.0.
3. Liner installed in supply or return air ducts located outside the building shall have a min. R-value of 8.0.

C. Where ducts are lined, exterior insulation will not be needed except as otherwise specified. Dimensions given on the drawings are inside the insulation.

D. Sheet metal sizes shall be increased to allow for the thickness of liner called for.

E. Refer to Section 15010 for Flame Spread Properties.

2.7 DUCTWRAP

A. All unexposed rigid ductwork, outside the conditioned air space shall be wrapped with 2" minimum thickness FSK foil backed insulation, with a minimum installed R-value of 6.0. Install in accordance with SMACNA standards and manufacturer's recommendations. Duct wrap joints shall be stapled and taped with SMACNA grade foil tape.

B. Wrap all exhaust ducts w/1" minimum thickness FSK foil backed insulation. Install in accordance with SMACNA standards and manufacturer's recommendations. Duct wrap joints shall be stapled and taped with SMACNA grade foil tape.

2.8 <S> FIRE DAMPERS/SMOKE & FIRE DAMPERS (IF A PART OF THE PROJECT)

A. Furnish and install UL labeled fire dampers or smoke and fire dampers as applicable with fusible links where indicated and/or required by local codes in accordance with NFPA 90A and 90B.

B. Dampers shall be 95% minimum free area. Fire dampers shall be Ruskin series DIBD, Greenheck series DFD, type B or NCA model FDD, type B, Classified UL-555. Smoke and fire damper shall be Ruskin FSD, Greenheck FSD, or NCA FSD, Classified UL-555 and UL-555S. Dampers shall be “dynamic rated”.

C. Where dampers are installed in a horizontal position, provide stainless steel closure springs and cam type blade locks to insure complete damper shut-off.

D. Fire dampers shall be equipped with suitable frame style for round, oval or rectangular ducts.

E. Fire dampers shall only be installed in steel grilles, registers and diffusers. Aluminum air distribution devices may not be used in conjunction with fire dampers. It shall be the contractor’s responsibility to verify that only steel devices are used with fire dampers.

F. Acceptable manufacturers: Advanced Air, Ruskin, Air Balance, Airstream Products, Greenheck, Safe-Air, Pottorff

2.9 WALL LOUVERS: <S>

A. Provide 4" thick stationary extruded aluminum louvers with drainable blades. Units shall exactly fit opening and be flashed completely weather tight.

B. Provide factory baked-enamel coating system. Final color shall be approved by the Architect.

C. Maximum free area velocity for intake louvers shall not exceed 1000 ft. per minute with a maximum pressure drop of 0.15 inches w.g.

D. Louver blades shall be a minimum 0.125 inch thick and rigidly bracketed for 20 pounds per square foot wind loading.

E. Provide accessories as follows:

Alum. bug screen in removable frames.

F. Acceptable manufacturers/types are PENN Model M412, Greenheck ESD-403, Arrow E445, American Warming E445, Ruskin ELF375DX or NCA model XAD-4-45.

2.10 AIR DISTRIBUTION DEVICES: <S>

A. Grilles, registers and ceiling outlets shall be as scheduled in the plans and shall be provided with sponge rubber or soft felt gaskets. If a manufacturer other than the one scheduled is used, the sizes shown on the drawings shall be checked for performance, noise level, face velocity, throw, pressure drop etc., before the submittal is made. Selections shall meet the manufacturer's own published data for the above performance criteria. The throw shall be such that the velocity at the end of the throw in the five foot occupancy zone will not be more than 50 FPM or less than 25 FPM. Should grilles other than those scheduled by name be furnished, manufacturer shall be prepared to demonstrate compliance with noise criteria on request to Engineer's satisfaction. All devices shall be tested per Air Diffuser Council and labeled as such.

B. Locations of outlets on drawings are approximate and shall be coordinated with other trades to make symmetrical patterns and shall be governed by the established pattern of the lighting fixtures or Architectural reflected ceiling plan. Where called for on the schedules, the grilles, registers and ceiling outlets shall be provided with deflecting devices and manual dampers. These shall be the standard product of the manufacturer, subject to review by the Engineer and equal to brand scheduled. All ceiling devices shall be furnished to be compatible with the type ceiling in which they are installed.

C. Air distribution devices shall be as manufactured by Titus, Carnes, Anemostat, Krueger, Metalaire, Nailor-Hart, Price, Tuttle & Bailey, or Pottroff.

2.11 INSTRUMENT PORTS

Instrument ports shall be a 2 5/8" diameter base, neoprene gasket 2" deep neck, screwed cover operated with No. 024 spanner wrench, mounting screws, equal to Young 1101.

2.12 DUCT ACCESS DOORS (IF A PART OF THE PROJECT)

Duct access doors shall have gasketed frame with wing nut fasteners, (1" thick insulation bonded to interior face), 8" X 8" size (duct opening) on ductwork up to 14" and 12" X 12" size on larger ductwork, equal to Young 1310.

2.13 BAROMETRIC RELIEF DAMPERS

Barometric relief dampers shall have blade seals and adjustable counterbalance and shall be equal to NCA CBD-112, NCA XABD-1 or Arrow 500-B-CB, sized for the airflow or static pressure shown on the plans.

2.14 KITCHEN EXHAUST DUCTS (IF A PART OF THE PROJECT)

General: Fabricate kitchen exhaust ducts and supports, used for smoke and vapor removal from cooking equipment, of 18 ga. minimum stainless steel. For duct construction, comply with SMACNA “HVAC Duct Construction Standards”, and NFPA 96 “Removal of Smoke and Grease Laden Vapors from Commercial Cooking Equipment”. In all installations, insulate ductwork with 1-1/2” thick min, 6 pcf min duct wrap, U.L. listed and NFPA compliant for “grease ducts”.

PART 3—EXECUTION

3.1 WORKMANSHIP, QUALITY, AND REQUIREMENTS

A. Ductwork shown on the drawings, specified or required for the heating, ventilating and air conditioning systems shall be constructed and erected in a first class workmanlike manner in accordance with SMACNA recommendations for low pressure and medium pressure duct construction. This work shall be warranted for a period of one year from the date of acceptance of the job against noise, chatter, whistling or vibrations and free from pulsation under all conditions of operation. After the system is in operation, should these defects occur, they shall either be removed and replaced or reinforced as directed by the Architect.

B. Ductwork shall be erected in the general locations shown on the drawings, but must conform to all structural and finish conditions of the building. Before fabricating any ductwork, the Contractor shall check the physical conditions at the jobsite and shall make

all necessary changes in cross sections, offsets, etc., whether they are specifically indicated or not.

C. Provide manually operated volume control dampers in all branches, splits and taps for proper balancing of air distribution whether indicated on the drawings or not. Dampers shall be either single blade or multi-blade as required as shown in the SMACNA manual. They shall have an indicating device with lock to hold damper in position for proper setting.

D. Damper operators in all unfinished areas shall be Young Series 400 of the exact style, type and sizes as required. All other operators shall be Young #315 and/or #895 as required. All dampers shall have Young end bearings on the rod at the opposite end from the operator. Where dampers are installed in ducts located above accessible type ceiling, damper operators shall not be extended through the finished ceiling. Damper operators above inaccessible ceilings shall be furnished with extension rods operable through diffuser and grille faces or from remote locations.

E. All square elbows shall have double thickness turning vanes per the SMACNA manual requirements except for any return air jumper ducts noted on drawings.

F. Furnish and install in the ductwork, hinged access doors to provide access to all dampers, automatic dampers, fusible links, cleaning operations, etc. Where the ducts are insulated, the access doors shall be double skin doors with one inch (1") of insulation in the door. Factory fabricated doors as manufactured by Milcor or equal meeting these specifications will be acceptable.

G. Where ducts connect to HVAC equipment, flexible connections shall be made using "Ventglas" fabric that is fire-resistant, waterproof, mildew- resistant and practically air tight and shall weigh approximately thirty ounces (30 oz.) per square yard. There shall be a minimum of one-half inch (1/2") slack in the connections and a minimum of two and one half inches (2-1/2”) distance between the edges of the duct except that there shall also be a minimum of one inch (1") of slack for each inch of static pressure on the fan system.

H. Furnish and install screens on all ducts, fans, etc., and openings furnished by this Contractor which led to, or are, outdoors. Screens shall be 16 gauge, one eight inch (1/8") mesh in removable galvanized steels frames.

I. Furnish test openings with covers in each zone duct for taking readings of air velocities or pressures in ducts. See the SMACNA manual for cover construction.

J. All holes in ducts for damper rods and other necessary devices, shall be either drilled or machine punched, (not pin punched), and shall not be any larger that necessary. All duct openings shall be provided with sheet metal caps if the openings are to be left unconnected for any length of time. In general, sheet metal screws shall not be used in duct construction unless the head (not the point) of the screw is in the airstream. Transformations shall have a ratio of not more than one inch (1") in transformation to every two inches (2") of length unless specifically shown otherwise on the drawings.

K. Leakage Testing of Installed System:
   1. The installed new [and existing duct systems] shall be tested to the designed operating pressure.
   2. Measure the air leakage at the test pressure by a calibrated orifice type of flow

meter. Total allowable leakage of the system shall not exceed 2% of the air handling capacity of the system. If the system is tested in sections, the leakage rates shall be added to give the performance of the whole system.

3. Leakage concentrated at one point may result in objectionable noise even if the system passes the leakage rate criteria. This noise source must be corrected to the satisfaction of the engineer.
4. The orifice flow measurement device must have been individually calibrated against a primary standard, and this calibrated curve permanently attached to the orifice tube assembly.
5. Testing must be in accordance with a printed procedure submitted to the engineer for approval.

3.2 FLASHING

A. Where ducts pass through roofs or exterior walls, suitable flashing shall be provided to prevent rain or air current from entering the building. The flashing shall be not less than No. 24 gauge galvanized steel.

B. Where ducts exposed to view pass through walls, floors or ceilings, furnish and install sheet metal collars to cover the voids around the duct.

3.3 FIRE DAMPERS/SMOKE & FIRE DAMPERS (IF A PART OF THE PROJECT)

A. Fire dampers/smoke & fire dampers shall be installed in accordance with the SMACNA recommendations and as detailed on the drawings.

B. Provide a duct access panel for each fire damper.

C. Seal wall and floor penetrations with approved fire-stopping material. Fire-stop shall be equal to BIO Fireshield, Inc., BIO K-2.

3.4 PAINTING

A. Whenever exposed zinc-coated galvanized steel ductwork is to be painted, the surface preparation shall be in accordance with the practices set forth in ASTM D2092. Painting shall be in accordance with project specification section 09900 “Painting”.

3.5 INSTALLATION OF KITCHEN EXHAUST DUCTS (IF A PART OF THE PROJECT)

A. General: Fabricate joints and seams with continuous welds for watertight construction. Provide for thermal expansion of ductwork through 2000°F (1093°C) temperature range. Install without dips or traps that may collect residues, except where traps have continuous or automatic residue removal. Provide access openings at each change in direction, located on sides of duct 1-1/2" minimum from bottom, and fitted with grease tight covers of same material as duct. In addition, all requirements of the latest edition of NFPA 96 must be met.

END OF SECTION

SECTION 26 20 10

ELECTRICAL SERVICE AND DISTRIBUTION

PART 1—GENERAL

1.1 DESCRIPTION

This section governs for furnishing, installing, testing and placing in service electrical systems.

1.2 QUALITY ASSURANCE

A. Comply with all National Electrical Code (NEC) requirements, local ordinances, and State and Federal regulations as applicable to this project.

B. Manufacturer - Furnish products of manufacturers named unless otherwise approved.

1.3 STORAGE AND HANDLING

Maintain materials and equipment in like-new condition. Prevent accumulation of construction dirt and excess condensation.

1.4 INSPECTIONS AND TESTS

A. Pre-Energization and Operating Tests – The complete electrical system shall be performance tested when first installed on-site. Each protective, switching, and control circuit shall be adjusted in accordance with the recommendations of the protective device study and tested by actual operation using current injection or equivalent methods as necessary to ensure that each and every such circuit operates correctly to the satisfaction of the authority having jurisdiction.

1. Instrument Transformers – All instrument transformers shall be tested to verify correct polarity and burden.
2. Protective Relays – Each protective relay shall be demonstrated to operate by injecting current or voltage, or both, at the associated instrument transformer output terminal and observing that the associated switching and signaling functions occur correctly and in proper time and sequence to accomplish the protective function intended.
3. Switching Circuits – Each switching circuit shall be observed to operate the associated equipment being switched.
4. Control and Signal Circuits – Each control or signal circuit shall be observed to perform its proper control function or produce a correct signal output.
5. Metering Circuits – All metering circuits shall be verified to operate correctly from voltage and current sources, similarly to protective relay circuits.
6. Acceptance Tests – Complete acceptance tests shall be performed, after the station installation is completed, on all assemblies, equipment, conductors, and control and protective systems, as applicable, to verify the integrity of all the systems.
7. Relays and Metering Utilizing Phase Differences – All relays and metering that use phase differences for operation shall be verified by measuring phase angles at the relay under actual load conditions after operation commences.

B. Test Report – A test report covering the results of the tests required in NEC 225.56(A) shall be delivered to the authority having jurisdiction prior to energization.

1.5 ELECTRICAL SERVICE

A. Contractor shall be responsible for coordination of temporary and permanent electrical services with Electrical Delivery Provider prior to construction.

B. All cost associated with providing permanent electrical service to site from the Electrical Delivery Provider shall be submitted in writing to Architect prior to construction for review.

C. Contractor shall verify exact requirements from Electrical Delivery Provider and provide same. This shall include but not be limited to meter and meter location, underground conduit materials and construction, overhead materials and construction, conductors, service poles, and connections to transformer and meter.

D. Contractor shall verify requirements of the Electrical Delivery Provider for CT metering. Electrical service when CT meter is installed shall be terminated at main fused disconnect or main distribution panel as indicated on plans.

PART 2—PRODUCTS

2.1 ELECTRICAL

A. Conductors - To be copper unless otherwise specified and of size and type to conform to the requirements of National Electric Safety Code for loading and location

B. Switches and Controls - To be the size specified and comply with the National Electric Manufacturers Association (NEMA) standards. Devices, controls and material shall be subject to applicable codes and regulations. Deviation from plans and specifications shall have the prior approval of the Engineer.

C. Conduit-Outdoor
1. Underground and Under Foundations and Slabs - Schedule 40 electrical grade PVC for horizontal runs. At stub-ups from underground, install galvanized heavy wall rigid steel (UL) for the last three feet of horizontal run, radius, and vertical riser, unless noted otherwise. Install 9” wide yellow “Electrical Warning” tape 6” directly above underground conduit.
2. Outdoor Exposed – Galvanized heavy wall rigid steel (UL) conduit.

D. Conduit-Indoor - Inside buildings, covered or protected areas use Electrical Metallic Tubing (EMT) conduit.

E. Flexible Conduit - "Sealtite," type US, by American Brass Company or Anaconda.

F. Conduit Fittings - Crouse-Hinds, Appleton, or Killark. Unless noted otherwise, provide setscrew connections and couplings.

G. Electrical Panels - Plug-in type circuit breakers with capacity as required. Approved

Manufacturers: G.E., Westinghouse, Cutler-Hammer, Square-D, or Allen-Bradley.

H. Indoor Receptacles - Heavy Duty, 20A min. “specification” grade, with wiring clamps with large head screws for positive clamping of wiring for back and side wiring method, equal to Hubbell 5362. Finish to match existing receptacles where applicable. Finish per Architect for new construction.

I. Switches - Heavy Duty, 20A min. “specification grade,” equal to Hubbell 1221. Where show on plans 3-way switches shall be Heavy Duty, 20A min. “specification grade,” equal to Hubbell 1223. Finish to match existing switches where applicable. Finish per Architect for new construction.

J. Outdoor Receptacles - Weatherproof spring cover and conduit box (code approved) with GFCI protection.

K. Photoelectric/Timer Lighting Controls
   1. Photocells
      a. Photocells to be U.L. listed and electronic.
      b. Load capacity to be 1800 VA minimum but not less than 125% of load including power factor correction.
      c. Photocells to have integral surge/lightning protection.
      d. Photocell to have delay action to prevent de-energizing load due to light from headlights or lightning.
      e. Acceptable brand names include: Tork, Paragon, & Intermatic. Photocell brand to match timer brand.
   2. Timers
      a. Timers to be U.L. listed and mechanical.
      b. Load capacity to be rated at a minimum of 125% of load including power factor correction.
      c. Timer to provide 24-hour control. Provide one ON and one OFF tripper; timer to be capable of at least 3 on/off operations by adding additional trippers.
      d. Provide manual override.
      e. Acceptable brand names: Tork, Paragon, & Intermatic. Timer brand to match photocell brand.
   3. Installation – Install all controls per manufacturer’s recommendations.
      a. Relays can be eliminated if contacts are rated for the actual load.
      b. Do not use latching contactors.
      c. Mount photocells in an upright position facing toward natural light and away from artificial lights, tree shadows, and building shadows.

PART 3—EXECUTION

3.1 GENERAL

A. Install all equipment and materials in accordance with recommendations of each equipment manufacturer.

B. Space allocations and utility rough-ins have been designed on the basis of equipment items named by manufacturer and model number. If any equipment not so named is offered which differs substantially in dimensions or configuration from the named equipment, provide scaled shop drawings showing that the substitute can be installed in the same space available without interfering with other trades or with access for operation and maintenance in the completed project. The Installer shall coordinate final rough-in locations with actual equipment furnished.

C. Use only workmen skilled in this type of work.

3.2 INSTALLATION

A. CONDUIT
1. Steel Conduit Installation Practices: AISI Handbook "Steel Electrical Raceways" for steel.
2. Sleeves through footings for exterior runs to be "OZ" Series FSK, WSK, G and W, or 3M.
3. Exposed raceways to be installed parallel or perpendicular to walls, structural members of intersections, or vertical planes and ceilings.
4. Screw clamp backs to be used with conduits run on walls or ceilings.
5. Place an approved (OZ, Crouse-Hinds, Appleton) expansion fitting where crossing building expansion joints.
6. Install 9” wide yellow “Electrical Warning” tape 6” above outdoor buried conduit.

B. WIRE AND CABLE
1. Size - Type THHN or THWN stranded, 75ºC min. not smaller than No. 12 AWG, except control wire to be as required by the manufacturer. No. 12 AWG may be stranded or solid.
2. Branch circuit grounding conductors in conduit to be insulated unless otherwise noted.
3. Color coding - In accordance with NEC for color code control wires.
4. Connections and Splices in Dry Locations - For circuits loaded at less than 600 Volts AC, pressure connectors may be used (except for motors). Use compression lugs at motor terminals. Use compression sleeves for splices of No. 8 AWG and larger. Use electrical spring connectors (Scotchlock or 3M) for connections and wire joints in lighting and receptacle outlet boxes, and control junction boxes with terminal strips. Maximum wire size No. 8 AWG for spring connectors. Cover all splices, joints, and free ends of conductors with insulation equivalent to that of conductors or with insulating device suitable for the purpose.

C. PANELS
1. Top operating handle not to exceed 6 feet and 6 inches from finished floor.

2. Label all circuits on director card with embossing tape prior to job completion.

3. Three layer laminated nameplates shall be 3/32” inch thick, lengths as required to accommodate lettering, and in ¾” and 1 ¼” widths. Each plate shall have adhesive

backing with pull-apart resistance of at least 100 PSI and be attached to panels with screws. Plates shall be laminated type with black background and white letters.

4. All sub panels shall have nameplate installed inside panel door stating the panel it is powered from.

D. FLEXIBLE CONDUIT CONNECTIONS

Minimum of 2 feet to be provided for equipment subject to vibration or movement and to all motors. Arrange to facilitate motor removal.

E. DISCONNECT SWITCHES

1. Unless noted otherwise provide non-fused disconnect switches for all outside equipment, including but not limited to, air conditioning condensing units and roof-mounted exhaust fans.

2. Provide local disconnect for all appliances as required by NEC not within 50ft and line-of-sight of associated circuit breaker.

3.3 PROTECTIVE DEVICE TIME-CURRENT COORDINATION ANALYSIS ARC-FLASH STUDY

A. Provide arc-flash labeling in accordance with NEC 110.16. Calculate the maximum available fault current as necessary to ensure the service equipment ratings are sufficient for the maximum available fault current at the line terminals of the equipment in accordance with NEC 110.24. The required field markings shall be adjusted to reflect the new level of maximum available fault current. Field markings shall be of sufficient durability to withstand the environment involved. Coordinate with Owner for additional requirements in regards to protective device time-current coordination analysis arc-flash study.

END SECTION

SECTION 26 50 10

LIGHTING

PART 1—GENERAL

1.1 SCOPE

A. Work of this Section shall include the following items:
- Interior LED
- Exterior LED
- Emergency Lighting System

1.2 SUBMITTALS

A. Submittals that deviate or substitute products or items differing from those specified shall provide cut sheets of both the specified item and the proposed substitution for product comparison. **Submittals not following this procedure will not be reviewed.**

PART 2—PRODUCTS

2.1 LIGHTING FIXTURES AND LAMPS

A. Provide fixtures including interior and exterior fixtures and emergency battery pack type fixtures as indicated on the plans and described in the schedule.

B. All battery packs supplying emergency lighting fixtures shall be capable of sustained operation for at least 90 minutes without any degradation in performance and without going into deep cell discharge.
   1. When the fixture is powered by the battery pack, at least one third of the normal light output of one lamp shall be available for emergency lighting. Unless otherwise noted on the plans only one lamp shall be available for emergency lighting.
   2. All emergency lights shall have a lighted push-to-test button clearly visible and accessible.
   3. All battery packs shall be NICAD unless noted otherwise on the plans.

C. Fixtures shall be complete with lamps as indicated, internal wiring, drivers, transformers, brackets, fittings, lenses, louvers, guards, reflectors, pole supports and accessories as required, indicated or detailed.

D. Fixture make and model designations are shown in the lighting schedule on the Project drawings. Acceptable manufacturers are Lithonia Lighting, Cooper Lighting, Cree, Philips, RAB Lighting, and Hubbell/Prescolite provided substitutions meet the design intent and specifications of the scheduled fixtures including, but is not limited to color, shape, size, and output. Substitutions for products other than those stipulated will be considered by the Architect up to 3 days before the receipt of bids. The burden of proof of equality rests with the Prime Bidder. **Substitutions shall be by Architect's written approval only and may require submission of samples.**

E. Provide a transformer/driver for LED lights that meets the manufacturer's requirements. Verify with the manufacturer the minimum and maximum number of fixtures that can be powered

from a single transformer/driver so as to provide stable, flicker-free operation and long life.

PART 3—EXECUTION

3.1 LIGHTING FIXTURES

A. Installation methods for each fixture shall be as indicated or detailed and as recommended by the fixture manufacturer for the application. Supports such as mounting brackets, hangers, clamp, etc., shall be provided in the best practical manner consistent with good workmanship and appearance.

B. Any fixture damaged during construction prior to final acceptance of the project shall be replaced or repaired to the satisfaction of the Engineer.

C. Contractor shall note architectural finish schedules and existing conditions and furnish proper mounting accessories or trim as required to properly mount each fixture type.

D. Recessed fixtures shall be provided with mounting frames or rings and shall finish flush to the ceiling without light leaks. Fixtures shall be connected by means of 3/8" flexible metal conduit (max 6'-0" length) from outlet boxes mounted above or alongside the fixture. “Daisy-chaining” will not be permitted

E. Fixtures exposed to outdoor temperatures shall be rated for 0 degree Fahrenheit operation.

END SECTION

SECTION 27 10 10

DATA AND TELEPHONE CABLE PLANT

PART 1—GENERAL

1. SCOPE OF WORK

   A. Provide all equipment, materials, labor, supervision, and services necessary for or incidental to the installation and testing of a complete DATA and VOICE cable plant providing all permanent premise cabling and wiring devices required to support a facility wide computer network and telephone cabling system and as shown or indicated on the drawings and/or as specified.

   B. Provide a 20+ year manufacturer warranty on installed data and voice cabling system.

2. CODES AND STANDARDS

   A. NFPA 70 National Electrical Codes.

   B. NFPA 101 Code for Safety to Life from Fire in Buildings and Structures.

   C. ANSI/TIA-568.0-D – Generic Telecommunications Cabling for Customer Premises.

   D. ANSI/TIA-568.1-D - Commercial Building Telecommunications Cabling Standard.

   E. ANSI/TIA-568-C.2-1 – Balanced Twisted-Pair Telecommunications Cabling and Components Standard, Addendum 1: Specifications for 100Ω Category 8 Cabling

   F. ANSI/TIA-568-C.3-1 – Optical Fiber Cabling Components Standard.

   G. ANSI/NECA/TIA-568-C.4- Broadband Coaxial Cabling and Components Standard

   H. ANSI/TIA-569-D – Telecommunications Pathways and Spaces.

   I. TIA-607-C – Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises.

   J. TIA-606-B.1 – Administration Standard for Telecommunications Infrastructure.

   K. BICSI- Other BICSI Standards which may apply.

   L. All applicable parts will be Underwriters Laboratories, Inc. approved.

   M. All applicable parts will be FCC Class B approved.

   N. Americans with Disabilities Act.

   O. Local and State Building Codes.

   P. All requirements of the local Authority Having Jurisdiction (AHJ).

3. SUBMITTALS

A. Submit to the engineer/designer shop drawings, product data (including cut sheets and catalog information), and samples required by the contract documents. Submit shop drawings, product data, and samples with such promptness and in such-sequence as-to cause no delay in the work or in the activities of separate contractors.
   1. By submitting shop drawings, product data, and samples, the contractor represents that he or she has carefully reviewed and verified materials, quantities, field measurements, and field construction criteria related thereto. It also represents that the contractor has checked, coordinated, and verified that information contained within shop drawings, product data, and samples conform to the requirements of the work and of the contract documents. The engineer/designer remains responsible for the design concept expressed in the contract documents as defined herein.
   2. The engineer's/designer's approval of shop drawings, product data, and samples submitted by the contractor shall not relieve the contractor of responsibility for deviations from requirements of the contract documents, unless the contractor has specifically informed the engineer/designer in writing of such deviation at time of submittal, and the engineer/designer has given written approval of the specific deviation. The contractor shall continue to be responsible for deviations from requirements of the contract documents not specifically noted by the contractor in writing, and specifically approved by the engineer in writing.
   3. The engineer's/designer's approval of shop drawings, product data, and samples shall not relieve the contractor of responsibility for errors or omissions in such shop drawings, product data, and samples.

B. The engineer's/designer's review and approval, or other appropriate action upon shop drawings, product data, and samples, is for the limited purpose of checking for conformance with information given and design concept expressed in the contract documents. The engineer's/designer's review of such submittals is not conducted for the purpose of determining accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the contractor as required by the contract documents. The review shall not constitute approval of safety precautions or of construction means, methods, techniques, sequences, or procedures. The engineer's/designer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

C. Perform no portion of the work requiring submittal and review of shop drawings, product data, or samples, until the engineer/designer has approved the respective submittal. Such work shall be in accordance with approved submittals.

D. Submit shop drawings, product data, and samples as a complete set within thirty (30) days of award of contract.
   1. Shop drawings: Submit the following:
      a. Backbone (riser) diagrams
      b. System block diagram, indicating interconnection between system components and subsystems

2. Product Data - Provide equipment list and data sheet on system devices, racks, special boxes, cables, and other material as requested by the Architect including:
   a. Manufacturer
   b. Model Number
   c. Indication all options and accessories
   d. Catalog data sheet with photograph

E. Submit project record drawings at conclusion of the project.
1. Approved shop drawings
2. Plan drawings indicating locations and identification of work area outlets, nodes, telecommunications rooms (TRs), and backbone (riser) cable runs
3. Telecommunications rooms (TRs) and equipment room (ER) termination detail sheets.
4. Cross-connect schedules including entrance point, main cross-connects, intermediate cross-connects, and horizontal cross-connects.
5. Labeling and administration documentation.
6. Warranty documents for equipment.
7. Copper certification test result printouts and diskettes,
8. Optical fiber power meter/light source test results.

4. QUALIFICATIONS OF BIDDER

A. The Project Manager shall be the main point of contact for the project between the Owner and the subcontractor's technicians.

B. The Project manager shall be a current RCDD® if required on plans.

C. The same site supervisor shall be assigned to the project site for 95% of the work week, when technicians are on-site, and shall be responsible for the management of Lead Technicians.

D. Bidders who do not currently possess the necessary qualifications, trained and experienced personnel, financial capacity, and meet the other requirements herein described will be disqualified.

E. The bidder, as a business entity, shall be an authorized and designated representative of the equipment manufacturer with full warranty rights, and shall have been actively engaged in the business of selling, installing, and servicing commercial building cable systems for a period of at least 5 years.

F. Recently formed companies are acceptable only if specific pre-approval is requested, and granted by the Architect/Engineer, based on experience of key personnel, current and completed projects, and all licensing requirements are met 10 working days prior to the bid date.

G. The bidder shall have an office within 100 miles of the job site staffed with trained technicians who are qualified and licensed to supervise the installation, to be responsible that the system is installed as submitted, to conduct system start up and perform a 100 percent operational audit of all installed devices, to instruct the Owners representatives in the proper operation of the system, and to provide service throughout the warranty period.

H. The bidder shall be fully experienced in the design and installation of systems as herein specified, and shall furnish with the bid an itemized list of the installations of the type specified herein. The list shall include the name of the project, date of completion, the amount of the contract, the name, and telephone number of the person to contact for reference. This list must contain at least five (5) projects within a 100-mile radius of the school district to allow school administration officials to visit the job site for review of the system installation and service.

I. The bidder shall not have any unresolved grievances or complaints of record regarding workmanship, code compliance, or service response. A Contractor that has any prior finding(s) of a code violation or has any litigation in process is unacceptable.

J. The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

K. The bidder shall employ full time local technicians and installers. The manufacturer shall maintain a full time factory employed service staff for product support and service.

L. Untrained, undocumented or otherwise unqualified personnel are not allowed to perform any portion of the communications infrastructure installation.

M. The ability of any bidder to obtain plans and provide a performance bond shall not be regarded as the sole qualification of such bidder's competency and responsibility to meet the requirements and obligations of the contract.

N. Before using the bid of a subcontractor as part of his bid, the General Contractor shall satisfy himself that the proposed subcontractor can satisfy all of the requirements expressed above. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that the bidder and/or any subcontractor he proposes can properly qualify to carry out the obligation of any part of the contract, and to complete the work contemplated therein.

O. The Owner reserves the right to reject the bid of any bidder who has previously failed to perform properly, or complete on time, contracts of a similar nature.

5. ALTERNATE PROPOSALS

A. Bidders wishing to propose systems, which differ in any features, functions, or operating characteristics from those outlined in these specifications must do so in writing to the specifying authority at least ten (10) days prior to bid opening.

B. For manufacturers equipment or models other than that specified, the bidder shall supply proof that such substitute equipment in compatible with all devices to be furnished, and that the equipment equals or exceeds the features, functions, performance, and quality of the specified equipment. Proposals must include detailed information showing all deviations from the system as specified.

C. Bidders that do not obtain prior approval for alternate equipment will not be considered an acceptable supplier for this project. Final approval of the alternate system shall be based on the decision of the Owner and Architect. Prior approval to bid this project does not automatically insure the system will be an acceptable equivalent.

6. QUALITY ASSURANCE

A. The contractor shall have worked satisfactorily for a minimum of five (5) years on systems of this type and size.

B. Upon request by the engineer/designer, furnish a list of references with specific information regarding type of project and involvement in providing of equipment and systems.

C. Equipment and materials of the type for which there are independent standard testing requirements, listings, and labels, shall be listed and labeled by the independent testing laboratory.

D. Where equipment and materials have industry certification, labels, or standards (i.e., NEMA - National Electrical Manufacturers Association), this equipment shall be labeled as certified or complying with standards.

E. Material and equipment shall be new, and conform to grade, quality, and standards specified. Equipment and materials of the same type shall be a product of the same manufacturer throughout.

F. Subcontractors shall assume all rights and obligations toward the contractor that the contractor assumes toward the owner and engineer/designer.

7. DELIVERY, STORAGE, AND HANDLING

A. Protect equipment during transit, storage, and handling to prevent damage, theft, soiling, and misalignment. Coordinate with the owner for secure storage of equipment and materials. Do not store equipment where conditions fall outside manufacturer's recommendations for environmental conditions. Do not install damaged equipment; remove from site and replace damaged equipment with new equipment.

8. SEQUENCE AND SCHEDULING

A. Submit schedule for installation of equipment and cabling. Indicate delivery, installation, and testing for conformance to specific job completion dates. As a minimum, dates are to be provided low bid award, installation start date, completion of station cabling, completion of riser cabling, completion of testing and labeling, cutover, completion of the final punch list, and owner acceptance.

9. USE OF THE SITE

A. Use of the site shall be at the owner's direction in matters in which the owner deems it necessary to place restriction.

B. Access to building wherein the work is performed shall be as directed by the owner.

C. The owner will occupy the premises during the entire period of construction for conducting his or her normal business operations. Cooperate with the owner to minimize conflict and to facilitate owner's operations.

D. Schedule necessary shutdowns of plant services with the owner, and obtain written permission from the owner. Refer to article - CONTINUITY OF SERVCES-herein.

E. Proceed with the work without interfering with ordinary use of streets, aisles, passages, exits, and operations of the owner.

10. CONTINUITY OF SERVICES

A. Take no action that will interfere with, or interrupt, existing building services unless previous arrangements have been made with the owner's representative. Arrange the work to minimize shutdown time.

B. Owner's personnel will perform shutdown of operating systems. The contractor shall give three (3) days' advance notice for systems shutdown.

C. Should services be inadvertently interrupted, immediately furnish labor, including overtime, material, and equipment necessary for prompt restoration of interrupted service.

11. DRAWINGS. MANUALS. AND TRAINING

A. Upon completion of the installation and prior to final inspection, this Contractor shall furnish five (5) copies of as-built drawings. Provide one reproducible vellum and four prints. In addition, this Contractor shall furnish four (4) copies of a manual giving complete instructions for the operation, inspection, testing and maintenance of the system including wiring diagrams. Place cable test results in manuals.

B. All cable paths and wiring methodology shall be documented. All cables shall have both ends labeled and included in the as-built documentation. Provide on a CD-ROM in Excel compatible form spreadsheet file cross referencing all cable run numbers, architectural room number, and owners room number from the origin and destination of each cable run.

C. A formal on-site training session shall be provided by this contractor to the Owners Representative / Maintenance personnel and shall include instruction in the location, inspection, maintenance, testing, and operation of all system components. Provide a minimum of two (2) hours of documented general instruction.

12. WARRANTY, SERVICE. TESTING. CERTIFICATION

A. Unless otherwise specified, unconditionally guarantee in writing the materials, equipment, and workmanship for a period of not less than twenty (20) years from date of acceptance by the owner. The owner shall deem acceptance as beneficial use.

B. Transfer manufacturer's warranties to the owner in addition to the General System Guarantee. Submit these warranties on each item in list form with shop drawings. Detail specific parts within equipment that are subject to separate conditional warranty. Warranty proprietary equipment and systems involved in this contract during the guarantee period. Final payment shall not relieve you of these obligations.

C. The System Contractor shall make a thorough inspection of the complete installation to ensure the following:
   1. Complete and functional system
   2. Installed in accordance with manufacturer's instructions.
   3. All cabling shall test free from all grounds and shorts.

D. Data UTP cable shall be tested at 350 MHz or greater. The cable tester shall produce a printed report, noting label information, for each cable run. Testing shall be conducted with a Level III or equivalent cable test scanner with active injector capable of Category 6.

E. Telephone UTP cable shall be tested at 100 MHz with the same type tester to insure Category 5e requirements.

F. ADDITIONAL REQUIREMENTS:
   1. A representative of the end-user shall be invited to witness field testing. The representative shall be notified of the start date of the testing phase five (5) business days before testing commences.
   2. A representative of the end-user will select a random sample of 5% of the installed links. The representative (or his authorized delegate) shall test these randomly selected links and the results are to be stored in accordance with the prescriptions in Section 1.4. The results obtained shall be co-pared to the data provided by the installation contractor. If more than 2% of the sample results differ in terms of the pass/fail determination, the installation contractor under supervision of the end-user representative shall repeat 100% testing and the cost shall be borne by the installation contractor.

G. PERFORMANCE TEST PARAMETERS
   1. The test of each cable link shall contain all of the following parameters as detailed below. In order to pass the link test all measurements (at each frequency in the range from 1 MHz through minimum 350 MHz) must meet or exceed the limit value determined in the TIA/EIA standards.
   2. **Wire Map –** Wire Map shall report Pass if the wiring of each wire-pair from end to end is determined to be correct. The Wire Map results shall include the continuity of the shield connection if present.
   3. **Length –** The field tester shall be capable of measuring length of all pairs of a permanent link or channel based on the propagation delay measurement and the average value for NVP (1). The physical length of the link shall be calculated using the pair with the shortest electrical delay. This length figure shall be reported and shall be used for making the Pass/Fail decision. The Pass/Fail criteria are based on the maximum length allowed for the permanent link configuration (90 meters - 295 ft) or the channel (100 meters - 328 ft) plus 10% to allow for the variation and uncertainty of NVP.
   4. **Insertion Loss (Attenuation) –** Insertion Loss is a measure of signal loss in the permanent link or channel. The term 'Attenuation' has been used to designate 'insertion loss'. Insertion Loss shall be tested from 1 MHz through minimum 350 MHz in maximum step size of 1 MHz. It is preferred to measure attenuation at the same frequency intervals as NEXT Loss in order to provide a more accurate calculation of the Attenuation-to-Crosstalk Ratio (ACR) parameter.
   5. **Nominal Velocity of Propagation (NVP**) expresses the speed of the electrical signals along the cabling link in relation to the speed of light in vacuum. Insulation characteristics and twist rate of the wire pair influence NVP in minor ways.

Typically, an 'average' value for NVP is published for all four wire-pairs in a data cable.

6. **NEXT Loss**, **pair-to-pair** – Pair-to-pair near-end crosstalk loss (abbreviated as NEXT Loss) shall be tested for each wire pair combination from each end of the link (a total of 12 pair combinations). This parameter is to be measured from 1 through minimum 350 MHz. NEXT Loss measures the crosstalk disturbance on a wire pair at the end from which the disturbance signal is transmitted (near-end) on the disturbing pair.
7. **PSNEXT Loss –** Power Sum NEXT Loss shall be evaluated and reported for each wire pair from both ends of the link-under-test (a total of 8 results). PSNEXT Loss captures the combined near-end crosstalk effect (statistical) on a wire pair when all other pairs actively transmit signals. Like NEXT this test parameter must be evaluated from 1 through minimum 350 MHz and the step size may not exceed the maximum step size defined in the standards.
8. **ELFEXT Loss**, **pair-to-pair –** Pair-to-pair FEXT Loss shall be measured for each wire-pair combination from both ends of the link-under-test. FEXT Loss measures the unwanted signal coupling (crosstalk disturbance) on a wire pair at the opposite end (far-end) from which the transmitter emits the disturbing signal on the disturbing pair. FEXT is measured to compute ELFEXT Loss that must be evaluated and reported in the test results. ELFEXT measures the relative strength of the far-end crosstalk disturbance relative to the attenuated signal that arrives at the end of the link. This test yields 24 wire-pair combinations. ELFEXT is to be measured from 1 through minimum 350 MHz and the maximum step size for FEXT Loss measurements shall not exceed the maximum step size defined in the standards. Minimum test results documentation (summary results): Identify the wire pair combination that exhibits the worst-case margin and the wire pair combination that exhibits the worst value for ELFEXT. These wire pairs must be identified for the tests performed from each end. Each reported case shall include the frequency at which it occurs as well as the test limit value at this frequency.
9. **PSELFEXT Loss** – As defined in TIA/EIA standards.
10. **Power Sum ELFEXT** is a calculated parameter that combines the effect of the FEXT disturbance from three wire pairs on the fourth one. This test yields 8 wire-pair combinations.
11. **Return Loss** – Return Loss (RL) measures the total energy reflected on each wire pair. Return Loss is to be measured from both ends of the link-under-test for each wire pair. This parameter is also to be measured form 1 through minimum 350 MHz in frequency increments that do not exceed the maximum step size defined in the standards. Minimum test results documentation (summary results): Identify the wire pair that exhibits the worst case margin and the wire pair that exhibits the worst value for Return Loss. These wire pairs must be identified for the tests performed from each end. Each reported case shall include the frequency at which it occurs as well as the test limit value at this frequency.
12. **ACR (Attenuation to crosstalk ratio)** [This parameter is not demanded by the standards but may be required in order to obtain the premise wiring vendor's warranty] – ACR provides an indication of bandwidth for the two wire-pair network applications. ACR is a computed parameter that is analogous to ELFEXT and expresses the signal to noise ratio for a two wire-pair system. This calculation yields 12 combinations - six from each end of the link. Minimum test results documentation (summary results): Identify the wire pair combination that exhibits the worst case margin and the wire pair combination that exhibits the worst value for ACR. These wire pair combinations must be identified for the tests performed

from each end. Each reported case shall include the frequency at which it occurs as well as the test limit value at this frequency. **PSACR** [This parameter is not required by the standards but may be required in order to obtain the premise wiring vendor's warranty] – The Power Sum version of ACR is based on PSNEXT and takes into account the combined NEXT disturbance of all adjacent wire pairs on each individual pair. This calculation yields 8 combinations - one for each wire pair from both ends of the link. Minimum test results documentation (summary results): Identify the wire pair that exhibits the worst-case margin and the wire pair that exhibits the worst value for PSACR. These wire pairs must be identified for the tests performed from each end. Each reported case shall include the frequency at which it occurs as well as the test limit value at this frequency.

13. **Propagation Delay –** Propagation delay is the time required for the signal to travel from one of the link to the other. This measurement is to be performed for each of the four wire pairs. Minimum test results documentation (summary results): Identify the wire pair with the worst-case propagation delay. The report shall include the propagation delay value measured as well as the test limit value.
14. **Delay Skew –** This parameter shows the difference in propagation delay between the four wire pairs. The pair with the shortest propagation delay is the reference pair with a delay skew value of zero. Minimum test results documentation (summary results): Identify the wire pair with the worst-case propagation delay (the longest propagation delay). The report shall include the delay skew value measured as well as the test limit value.

H. TEST RESULT DOCUMENTATION

1. The test results information for each link shall be recorded in the memory of the field tester upon completion of the test.
2. The test results records saved by the tester shall be transferred into a Windows(tm)-based database utility that allows for the maintenance, inspection and archiving of these test records. A guarantee must be made that the measurement results are transferred to the PC unaltered, i.e., "as saved in the tester" at the end of each test and that these results cannot be modified at a later time.
3. The database for the completed job shall be stored and delivered on CD-ROM including the software tools required to view, inspect, and print any selection of test reports.
4. A paper copy of the test results shall be provided that lists all the links that have been tested with the following summary information.
    a. The identification of the link in accordance with the naming convention defined in the overall system documentation
    b. The overall Pass/Fail evaluation of the link-under-test including the NEXT Headroom (overall worst case) number.
    c. The date and time the test results were saved in the memory of the tester
    d. General Information to be provided in the electronic data base with the test results information for each link:
        i. The identification of the customer site as specified by the end-user
        ii. The identification of the link in accordance with the naming convention defined in the overall system documentation
        iii. The overall Pass/Fail evaluation of the link-under-test
        iv. The name of the standard selected to execute the stored test results
        v. The cable type and the value of NVP used for length calculations

vi. The date and time the test results were saved in the memory of the tester

vii. The brand name, model and serial number of the tester

viii. The identification of the tester interface

ix. The revision of the tester software and the revision of the test standards database in the tester

PART 2—PRODUCTS

1. GENERAL

A. All cable and wiring devices provided should be listed and labeled by Underwriters Laboratories, Inc. for the intended use under the latest appropriate testing standard.

B. Only equipment devices have been shown on the contract drawings. Specific wiring between equipment has not been shown.

C. All equipment and components shall be new, and the manufacturer's current model. All like devices shall be of the same manufacturer and model number.

D. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., cable shall not be supported by or lay on suspended ceilings). Fasteners and supports shall be adequate to support the required load.

E. Installation subject to approval, inspection, and test of the Architect/Engineer.

2. ACCEPTABLE MANUFACTURES

A. All reference to manufacturers or suppliers' model numbers and other pertinent information herein are supplied to establish minimum standards of performance, function and quality. The intent is to establish a standard of quality, function and features. It is the responsibility of the bidder to insure that the proposed product meets or exceeds every standard set forth in these specifications.

B. It is the responsibility of the Contractor to provide all features and functions as outlined in these specifications.

C. The functions and features specified are vital to the operation of this facility; therefore, inclusion in the list of acceptable manufacturers does not release the contractor from strict compliance with the requirements of this specification.

D. The following are acceptable cable manufactures any other proposed suppliers must be pre-approved:

1. Belden
2. Berk-tek
3. CommScope
4. Panduit
5. Essex
6. General
7. Mohawk
8. TE Connectivity

9. Optical Cable Corporation
10. The following are acceptable wiring device manufactures any other proposed suppliers must be pre-approved: Hubbell
11. Ortronics
12. Panduit
13. Leviton
14. Siemens
15. TE Connectivity

E. The following are acceptable Telecommunication Room Hardware manufacturers any other proposed suppliers must be pre-approved:
1. B-Line
2. Chatsworth
3. Damac
4. CISCO
5. Blonder Tongue

3. SYSTEM DESCRIPTION

A. Data: The data communication system will provide the permanent part of the building wiring (cable plant) required to support a computer local area or wide area network. The new MDF shall be connected in a star topology. The cabling will extend from each designated data jack to the new MDF. This system shall allow all the additional equipment required to complete the computer network to simply be plugged in.
1. **DATA INSERTS CATERGORY 6** – All data jacks shall be wired with Category 6 (data grade) Blue. The back of the device shall have color-coded insulation displacement contact (IDC) type connections.
2. **DATA UTP CABLING. CATEGORY 6** – NEC type CMP cable blue, Category 6, Plenum, 24 AWG solid copper conductor, 4-pair UTP or equivalent. It should be able to support data rates up to 350 MHz
3. **DATA WALL PLATES** – Provide multiple jack modular Electrical stainless steel wall plates with label windows where shown on plans or required. Each location with data only shall have two ports. Each location with data and telephone shall have two data ports and two telephone ports.
4. **COPPER PATCH CABLES** – Provide 3' and 10' Category 6 Blue patch cables for each active data outlet, passive panel switch.

B. Telephone: Telephone communication system will provide the permanent part of the building wiring (cable plant) required to support a telephone system as shown or indicated on the plans. The drop cabling will extend from each designated telephone jack to a telephone backboard. This system shall allow all the additional equipment required to complete the telephone system to be plugged into a jack or punched down at the telephone backboard. This specification section does not specify or include any of the telephone electronic equipment including all desk sets, wall sets, modular cords, and switching equipment. Contractor shall coordinate and schedule with Telephone Delivery Provider for connection and installation of service. All cost associated with connection and installation of telephone service shall be responsibility of Contractor.
1. **TELEPHONE JACKS** – All telephone jacks shall be 8-pin modular female connectors (RJ-45). All cabling, punch blocks, connectors, and jacks provided will meet and be tested to TIA/EIA 568-B Category 5e standards supporting data transmission rates up to 100 Mbps. All cabling, terminations and devices shall

meet Category 5e standards. Wiring topology to be a hierarchical star pattern extending from a telephone backboard to each jack. **TELEPHONE BACKBOARD BLOCKS. CATEGORY 5e** - Provide the required quantity of board mounted, Category 5e minimum, 66, 110 or other termination blocks. Provide spool and "D" hook or other wire management devices as required. All blocks and cables shall be labeled and documented to ANSI/TIA standards.

2. **TELEPHONE UTP CABLING. CATEGORY 5e** - NEC type CMP cable, Category 5e White Plenum. All cable shall have labels on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens.
3. **TELEPHONE LINE ELECTRICAL SURGE PROTECTORS** - Electrical surge protection shall be provided for all service entrance connections and on cables that connect one building to another (i.e. any other portion of a building complex not under one continuous roof at both exit points) to prevent damage to equipment. Provide solid-state plug-in protector units to provide over-voltage protection and heat coils to provide protection. Provide 100 pair plug-in protector panels as required.
4. **WALL TELEPHONE JACKS** - Provide a non-keyed RJ-45 jack, stainless steel wall plate with telephone wall set mounting studs, and Category 6 cable to telephone block. The back of the device shall have color-coded insulation displacement contact (IDC) type connections.
5. **FAX MACHINE JACKS** - Provide a non-keyed RJ-45 Red jack, wall plate, and Category 6 cable to telephone block. The back of the device shall have color coded insulation displacement contact (IDC) type

4. CABLE INSTALLATION AND ATTACHMENTS

A. System wiring and equipment installation shall be in accordance with good engineering practices as established by the TIA and the NEC. Wiring shall meet all state and local electrical codes. All wiring shall test free from all grounds and shorts. All communications cable shall be supported from the building structure and bundled. The support system shall provide a protective pathway to eliminate stress that could damage the cabling. The cable shall not be crushed, deformed, skinned, crimped, twisted, or formed into tight radius bends that could compromise the integrity of the cabling. Communication cables shall not be run loose on ceiling grid or ceiling tiles. Support shall be provided by mounting appropriate fasteners, which may be loaded with multiple cables. Provided that the weight load is carried by the support rod or wire the support assembly may attach to the ceiling grid for lateral stabilization. The required support wires for the ceiling grid or light fixtures shall not be utilized. Any fastener attached to the ceiling grid shall not interfere with inserting or removing ceiling tiles. All cabling and supports must be positioned at least 12 inches above the ceiling grid.

B. Communication cables shall be run in bundles above accessible ceilings and supported from building structure utilizing J-Hooks or cable trays. Cabling shall be loosely bundled with Velcro randomly spaced at 30 to 48 inches on center; Velcro shall not be tight enough to deform cabling and shall not be used to support the cabling. **Tie wraps and Zip Ties shall not be acceptable.**

C. Attachments for cabling support shall be spaced at 48 to 60 inches on center. The cable bundle shall not sag more than 12 inches mid-span between attachments. All attachments shall be approved for Category 5e or Category 6 cabling as per Part 2.3 above.

Attachments for Category 5e shall be sized as follows:

1. Bundles up to 1" dia. (20 CAT3 or 5e cables) Caddy #CAT16 or equivalent
2. Bundles up to 1 -5/16" dia. (50 CAT3 or 5e cables) Caddy #CAT21 or equivalent
3. Bundles up to 2" dia. (90 CAT3 or 5e cables) Caddy #CAT32 or equivalent
4. Bundles up to 4" dia. (330 CAT3 or 5e cables) Caddy #CAT64 or equivalent

Attachments for Category 6 shall be sized as follows:

1. Bundles up to 1” dia. (15 CAT6 cables) Caddy #CAT16 or equivalent
2. Bundles up to 1 -5/16” dia. (40 CAT6 cables) Caddy #CAT21 or equivalent
3. Bundles up to 2” dia. (60 CAT6 cables) Caddy #CAT32 or equivalent
4. Bundles up to 4” dia. (220 CAT6 cables) Caddy #CAT64 or equivalent

D. Do not mix different signal strength cables on the same J-Hook (i.e. fire alarm with telephone/data cable). Multiple J-Hooks can be on the same attachment point up to the rated weight of the attachment device.

E. Cable tray shall be routed over the MDF/IDF racks and MDF/IDF equipment board at the top of the open racks as shown on plans. Cable tray shall be CPI Model No. 10250-012 or equivalent 12" wide, heavy-duty steel construction cable runway with cross members at 12" intervals with a standard gray finish. Cable tray shall be securely supported from the building structure and grounded.

F. Communication cables shall be run in conduits, where stubs are provided, from wall or floor jacks to above accessible ceilings. Conduit shall be required only within walls and concealed spaces to provide access. Provide a plastic snap bushing or sleeve on the end of each conduit stub such as Thomas & Betts no. 443 – ¾”, 424 - 1", 425 -1 1/4", 427 - 2" or equivalent.

G. Conduit, duct or track shall be used for communication cable in exposed areas.

H. All conduit, ducts, track and raceways shall be supported from the structure at industry standard intervals for the size specified, utilizing proper anchoring devices and techniques for each type of cable used.

I. All penetrations through fire rated walls or floors shall feature a short length of metal conduit. The hole shall be neatly cut, not oversize or irregular. Seal the interior of the conduit sleeve around the cables and around the outside of the sleeve on each side of the penetration with fire-stop caulk or putty, such as Minnesota Mining & Mfg. Co (3M) – CP25WB+ caulk, MPS-2+ putty, or equivalent. Install according to the manufacturer's instructions.

J. All cable shall have a label on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens.

K. Each cable run shall include a three-foot service loop with Velcro located in the ceiling above the rack. This is to allow for future re-termination or repair.

L. Mount all head end equipment firmly in place. Route cable in a professional, neat and orderly installation.

M. All cabling shall be placed with regard to the environment, EMI/RFI interference and its effect on communication signal transmission.

N. Non-conductive fiber optic cable is immune from EMI/RFI interference. Give priority when selecting a rout to minimize exposure to possible cable damage from maintenance or service of all systems in the attic space.

O. Do not route any data cable within two feet of any light fixture, HVAC unit, service access area, electric panel, or any device containing a motor or transformer.

P. Communication cable will not be installed in the same conduit, duct or track with line voltage electrical cable

Q. Maximum pulling tension should not exceed 25 Ib/ft. or manufactures recommendation, whichever is less.

R. Any pulling compounds (lubricants) utilized must be approved by the cable manufacturer and shall not degrade the strength or electrical characteristics of the cable.

S. No terminations, splices or equipment shall be installed in or above ceilings.

T. Cable bends shall not exceed the manufacturer's suggested bend radius.

U. Provide for adequate ventilation in all equipment racks and take precautions to prevent electromagnetic electrostatic hum.

V. Raceways shall be used for their intended purpose. Communications wires and cables shall not be strapped, taped, or attached by any means to the exterior of any conduit or raceway as a means of support.

W. A grounding bus bar shall be installed at each IDF and MDF location. This ground bus bar shall be connected to the building grounding system. All electronic equipment shall be connected to the grounding bus bar as per the manufacturer’s requirements and recommendations.

END SECTION

SECTION 27 60 10

FIRE ALARM SYSTEM

PART 1—GENERAL

1.1 DESCRIPTION

This Section governs for furnishing and installing Fire Alarm System.

1.2 RELATED WORK

Heating, Ventilation & Air Conditioning

1.3 SUBMITTAL REQUIREMENTS

A. Provide Cutsheets of all equipment and wire.

B. Provide Battery Calculations and Voltage Drop Calculations.

C. Provide floorplans in accordance with the International Building Code, showing all device locations, candela ratings of signals, and point to point wiring. Drawings shall be sealed by a Fire Alarm Planning Superintendent. Fire Alarm Contractor shall verify system design meet all code requirements.

1.4 CODES AND STANDDARDS

A. NFPA 70 National Electrical Code

B. NFPA 72 National Fire Alarm and Signaling Code

C. NFPA 101 Code for Safety to Life from Fire in Buildings and Structures

D. Texas Administrative Code

E. Americans with Disabilities Act

F. Local and State Building Codes

G. All requirements of the local Authority Having Jurisdiction (AHJ)

1.5 WARRANTY

The contractor shall provide a full one year parts and labor warranty of the system from the date of final acceptance of the project. The contractor shall also provide service contract to the owner prior to the completion of the initial warranty period for their review.

PART 2—PRODUCTS

2.1 APPROVED MANUFACTURERS

A. Specifications are based upon first named. Others listed may be used provided deviations from specifications are minor.
   1. Edwards Company
   2. Notifier Company
   3. Simplex Company
   4. Fire Lite Alarm
   5. Siemens Fire Alarm

B. Provide compatible equipment from one manufacturer.

2.2 EQUIPMENT

A. Control Panel - Panel to be U.L. listed meeting requirements for power limited fire protection signaling circuits of the National Electrical Code Panel shall be recessed into wall. Provide an EST IO500 Addressable Fire Alarm Control Panel. The panel shall be expandable for future building additions. Provide signal Power Boosters (EST BPS 6) as required to provide Signal Power.

B. Annunciator Panel- Where required of if shown on the plans, provide an EST RLCD-C Annunciator Panel. Panel shall have LCD display and be capable of full control of the control panel.

C. Addressable Double Action Pull Station- Provide EST SIGA-278 Addressable Pull Stations constructed of red Lexan with red raised letters reading “FIRE” and with simple, concise instructions for activation of the station by the general public. Architect prefers white devices if available.

D. Horn/Strobe Unit – EST Genesis Series White flush mounted audible/visual units. All signals shall meet the current ADA and TAS requirements. Fire alarm contractor shall verify proper candela rating and Db level requirement.

E. For Work under NFPA 2013 provide low frequency Signals in all Sleeping Occupancies.

F. Ceiling Mount Heat Detectors- Provide EST SIGA2-HFS 135F Analog fixed temperature Heat Detectors as required.

G. Ceiling Mount Smoke Detectors- Provide EST SIGA2-PS Analog Photoelectric Smoke Detectors where shown on the plans. Detector shall have separate head and base. Smoke Detectors shall be installed above the control panel, above booster power supplies, at door holders, smoke doors and as required by the local authority having jurisdiction.

H. Duct Mounted Smoke Detectors- Provide EST SIGA- DH Analog Photoelectric Duct detectors where required. Duct detector shall shut down its air handler as required by applicable code. Provide remote LED in a visible location for quick identification of Duct Detector in Alarm. Fire Alarm Contractor to verify if Duct Detectors are required on Supply or Return side (or both).

I. Carbon Monoxide/Carbon Dioxide Detectors – If shown on the plans, provide EST SIGA2-COS Detectors.

J. Sprinkler connection-Fire Alarm Contractor to provide EST SIGA-CT2 or SIGA-WTM Monitor Module to monitor Sprinkler Switches as required.

K. For work under IBC 2012 a manual emergency voice communication system shall be required.

PART 3—EXECUTION

3.1 Wire shall be run in conduits or plenum rated. Non Plenum Rated Cable will not be accepted unless ran in conduit.

A. All conduit, duct, track or raceways shall be supported from the building structure at industry standard intervals for the size and type required. Utilize the proper anchoring devices and techniques for each type of cable used.

B. Fire Alarm cables shall be run in bundles above accessible ceilings and supported from the building structure. Cabling shall be loosely bundled with wire wraps spaced at 48 inch centers. The cable bundle shall not be allowed to sage more than 12 inches mid-span between attachments. All cable runs shall follow building lines and 90 degree turns. No cables shall be attached to any other trades equipment or mounting devices. J-HOOKS and Caddy straps are to be used for any bundles of wire in all corridors. Size the caddy straps and j-hooks to properly support the size of the bundles.

C. All penetrations through fire-rated walls shall feature short length of metal conduit. The sleeve shall be neatly enclosed by the fire wall material. Do not oversize the sleeve opening. Each sleeve shall be sealed with approved fire rated caulk or putty on each side of the penetration.

3.2 FINAL TESTING AND CLOSE OUT

A. The Contractor shall field test the complete system and demonstrate the system extension to the satisfaction of the Owner.

B. The Contractor shall provide to the Owner a complete set of Auto CADD as-built drawings locating all of the systems cable runs, device locations and descriptions, both in disk form and hard copy form. Contractor shall also provide owners manuals.

3.3 INSTALLATION

A. Fire Alarm panels in public areas shall be recessed as much as possible within the wall.

B. Provide Remote Annunciators in locations as approved by the local AHJ if the Fire Alarm Control Panel is located in a non-readily-accessible area.

C. Install system per the manufacturer's specifications.

3.4 TESTING

A. Set and check out system for proper operation upon completion.

SECTION 31 23 00

STRUCTURAL EXCAVATION AND BACKFILL

PART 1 - GENERAL

1.1 DESCRIPTION

A. This item governs excavation for placing structures; disposal of such excavated material; and backfilling around completed structures to the level of original ground or finished grade.

B. Work to include all necessary pumping or bailing, sheeting, drainage, construction, and removal of any required cofferdams.

C. Unless otherwise provided, work to provide for removal of old structures or portions thereof, trees, and all other obstructions necessary to the proposed construction.

1.2 QUALITY ASSURANCE

A. Contractor to be responsible for incorporating recommendations contained in the soil report.

B. Unless specified otherwise excavation is not permitted outside a horizontal distance from footing line equal to depth of footing.

PART 2 - PRODUCTS

2.1 BACKFILL

A. Excavated Material: Natural excavated materials free of peat, muck, silt, organic materials, debris or other extraneous material.

B. Select Fill: When required as a result of unacceptable natural material or by plans, provide select fill with a Plasticity Index (PI) of between 4 and 15, a Liquid Limit (LL) of less than 35, and a maximum of 45 percent passing the No. 200 sieve U.N.O. in Geotechnical Report.

2.2 TOPSOIL

A. Strip topsoil to full depth and stockpile where directed by Owner. After grading work is completed, distribute topsoil uniformly to a minimum 4" depth.

2.3 GRADING

A. Fill as required with approved material and compact and slope grade away from building and slabs for positive drainage. Hold finish grades 1.5" below walks and drives and 6" below building finished floor unless indicated otherwise. Slope away from building and slabs one foot in twelve.

2.4 SEAL SLABS

A. Concrete to meet provisions of Concrete Specifications in these documents.

PART 3 - EXECUTION

3.1 CONSTRUCTION METHODS

A. General

1. Make excavation to lines and depths indicated or established by Engineer. Excavate below bottom of structural slab elevation shown for seal slab when required.
2. Furnish supports for piping and structures within excavated area at no cost to Owner.
3. Where necessary to increase or decrease footing depths, make changes in details of structure as directed.
4. Where structure is to rest on excavated surface other than rock, bottom of excavation not to be disturbed, and removal of foundation material to final grade to be accomplished just prior to placement of seal slab when required.
5. Protect excavations from rainfall and surface water. If supporting soils are affected by exposure to excessive water or drying, excavate deeper and/or wider to sound material at no cost to Owner. Prior to such additional work, notify Engineer immediately and obtain approval before continuing.
6. Remove all loose rock or other hard material from excavation, and cut to form surface either level, stepped, or serrated. Clean out seams and fill with concrete or approved structural fill prior to time of footing placement.
7. Store excavated materials to be used for future backfill in piles at locations convenient for re-handling, and locate so as not to interfere with other work. Locate edge of storage pile a horizontal distance from edge of excavation a minimum of 1.0 times the depth of excavation.
8. Provide site drainage and/or groundwater control procedures to protect excavations. Use site grading, cofferdams, ditches, and/or other means to prevent surface water from flowing into excavations or ponding on areas where foundations or pavement will be located. Maintain groundwater and surface water control continuously until structure is complete and ground surface has been brought to final grade.

B. Cofferdams

1. Cofferdam is a temporary or removable structure to contain surrounding earth, water, or both out of excavation, and may be earth, timber, steel, concrete, or combination thereof. Cofferdam to be complete with bracing and necessary pumps, well points, or other procedures to control groundwater and surface water.
2. Provide cofferdams for excavations where necessary to control water conditions or to prevent sliding and caving of walls of excavation.
3. When required, submit drawings showing proposed method of ground and surface water control, and cofferdam construction.
4. Extend sheet pile cofferdams below bottom of footings sufficiently to prevent "blow outs". Provide adequate bracing and make as watertight as practicable.
5. Adjust cofferdams which tilt or move laterally, at no cost to Owner. Such movement may indicate subsoil failure and is to be brought to the attention of the Engineer immediately.

6. Unless otherwise provided, remove cofferdams after completion of construction so as not to disturb or mar structure. As directed, cofferdam may be partially removed, or be left entirely in place.

C. Pumping or Bailing
   1. Pump or bail from interior of cofferdam and avoid movement of water through or along concrete being placed.
   2. Do not pump or bail during concrete placement, or for minimum of 24 hours thereafter, unless from suitable sump separated from concrete by watertight wall.
   3. Do not pump or bail to dewater cofferdam for minimum of 36 hours after seal slab has set.

D. Fill Placement Under Structures
   1. Backfill excavated areas immediately after undesirable materials or stripping is removed.
   2. Approved fill for placement under structures is select fill or other materials as approved by Structural Engineer.
   3. Compact material mechanically in loose lifts not exceeding 8 inches.
   4. Compact to 95 percent of maximum density as determined by Standard Proctor, ASTM D698 at a moisture content within three percent (3%) of optimum moisture or as recommended by Geotechnical Consultant.
   5. Building pads for structures are to include area under building including porches, porte-cocheres, and other parts of foundation as shown on structural details, and extending five feet (5') minimum from face of foundation. Depth requirements shall be defined by geotechnical report or structural details and notes whichever is greater.

E. Structural Backfilling
   1. Backfill excavated areas not occupied by permanent structure as soon as such backfill will not interfere with progress of work.
   2. Unless otherwise specified, compact backfill mechanically in loose lifts not exceeding 8 inches.
   3. Compact to 95 percent of maximum density as determined by Standard Proctor, ASTM D698 at a moisture content within two percent (2%) of optimum moisture.
   4. Do not place backfill against walls for minimum of 7 days after structure has been in place.
   5. Place backfill against walls of partially completed structure only after approval of Engineer.
   6. Prevent wedge action of backfill against structure, and step or serrate slopes bounding excavation. Do not use heavy or intense compaction against structure, and backfill within 55 feet of structure to be subject to light but full compaction.

END OF SECTION

SECTION 30 01 31

TV INSPECTION OF SEWER PIPELINES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: TV inspection of sewer pipelines.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. TV Inspection of Sewer Pipelines: Basis of Measurement: By linear foot.

1.3 REFERENCES

A. American Water Works Association: AWWA D100 - Standard for Welded Steel Tanks for Water Storage.

B. Electronics Industries Association (EIA).

1.4 SUBMITTALS

A. Submit completed tape cassettes, identified by tape number, project name, street name, right-of-way property name, and manhole numbers.

B. Tapes become property of Owner.

1.5 QUALITY ASSURANCE

A. Use cameras with video output capable of producing minimum of 600 lines of horizontal resolution at center; optimum imagery with minimum illumination; and meet requirements of EIA Standard Video Signal.

1.6 QUALIFICATIONS

A. Applicator: Company specializing in performing work of this section.

PART 2 - PRODUCTS

2.1 DIGITAL FILES

A. Digital video files.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify location of sewer pipelines to be inspected.

3.2 PREPARATION

A. Flush and clean pipeline interiors to remove sludge, dirt, sand, stone, grease, and other materials from pipe to ensure clear view of interior conditions.

B. Intercept flushed debris at next downstream manhole by use of weir or screening device, remove, and dispose of debris off site.

C. Furnish materials, labor, equipment, power, maintenance, to implement a temporary bypass pumping system around work area for time required to complete TV inspection.

3.3 APPLICATION

A. Closed-circuit TV Camera System:
   1. Utilize cameras specifically designed and constructed for closed-circuit sewer line inspection. Utilize camera equipment with pan and tilt capability to view each lateral connection at multiple angles.
   2. Utilize camera capable of moving both upstream and downstream; minimum 1,000 feet (300 m) horizontal distance with one setup; direct reading cable position meter.

3.4 FIELD QUALITY CONTROL

A. Pipeline Inspection:
   1. Identify and record locations of flat grades, dips, deflected joints, open joints, broken pipe, protrusions into pipeline, and points of infiltration.
   2. Locate and record service connections.
   3. Record locations of pipeline defects and connection horizontal distance, in feet (meters), and direction from manholes.

END OF SECTION

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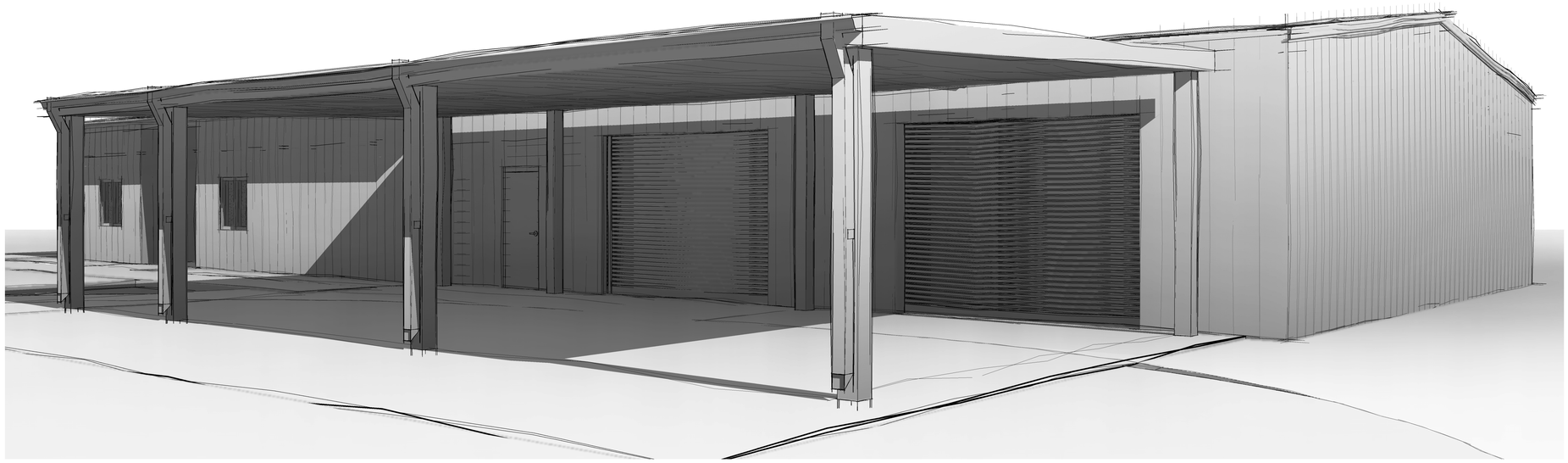
5030 US-69, BEAUMONT, TX 77705



COUNTY JUDGE — **JEFF BRANICK**
COMMISSIONER PRECINCT 1 — **VERNON PIERCE**
COMMISSIONER PRECINCT 2 — **CARY ERICKSON**
COMMISSIONER PRECINCT 3 — **MICHAEL SINEGAL**
COMMISSIONER PRECINCT 4 — **EVERETTE "BO" ALFRED**
SHERIFF — **ZENA STEPHENS**

SHEET LIST

SHEET NUMBER	SHEET NAME
-	Unnamed
A0.0	COVER PAGE
A0.1	SITE PLAN
A0.2	DEMOLITION FLOOR PLAN
A1.0	GROUND FLOOR PLAN
A1.1	REFLECTED CEILING PLAN
A1.2	ROOF PLANS
A2.0	TYPICAL MOUNTING HEIGHTS / INTERIOR ELEVATIONS
A4.1	ELEVATIONS
A5.1	BUILDING SECTIONS
A5.2	WALL SECTIONS
A5.3	WALL SECTIONS

SHEET LIST

SHEET NUMBER	SHEET NAME
S2.11	FOUNDATION PLAN AND DETAILS
M7.11	MECHANICAL PLAN & DETAILS
M7.21	MECHCANICAL DETAILS
P8.11	SANITARY SEWER PLAN & DETAILS
P8.21	HOT/COLD WATER PLAN & DETAILS
E9.11	POWER PLAN & DETAILS
E9.21	REFLECTED CEILING PLAN & DETAILS
E9.31	ELECTRICAL DETAILS

GENERAL NOTES:

1. REFER TO PROJECT MANUAL FOR INSTRUCTIONS TO OFFERORS / BIDDERS, PROPOSAL DOCUMENTS, AND SPECIFICATIONS.
2. REFER TO CIVIL ENGINEERING DOCUMENTS FOR CIVIL / SITE REQUIREMENTS.
3. REFER TO STRUCTURAL ENGINEERING DOCUMENTS FOR STRUCTURAL REQUIREMENTS.
4. REFER TO MECHANICAL ENGINEERING DOCUMENTS FOR MECHANICAL SYSTEMS REQUIREMENTS.
5. REFER TO ELECTRICAL ENGINEERING DOCUMENTS FOR ELECTRICAL SYSTEMS REQUIREMENTS.
6. REFER TO PLUMBING DOCUMENTS FOR PLUMBING SYSTEMS REQUIREMENTS.

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LUFKIN, TX 75901
979.776.9700
ZPARKER@GLSTEXAS.COM

BURNS ARCHITECTURE

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Date	10/18/2023
Scale	

COVER PAGE

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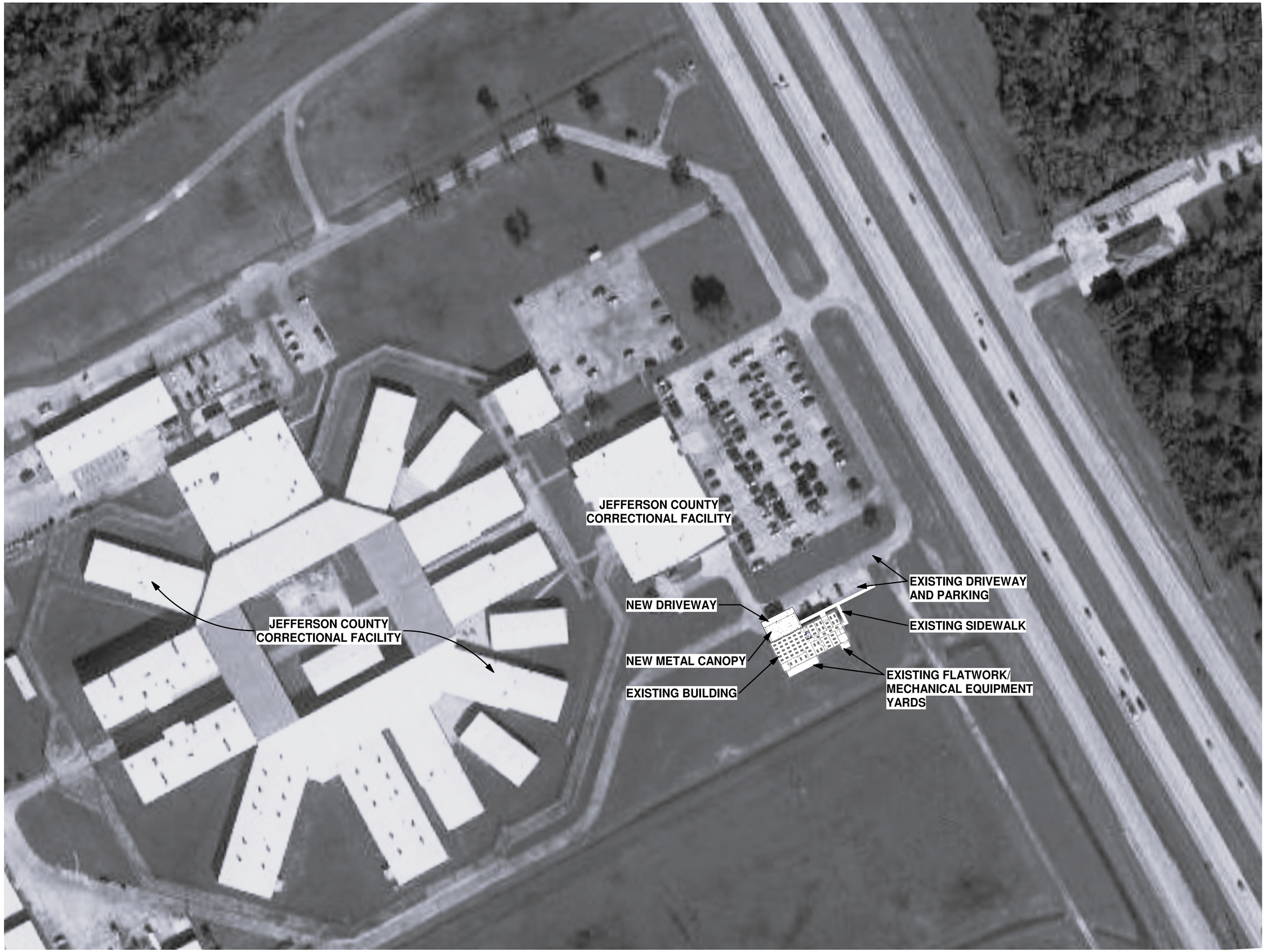

N 1 OVERALL SITE PLAN
1" = 50'-0"

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STATE OF TEXAS
10/18/2023

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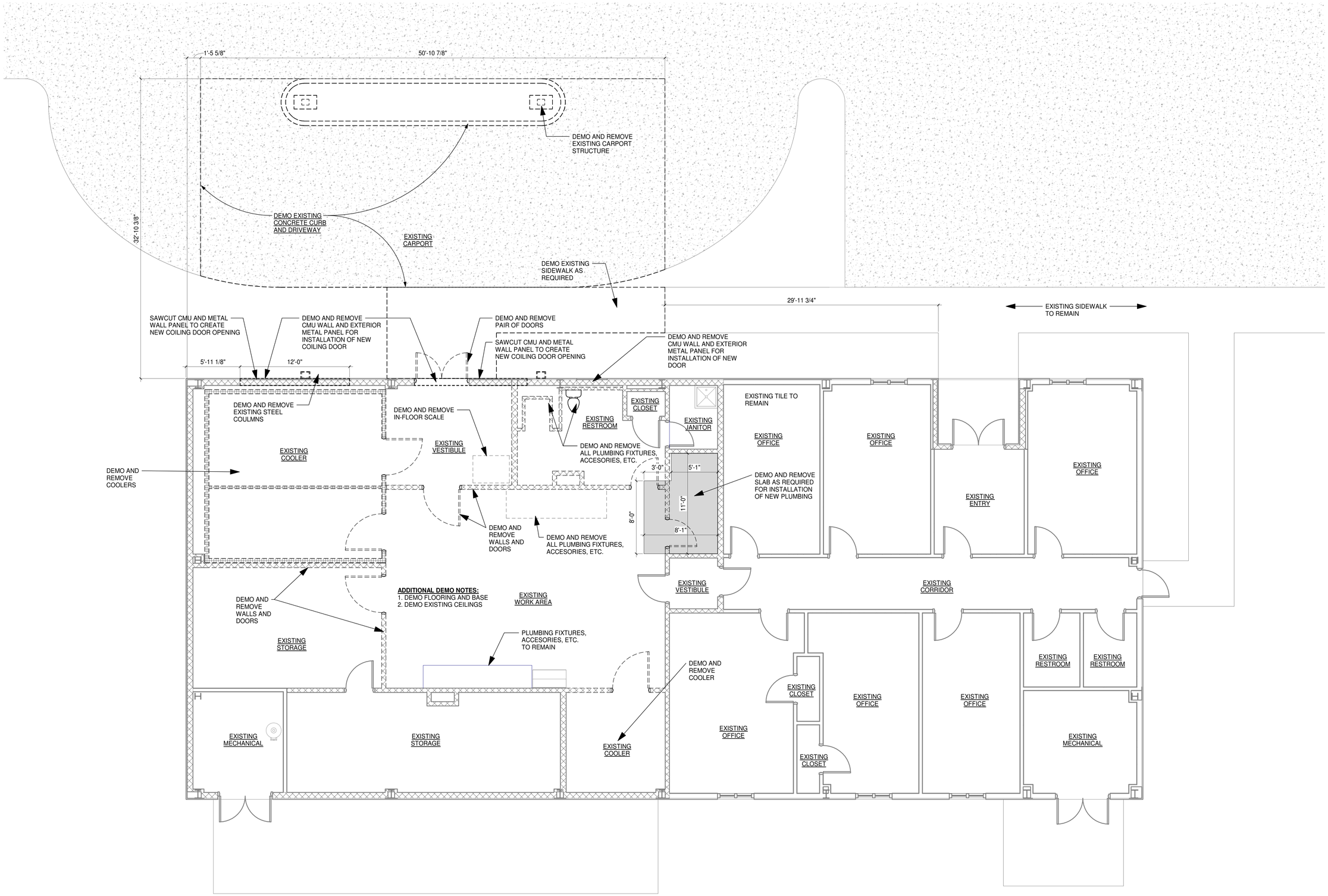
Date	10/18/2023
Scale	1" = 50'-0"

SITE PLAN

A0.1



1 DEMOLITION FLOOR PLAN
1/4" = 1'-0"

PLAN NOTES:

1.REFER TO MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.

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10/18/2023

Project Number	JCVIB-23
Date	10/18/2023
Scale	1/4" = 1'-0"

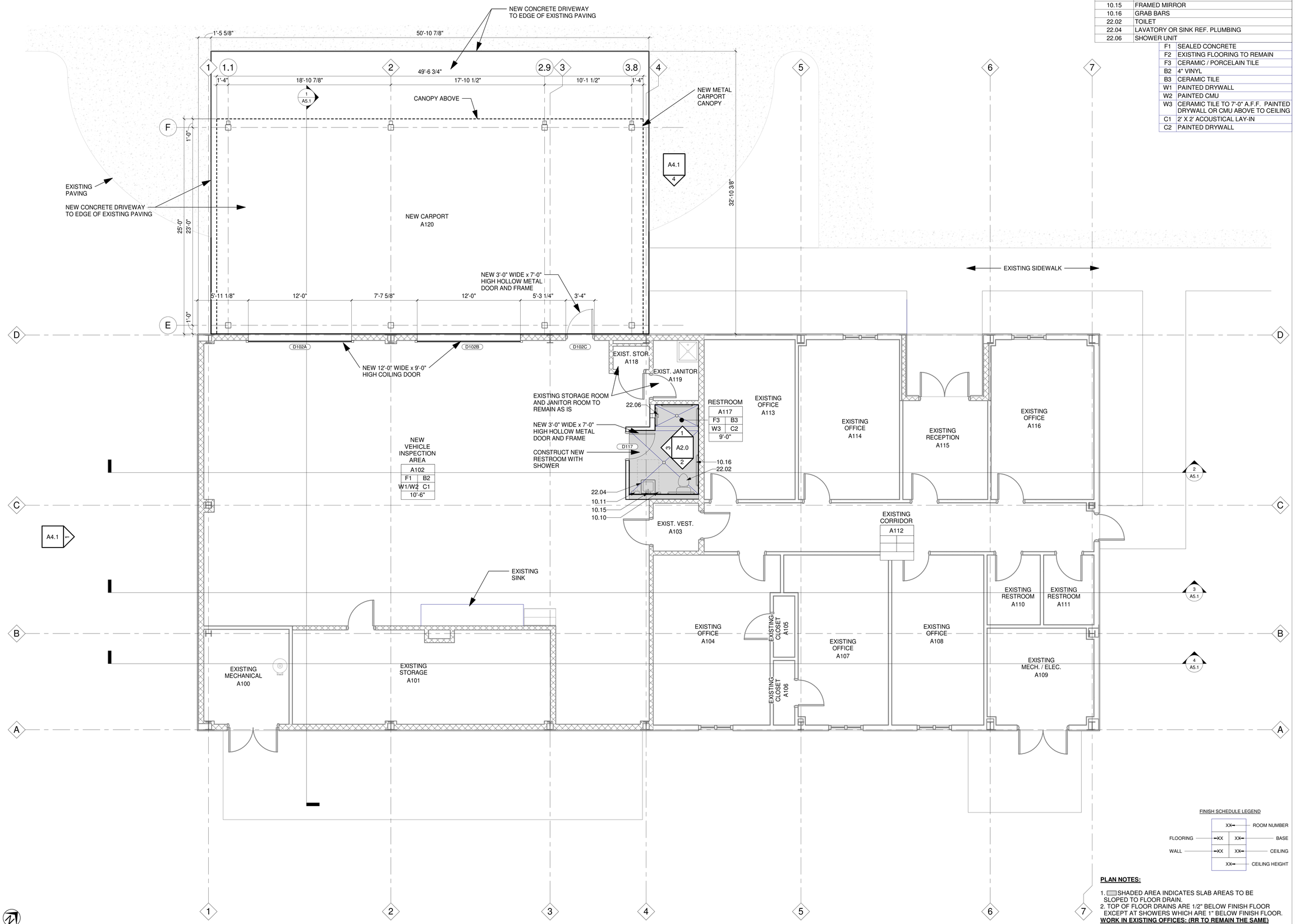
DEMOLITION FLOOR PLAN

A0.2

NUMBERED NOTES

NUMBER	DESCRIPTION
10.10	SOAP DISPENSER
10.11	PAPER TOWEL DISPENSER
10.15	FRAMED MIRROR
10.16	GRAB BARS
22.02	TOILET
22.04	LAVATORY OR SINK REF. PLUMBING
22.06	SHOWER UNIT

F1	SEALED CONCRETE
F2	EXISTING FLOORING TO REMAIN
F3	CERAMIC / PORCELAIN TILE
B2	4" VINYL
B3	CERAMIC TILE
W1	PAINTED DRYWALL
W2	PAINTED CMU
W3	CERAMIC TILE TO 7'-0" A.F.F. PAINTED DRYWALL OR CMU ABOVE TO CEILING
C1	2' X 2' ACOUSTICAL LAY-IN
C2	PAINTED DRYWALL



1 GROUND FLOOR PLAN
1/4" = 1'-0"

FINISH SCHEDULE LEGEND

XX — ROOM NUMBER
FLOORING — XX — XX — BASE
WALL — XX — XX — CEILING
XX — CEILING HEIGHT

PLAN NOTES:

1. SHADED AREA INDICATES SLAB AREAS TO BE SLOPED TO FLOOR DRAIN.
2. TOP OF FLOOR DRAINS ARE 1/2" BELOW FINISH FLOOR EXCEPT AT SHOWERS WHICH ARE 1" BELOW FINISH FLOOR.

WORK IN EXISTING OFFICES: (RR TO REMAIN THE SAME)

1. PAINT EXISTING WALLS
2. NEW VCT TILE AND BASE
3. NEW 2'x2' LAY-IN CEILING

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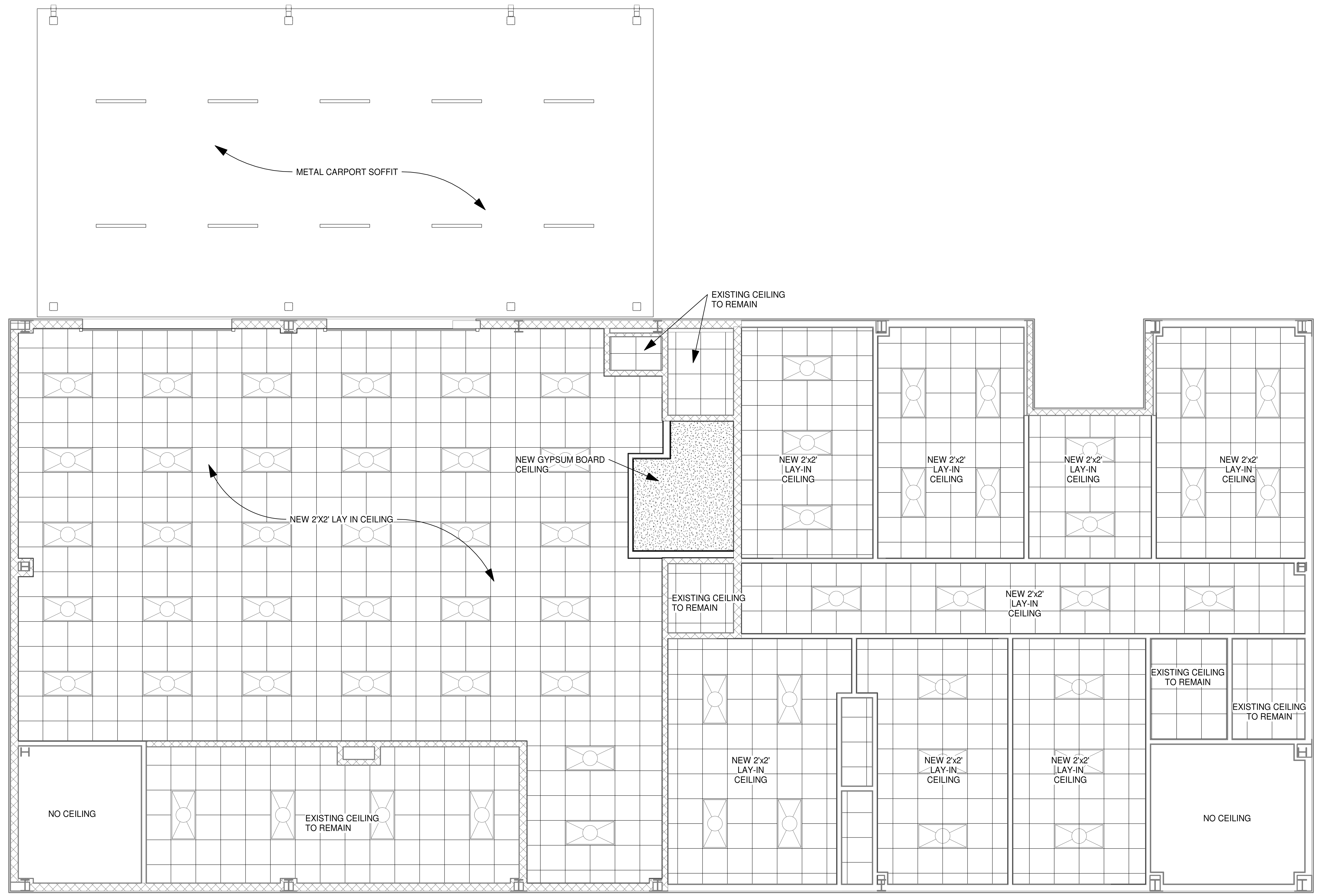
Scale	1/4" = 1'-0"

GROUND FLOOR PLAN

A1.0



1 REFLECTED CEILING PLAN
1/4" = 1'-0"

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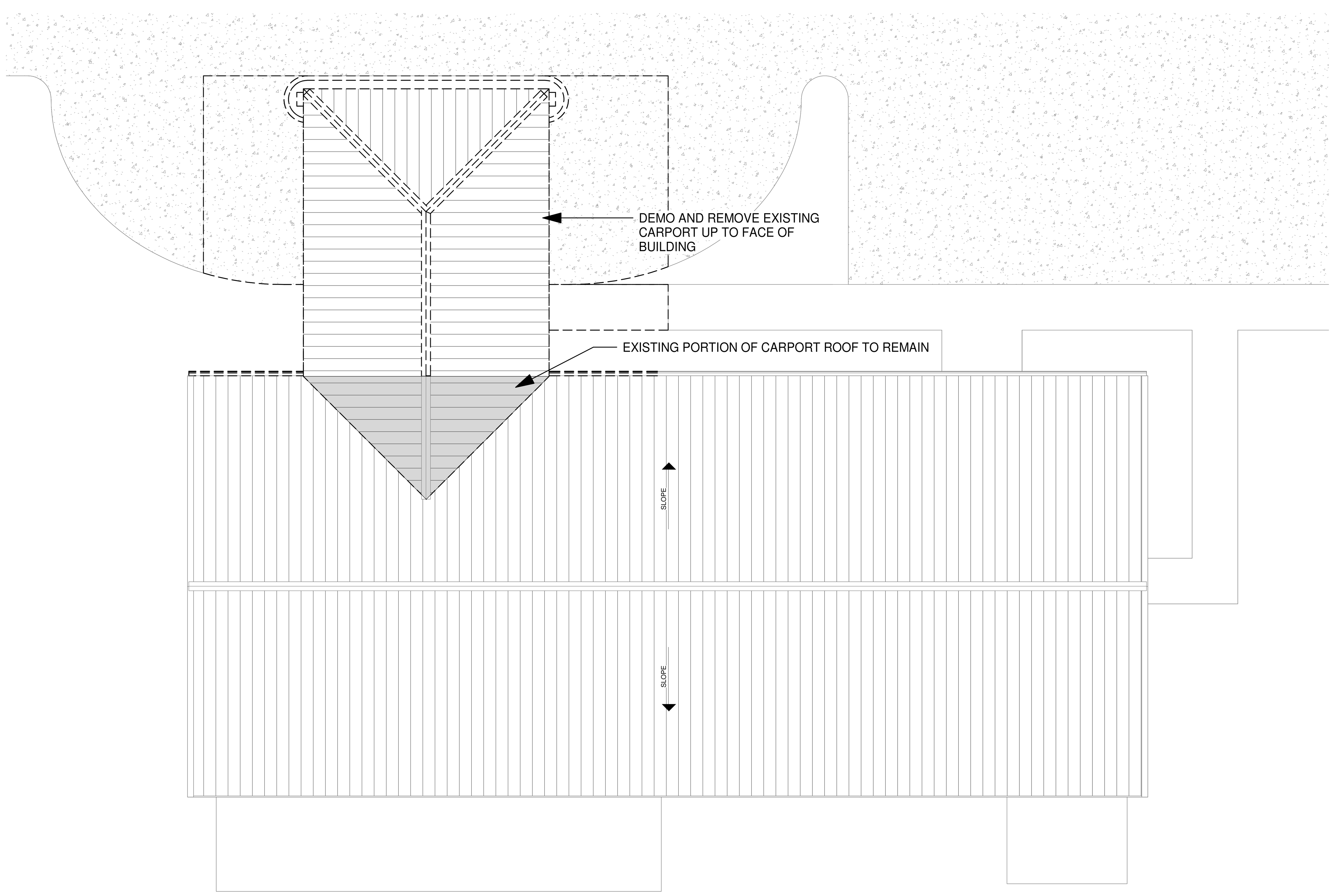
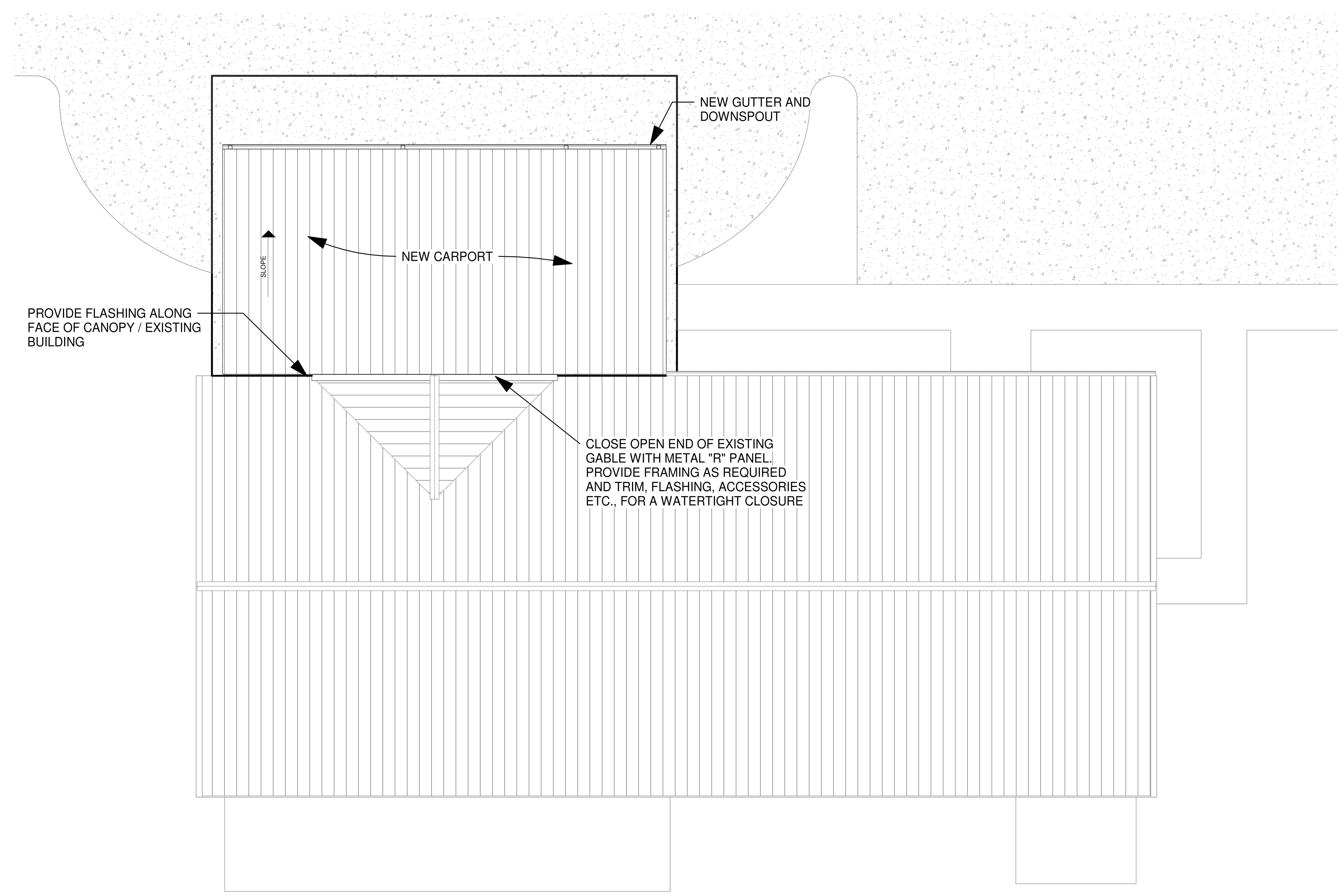
REFLECTED CEILING PLAN

A1.1



1 DEMOLITION ROOF PLAN
1/8" = 1'-0"



2 NEW ROOF PLAN
1/8" = 1'-0"

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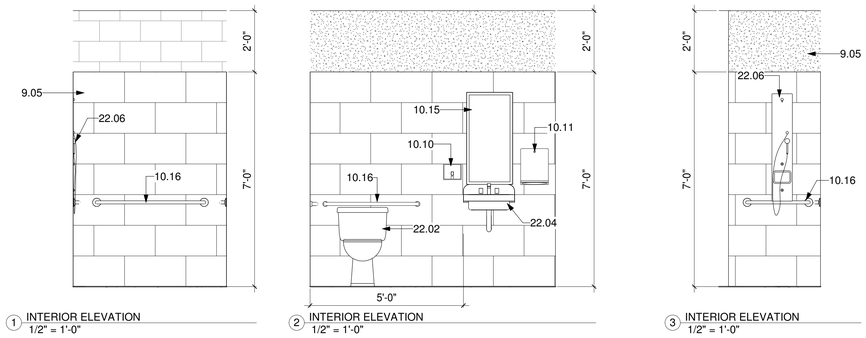
Scale	1/8" = 1'-0"

ROOF PLANS

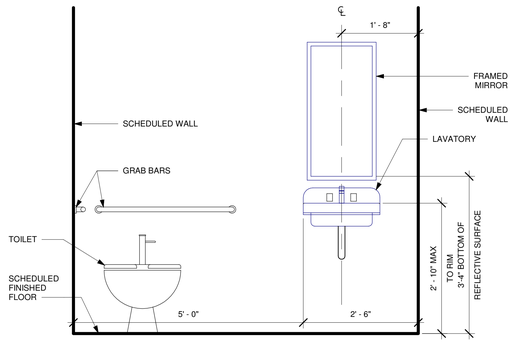
A1.2



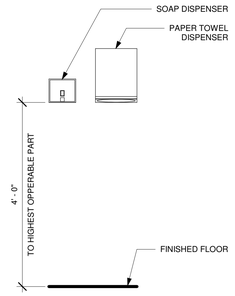
1 INTERIOR ELEVATION
1/2" = 1'-0"

2 INTERIOR ELEVATION
1/2" = 1'-0"

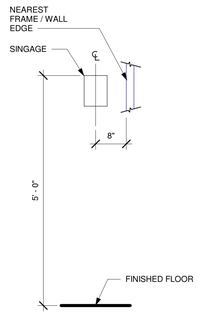
3 INTERIOR ELEVATION
1/2" = 1'-0"



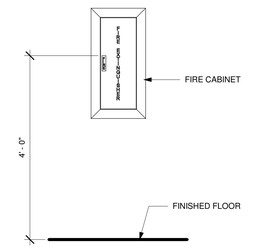
1 TYP. RESTROOM FIXTURE MOUNTING HEIGHTS
3/4" = 1'-0"



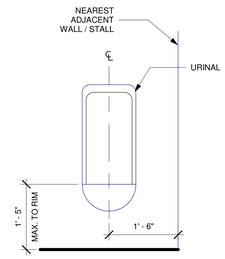
2 TYP. DISPENSER MOUNTING HEIGHTS
3/4" = 1'-0"



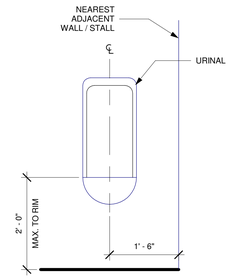
3 TYP. SIGNAGE MOUNTING HEIGHTS
3/4" = 1'-0"



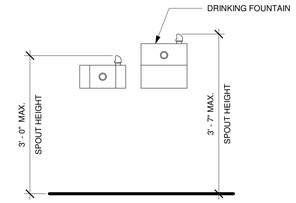
4 TYP. FIRE EXTINGUISHER CABINET MOUNTING HEIGHT
3/4" = 1'-0"



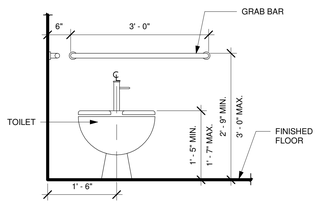
5 TYP. H.C. URINAL MOUNTING HEIGHT
3/4" = 1'-0"



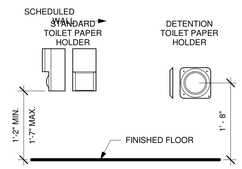
6 TYP. STANDARD URINAL MOUNTING HEIGHTS
3/4" = 1'-0"



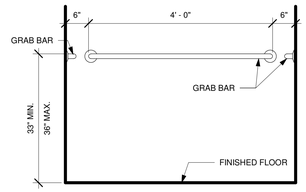
7 TYP. DRINKING FOUNTAIN MOUNTING HEIGHTS
3/4" = 1'-0"



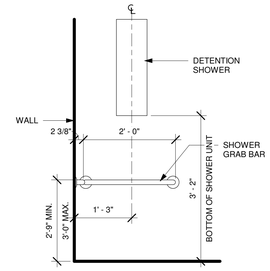
8 TYP. TOILET DIMENSIONS
3/4" = 1'-0"



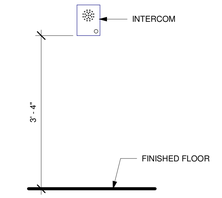
9 TYP. TOILET PAPER HOLDER MOUNTING HEIGHTS
3/4" = 1'-0"



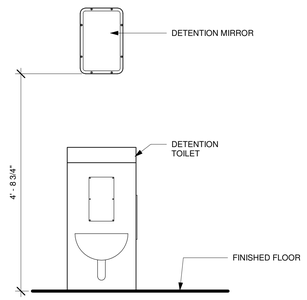
10 TYP. GRAB BAR MOUNTING HEIGHTS
3/4" = 1'-0"



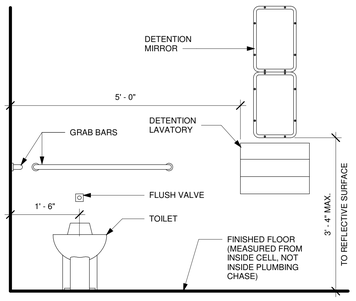
11 TYP. DETENTION SHOWER / GRAB BAR MOUNTING HEIGHTS
3/4" = 1'-0"



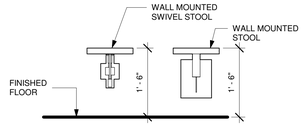
12 TYP. INTERCOM MOUNTING HEIGHT
3/4" = 1'-0"



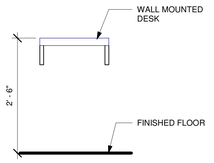
13 TYP. NON H.C. DETENTION TOILET / LAVATORY AND MIRROR MOUNTING HEIGHTS
3/4" = 1'-0"



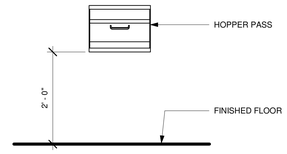
14 TYP. H.C. DETENTION TOILET / LAVATORY MIRROR MOUNTING HEIGHT
3/4" = 1'-0"



15 TYP. DETENTION STOOL MOUNTING HEIGHTS
3/4" = 1'-0"



16 TYP. DETENTION DESK HEIGHT
3/4" = 1'-0"



12 TYP. HOPPER PASS MOUNTING HEIGHT
3/4" = 1'-0"

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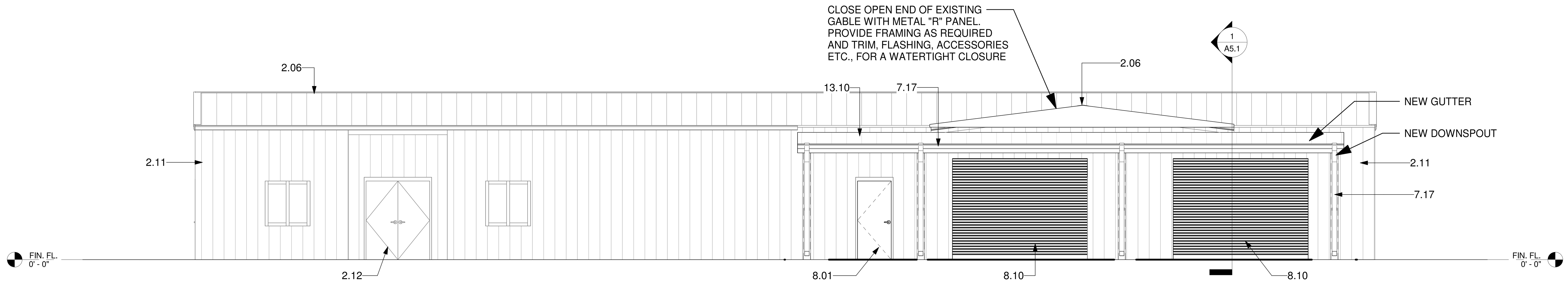
10/18/2023

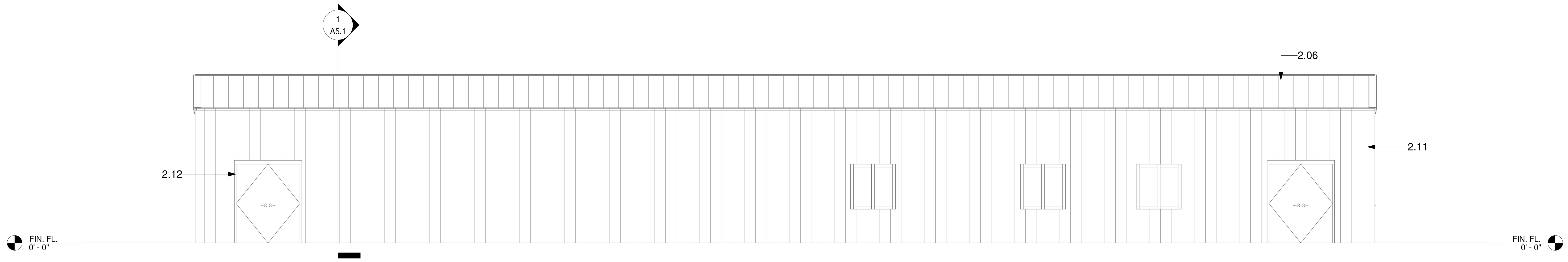
Project Number	JCVIB-23
Date	10/18/2023
Scale	As indicated

TYPICAL MOUNTING HEIGHTS / INTERIOR ELEVATIONS

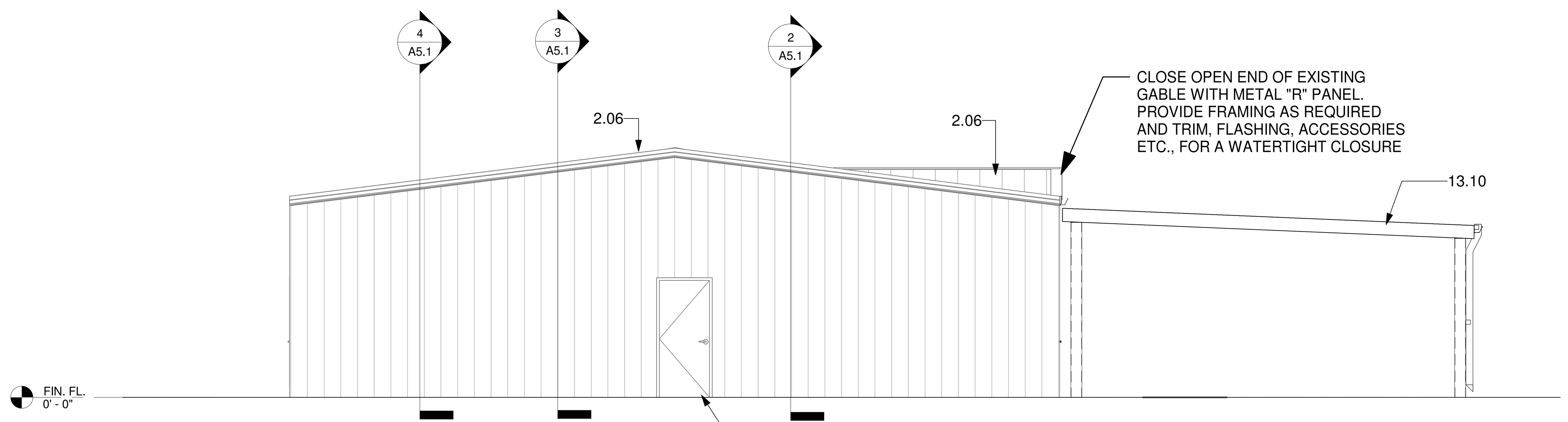
A2.0



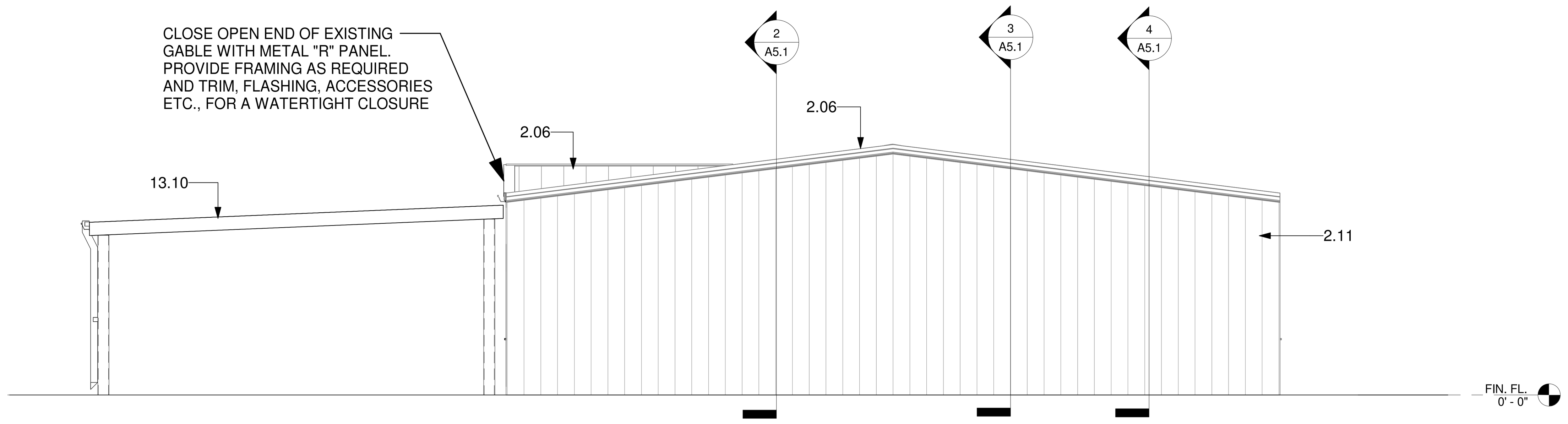
4 NORTH EXTERIOR ELEVATION
3/16" = 1'-0"



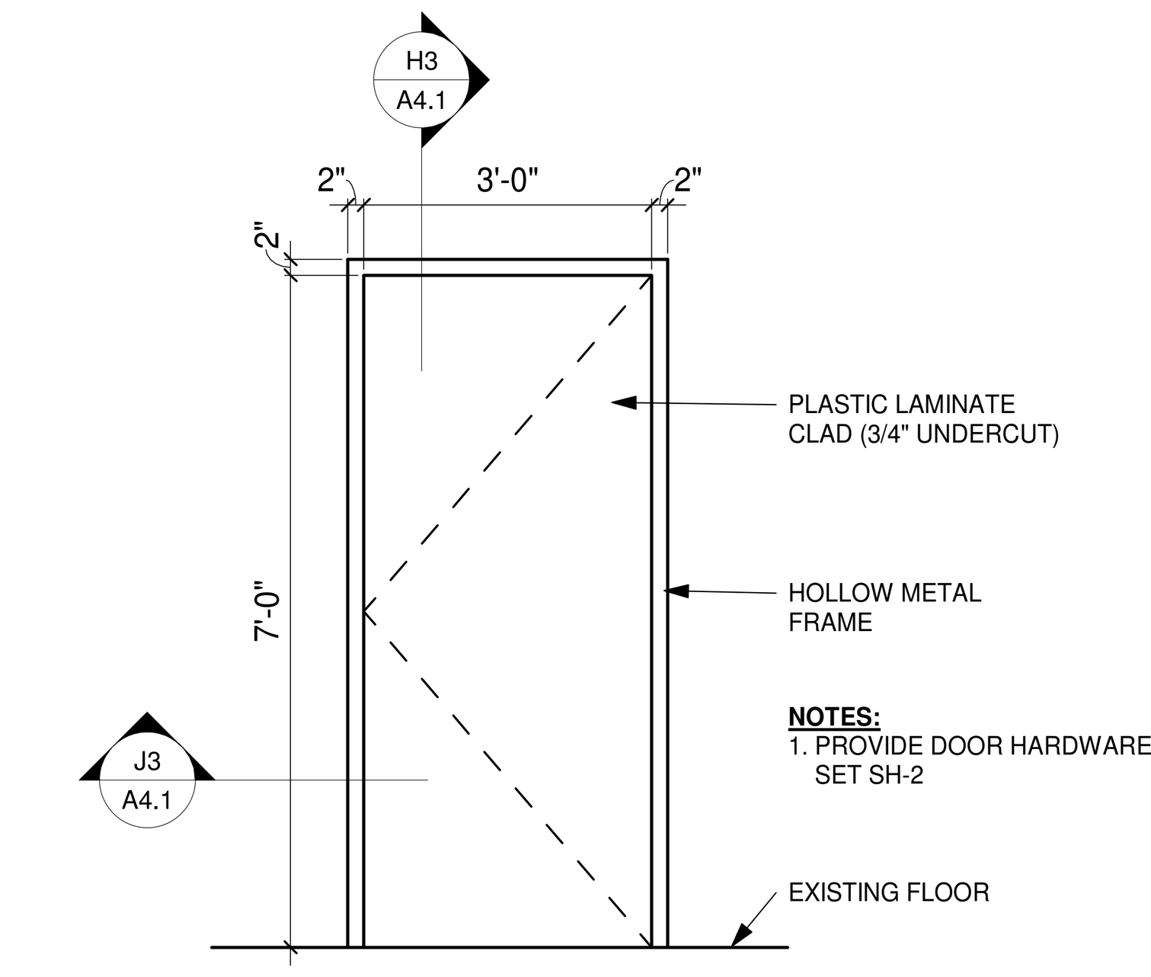
2 SOUUTH EXTERIOR ELEVATION
3/16" = 1'-0"



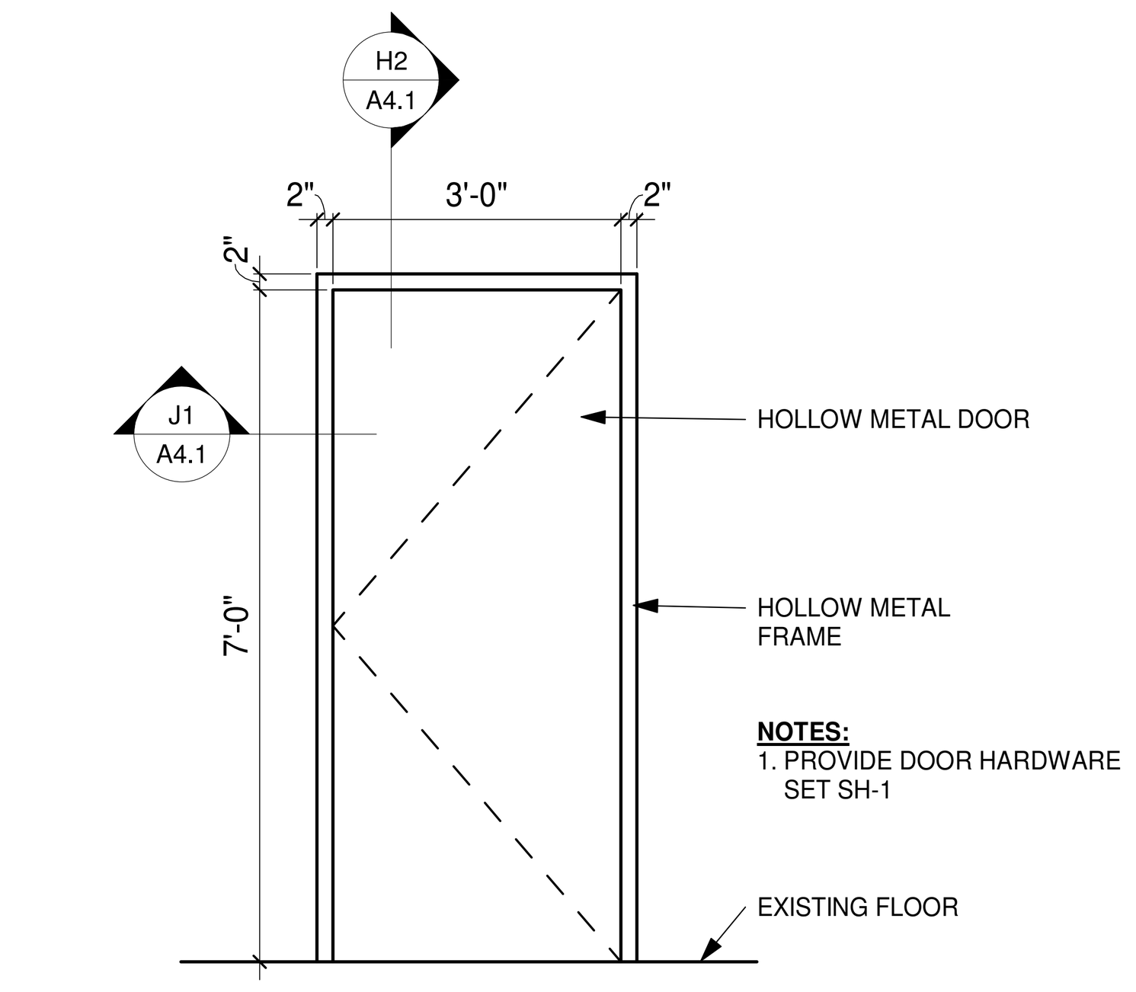
3 EAST EXTERIOR ELEVATION
3/16" = 1'-0"



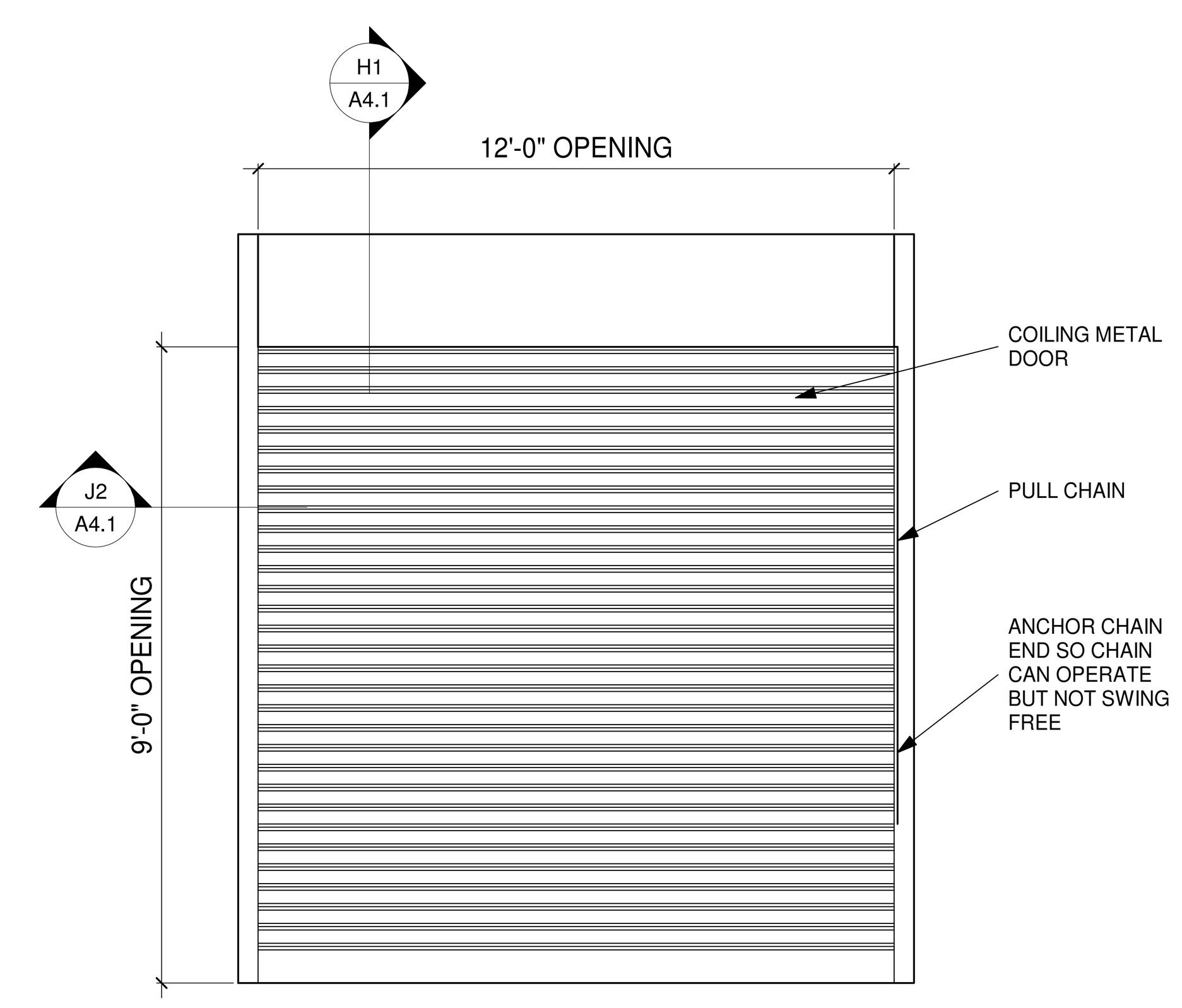
1 WEST EXTERIOR ELEVATION
3/16" = 1'-0"



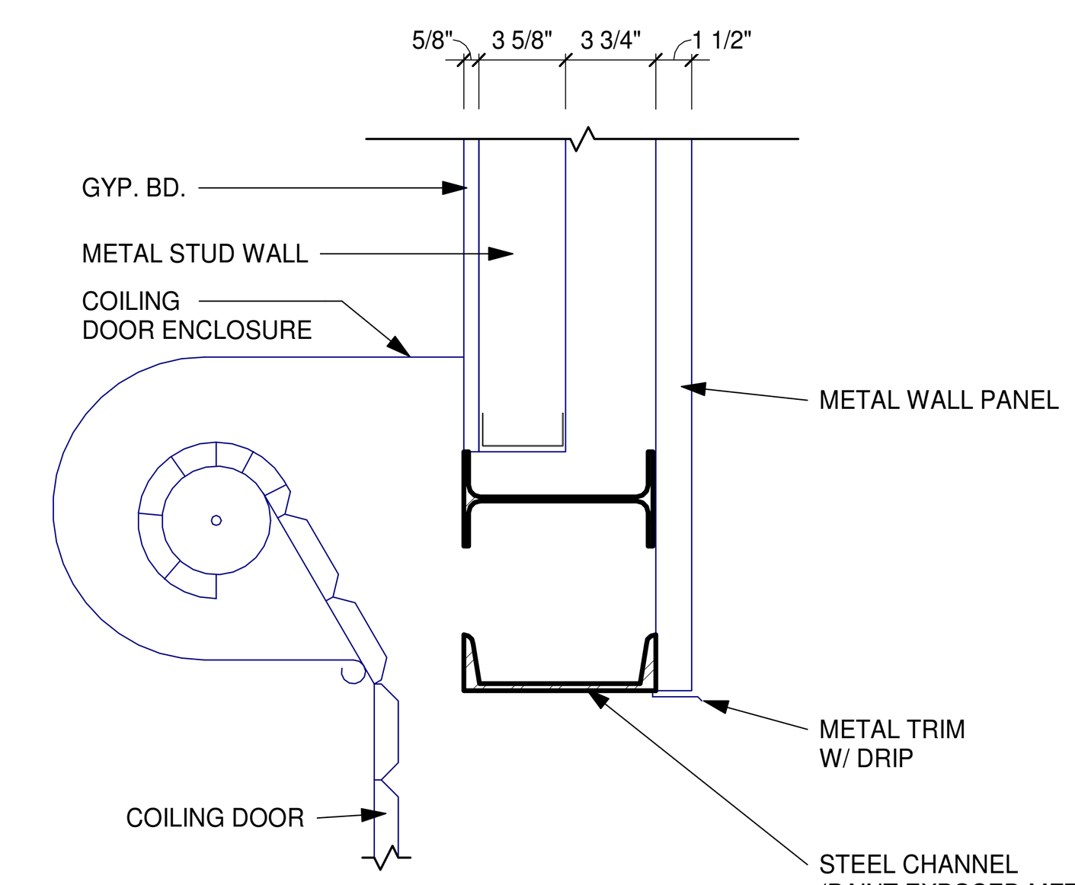
D1 DOOR ELEVATION - D117
1/2" = 1'-0"



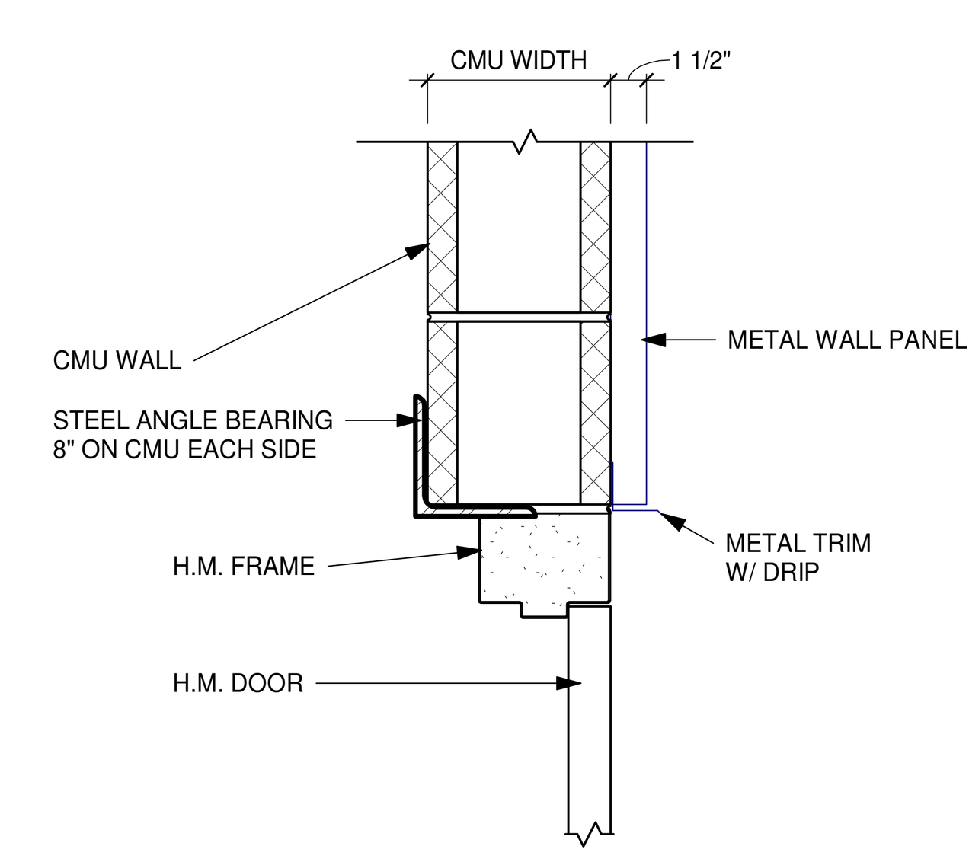
D2 DOOR ELEVATION - D102C
1/2" = 1'-0"



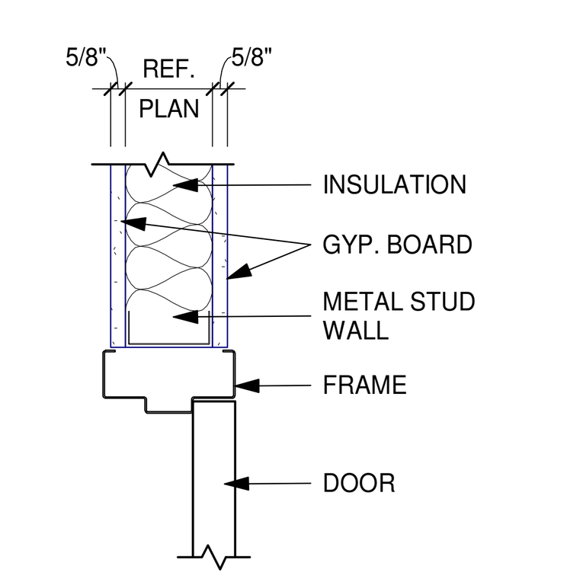
D3 DOOR ELEVATION - D102A & D102B
1/2" = 1'-0"



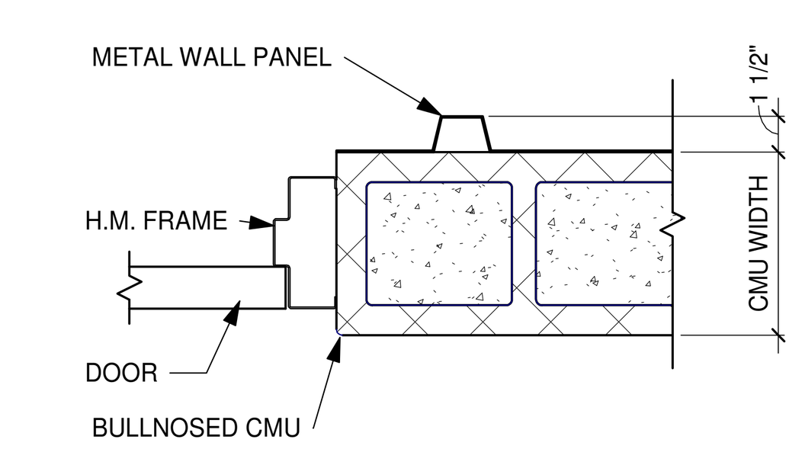
H1 HEAD DETAIL
1 1/2" = 1'-0"



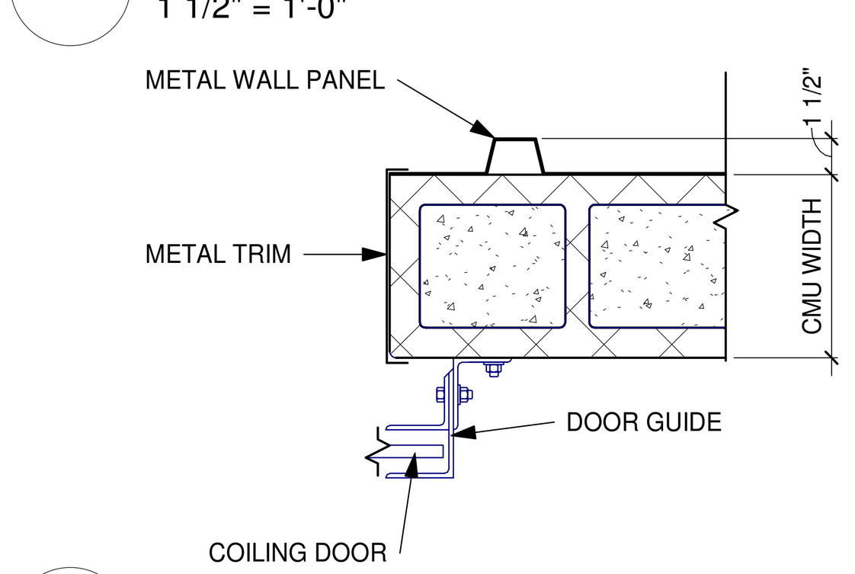
H2 HEAD DETAIL
1 1/2" = 1'-0"



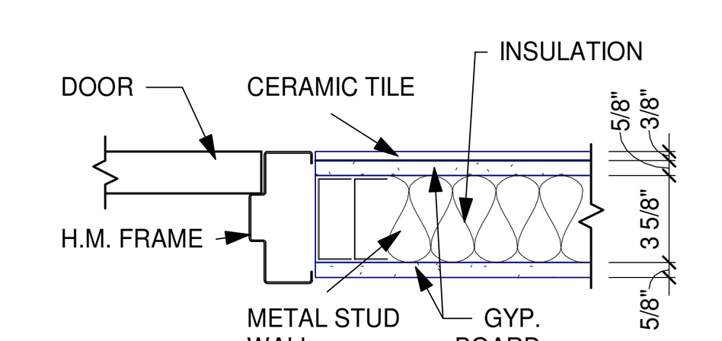
H3 HEAD DETAIL
1 1/2" = 1'-0"



J1 JAMB DETAIL
1 1/2" = 1'-0"



J2 JAMB DETAIL
1 1/2" = 1'-0"



J3 JAMB DETAIL
1 1/2" = 1'-0"

NUMBERED NOTES

NUMBER	DESCRIPTION
2.06	EXISTING ROOF
2.11	EXISTING METAL WALL PANEL
2.12	EXISTING DOOR
7.17	PREFINISHED METAL GUTTER AND DOWNSPOUTS
8.01	DOOR AND FRAME
8.10	OVERHEAD COILING/COUNTER DOOR
13.10	PRE-FABRICATED METAL CARPORT

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JEFFERSON COUNTY
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BUILDING
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No.	Revision	Date

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DOCUMENTS

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Project Number	JCVIB-23
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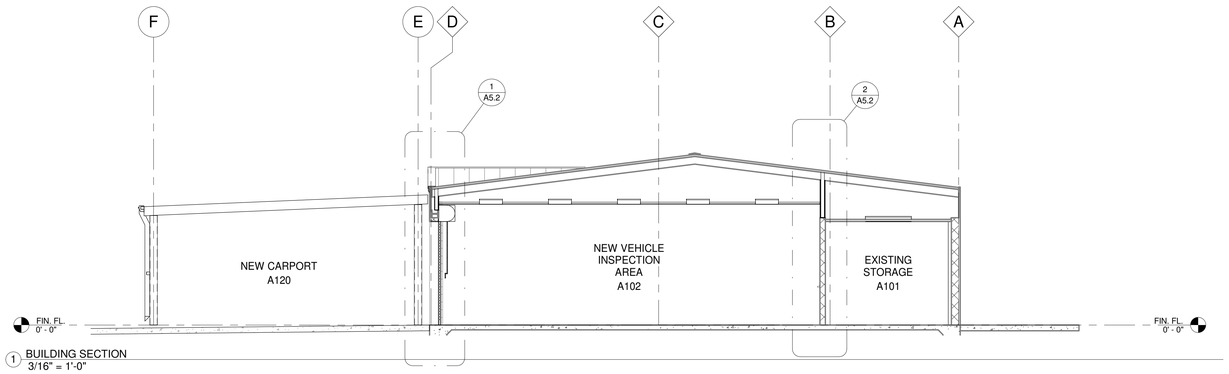
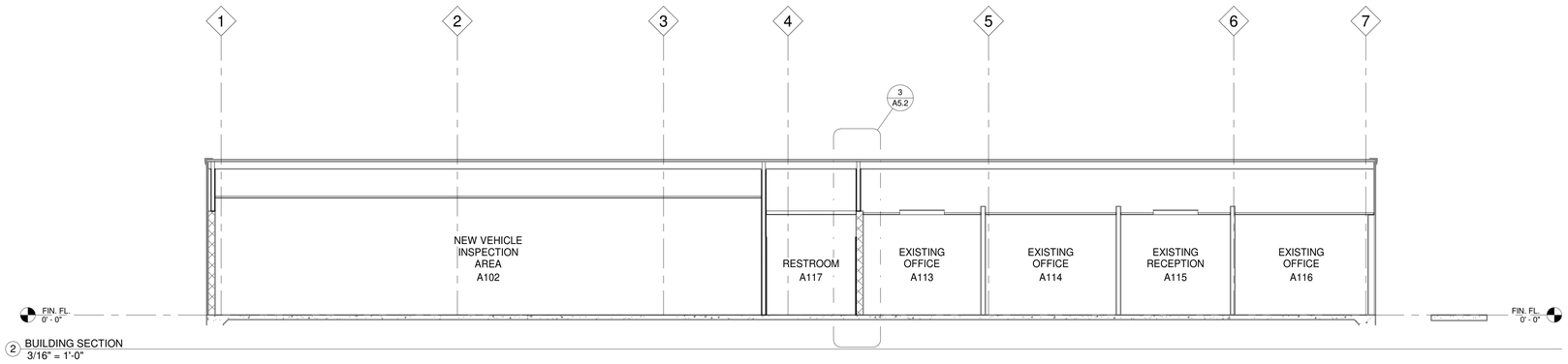
Scale	As indicated

ELEVATIONS

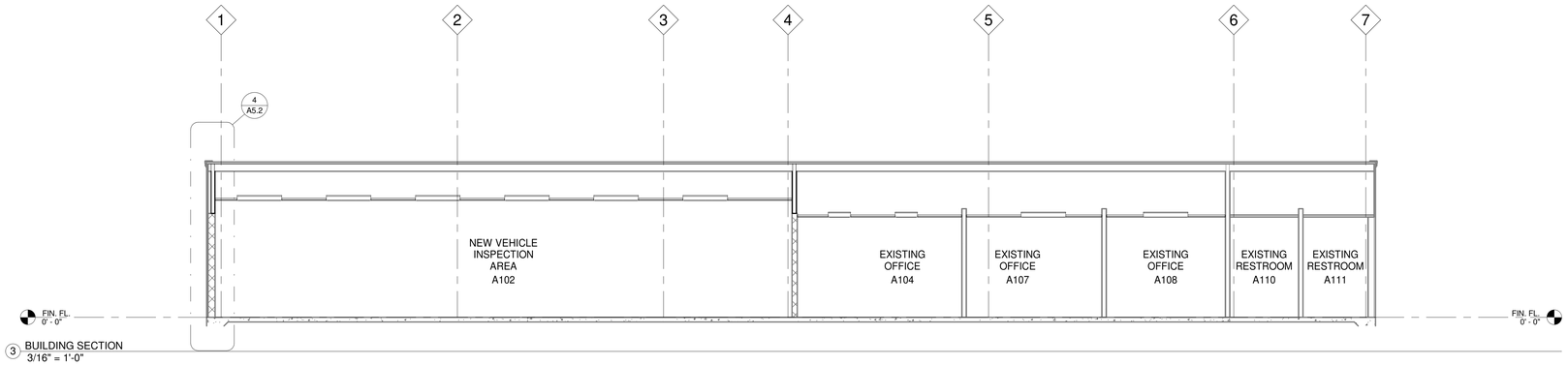
A4.1



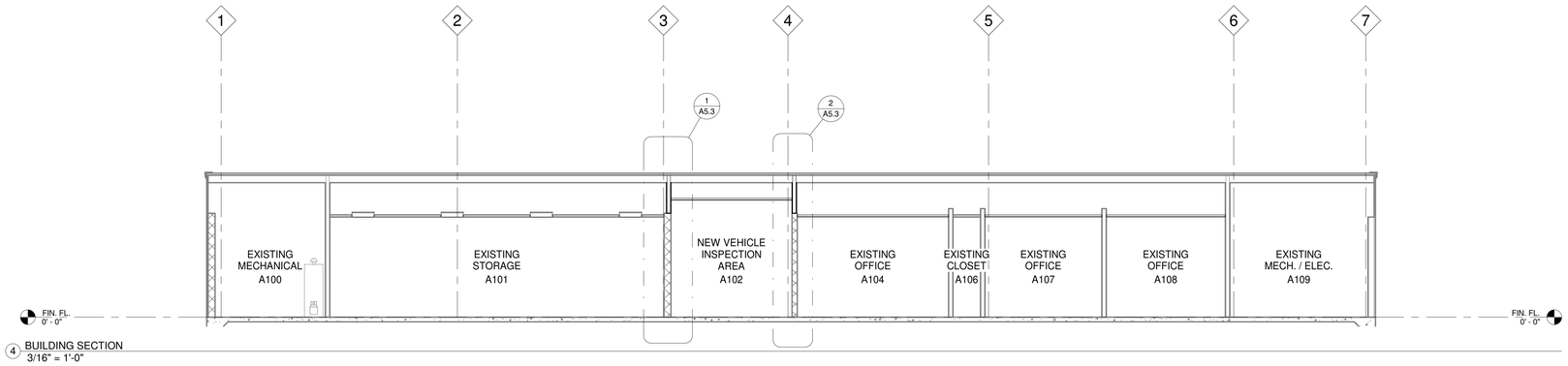
1 BUILDING SECTION
3/16" = 1'-0"



2 BUILDING SECTION
3/16" = 1'-0"



3 BUILDING SECTION
3/16" = 1'-0"



4 BUILDING SECTION
3/16" = 1'-0"

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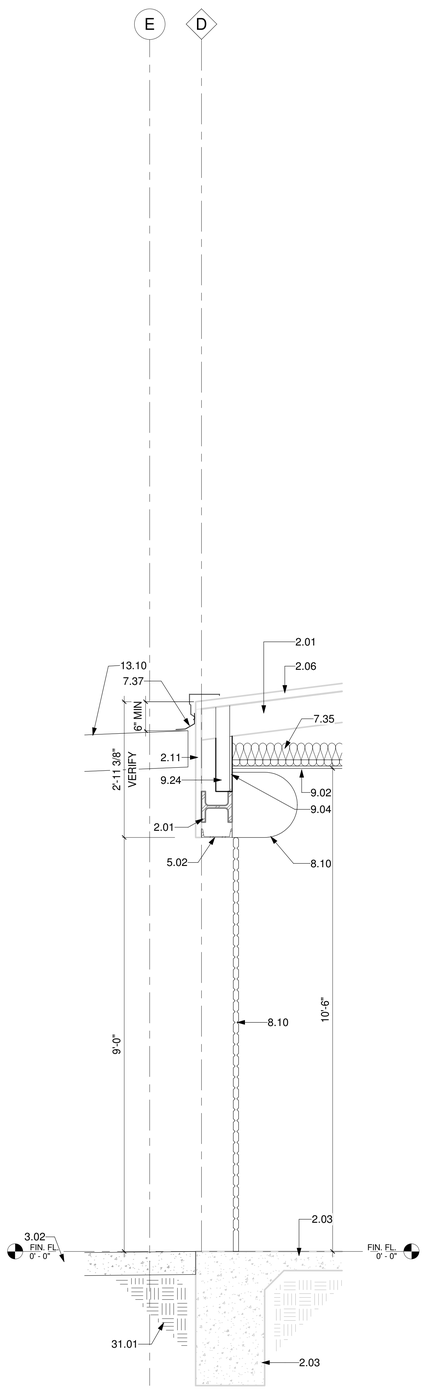
Scale	3/16" = 1'-0"

BUILDING SECTIONS

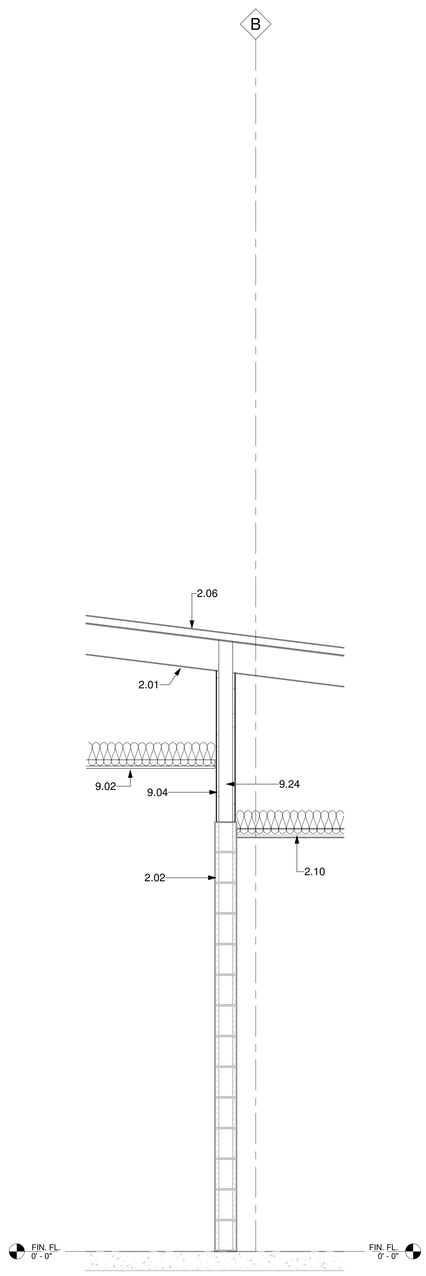
A5.1

NUMBERED NOTES

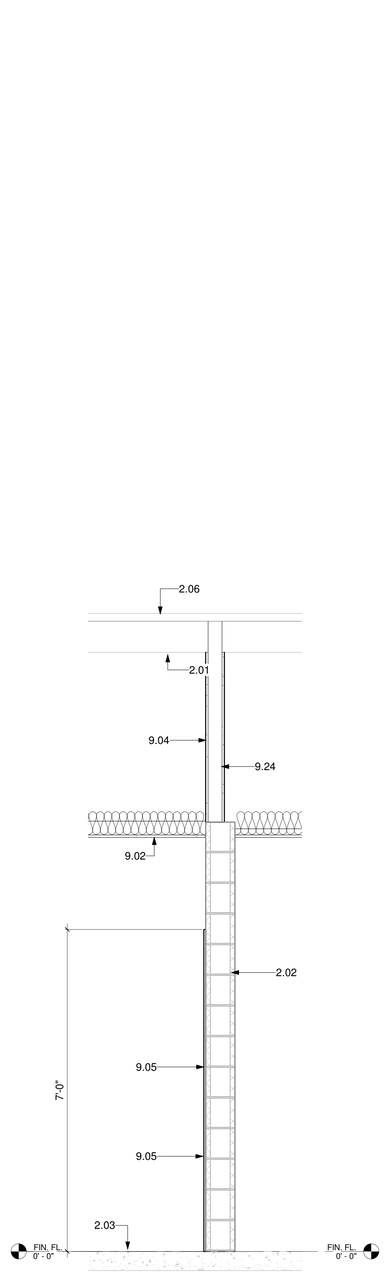
NUMBER	DESCRIPTION
2.01	EXISTING BUILDING STRUCTURE
2.02	EXISTING CMU
2.03	EXISTING GRADE BEAM AND OR SLAB
2.06	EXISTING ROOF
2.10	EXISTING CEILING
2.11	EXISTING METAL WALL PANEL
3.02	PAVING / FLATWORK SLAB. REF. CIVIL
5.02	STRUCTURAL FRAMING COMPONENT REF. STRUCTURAL
7.35	THERMAL BATT INSULATION
7.37	MEMBRANE FLASHING
8.10	OVERHEAD COILING/COUNTER DOOR
9.02	SCHEDULED CEILING
9.04	PAINTED DRYWALL. BACKER BOARD AT WET LOCATIONS (PAINT NOT REQUIRED ABOVE CEILING)
9.05	CERAMIC / PORCELAIN WALL TILE
9.24	METAL STUD WALL
13.10	PRE-FABRICATED METAL CARPORT
31.01	PREPARED SUB-GRADE, REF. STRUCTURAL



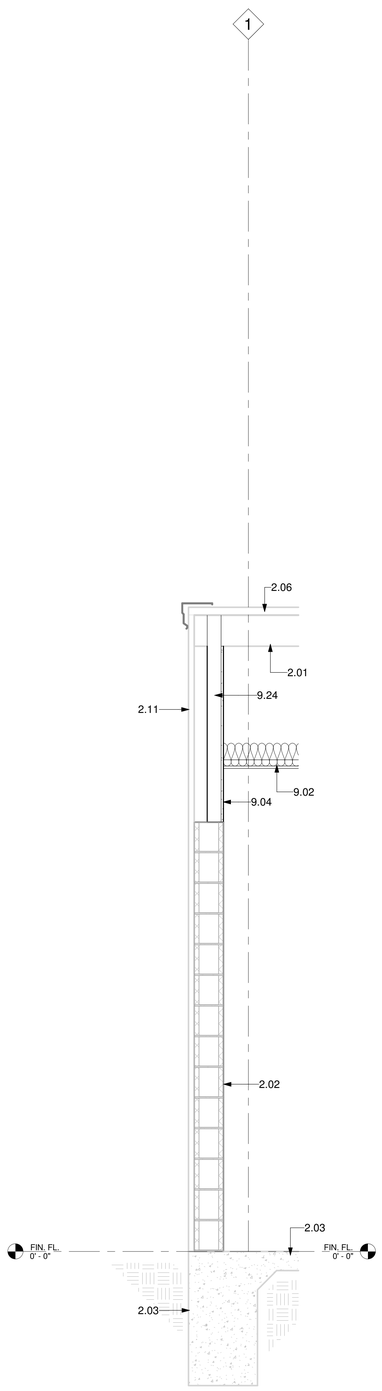
1 WALL SECTION
3/4" = 1'-0"



2 WALL SECTION
3/4" = 1'-0"



3 WALL SECTION
3/4" = 1'-0"



4 WALL SECTION
3/4" = 1'-0"

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REGISTERED ARCHITECT KENNETH C. BURNS STATE OF TEXAS
10/18/2023

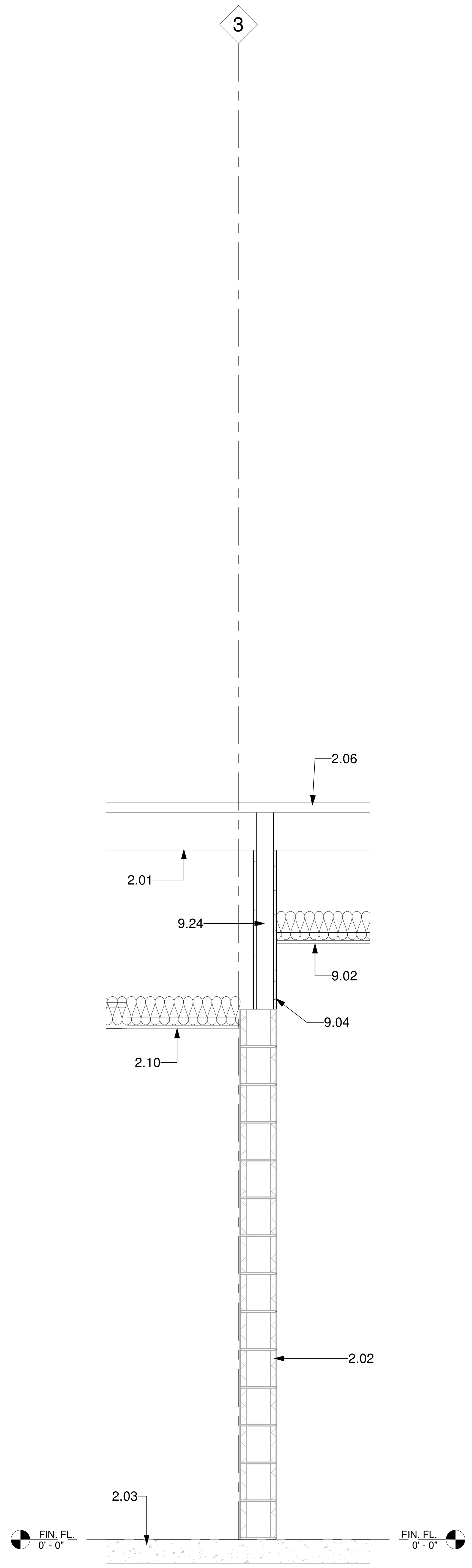
Project Number	JCVIB-23
Date	10/18/2023
Scale	3/4" = 1'-0"

WALL SECTIONS

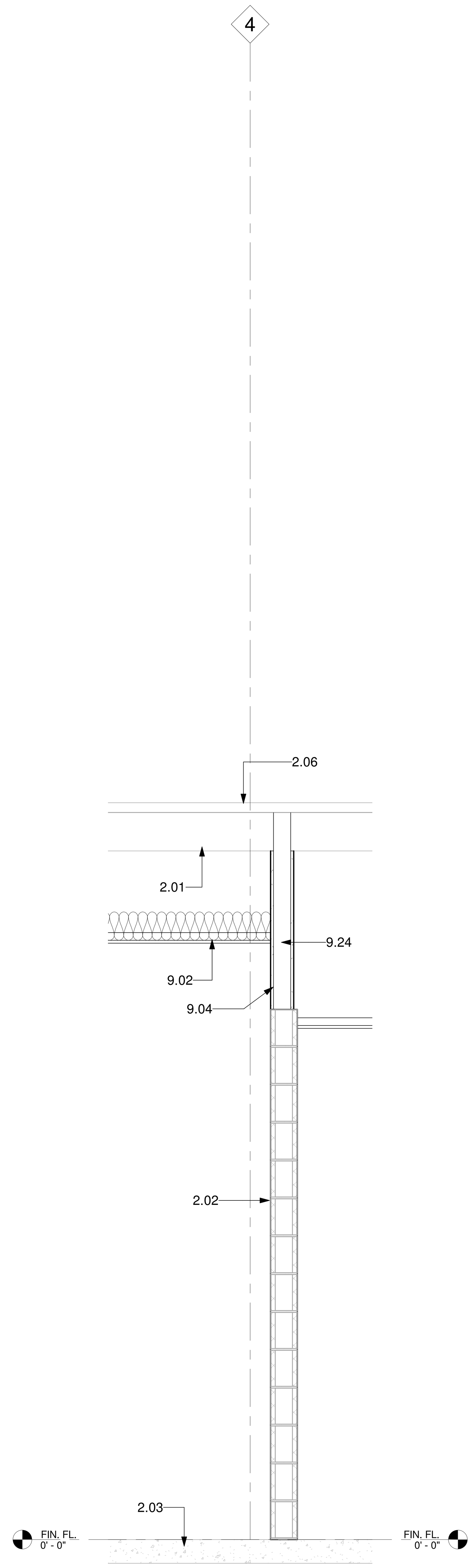
A5.2

NUMBERED NOTES

NUMBER	DESCRIPTION
2.01	EXISTING BUILDING STRUCTURE
2.02	EXISTING CMU
2.03	EXISTING GRADE BEAM AND OR SLAB
2.06	EXISTING ROOF
2.10	EXISTING CEILING
9.02	SCHEDULED CEILING
9.04	PAINTED DRYWALL, BACKER BOARD AT WET LOCATIONS (PAINT NOT REQUIRED ABOVE CEILING)
9.24	METAL STUD WALL



1 WALL SECTION
3/4" = 1'-0"



2 WALL SECTION
3/4" = 1'-0"

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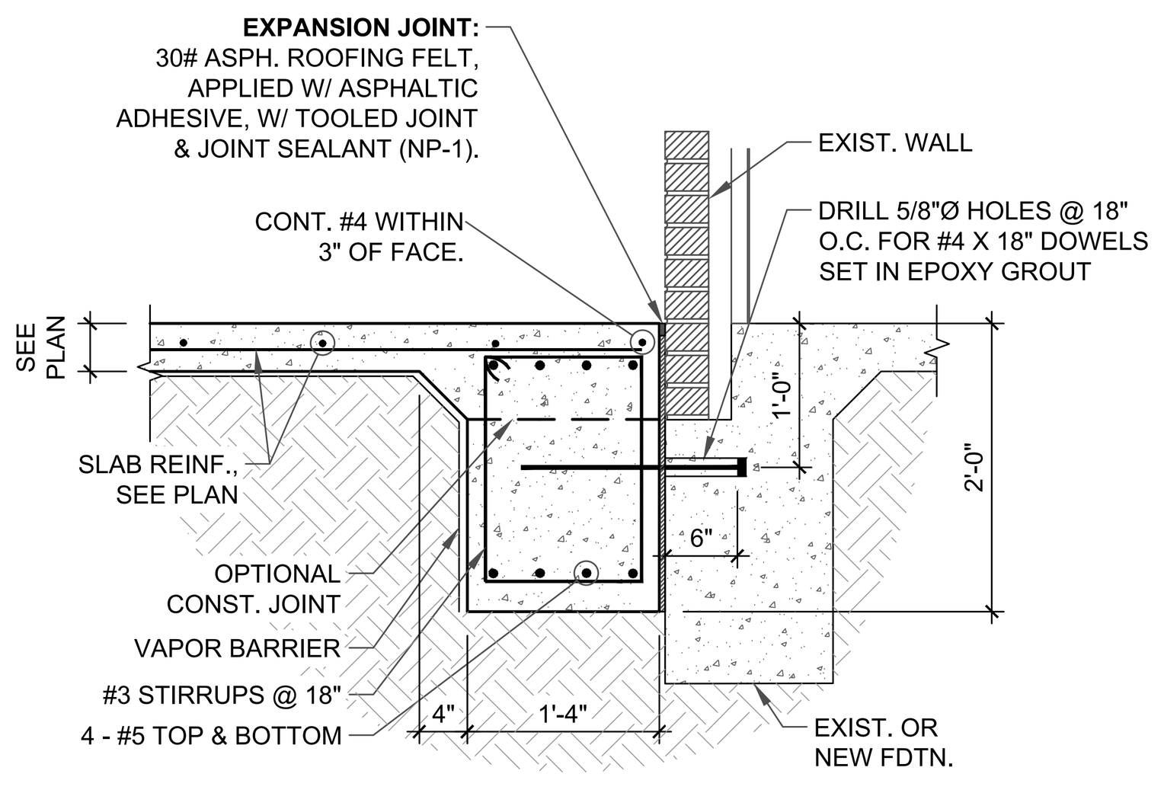
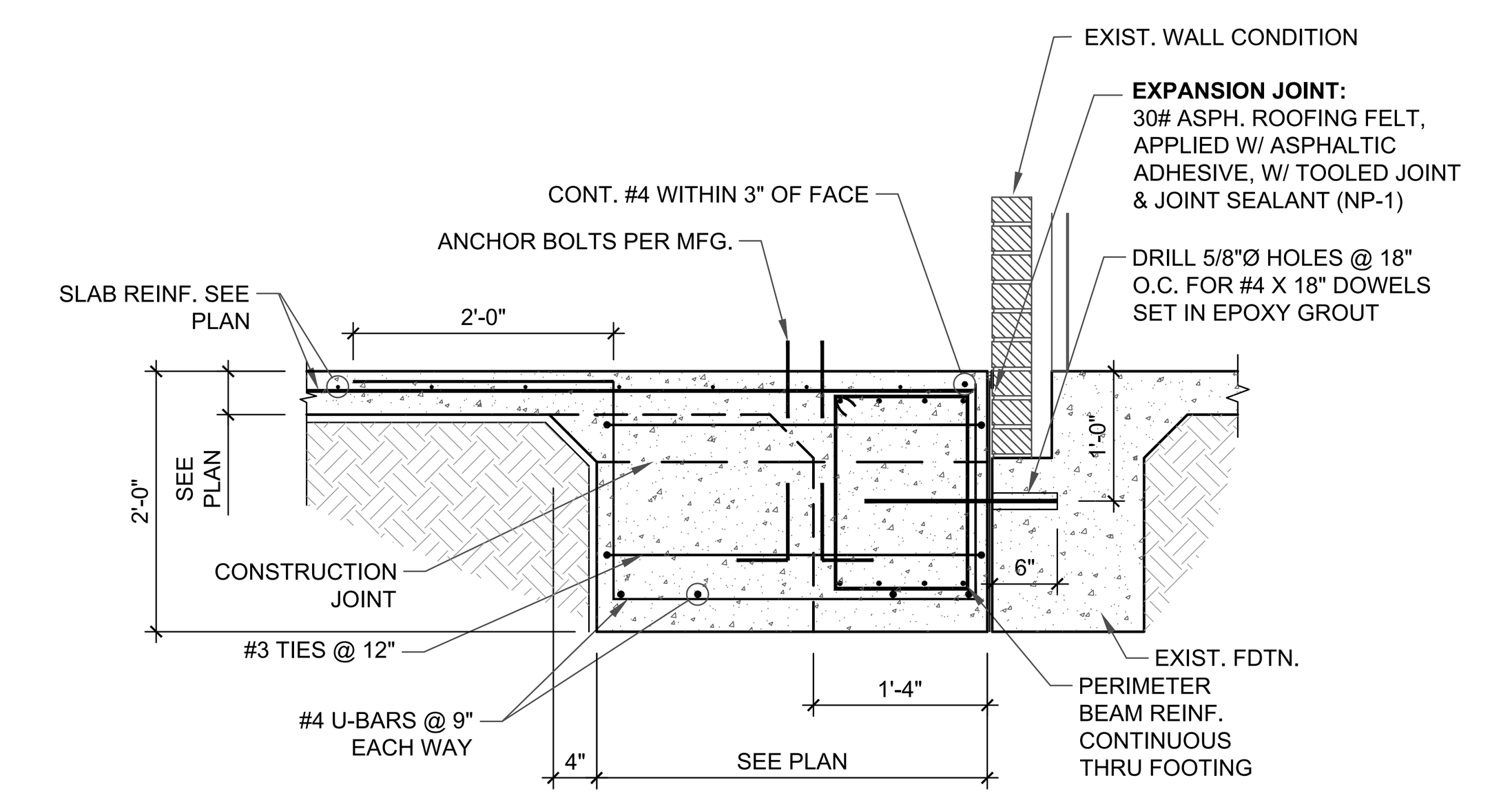
Scale	3/4" = 1'-0"

WALL SECTIONS

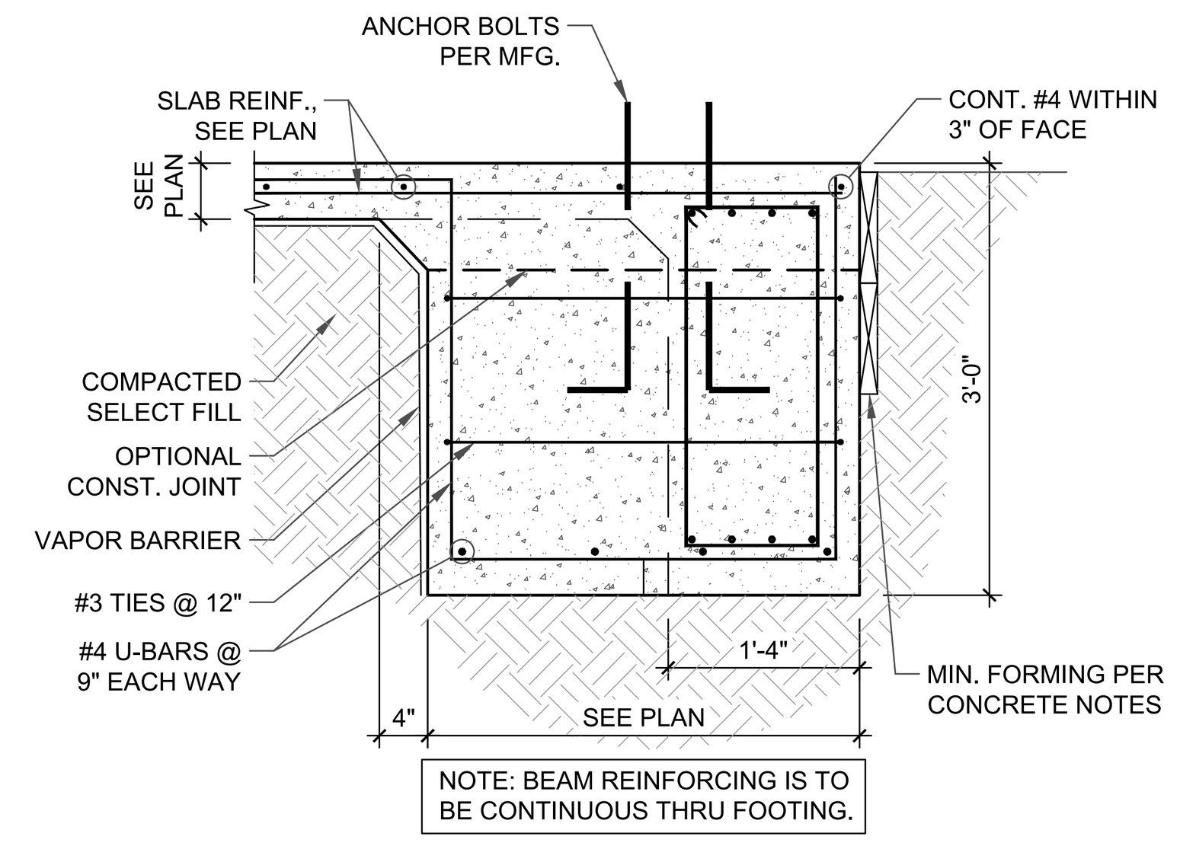
A5.3



7 PERIMETER BEAM @ EXISTING FOUNDATION
3/4" =1'-0"



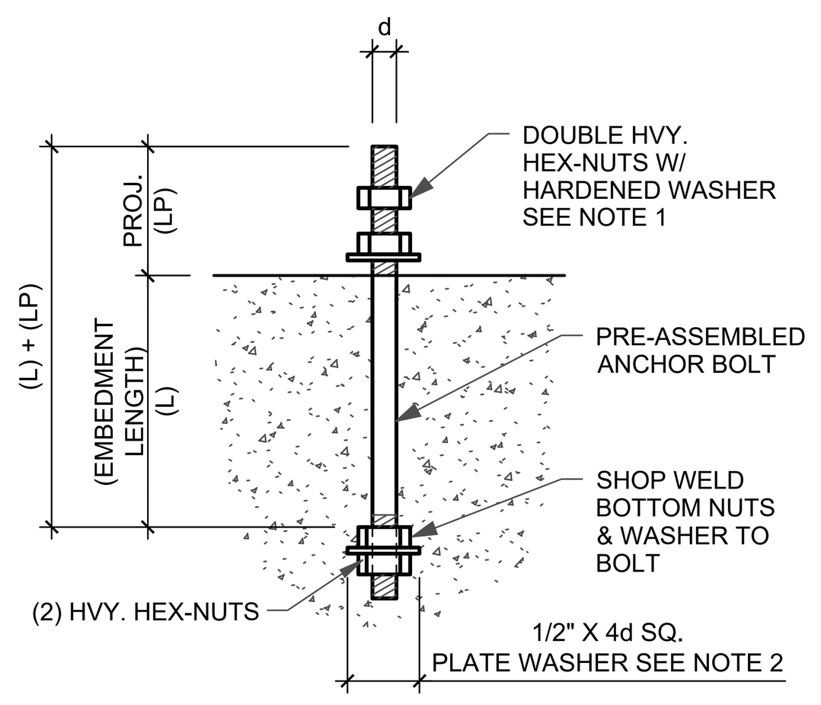
5 PERIMETER FOOTING @ EXISTING FOUNDATION
3/4" =1'-0"



3 PERIMETER FOOTING NO LEDGE
3/4" =1'-0"

ANCHOR BOLT	
DIAMETER (d)	EMBEDMENT (L)
1/2"	9"
5/8"	12"
3/4"	16"
7/8"	18"
1"	22"
1 1/8"	24"
1 1/4"	26"
1 3/8"	27"
1 1/2"	29"

(LP) = GRIP + 7/8" + 2d



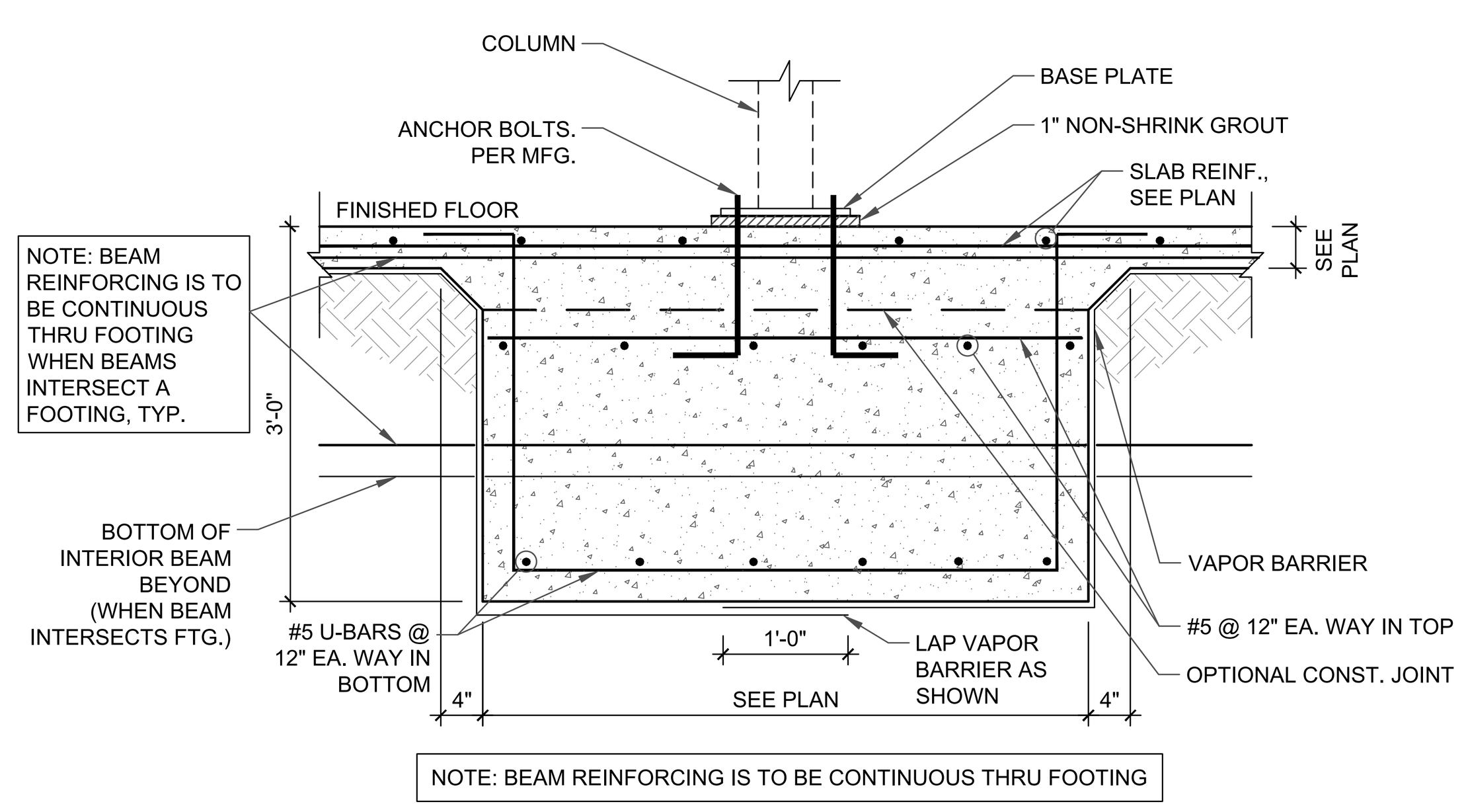
NOTES:

1.) WHERE GROUT THICKNESS IS LESS THAN OR EQUAL TO LEVELING NUT THICKNESS, PROVIDE LEVELING SHIMS IN LIEU OF LEVELING NUT.

2.) ADJUST PLATE WASHER UP OR DOWN WHERE ADJACENT PLATE WASHERS INTERFERE. DO NOT ADJUST PROJECTION.

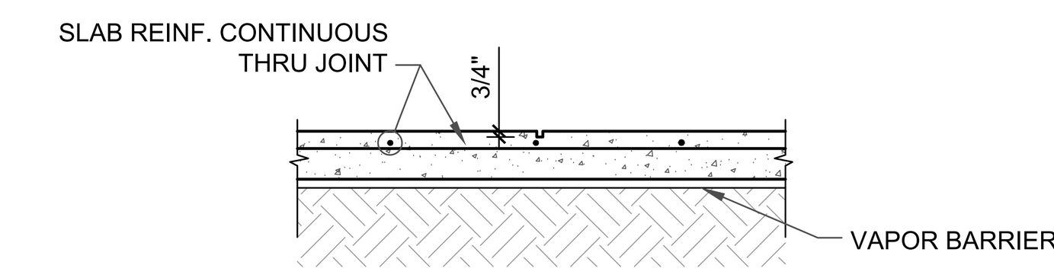
3.) ALL ANCHOR BOLTS TO BE HOT DIP GALVANIZED AND MEET ASTM F1554 GR. 36.

11 ANCHOR BOLT
3/4" =1'-0"



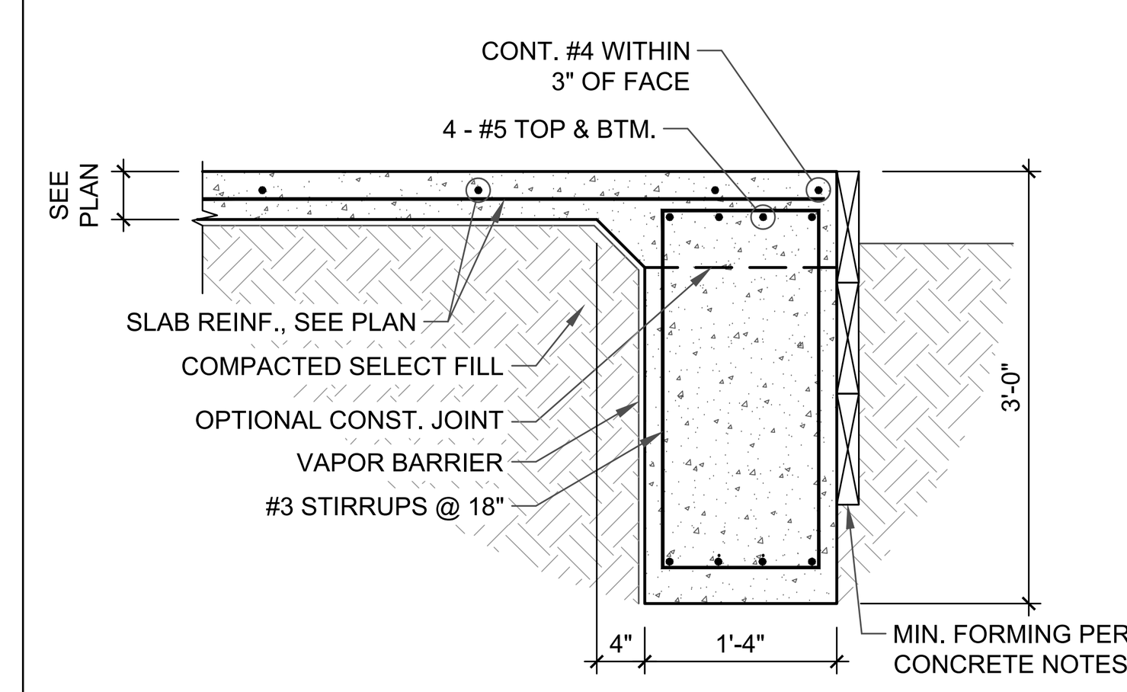
9 INTERIOR FOOTING
3/4" =1'-0"

TOOLED CONTROL JOINT (TCJ)

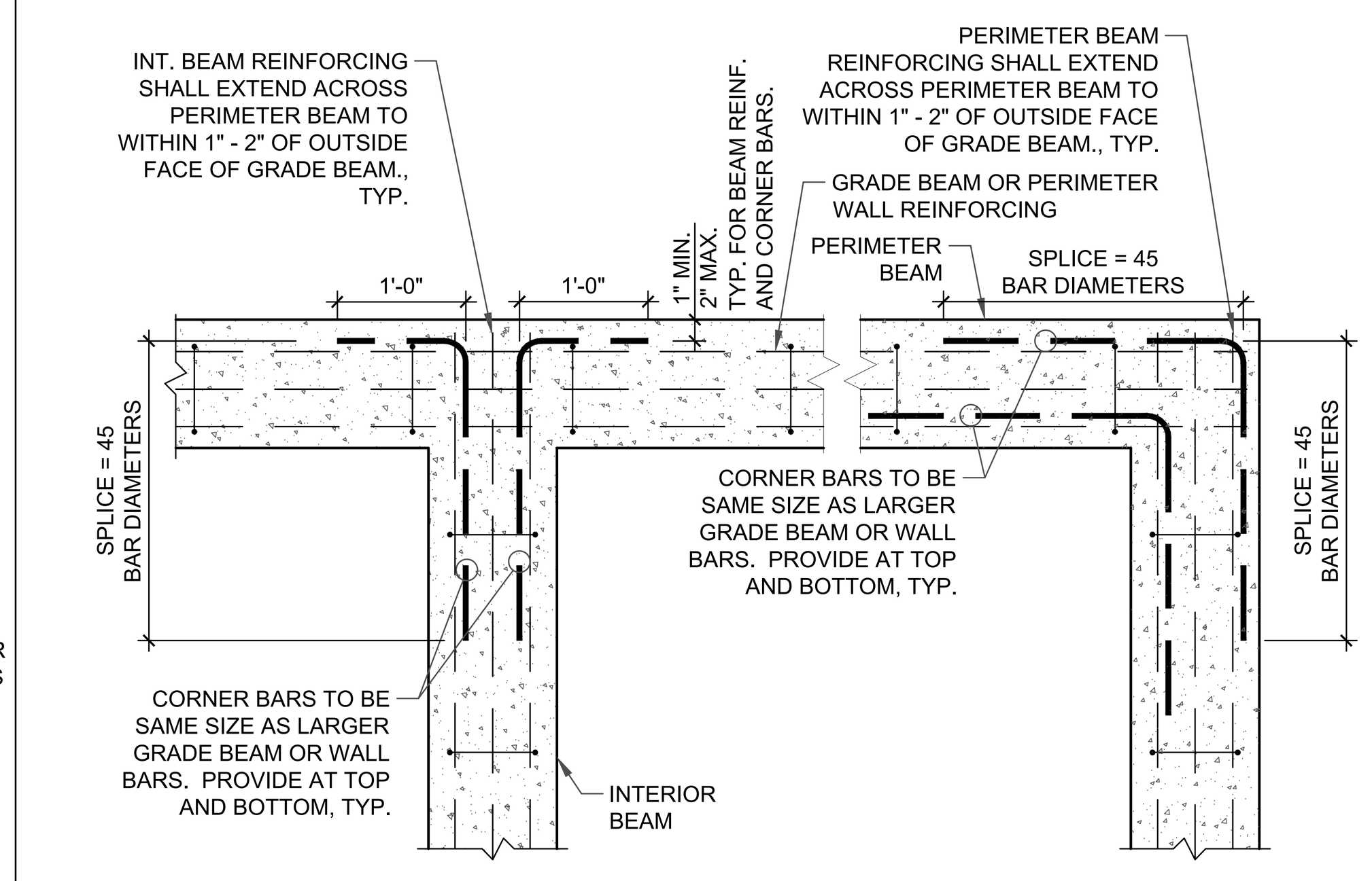


NOTES:
1. PLACE CONTROL JOINTS AS TO NOT CONFLICT WITH GRADE BEAMS AND FOOTINGS.
2. COORDINATE CONTROL JOINT LOCATION WITH ARCHITECT AT EXPOSED CONCRETE.
3. CONTROL JOINTS TYPICALLY REMAIN UNGROUTED AT EXPOSED CONCRETE.

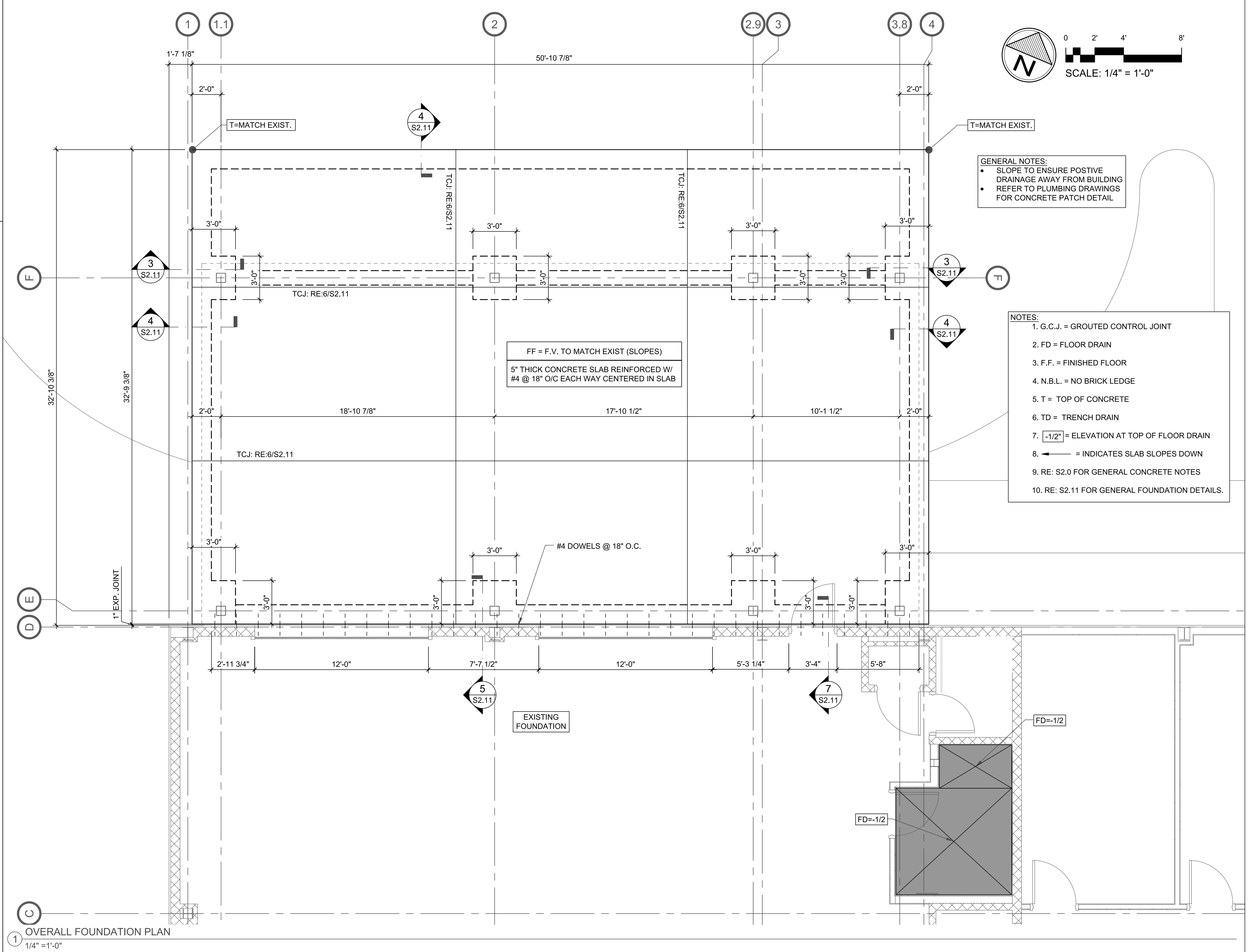
6 GROUND CONTROL UNIT
3/4" =1'-0"



4 PERIMETER BEAM NO LEDGE
3/4" =1'-0"

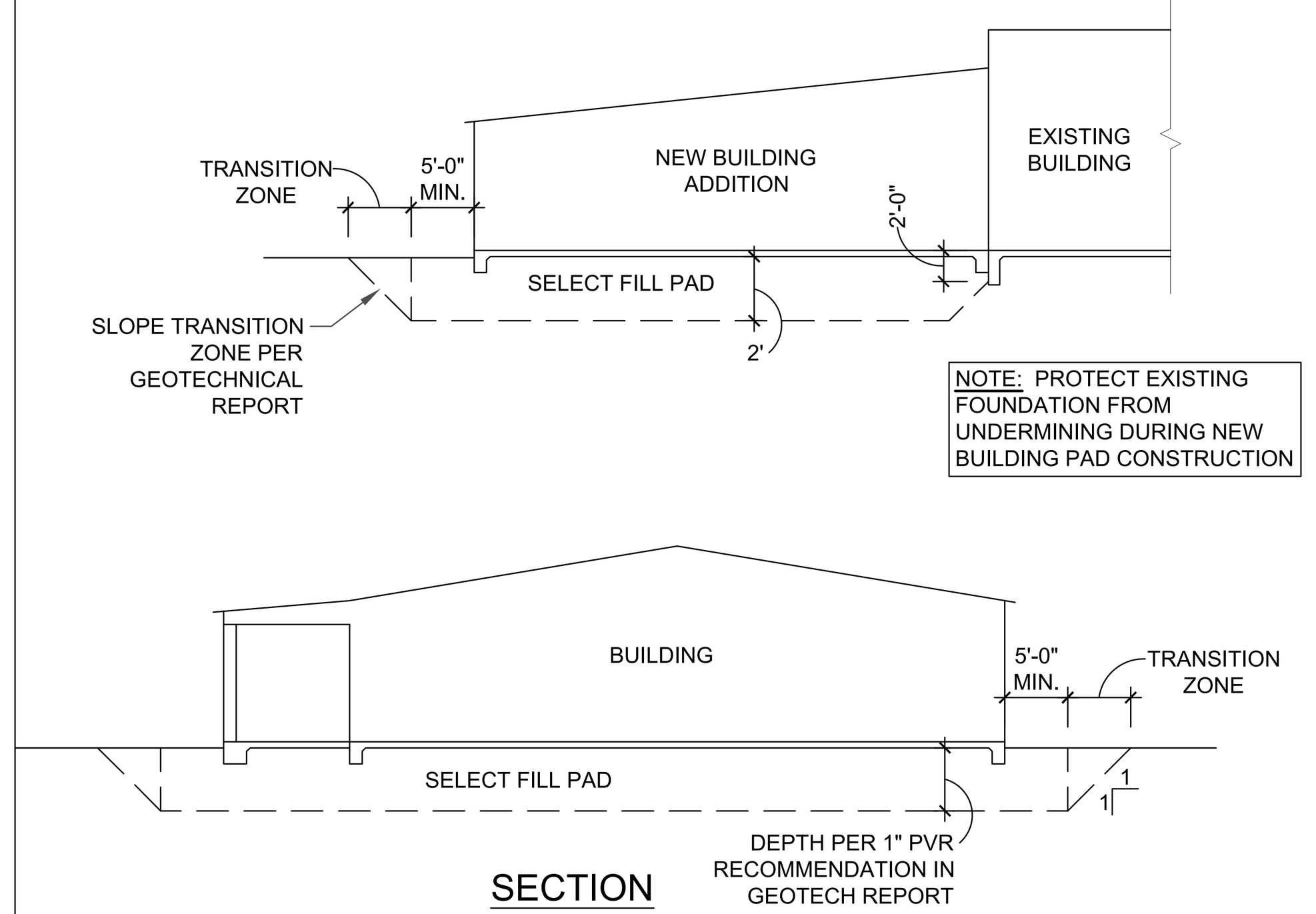


2 TYPICAL REINFORCING
3/4" =1'-0"

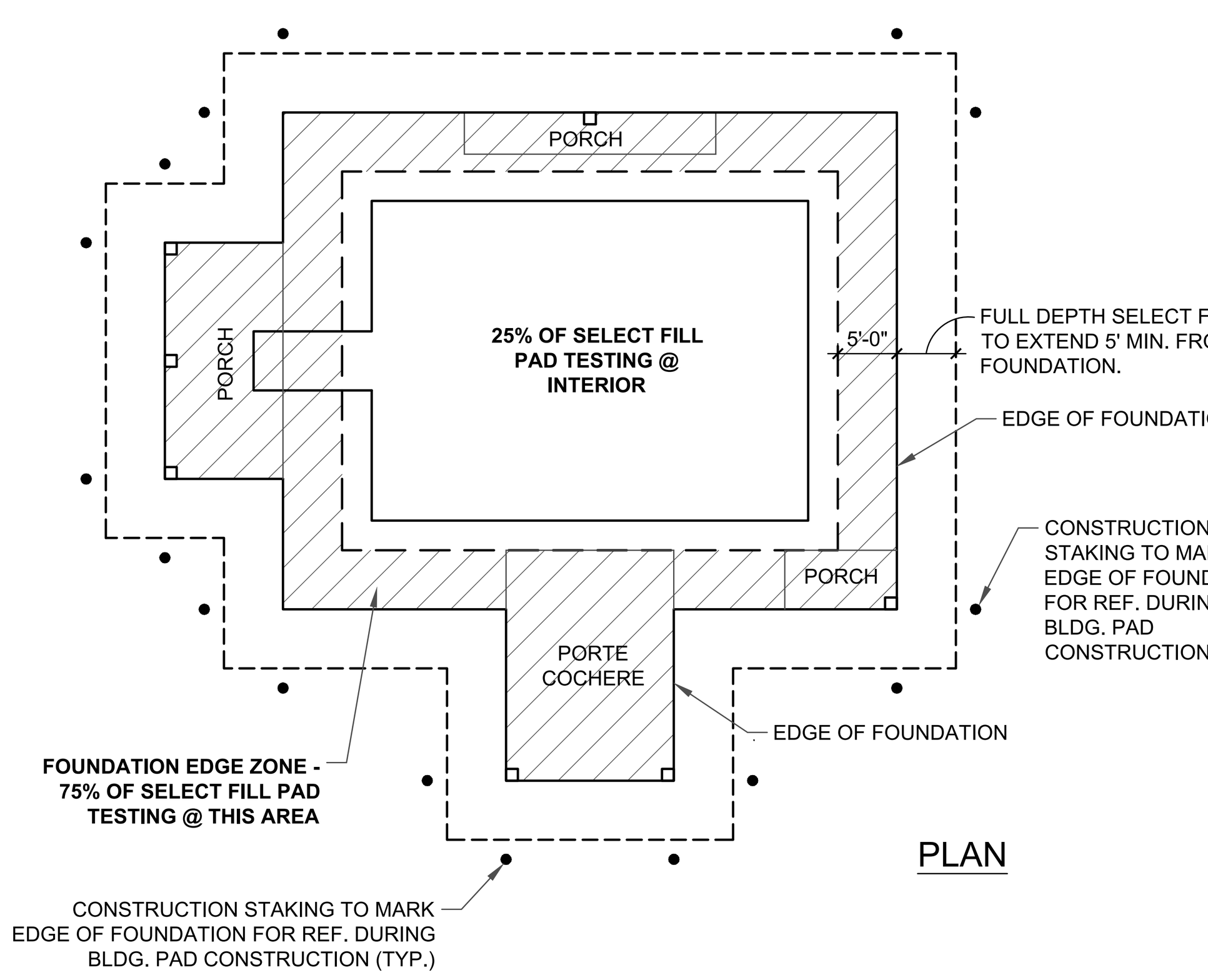


NOTES:
1. G.C.J. = GROUTED CONTROL JOINT
2. FD = FLOOR DRAIN
3. F.F. = FINISHED FLOOR
4. N.B.L. = NO BRICK LEDGE
5. T = TOP OF CONCRETE
6. TD = TRENCH DRAIN
7. -1/2" = ELEVATION AT TOP OF FLOOR DRAIN
8. ← = INDICATES SLAB SLOPES DOWN
9. RE: S2.0 FOR GENERAL CONCRETE NOTES
10. RE: S2.11 FOR GENERAL FOUNDATION DETAILS.

1 OVERALL FOUNDATION PLAN
1/4" =1'-0"



SECTION



PLAN

10 BUILDING PAD DETAIL
3/4" =1'-0"

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE.
2. MILD STEEL REINFORCING BARS SHALL CONFORM TO ASTM A-615, NO.3 AND LARGER BARS SHALL BE GRADE 60.
3. WELDED STEEL WIRE REINFORCEMENT SHALL CONFORM TO ASTM A-185. ALL WELDED STEEL WIRE FABRIC SHALL BE SUPPLIED IN FLAT SHEETS, NOT IN ROLLS.
4. MILD STEEL REINFORCEMENT AND ACCESSORIES SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI SP-66.
5. CONCRETE SHALL BE NORMAL WEIGHT WITH AN APPROXIMATE DENSITY OF 150 PCF, U.N.O.
6. PORTLAND CEMENT SHALL BE A SINGLE BRAND CONFORMING TO ASTM C-150, TYPE 1, TYPE 2, OR COMBINATION OF 1 AND 2, UNLESS OTHERWISE APPROVED.
7. NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C-33. THE MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE THE FOLLOWING:
   FOUNDATION/SLABS = 1"
   CMU BOND BEAMS = ½"
   SECOND FLOOR = ½"
8. ADDITIVES FOR AIR ENTRAINMENT, WATER REDUCTION, AND SET CONTROL SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS, AND APPROVED BY ENGINEER .
9. MIXES SHALL BE DESIGNED TO PROVIDE CONCRETE WITH 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
10. MILD STEEL REINFORCEMENT SHALL BE PLACED AND SECURED IN ACCORDANCE WITH CRSI "RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS".
11. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS OR AS REQUIRED BY ACI:
   GRADE BEAMS = 1 ½" TOP & SIDES, 3" BOTTOM
   SLABS ON GRADE = 1 ½" TOP
   FOOTINGS = 2" TOP & SIDES, 3" BOTTOM
   PAVING = 1 ½" TOP, 3" BOTTOM
12. REINFORCING BARS MAY BE SPLICED ONLY WHERE SHOWN ON THE DRAWINGS EXCEPT THAT REINFORCING DESIGNATED AS "CONTINUOUS", "CONTINUOUS" REINFORCING BARS NO. 6 AND SMALLER SHALL BE CONTACT LAP SPLICED 57 BAR DIAMETERS AND NO. 7 AND LARGER SHALL BE CONTACT LAP SPLICED 71 BAR DIAMETERS, UNLESS NOTED OTHERWISE. LAP SPLICES OF CONTINUOUS REINFORCING SHALL BE MADE OVER SUPPORTS FOR BOTTOM / INTERMEDIATE BARS AND AT MIDSPAN FOR TOP REINFORCING. WELDED WIRE FABRIC SHALL BE SPLICED BY LAPPING TWO FULL MESH AND LACING THE SPLICES WITH WIRE. ALL SPLICES SHALL BE STAGGERED.
13. WELDING OF MILD STEEL REINFORCING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE-REINFORCING STEEL", AWS D-1.4. ANY REINFORCING INDICATED TO BE WELDED SHALL MEET ASTM A706.
14. EACH AREA OF CONCRETE WORK SHALL BE FINISHED AND CURED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. UNLESS NOTED, PROVIDE THE FOLLOWING CONCRETE FINISHES:
   BUILDING INTERIOR FLOORS – STEEL TROWEL FINISH
   PORCHES/LANDINGS – STEEL TROWEL FINISH WITH LIGHT BROOM
   SIDEWALKS – MEDIUM BROOM FINISH
   RAMPS – HEAVY BROOM FINISH
15. PROVIDE MINIMUM EXTERIOR FORM OF 20" BELOW FINISHED FLOOR AND A MINIMUM OF 12" BELOW FINISHED GRADE, WHICHEVER IS GREATER. PROVIDE REQUIRED EXTERIOR FOUNDATION FORMS IN AREAS WHERE FOUNDATION IS EXPOSED AFTER FINAL GRADES ARE ATTAINED, REFER TO GRADING PLAN FOR FINAL GRADES AROUND BUILDING.
16. REINFORCING STEEL WILL NOT BE ACCEPTED WITHOUT APPROPRIATE CHAIRING (MUST BE SUBMITTED FOR APPROVAL TO ENGINEER PRIOR TO INSTALLATION). BRICK CHAIRS ARE **NOT** ACCEPTABLE.
17. WHERE APPLIED, VINYL WATERSTOPS SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS.

8 CONCRETE NOTES

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ZACHERY K. PARKER 144556 LICENSED PROFESSIONAL ENGINEER
10/18/2023

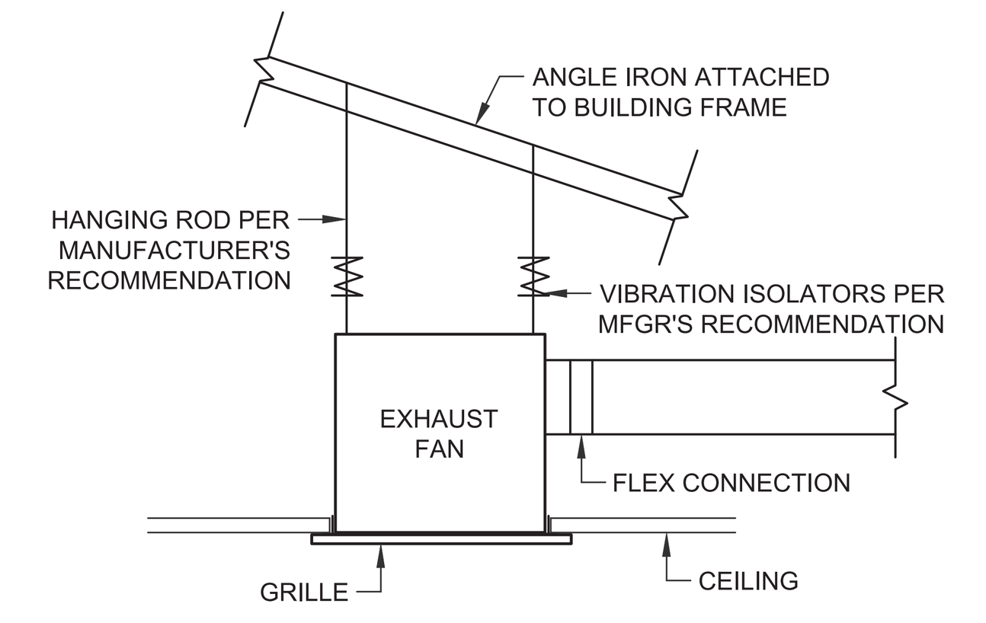
GLS PROJECT #154079

GLS ARCHITECTURE • ENGINEERING • INTERIORS • LANDSCAPE • SURVEYING

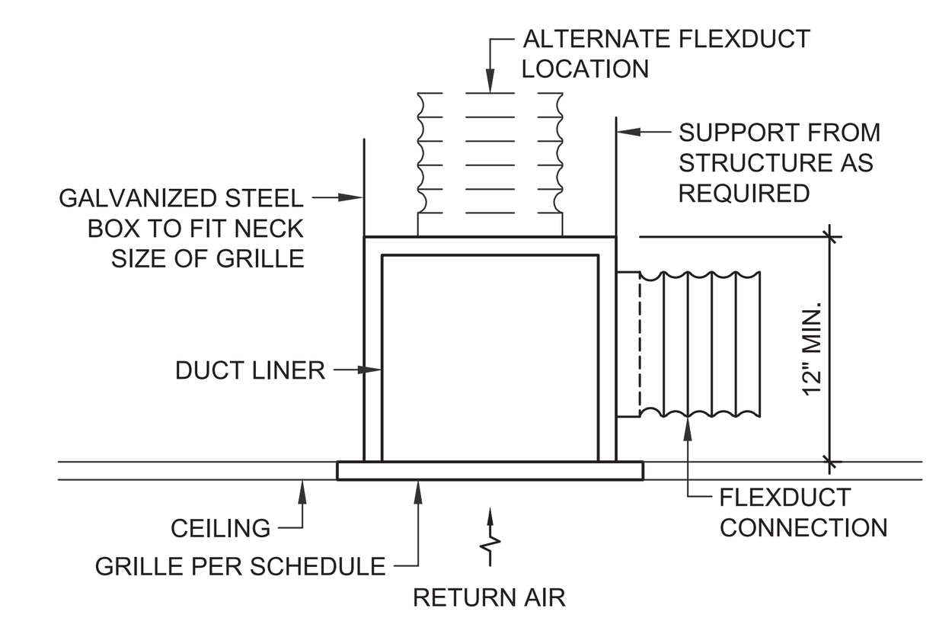
Project Number	JCVIB-23
Date	10-18-2023
Scale	1/4" =1'-0"

FOUNDATION PLAN AND DETAILS

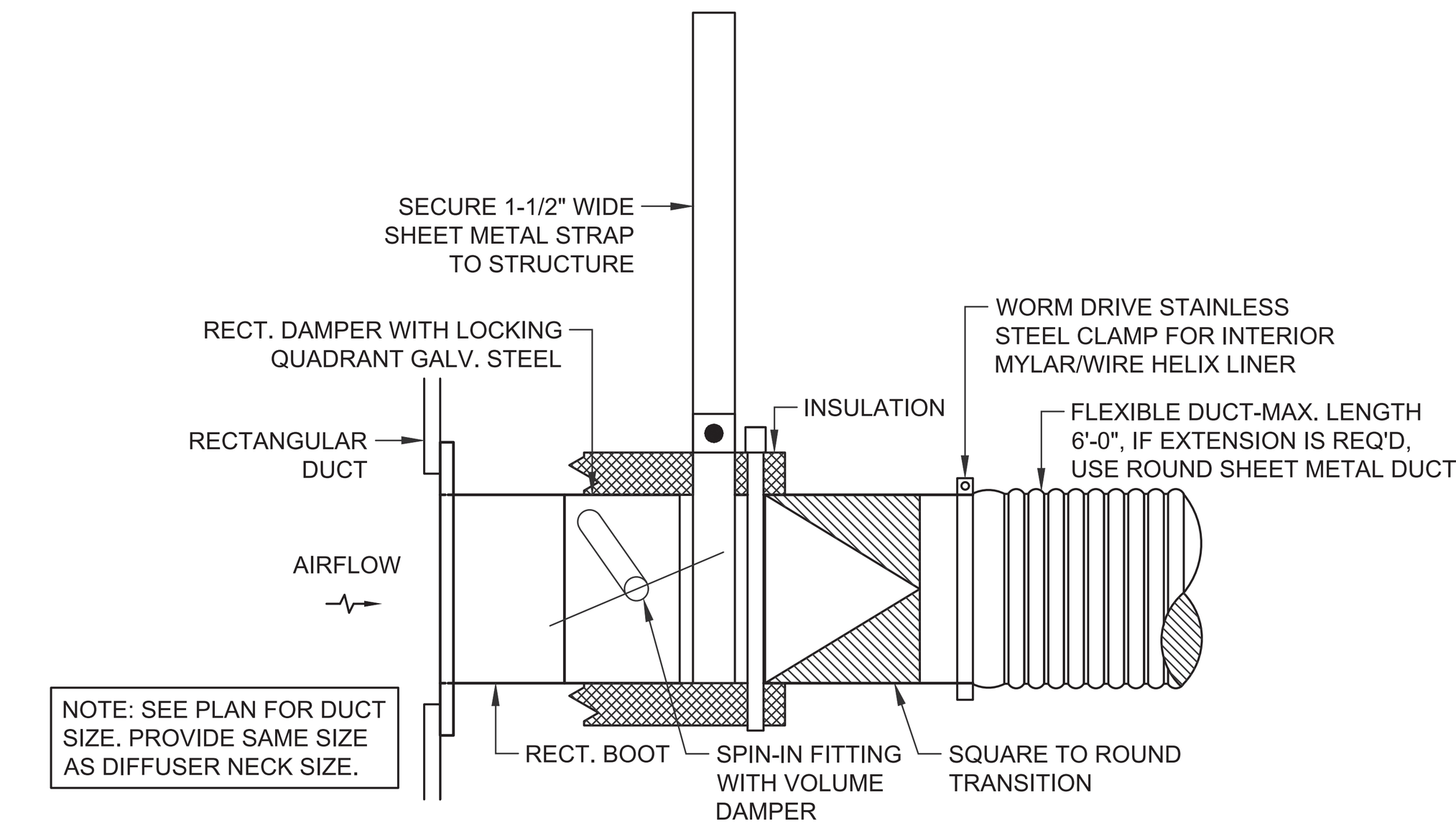
S2.11



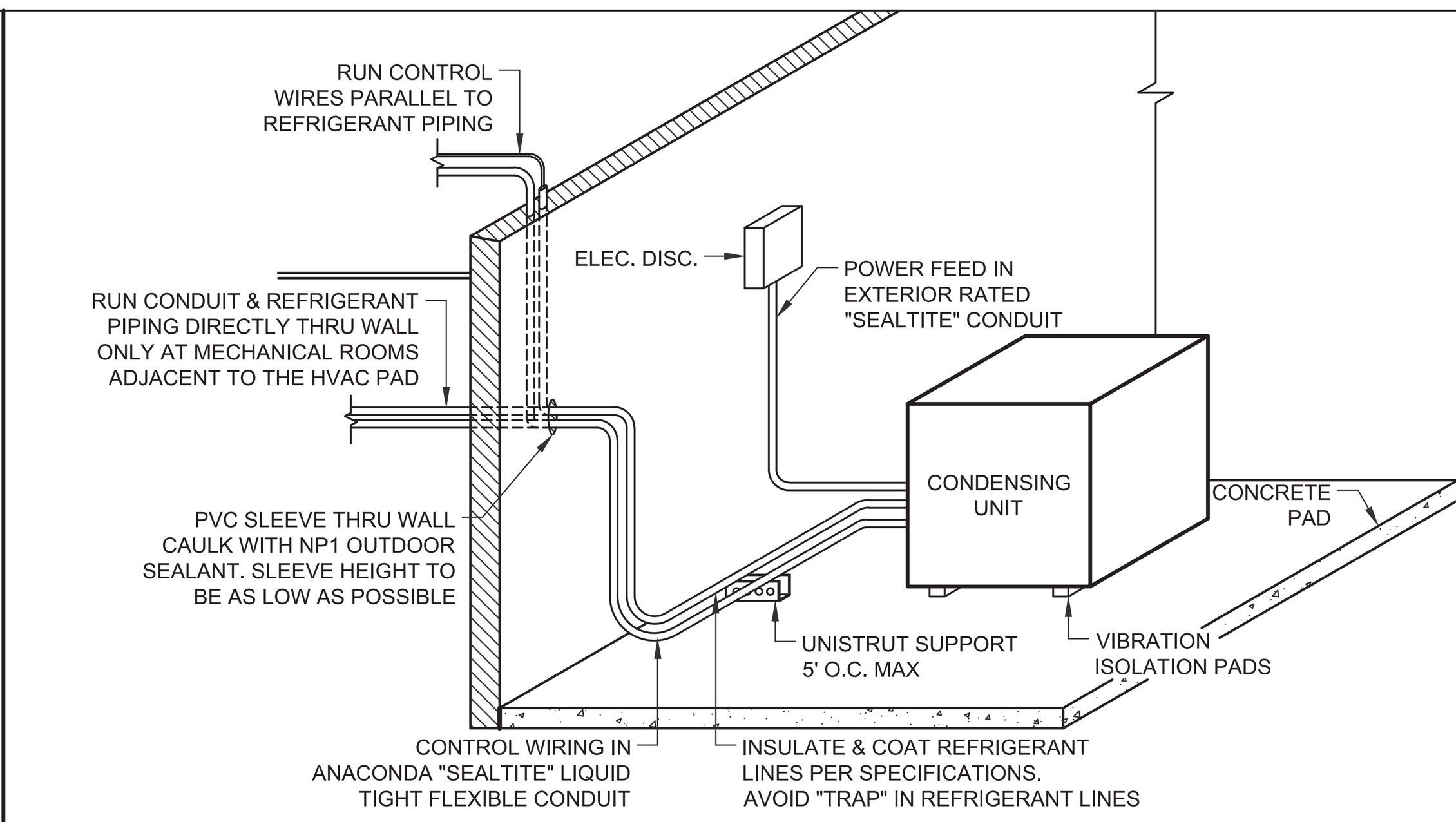
20 CEILING EXHAUST FAN DETAIL
N.T.S.



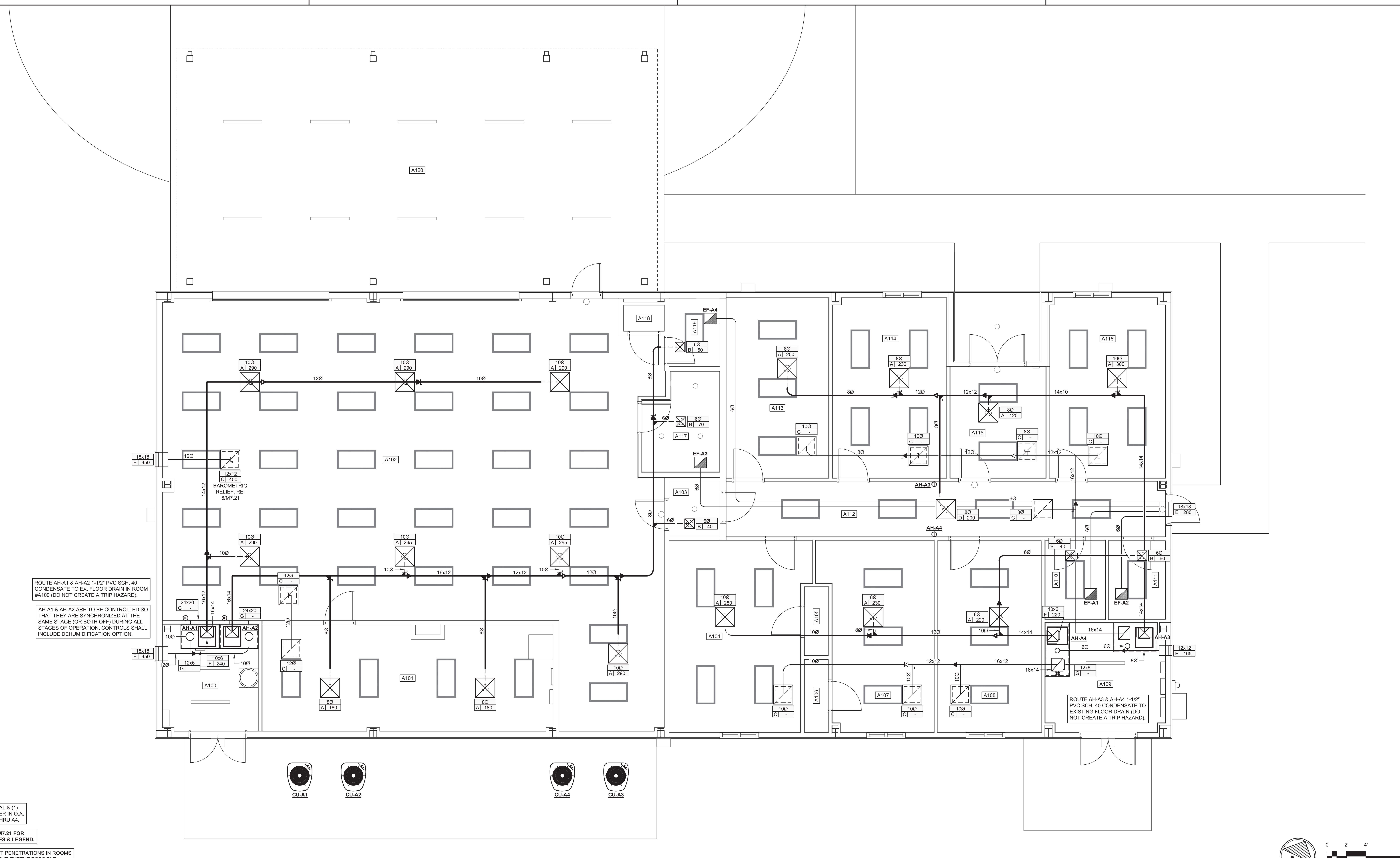
15 RETURN AIR ASSEMBLY DETAIL
N.T.S.



10 DUCT CONNECTION DETAIL
N.T.S.



5 CONDENSING UNIT INSTALLATION DETAIL
N.T.S.



PROVIDE (1) MANUAL & (1) MOTORIZED DAMPER IN O.A. DUCTS OF AH-A1 THRU A4.

REFER TO SHEET M7.21 FOR MECHANICAL NOTES & LEGEND.

USE EXISTING DUCT PENETRATIONS IN ROOMS #A100 & #A109 TO THE EXTENT POSSIBLE. WIDEN PENETRATIONS AS NECESSARY FOR NEW DUCTS, SEAL AROUND DUCTS AIR TIGHT.

1 MECHANICAL PLAN
1/4"=1'-0"

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BURNS ARCHITECTURE,LLC
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SAMUEL J. EDWARDS 145722 LICENSED PROFESSIONAL ENGINEER 10/19/2023

GLS

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Project Number	JCVIB-23
Date	10-18-23
Scale	1/4"=1'-0"

MECHANICAL PLAN & DETAILS

M7.11

20

19

18

17

16

EXHAUST FAN SCHEDULE

UNIT TAG	EF-A1, A2, A3	EF-A4
PRIMARY AREA SERVED	EF-A1: A110 RESTROOM EF-A2: A111 RESTROOM EF-A3: A117 RESTROOM	A119 JANITOR
GREENHECK MODEL NO. (OR APPROVED EQUAL)	SP-A90	SP-A90
FAN TYPE	CEILING EXHAUST	CEILING EXHAUST
DRIVE	DIRECT	DIRECT
CFM	70	70
EXTERNAL STATIC (I.W.C.)	0.25	0.25
VOLTS/PH/HZ	**120/1/60**	**120/1/60**
MOTOR SIZE (WATTS)	13	13
SONES	0.3	0.3
CONTROL INTERLOCK	ROOM LIGHTS	WALL SWITCH
APPLICABLE NOTES	1-4	1-4

NOTES:

1) PROVIDE FLEX CONNECTION ON DUCTED INLET AND OUTLET OF FAN CABINET.

2) PROVIDE HANGING SPRING ISOLATORS. PROVIDE GRAVITY DAMPER ON DISCHARGE.

3) PROVIDE FACTORY INSTALLED THERMAL OVERLOAD PROTECTION AND VIBRATION ISOLATION FOR FAN MOTOR. PROVIDE A DISCONNECT SWITCH INTEGRAL TO THE FAN AND MOTOR STARTER AS REQUIRED.

4) PROVIDE SPEED CONTROL MOUNTED INSIDE A J-BOX IN THE ABOVE CEILING SPACE.

15 EXHAUST FAN SCHEDULE
N.T.S.

AIR DEVICE SCHEDULE

Mark	Model	Use	Construction	Color	Remarks
A	TITUS TMS	SUPPLY	24"x24" STEEL LAY-IN DIFFUSER	WHITE	PROVIDE D-100 NECK MOUNTED DAMPER AND INSULATED BACK. SEE PLANS FOR NECK SIZE.
B	TITUS TMS	SUPPLY	12"x12" STEEL LAY-IN DIFFUSER	WHITE	PROVIDE D-100 NECK MOUNTED DAMPER AND INSULATED BACK. SEE PLANS FOR NECK SIZE.
C	TITUS PAR	RETURN	24"x24" STEEL LAY-IN GRILLE	WHITE	PROVIDE INSULATED BACK. SEE PLANS FOR NECK SIZE.
D	TITUS TDC	SUPPLY	24"x24" STEEL LAY-IN DIFFUSER	WHITE	PROVIDE WITH TWO-WAY OPPOSITE DISCHARGE, AG-95 NECK MOUNTED DAMPER AND INSULATED BACK. SEE PLANS FOR NECK SIZE.
E	RUSKIN ELF375DX	INTAKE/ EXHAUST	EXTRUDED ALUMINUM 4" DEEP FRAME WITH INTEGRAL FLANGE	PER ARCHITECT	STATIONARY LOUVER WITH DRAINABLE BLADES. PROVIDE WITH 1/8" MESH INSECT SCREEN.
F	TITUS 272FS	SUPPLY	SURFACE MOUNTED STEEL FRAMED GRILLE	WHITE	DOUBLE DEFLECTION GRILLE WITH ADJUSTABLE BLADES. PROVIDE WITH AG-35 OPPOSED BLADE DAMPER. SIZE AS INDICATED ON PLANS.
G	TITUS 33RL	RETURN	SURFACE MOUNTED STEEL GRILLE	WHITE	PROVIDE AG-35 OPPOSED BLADE DAMPER. SIZE AS INDICATED ON PLANS. (BLADES PARALLEL TO THE LONG DIMENSION.)
-	ARROW MODEL 500-B-CB	INTAKE/RELIEF	ADJUSTABLE ALUMINUM COUNTER BALANCED BACKDRAFT DAMPER	-	PROVIDE WITH ADJUSTABLE COUNTER BALANCE WITH VARIABLE COUNTER WEIGHTS.
-	TITUS TRM	FRAME	ALUMINUM	WHITE	USE WITH LAY-IN TYPE DIFFUSERS AND GRILLES WHERE INSTALLED IN HARD CEILINGS.

14 AIR DEVICE SCHEDULE
N.T.S.

AIR COOLED COND. UNIT/AHU SCHEDULE WITH REHEAT COIL

AHU TAG(S) - INDOOR UNIT		AH-A1	AH-A2	AH-A3	AH-A4
C.U. TAG(S) - OUTDOOR UNIT		CU-A1	CU-A2	CU-A3	CU-A4
AREA SERVED		A100 MECH A102 VEHICLE INSPECTION AREA	A101 STORAGE A102 VEHICLE INSPECTION AREA A103 VESTIBULE A117 RESTROOM A119 JANITOR	A112 CORRIDOR A113 OFFICE A114 OFFICE A115 RECEPTION A116 OFFICE	A104 OFFICE A107 OFFICE A108 OFFICE A109 MECH/ELEC A110 RESTROOM A111 RESTROOM
AHU MODEL (OR APPROVED EQUAL)		LENNOX CBA38MV-048	LENNOX CBA38MV-048	LENNOX CBA38MV-042	LENNOX CBA38MV-042
UNIT ORIENTATION		VERTICAL	VERTICAL	VERTICAL	VERTICAL
AIR HANDLER WEIGHT (LBS)		189	189	189	189
C.U. MODEL NO. (OR APPROVED EQUAL)		LENNOX SSB048H4S41Y	LENNOX SSB048H4S41Y	LENNOX SSB036H4S41Y	LENNOX SSB036H4S41Y
C.U. WEIGHT (LBS)		235	235	190	190
MIN. SEER		16	16	16	16
NOMINAL TONNAGE		4	4	3	3
AHU REQ'MENTS	SUPPLY CFM	1,400	1,400	1,050	1,050
	EXTERNAL STATIC (I.W.C.)*	0.8	0.8	0.8	0.8
	FAN H.P. (B.H.P.)	1	1	1/2	1/2
	CENTRIFUGAL FAN DRIVE	DIRECT	DIRECT	DIRECT	DIRECT
	SPEED CONTROL	VARIABLE ECM	VARIABLE ECM	VARIABLE ECM	VARIABLE ECM
	FILTER THICKNESS	1" PLEATED	1" PLEATED	1" PLEATED	1" PLEATED
DESIGN CONDITIONS	OUTDOOR DB/WB (F)	103/81	103/81	103/81	103/81
	COIL ENT. DB/WB (F)	79/66	79/66	77/64	77/64
	O.A. CFM	225	225	80	85
	INDOOR DB/WB (F)	75/63	75/63	75/63	75/63
DESIGN CAPACITY (AHRI 210/240)	TOTAL NET BTUH	47,500	47,500	37,800	37,800
ELECTRIC HEATING COIL	LENNOX MODEL NO.	**ECB38-8**	**ECB38-8**	**ECB38-8**	**ECB38-8**
	NO. OF STAGES	1	1	1	1
	TOTAL KW	8	8	8	8
	BTUH OUTPUT	27,300	27,300	27,300	27,300
REHEAT COIL	LENNOX MODEL NO.	**EDA-060D**	**EDA-060D**	**NO EDA COIL**	**NO EDA COIL**
AHU/HEATER ELECTRICAL REQ'MENTS	VOLTS/PH/HZ	**240/3/60**	**240/3/60**	**240/3/60**	**240/3/60**
	MIN. CIRCUIT AMPACITY	33	33	33	33
	MAX CIR. PROT. RATING	35	35	35	35
C.U. ELECTRICAL	VOLTS/PH/HZ	**208-230/3/60**	**208-230/3/60**	**208-230/3/60**	**208-230/3/60**
	MIN. CIRCUIT AMPACITY	20.3	20.3	16.2	16.2
	MAX CIR. PROT. RATING	30	30	25	25
DX COOLING	STEPS OF CAPACITY	2	2	2	2
APPLICABLE NOTES		1-13	1-13	1-13	1-13

NOTES:

ALL EQUIPMENT MUST COMPLY WITH ALL 2023 DEPARTMENT OF ENERGY (D.O.E.) EFFICIENCY REGULATIONS AND ENVIRONMENTAL PROTECTION AGENCY (E.P.A.) MANDATES AND ASSOCIATED STANDARDS.

*EXTERNAL STATIC PRESSURE INCLUDES THE EDA COIL, THE R/A FILTER (DIRTY) AND THE SUPPLY AND RETURN DUCTWORK, PLENUMS, GRILLES, ETC.

1) FOR THE AIR HANDLING UNIT; PROVIDE SINGLE POINT ELECTRICAL CONNECTION TO FACTORY MOUNTED INTERNAL DISCONNECT, FACTORY INSTALLED NON-BLEED TXV, EVAPORATOR DEFROST CONTROL, AND "AIR-TIGHT" CABINET CONSTRUCTION. PROVIDE COIL GUARDS FOR THE CONDENSING UNITS.

2) CONTRACTOR TO FIELD INSTALL SCHEDULED ELECTRIC HEATING ELEMENT. FOLLOW MANUFACTURER'S GUIDELINES AND INSTALL INTERNAL TO AIR HANDLER CABINET.

3) PLEATED FILTERS REQUIRED AT THICKNESS SHOWN. EFFICIENCY AND PRESSURE DROP PER SPECIFICATIONS.

4) IF REFRIGERANT LINE EXCEEDS MFGR'S RECOMMENDED LENGTH; ADJUST LINE SIZES AND INSTALL SOLENOID ISOLATION VALVE, SUCTION LINE ACCUMULATOR, AND OTHER SPECIAL PRECAUTIONS PER MANUFACTURER'S RECOMMENDATIONS.

5) PROVIDE MATCHED AIR HANDLER AND CONDENSING UNIT SIZED IN ACCORDANCE WITH NOMINAL TONNAGE SHOWN ABOVE.

6) FOR C.U.'S, PROVIDE FACTORY INSTALLED 3-PHASE VOLTAGE MONITOR AT POWER CONNECTIONS. INTERFACE WITH THERMOSTAT CONTROLS TO STOP THE UNIT IF THERE IS A PHASE LOSS CONDITION.

7) PROVIDE THERMOSTAT/HUMIDISTAT (WITH A LOCKABLE COVER) AND REMOTE OUTDOOR TEMPERATURE SENSOR. LOCATE THERMOSTAT AS SHOWN ON PLANS. COORIDINATE WITH OWNER TO DETERMINE MOUNTING LOACTION OF REMOTE TEMPERATURE SENSOR.

8) THERMOSTATS SHALL BE HONEYWELL VISION PRO MODEL TH8321WF1001 WIFI CAPABLE THERMOSTATS. COORDINATE WITH DATA INSTALLER & OWNER.

9) THE EQUIPMENT MANUFACTURER WILL BE RESPONSIBLE FOR ANY MODIFICATION OF THE EQUIPMENT AS NECESSARY TO MEET THE REQUIRED PERFORMANCE AND THE STATED WARRANTY WHEN INSTALLED PER THE PROJECT DRAWINGS AND SPECIFICATIONS.

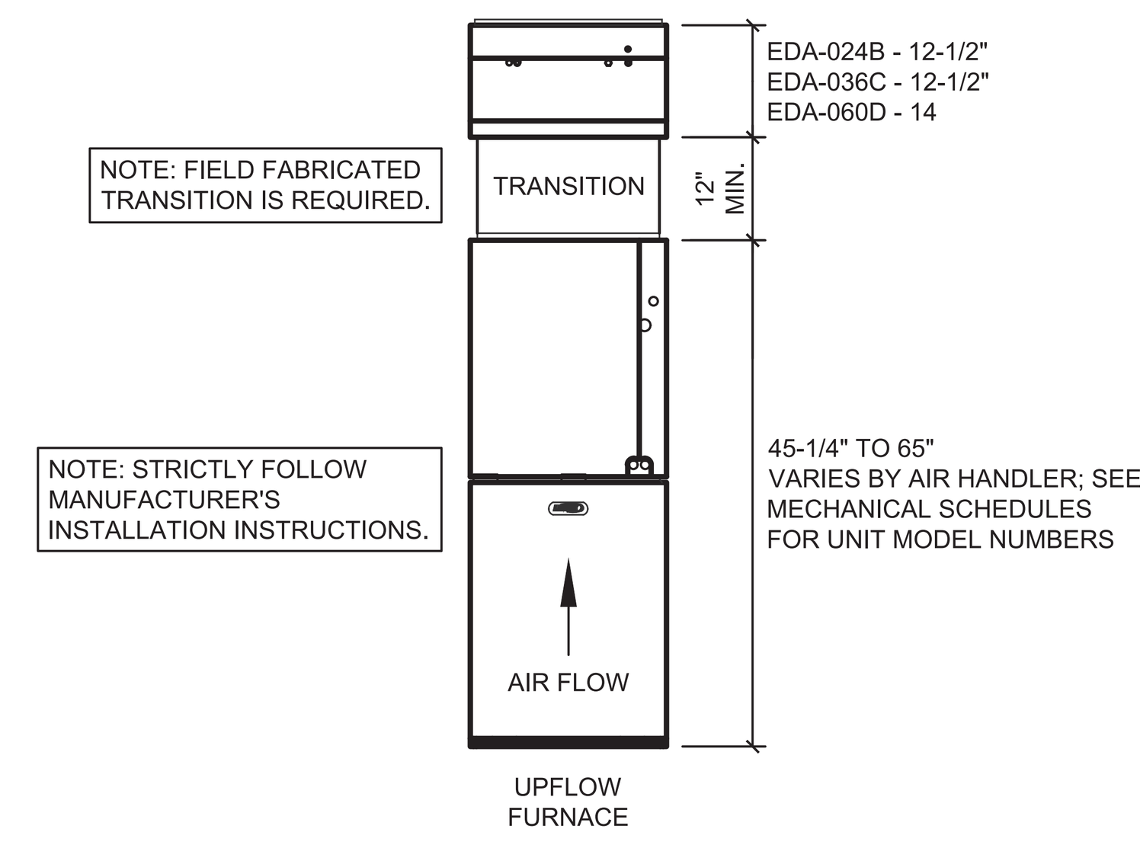
10) CONTRACTOR IS RESPONSIBLE FOR INSTALLING CONDENSING UNITS SO AS TO PROVIDE THE MANUFACTURER'S RECOMMENDED OPERATING CLEARANCES AS WELL AS THE NEC REQUIREMENTS FOR "DEDICATED ELECTRICAL SPACE" AND "ELECTRICAL WORKING SPACE".

11) PROVIDE WARRANTY PER SPEC SECTION WHICH INCLUDES 5-YR WARRANTY FOR COMPRESSOR AND ALL PARTS. 3RD PARTY WARRANTIES ALLOWED.

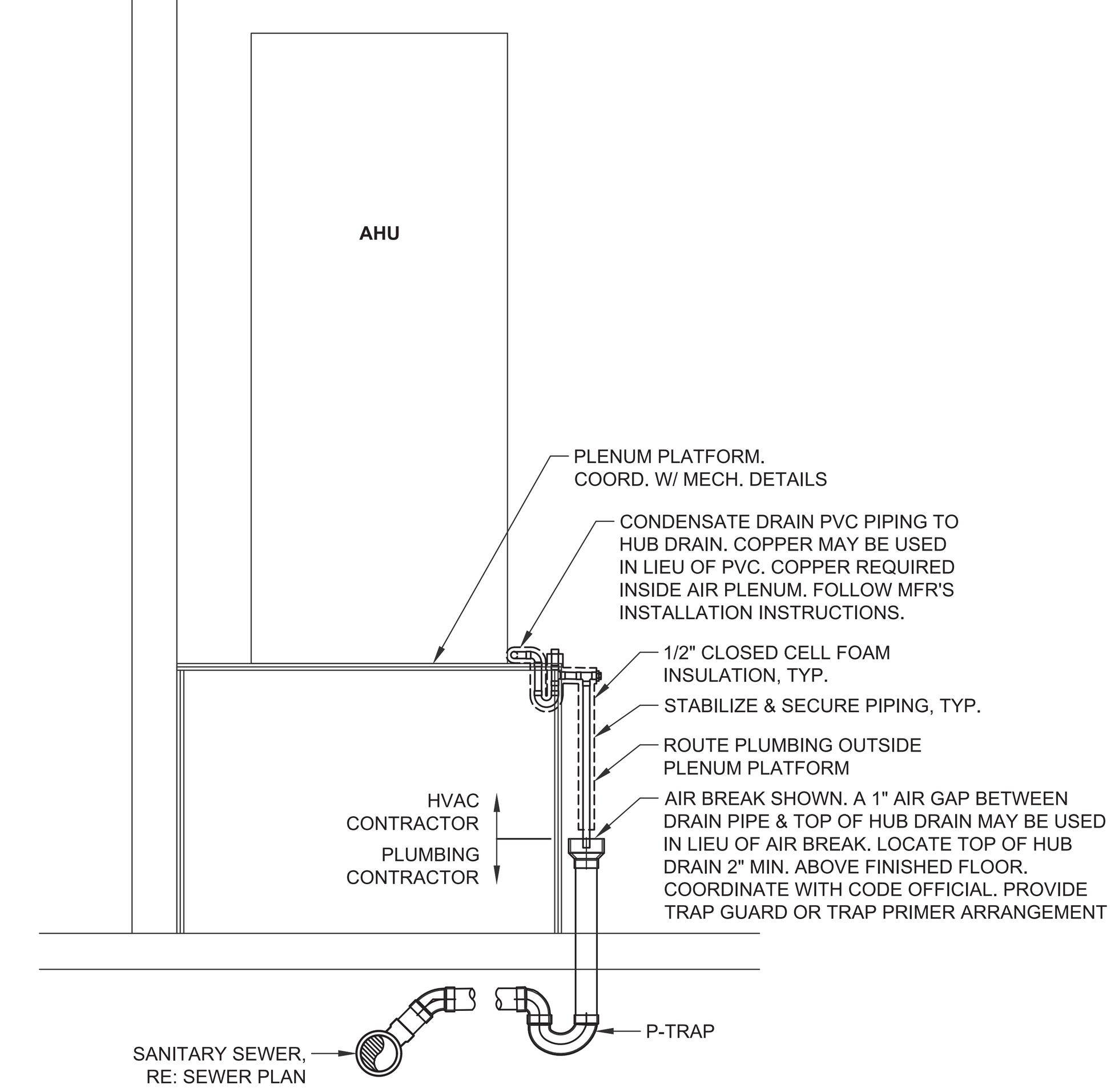
12) PROVIDE INSULATION AND PIPING KIT AS REQUIRED FOR PROPER EDA COIL INSTALLATION. STRICTLY FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

13) CONTRACTOR TO PROVIDE FIELD FABRICATED TRANSITION FROM AIR HANDLER TO EDA COIL.

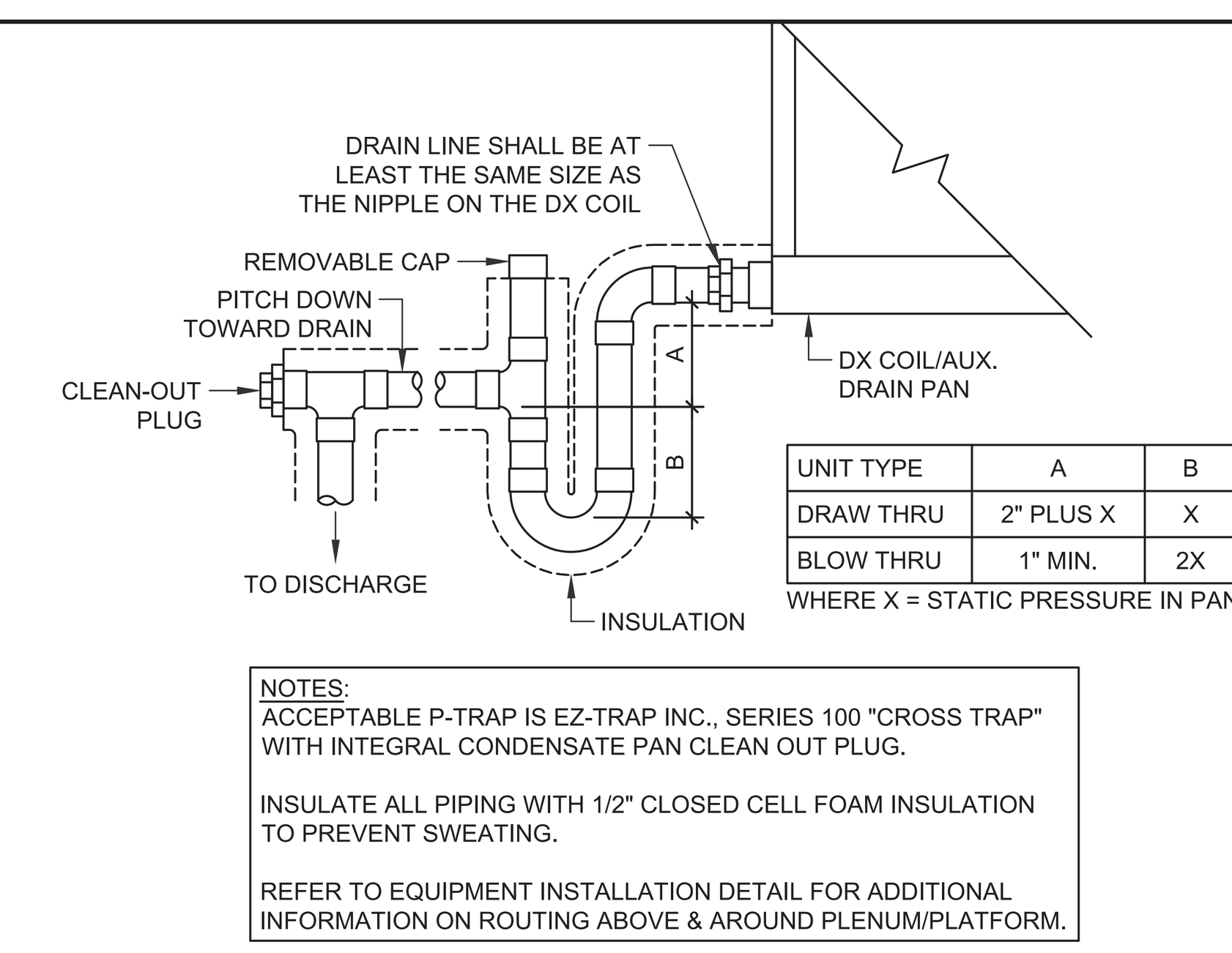
11 AIR COOLED CONDENSING UNIT/AHU WITH REHEAT COIL SCHEDULE
N.T.S.



10 HUMIDITROL DEHUMIDIFIER INSTALLATION DETAIL
N.T.S.



8 CONDENSATE DRAIN TO S.S. DETAIL
N.T.S.



7 CONDENSATE DRAIN DETAIL
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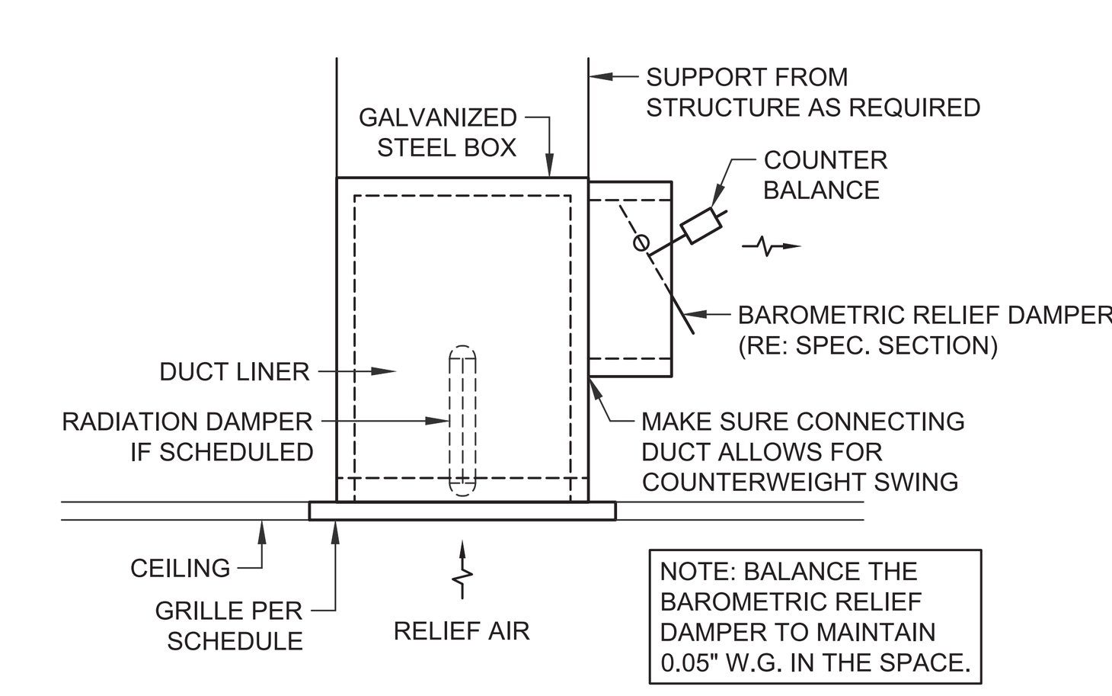
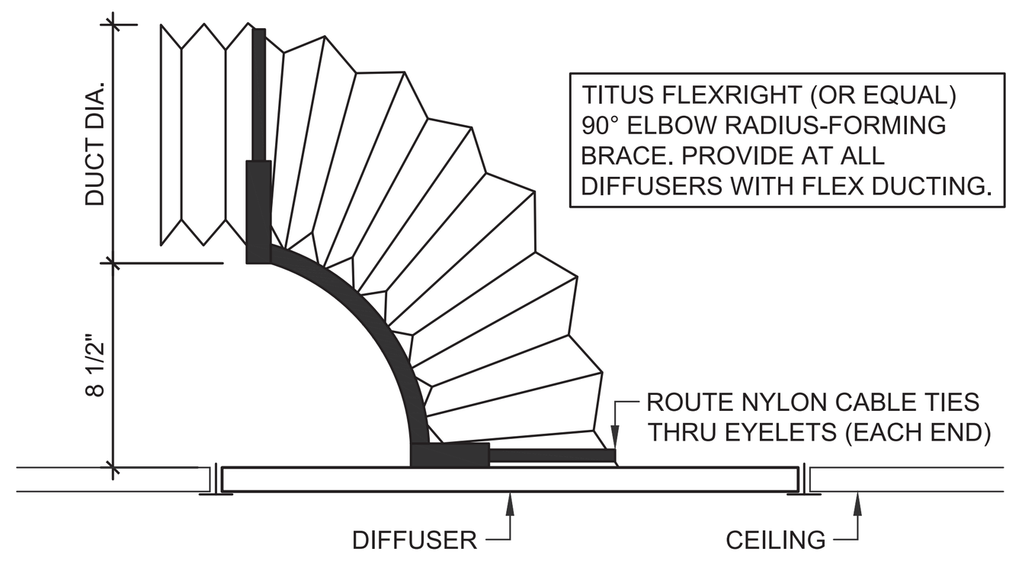


6 BAROMETRIC RELIEF ASSEMBLY DETAIL
N.T.S.



5 FLEX DUCT 90° ELBOW BRACE DETAIL
N.T.S.

1. ALL MECHANICAL SYSTEMS SHALL CONFORM TO THE CURRENT EDITION OF THE MECHANICAL CODE AND APPLICABLE ENERGY CODE.

2. INSULATE THE BACK SIDE OF LAY-IN SUPPLY DIFFUSERS WITH 1-1/2" THICK FSK INSULATION.

3. ALL DUCT WORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE CURRENT VERSION OF SMACNA AND ASHRAE STANDARDS.

4. ALL SQUARE AND RECTANGULAR ELBOWS SHALL HAVE AIRFOIL TURNING VANES.

5. LINE ALL INTERIOR SURFACES OF RETURN AIR PLENUMS WITH 1-1/2" THICK, 1-1/2 lb. DENSITY, DUCT LINER. GLUE AND FASTEN PER SMACNA STANDARDS AND SPEC REQUIREMENTS.

6. PROVIDE A RETURN AIR PLENUM/PLATFORM WHERE INDICATED. CONSTRUCT OF PLYWOOD AND SEAL AIR TIGHT. INTERNALLY LINE THE PLENUM ON ALL SIDES WITH 1" THICK DUCT BOARD EQUAL TO CERTAINTEED TOUGHGARD OR OWENS CORNING ENDURACOAT, OR RIGID LINER BOARD. LINER MUST BE FACTORY TREATED WITH EPA REGISTERED BIOCIDE. FOR DUCTED RETURNS, PROVIDE AN INSULATED ACCESS PANEL FOR CLEANING THE PLENUM ENCLOSURE. WHERE MULTIPLE AIR HANDLERS ARE SITTING ON A SINGLE PLATFORM, PROVIDE AN AIR TIGHT DIVIDER BETWEEN THEM, SPACE THE ACCESS PANELS EVERY 5 FEET (MAX) AND SEAL AIR TIGHT. WHERE RETURN AIR GRILLES ARE SHOWN; PROVIDE AN ACOUSTIC BAFFLE. REFER TO ARCHITECTURE DETAILS FOR PLENUM AND BAFFLE STRUCTURAL REQUIREMENTS.

7. WRAP ALL UNEXPOSED SUPPLY DUCTS WITH FSK INSULATION PER SPEC REQUIREMENTS. INTERNALLY LINE ALL EXPOSED DUCTS AND ALL EXTERIOR DUCTWORK PER SPEC REQUIREMENTS.

8. WRAP ALL EXHAUST DUCTS TO PREVENT CONDENSATION FROM COLLECTING ON THE DUCTWORK WITH 1" FSK INSULATION.

9. FLEX DUCT SHALL BE INSULATED PER SPEC REQUIREMENTS. SUPPORT FLEX DUCT TO PREVENT EXCESS SAGGING. TOTAL LENGTH OF ANY SECTION OF FLEX DUCT SHALL NOT EXCEED 6 FEET.

10. THE DIMENSIONS SHOWN FOR INTERNALLY LINED DUCTWORK INDICATES THE INSIDE CLEAR DIMENSION. ACTUAL DIMENSIONS FOR THE DUCTWORK MUST BE ADJUSTED TO A LARGER SIZE TO ACCOMMODATE THE THICKNESS OF THE DUCT LINER, TYPICALLY 3" LARGER FOR 1-1/2" LINER.

11. FRESH AIR INTAKE LOUVERS SHALL HAVE 1/8" GALVANIZED WIRE MESH INSECT SCREEN.

12. ALL EXHAUST LOUVERS SHALL HAVE 1/8" GALVANIZED WIRE MESH INSECT SCREEN.

13. RUN REFRIGERANT TUBING IN EXTERIOR WALL FROM GROUND LEVEL TO MECHANICAL ROOM.

14. MINIMUM WALL LOUVER SIZES ARE INDICATED BY THE AIR DEVICE TAG, UNLESS NOTED TO BE LARGER ON THE ARCHITECTURAL DRAWINGS.

15. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL AIR HANDLING UNITS.

16. EXHAUST DISCHARGE AND PLUMBING VENTS SHALL TERMINATE NO CLOSER THAN A HORIZONTAL DISTANCE OF 10 FEET FROM OUTSIDE AIR INTAKES. WHERE THE HORIZONTAL DISTANCE IS LESS THAN 10 FEET, INTAKES SHALL BE LOCATED A MIN. VERTICAL DISTANCE OF 3 FEET BELOW EXHAUST VENTS.

17. CONDENSATE DRAINS AT AIR HANDLING UNITS SHALL BE PIPED TO THE NEAREST HUB DRAIN OR FLOOR DRAIN. PROVIDE A P-TRAP AT EACH UNIT. ALL A/C CONDENSATE LINES SHALL BE INSULATED TO PREVENT SWEATING.

18. ORIENTATION AND LOCATIONS OF HVAC UNITS AS SHOWN ON THE PLANS ARE TO CONVEY THE DESIRE TO OPTIMIZE AIRFLOW TO EACH UNIT AND THE NEED FOR SERVICE ACCESS AND CLEARANCES. FINAL POSITIONING OF EACH UNIT IS THE CONTRACTOR'S RESPONSIBILITY TO MEET THE MANUFACTURER'S CLEARANCE REQUIREMENTS AS WELL AS THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND LOCAL CODES.

19. COORDINATE THE LOCATION OF EACH AIR HANDLING UNIT TO ENSURE PROPER CLEARANCE FOR CHANGING FILTERS AND MAINTAINING THE UNIT.

20. FOR ALL SUPPLY AIR DIFFUSERS WITH NECK MOUNTED OPPOSED BLADE DAMPER AND ALL REGISTERS: DURING THE AIR BALANCING PROCESS, LEAVE THE NECK MOUNTED DAMPER FULLY OPEN AND BALANCE THE AIR FLOW USING THE DAMPER LOCATED AT THE MAIN DUCT TAP.

21. INSTALL A TWO-POSITION MOTORIZED DAMPER AND A BALANCING DAMPER IN THE OUTSIDE AIR DUCT OF EACH AIR HANDLING UNIT OR FURNACE WITHOUT CO2 MONITOR CONTROL. INTERLOCK MOTORIZED DAMPER TO THE BLOWER FAN. HVAC CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ANY AND ALL ANCILLARY ITEMS NECESSARY TO CREATE A FULLY FUNCTIONAL SYSTEM INCLUDING BUT NOT LIMITED TO CIRCUIT BREAKERS, 24V TRANSFORMERS, AND INTERCONNECTING WIRING/CONDUIT/TERMINATIONS AS REQUIRED.

22. ALL FLUE PIPES, FLASHING, CAPS, ETC. ABOVE THE ROOF LINE SHALL BE PAINTED WITH AN APPROVED COATING AS SPECIFIED IN SPEC. COLOR SHALL MATCH THE ROOF.

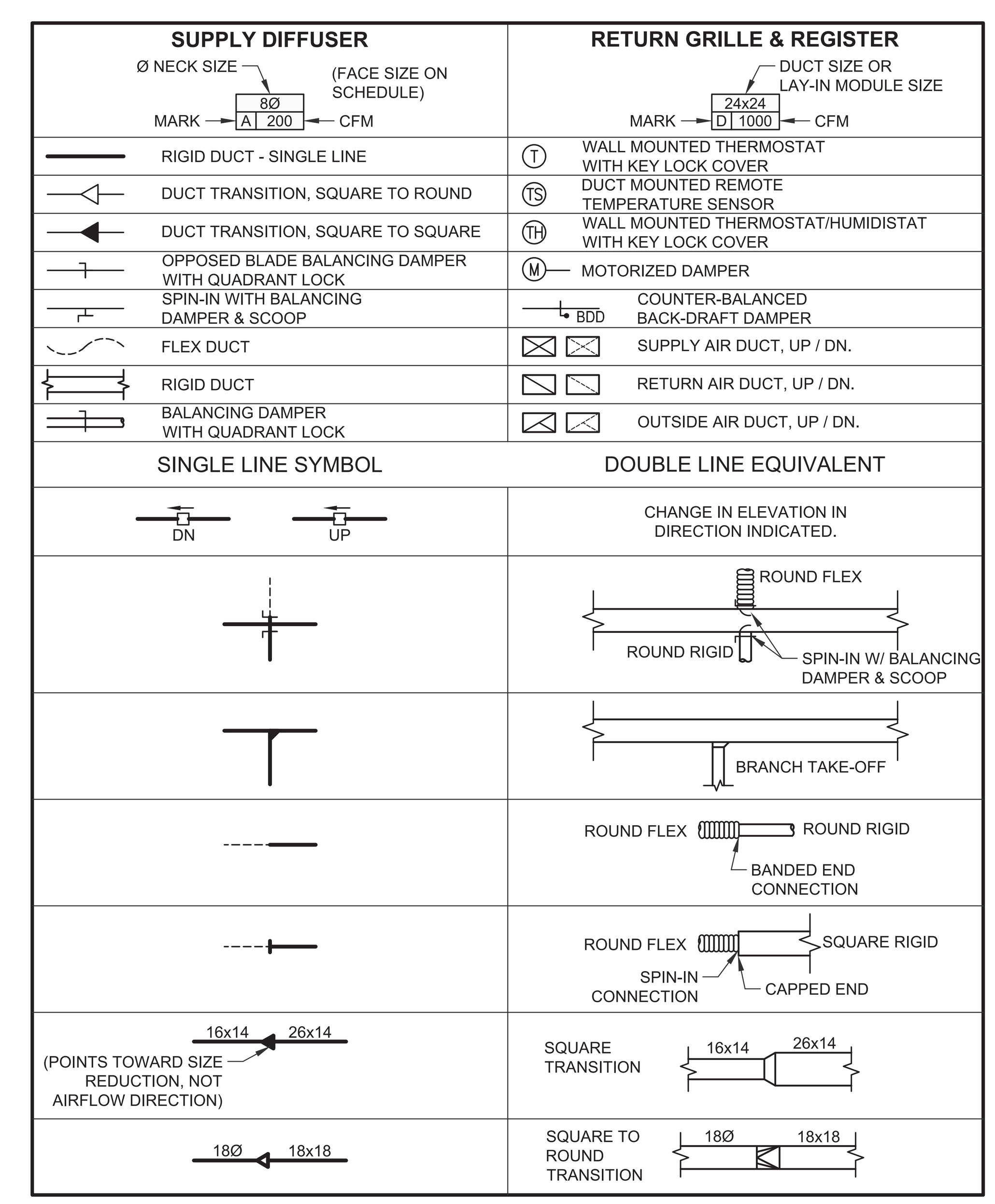
23. REFER TO THE ARCHITECTURAL DRAWINGS, CIVIL DRAWINGS AND DEMOLITION DRAWINGS FOR PERTINENT INFORMATION RELATED TO THE PROJECT {ELECTRICAL/PLUMBING/MECHANICAL} WORK.

24. IF THERMOSTATS/TEMPERATURE SENSORS ARE LOCATED ON HOT/COLD WALLS (EXTERIOR WALLS, MECHANICAL ROOMS, ELECTRICAL ROOMS, ETC.) PROVIDE INSULATED MOUNTING PLATE.

25. IN AREAS WHERE MECHANICAL EQUIPMENT IS SUSPENDED OR DUCT SUPPORTS, DUCTWORK, GAS PIPING, CONDENSATE PIPING, HYDRONIC PIPING, FIRE LINES, OR OTHER ANCILLARY ITEMS WILL BE EXPOSED TO PUBLIC VIEW, COORDINATE WITH OTHER DISCIPLINES AND THE PAINTER. ALL MECHANICAL ITEMS SHALL BE INSTALLED ON TIME FOR THE PAINTER TO COMPLETE WORK COINCIDENT WITH OTHER PAINTING REQUIREMENTS IN THE AREA.

26. UNLESS NOTED OTHERWISE ON PLANS, COPPER REFRIGERANT TUBING SHALL BE TYPE ACR HARD COPPER WITH WROUGHT FITTINGS. ALL ELBOWS SHALL BE LONG SWEEP.

3 MECHANICAL NOTES
N.T.S.



1 MECHANICAL LEGEND
N.T.S.

BURNS ARCHITECTURE, LLC
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BURNS ARCHITECTURE,LLC
P.O. BOX 2639
GALVESTON, TX 77553

JEFFERSON COUNTY
VEHICLE SEARCH / INVESTIGATION BUILDING
BEAUMONT, TX

No.	Revision	Date

NOTE: DO NOT SCALE DRAWING
CONSTRUCTION DOCUMENTS

STATE OF TEXAS
SAMUEL J. EDWARDS
145722
LICENSED
PROFESSIONAL ENGINEER
10/19/2023

GLS PROJECT #154079
GLS
ARCHITECTURE · ENGINEERING · INTERIORS
LANDSCAPE · SURVEYING
1609 S. CHESTNUT ST. STE. 202 · LUFKIN, TEXAS 75901 · (936) 637-4900
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-7700
455 RICE ROAD STE. 107 · TYLER, TEXAS 75703 · (903) 581-3800

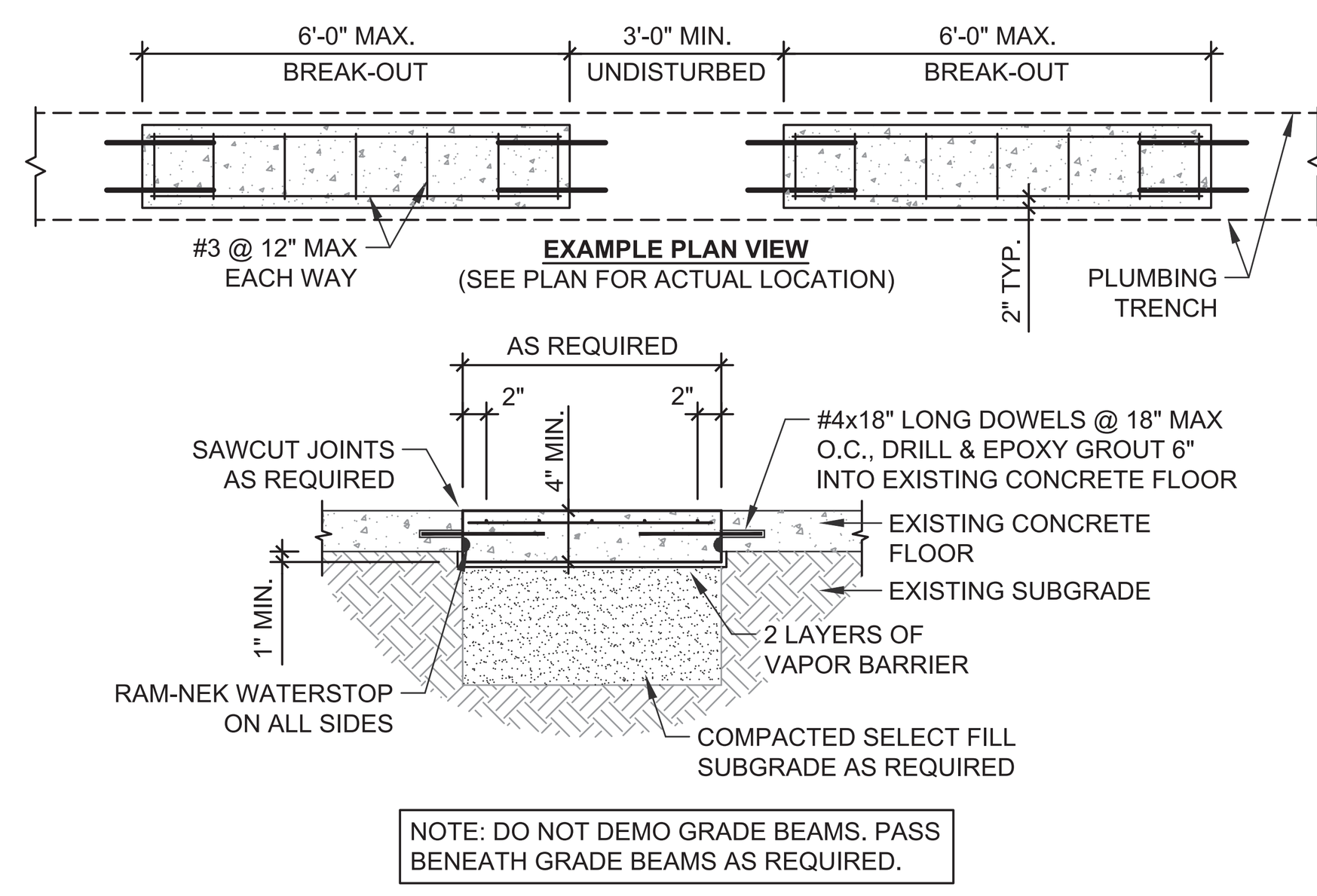
Project Number	JCVIB-23
Date	10-18-23
Scale	1/4"=1'-0"

MECHANICAL DETAILS

M7.21

20

19



15 CONCRETE FLOOR PATCH DETAIL
N.T.S.

O FD	FLOOR DRAIN
O FCO	FLOOR CLEAN OUT
O VTR	VENT TO ROOF
— — —	AC CONDENSATE DRAIN LINE
——O C——	ELBOW UP / ELBOW DOWN
——▶◀——	1/4 TURN, FULL-PORT BALL VALVE, UL LISTED FOR SERVICE
—— 3/4 CW —— SIZE OF PIPE IN INCHES / PIPE SYSTEM TYPE	SS SANITARY SEWER CW COLD WATER HW HOT WATER

14 PLUMBING LEGEND
N.T.S.

1. ALL MATERIALS AND INSTALLATION SHALL CONFORM TO APPLICABLE PLUMBING CODES, ENERGY CODES, AND LOCAL ORDINANCES.

2. ALL FIXTURES SHALL COMPLY WITH TEXAS DEPARTMENT OF HEALTH WATER SAVING PERFORMANCE STANDARDS.

3. THE DRAWINGS SHOW THE GENERAL ARRANGEMENT OF THE SYSTEMS - CONTRACTOR SHALL VERIFY CONDITIONS PRIOR TO START OF JOB.

4. WATER PIPING INSIDE THE BUILDING SHALL BE TYPE "L" COPPER WATER TUBE - USE LEAD-FREE SOLDER. ALTERNATE: HIGH DENSITY CROSS-LINKED POLYETHYLENE PEX PIPING MAY BE USED IN LIEU OF TYPE "L" COPPER, RE: SPECIFICATION SECTIONS. INSTALLATION TRAINING CERTIFICATION FROM MANUFACTURER REQUIRED BEFORE PERFORMING WORK. CHECK WITH THE LOCAL AUTHORITY PRIOR TO USE. WATER PIPING OUTSIDE SHALL BE SCHEDULE 40 ASTM 1785 PVC.

5. PROVIDE APPROVED WATER HAMMER ARRESTOR AT WATER CONNECTION TO FIXTURES PER MANUFACTURER'S RECOMMENDATIONS.

6. PROVIDE HEAT TRAPS AT WATER HEATERS.

7. ALL WATER PIPING IN THE ABOVE CEILING SPACE, WALLS, OR OTHER NON-CONDITIONED SPACE, SHALL BE INSULATED PER SPECIFICATIONS.

8. IF THE SUPPLY WATER PRESSURE IS GREATER THAN 80 P.S.I., PROVIDE A PRESSURE REDUCING VALVE. COORDINATE WITH WATER SUPPLY ENTITY TO VERIFY WATER PRESSURE.

9. WATER PIPING SHALL BE HYDROSTATICALLY TESTED TO 100 PSI WITH NO PRESSURE DROP IN 12 HOURS.

10. ALL WATER PIPING SHALL BE FLUSHED AT A VELOCITY OF 3 FT/SEC. AND DISINFECTED BY THE CONTRACTOR PER THE STANDARD PLUMBING CODE.

11. ALL EXPOSED UNDER SINK DRAIN AND SUPPLY WATER PIPING AND VALVES, FITTINGS, ETC. SHALL BE COVERED WITH A.D.A. APPROVED UNDER SINK PROTECTIVE PIPE COVERS CONSISTING OF GLOSS WHITE, FLEXIBLE, ANTI-MICROBIAL, MOLDED VINYL WITH NO EXPOSED CABLES OR FASTENERS, SUCH AS TRUEBRO LAV GUARD, MCGUIRE PROWRAP, OR PRE-APPROVED EQUAL.

12. ALL FLOOR DRAIN TRAPS AND HUB DRAIN TRAPS SHALL HAVE A PROSETS SYSTEMS, OR PRE-APPROVED EQUAL, TRAP GUARD.

13. UNLESS NOTED OTHERWISE, ALL SANITARY SEWER AND VENT PIPING SHALL BE SCHEDULE 40 PVC, ASTM D-2665.

14. ALL UNEXPOSED P-TRAPS AND TAILPIECES UNDER SINKS SHALL BE WRAPPED BY A PROTECTIVE COVERING, AND SHALL BE PVC, NOT CHROMED BRASS.

15. DWV PIPING SHALL BE TESTED PER APPLICABLE PLUMBING CODE TO A MINIMUM OF 10 FEET WATER HEAD FOR 30 MINUTES. BLEED OFF ALL AIR FROM PIPE STANDS.

16. COORDINATE PLUMBING VENT STACK LOCATIONS WITH MECHANICAL DRAWINGS TO ENSURE THAT VENTS ARE LOCATED NO CLOSER THAN 10 FEET FROM HVAC FRESH AIR INTAKES.

17. ALL VENT STACKS AND ROOF JACKS ABOVE THE ROOF LINE SHALL BE PAINTED WITH AN APPROVED COATING AS SPECIFIED IN SPEC. 9901. COLOR SHALL MATCH THE ROOF.

18. **FOR ALL FLOOR DRAINS:** SET TOP OF FLOOR DRAIN AT 1/2" BELOW THE FINISHED FLOOR. REFER TO FOUNDATION DETAILS FOR SLOPING REQUIREMENTS.

19. REFER TO "ACCESSIBILITY INFORMATION" ON "A" SHEETS, FOR REQUIRED MOUNTING HEIGHTS OF PLUMBING FIXTURES.

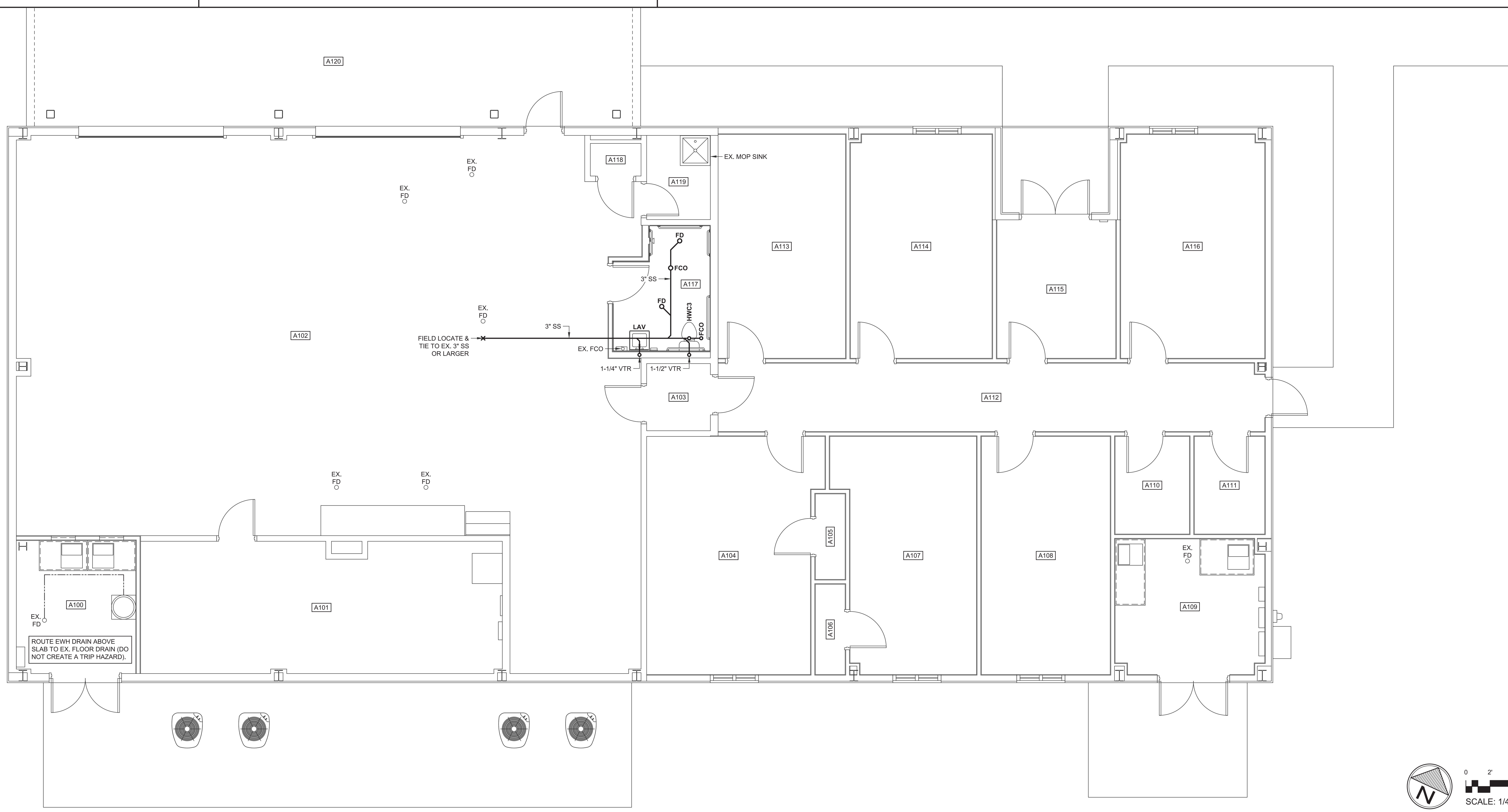
20. REFER TO THE ARCHITECTURAL DRAWINGS AND DEMOLITION DRAWINGS FOR PERTINENT INFORMATION RELATED TO THE PROJECT {ELECTRICAL/PLUMBING/MECHANICAL} WORK.

21. SEWER AND WATER PIPING SHOWN DIAGRAMMATICALLY. CONCEAL ALL ABOVE GRADE PIPE IN WALLS, BETWEEN FLOORS, AND/OR ABOVE CEILING IN THE ROOM WHERE FIXTURES ARE LOCATED. INSTALL IN ACCORDANCE WITH 2015 IECC REQUIREMENTS.

22. WHEN ROUTING UNDERGROUND PIPING, THE TOP OF THE PIPING IS TO BE AT 12" MINIMUM BELOW FINISHED FLOOR ELEVATION (UNLESS MAINTAINING SANITARY SEWER SLOPE REQUIRES OTHERWISE) AND SHALL PENETRATE FOUNDATION BEAMS AT APPROXIMATELY THE MID-DEPTH OF THE BEAM. WHERE PIPING INTERSECTS FOUNDATION BEAMS, THE ANGLE BETWEEN THE LONGITUDINAL AXIS OF THE PIPING AND THE LONGITUDINAL AXIS OF THE FOUNDATION BEAM IS TO BE IDEALLY 90 DEGREES BUT NOT LESS THAN 45 DEGREES. ALL VAPOR BARRIERS SHALL BE SEALED TO THE PIPING AT THE PENETRATIONS.

23. IN AREAS WHERE PLUMBING IS SUSPENDED OR PLUMBING AND ANCILLARY ITEMS WILL BE EXPOSED TO PUBLIC VIEW, COORDINATE WITH OTHER DISCIPLINES AND THE PAINTER. ALL PLUMBING ITEMS SHALL BE INSTALLED ON TIME FOR THE PAINTER TO COMPLETE WORK COINCIDENT WITH OTHER PAINTING REQUIREMENTS IN THE AREA.

4 PLUMBING NOTES
N.T.S.



FOR ALL SANITARY SEWER SHOWN, BREAK-OUT FLOOR AS REQUIRED IN NON-CONTINUOUS MANNER SO AS TO MAINTAIN SLAB INTEGRITY, UNLESS NOTED OTHERWISE. REFER TO 15/P8.11 FOR BREAK-OUT DETAIL.

FIELD LOCATE & TIE TO EXISTING SANITARY SEWER. VERIFY EXISTING SANITARY SEWER IS SLOPED PER CODE. COORDINATE WITH ARCHITECT & ENGINEER.

FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. WHERE ACCESSIBLE, INSPECT THE EXISTING SEWER LINES UTILIZING A COLOR CLOSED-CIRCUIT CAMERA TO DETERMINE THE CONDITION OF THE LINES & TO LOCATE EXISTING SERVICE CONNECTIONS. SUBMIT, WITH EACH CAMERA INSPECTION, A WRITTEN LOG THAT INCLUDES THE FOLLOWING AS A MINIMUM: ALL PIPE DEFECTS, SAGS, POINTS OF ROOT INTRUSION, OFFSET POINTS, FLOW & CAMERA DIRECTION, POSITION OF TAPS OR FAILURES, WEATHER CONDITIONS, & REPRESENTATIVE PHOTOGRAPHS.

1 SANITARY SEWER PLAN
1/4"=1'-0"

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ARCHITECTS • ADVISORS • CONSULTANTS

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ARCHITECTURE - ENGINEERING - INTERIORS
LANDSCAPE - SURVEYING
1609 S. CHESTNUT ST. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4900
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700
455 RICE ROAD STE. 107 - TYLER, TEXAS 75703 - (903) 581-3805

Project Number	JCVIB-23
Date	10-18-23
Scale	1/4"=1'-0"

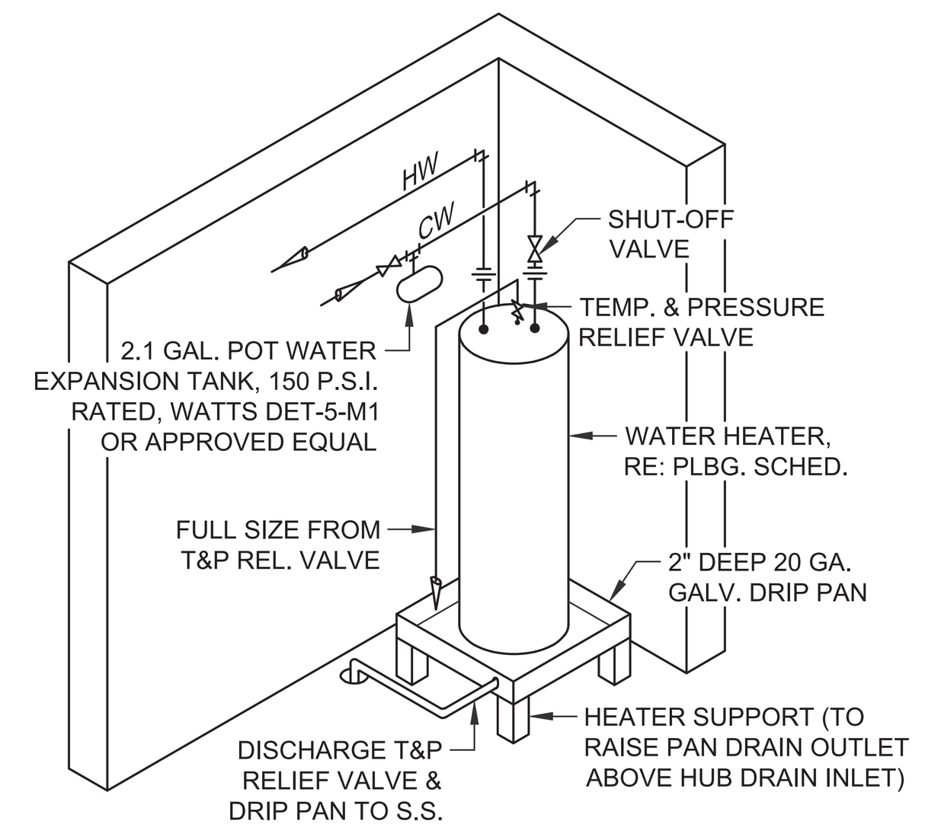
SANITARY SEWER PLAN & DETAILS

P8.11

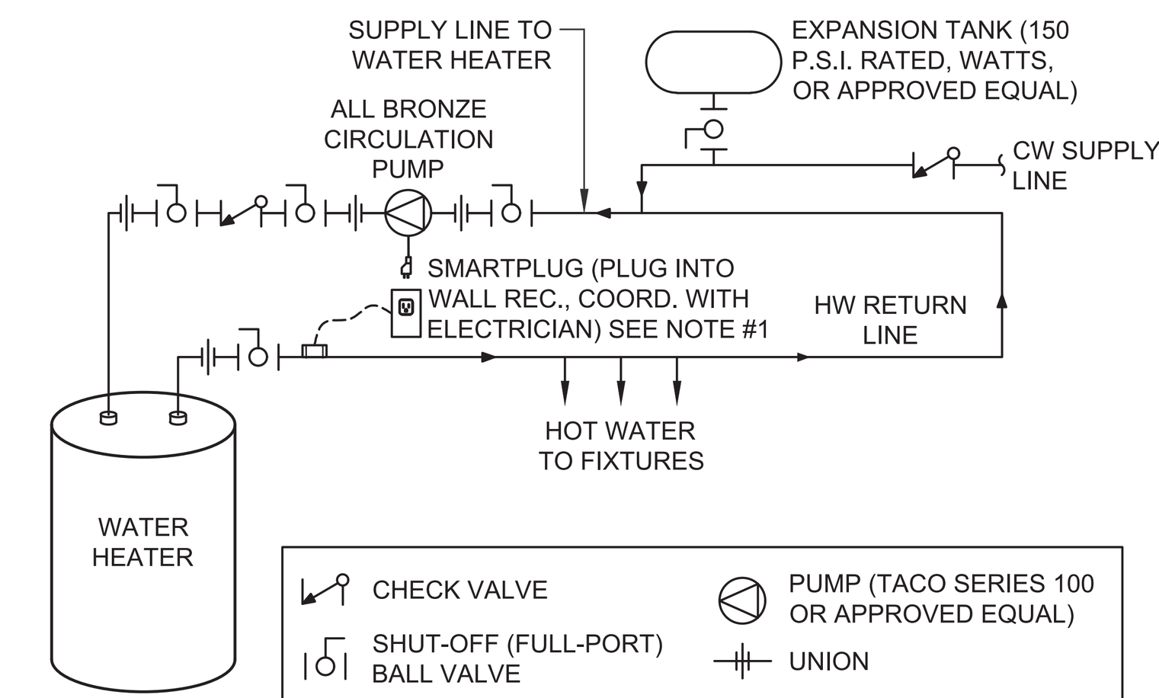
20

15

19



14 WATER HEATER ON PLATFORM
N.T.S.



NOTES:
1. USE SMART "USAGE ANALYSIS" DEVICE (TACO "SMARTPLUG" OR EQUAL, WITH WIRED SENSOR) TO CONTROL PUMP. COORDINATE WITH ELECTRICIAN FOR RECEPTACLE LOCATION.
2. SIZE THE PUMP TO PROVIDE A MAXIMUM OF 2 GPM THROUGH THE SYSTEM AT 10 FEET OF HEAD PLUS PIPING LOSSES.
3. INSTALL HEAT TRAPS AT WATER HEATER INLET AND OUTLET IF THEY ARE NOT FACTORY INSTALLED.
4. LENGTH OF HOT WATER BRANCH LINES FROM CIRCULATION LOOP ARE TO CONFORM TO 2015 IECC RULES.
5. SET THE WATER HEATER TEMPERATURE TO 140°F & THE AQUASTAT'S CONTROL TEMPERATURE TO 125°F (TO MAINTAIN ~130°F IN THE RECIRCULATING LINE AS RECOMMENDED FOR LEGIONNAIRE'S DISEASE CONTROL).

9 HOT WATER RECIRCULATING SYSTEM
N.T.S.

EQUIVALENT PIPE SIZES	
COPPER	PEX
1/2"	3/4"
3/4"	1"
1"	1-1/4"
1-1/4"	1-1/2"
1-1/2"	2"
2"	3"

NOTES:

1) COPPER OR PEX TUBING MAY BE USED FOR DOMESTIC WATER SUPPLIES.

2) 1/2" PEX MAY BE USED FOR LAVATORIES & SINKS WHERE FLOW RATE IS 4 GPM OR LESS.

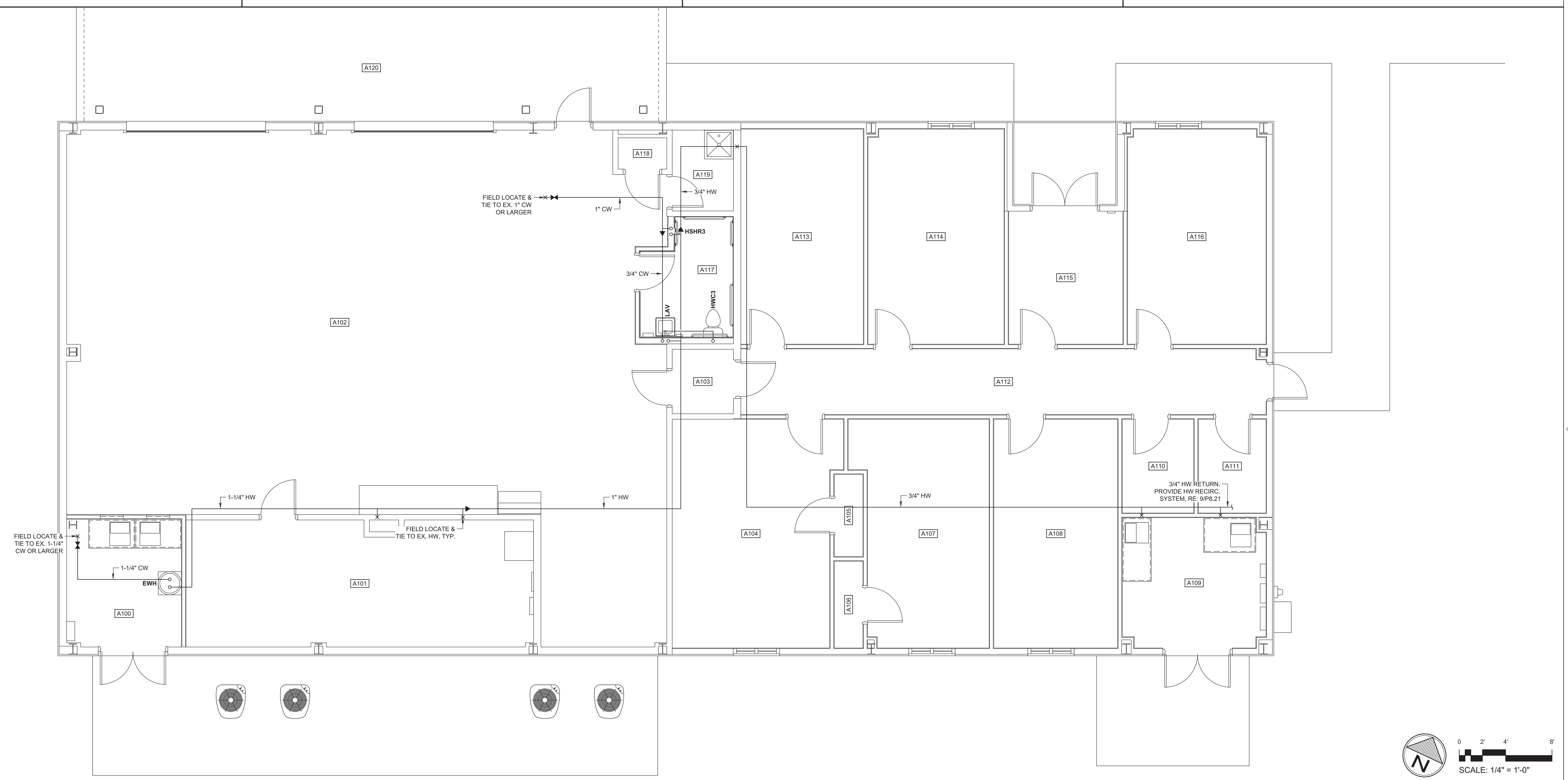
3) RE: PEX - INSTALLATION TRAINING CERTIFICATE(S) REQUIRED FROM MANUFACTURER. CHECK WITH LOCAL AUTHORITIES PRIOR TO USE.

4) SEE ALSO PLUMBING NOTES & SPECS.

5 COPPER/PEX EQUIVALENT SIZES
N.T.S.

MARK	FIXTURE	MANUFACTURER & MODEL	W	CW	HW
HWC3	HANDICAP WATER CLOSET WITH TANK (SEAT @ 17"-19")	AMERICAN STANDARD 215AB.104 CADET PRO ELONGATED, 1.28 G.P.F., WITH CHURCH 9500CT OPEN FRONT SEAT (TRIP LEVER SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET, USE OPTION 4188B.105 FOR TRIP LEVER ON RIGHT SIDE WHERE APPLICABLE)	3"	1/2"	-
LAV	WALL-HUNG LAVATORY (34" RIM HT.)	AMERICAN STANDARD 0355.012 LUCERNE WALL-HUNG LAVATORY, WITH DELTA 21C453 FAUCET, WITH OFFSET OPEN GRID STRAINER WITH ELBOW, 76mm LEVER HANDLES (POLISHED CHROME FINISH), ZURN Z1231 OR WADE 520 CARRIER SYSTEM, PROVIDE A TEMPERED WATER-TEMPERATURE LIMITING DEVICE (110°F)	1-1/2"	1/2"	1/2"
HSHR3	ADA WALL SHOWER (RE: ACCESSIBILITY INFORMATION DRAWING FOR HEIGHT REQUIREMENTS, MOUNT DIVERTER @ 48" A.F.F.)	BRADLEY HN250-EF-S20-HS-VL OR VR, SURFACE MOUNTED SHOWER UNIT, 304 SS HOUSING, COMPLETE WITH ALL FITTINGS, CHECK STOPS, DIVERTER, PRESSURE BALANCE MIXING VALVE, 2.0 GPM ADJUSTABLE SPRAYHEAD, HAND HELD HOSE SPRAY WITH BACKFLOW PREVENTER, 60" SS HOSE WITH POST STYLE MOUNTING BRACKET	-	1/2"	1/2"
FD	FLOOR DRAIN	WADE 1100-A CAST IRON FLOOR DRAIN, WITH ADJUSTABLE STRAINER, P-TRAP & TRAP GUARD TG33-WADE BY PROSET SYSTEMS OR EQUAL	3"	-	-
FCO	FLOOR CLEANOUT	ZURN MODEL ZN1400, WITH ADJUSTABLE NEO-LOCK OR WADE 8130	3" U.N.O.	-	-
EWH	ELECTRIC WATER HEATER	A.O. SMITH DURA-POWER, MODEL DEN-52, 50 GAL TANK, DUAL NON-SIMUL. 4500 WATT ELEMENTS, 240V/1PH., 18.8 AMP, 3 YR. COMM. TANK WARRANTY	-	3/4"	3/4"

4 PLUMBING SCHEDULE
N.T.S.



REFER TO SHEET P8.11 FOR PLUMBING NOTES & LEGEND.

PIPE SIZES SHOWN ARE BASED ON COPPER MATERIAL. PEX MATERIAL IS ALLOWED; SEE PLUMBING NOTES, SPECS., & "COPPER/PEX EQUIVALENT PIPE SIZES" DRAWING DETAIL.

1 HOT/COLD WATER PLAN
1/4"=1'-0"

BURNS ARCHITECTURE, LLC
ARCHITECTS • ADVISORS • CONSULTANTS

BURNS ARCHITECTURE,LLC
P.O. BOX 2639
GALVESTON, TX 77553

JEFFERSON COUNTY
VEHICLE SEARCH / INVESTIGATION BUILDING
BEAUMONT, TX

No.	Revision	Date

NOTE: DO NOT SCALE DRAWING
CONSTRUCTION DOCUMENTS

STATE OF TEXAS
SAMUEL J. EDWARDS
145722
LICENSED
PROFESSIONAL ENGINEER
10/19/2023

GLS PROJECT #154079

GLS
ARCHITECTURE - ENGINEERING - INTERIORS
LANDSCAPE - SURVEYING
1609 S. CHESTNUT ST. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4900
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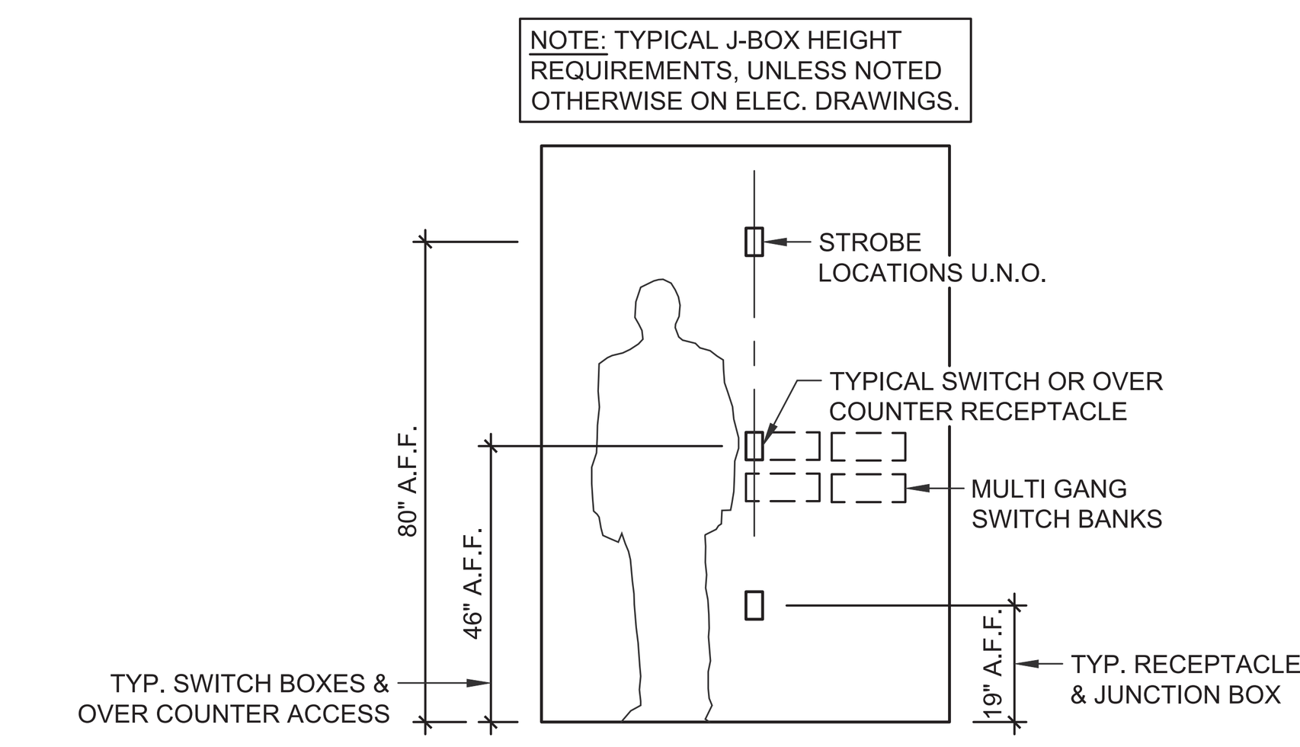
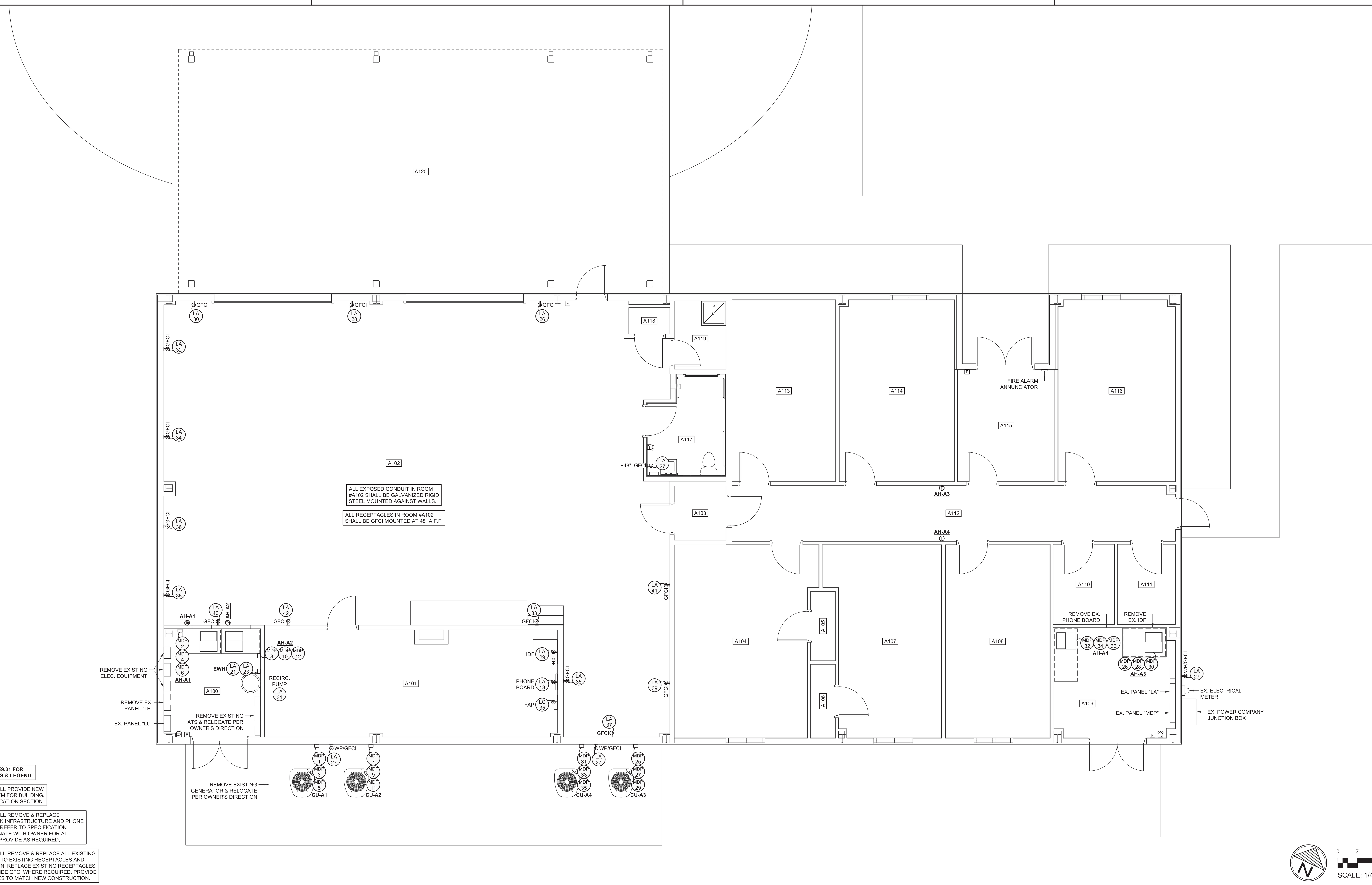
Project Number	JCVIB-23
Date	10-18-23
Scale	1/4"=1'-0"

HOT/COLD WATER PLAN & DETAILS

P8.21



5 TYPICAL J-BOX MOUNT HEIGHT DETAIL
N.T.S.



REFER TO SHEET E9.31 FOR ELECTRICAL NOTES & LEGEND.

CONTRACTOR SHALL PROVIDE NEW FIRE ALARM SYSTEM FOR BUILDING. REFER TO SPECIFICATION SECTION.

CONTRACTOR SHALL REMOVE & REPLACE EXISTING NETWORK INFRASTRUCTURE AND PHONE SYSTEM CABLING. REFER TO SPECIFICATION SECTION. COORDINATE WITH OWNER FOR ALL MODIFICATIONS & PROVIDE AS REQUIRED.

CONTRACTOR SHALL REMOVE & REPLACE ALL EXISTING BRANCH CIRCUITS TO EXISTING RECEPTACLES AND DEVICES TO REMAIN. REPLACE EXISTING RECEPTACLES WITH NEW & PROVIDE GFCI WHERE REQUIRED. PROVIDE NEW COVER PLATES TO MATCH NEW CONSTRUCTION.

1 POWER PLAN
1/4"=1'-0"

BURNS ARCHITECTURE, LLC
BURNS ARCHITECTURE,LLC
P.O. BOX 2639
GALVESTON, TX 77553

JEFFERSON COUNTY
VEHICLE SEARCH / INVESTIGATION BUILDING
BEAUMONT, TX

No.	Revision	Date

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CONSTRUCTION DOCUMENTS

STATE OF TEXAS
JUSTIN R. FENLEY
118566
LICENSED
PROFESSIONAL ENGINEER
10/19/2023

GLS
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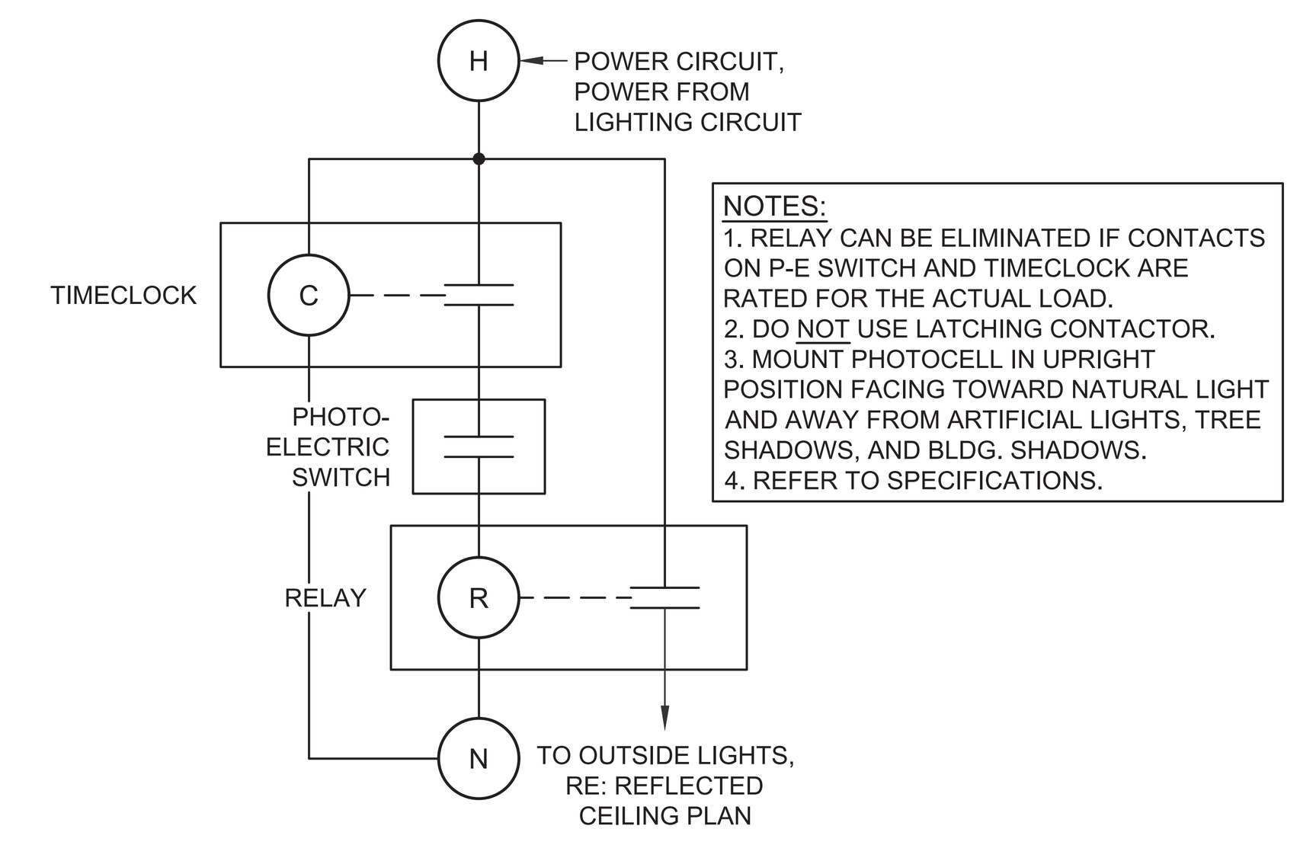
LANDSCAPE · SURVEYING

Project Number	JCVIB-23
Date	10-18-23
Scale	1/4"=1'-0"

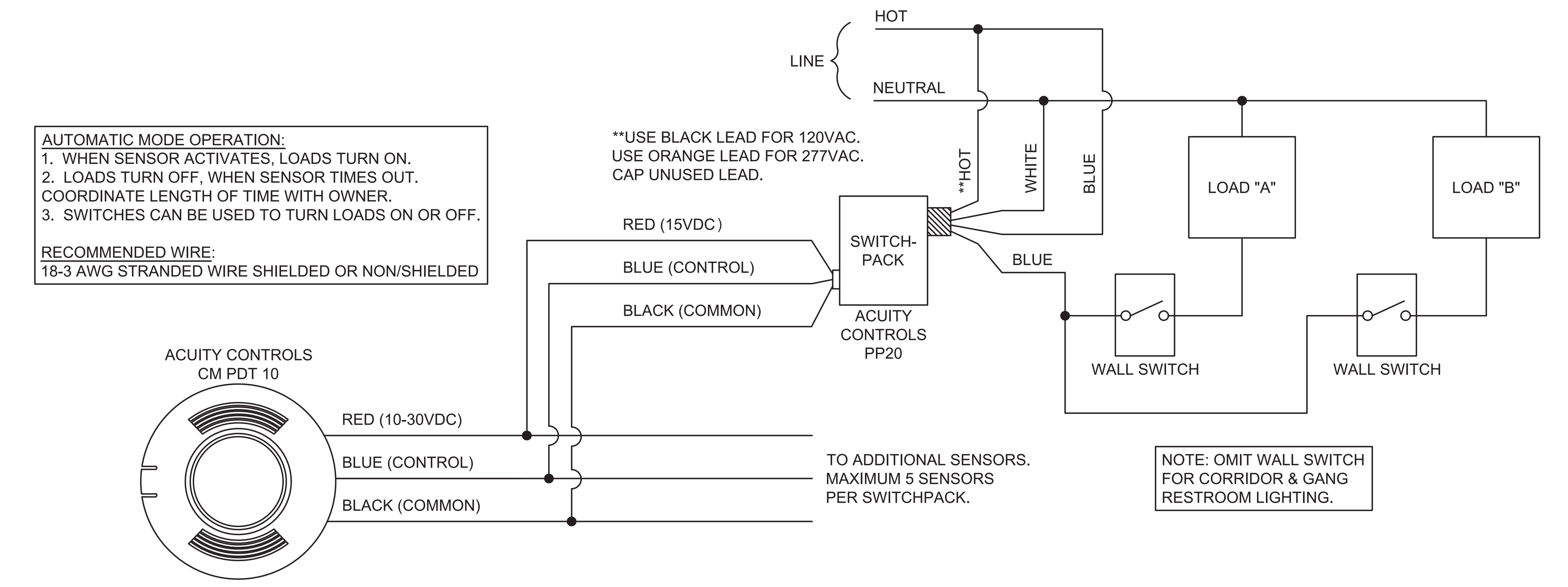
POWER PLAN & DETAILS

E9.11

20



15 TIMECLOCK/PHOTO-ELECTRIC DETAIL
N.T.S.



5 CEILING SENSOR WIRING DIAGRAM
N.T.S.

REFER TO SHEET E9.31 FOR ELECTRICAL NOTES & LEGEND.

ALL LIGHTING FIXTURES ARE TYPE "A1" UNLESS NOTED OTHERWISE.

CONTRACTOR SHALL REMOVE & REPLACE ALL EXISTING WALL SWITCHES. PROVIDE NEW COVER PLATES.

1 REFLECTED CEILING PLAN
1/4"=1'-0"

BURNS ARCHITECTURE, LLC

BURNS ARCHITECTURE,LLC
P.O. BOX 2639
GALVESTON, TX 77553
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JEFFERSON COUNTY
VEHICLE SEARCH / INVESTIGATION BUILDING
BEAUMONT, TX

No.	Revision	Date

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STATE OF TEXAS
JUSTIN R. FENLEY
118566
LICENSED PROFESSIONAL ENGINEER
10/19/2023

GLS

Project Number	JCVIB-23
Date	10-18-23
Scale	1/4"=1'-0"

REFLECTED CEILING PLAN & DETAILS

E9.21

(20)

(15)

(10)

(19)

(14)

(18)

(13)

(17)

(16)

WIRE/COND	CIRCUIT LOAD	LOAD NAME	CKT	CKT	LOAD NAME	CIRCUIT LOAD	WIRE/COND	TOTAL LOADS A	TOTAL LOADS C
3 #12 in 1/2" cond.	953	Rm A100-A102 - 21 Lts	1	2	Existing Receptacles	540	3 #12 in 1/2" cond.	1,493	
3 #12 in 1/2" cond.	1,061	Rm A102,A120 - 27 Lts	3	4	Existing Receptacles	540	3 #12 in 1/2" cond.		1,601
3 #12 in 1/2" cond.	500	Existing Load	5	6	Existing Receptacles	540	3 #12 in 1/2" cond.	1,040	
3 #12 in 1/2" cond.	500	Existing Load	7	8	Existing Receptacles	540	3 #12 in 1/2" cond.		1,040
3 #12 in 1/2" cond.	500	Existing Load	9	10	Existing Load	500	3 #12 in 1/2" cond.	1,000	
3 #12 in 1/2" cond.	500	Existing Load	11	12	Existing Receptacles	540	3 #12 in 1/2" cond.		1,040
3 #12 in 1/2" cond.	500	Existing Load	13	14	Existing Load	500	3 #12 in 1/2" cond.	1,000	
3 #12 in 1/2" cond.	500	Existing Load	15	16	Existing Receptacles	540	3 #12 in 1/2" cond.		1,040
3 #12 in 1/2" cond.	500	Existing Load	17	18	Existing Receptacles	540	3 #12 in 1/2" cond.	1,040	
3 #12 in 1/2" cond.	500	Existing Load	19	20	Existing Load	500	3 #12 in 1/2" cond.		1,000
3 #12 in 1/2" cond.	500	Existing Load **(15A)**	21	22	Existing Receptacles	540	3 #12 in 1/2" cond.	1,040	
3 #12 in 1/2" cond.	500	Existing Load	23	24	Existing Load	500	3 #12 in 1/2" cond.		1,000
3 #12 in 1/2" cond.	500	Existing Load	25	26	Existing Receptacles	540	3 #12 in 1/2" cond.	1,040	
3 #12 in 1/2" cond.	500	Existing Load	27	28	Existing Load	500	3 #12 in 1/2" cond.		1,000
3 #12 in 1/2" cond.	500	Existing Load	29	30	Existing Load	500	3 #12 in 1/2" cond.	1,000	
3 #12 in 1/2" cond.	500	Existing Load	31	32	Existing Receptacles	540	3 #12 in 1/2" cond.		1,040
3 #12 in 1/2" cond.	500	Existing Load	33	34	Existing Load	500	3 #12 in 1/2" cond.	1,000	
3 #12 in 1/2" cond.	500	FAP	35	36	Existing Load **(30A)**	1,500	3 #12 in 1/2" cond.		2,000
		Space	37	38	Existing Load	500	3 #12 in 1/2" cond.	500	
2 #10 & 1 #10 G	2,500	Existing Load	39	40	Existing Load	500	3 #12 in 1/2" cond.		3,000
in 1/2" cond.	2,500	**(30A)**	41	42	Existing Load	500	3 #12 in 1/2" cond.	3,000	
								13,153	13,761

NOTE: Unless otherwise noted, all single pole breakers are 20 Amp with #12 THHN copper wire. All breakers serving motor loads shall be HACR type or Motor Circuit rated per NEC requirements.

NOTE: For all existing receptacles and loads removed during demo label circuit breakers as "SPARE".

TOTAL LOAD ON PANEL: 26,915 VA
Diversified Load = -402.9 VA
/240 **(240/1/60 VAC)**
110.47 AMPS

(8) PANEL "LC"
N.T.S.

WIRE/COND	CIRCUIT LOAD	LOAD NAME	CKT	CKT	LOAD NAME	CIRCUIT LOAD	WIRE/COND	TOTAL LOADS A	TOTAL LOADS C
3 #12 in 1/2" cond.	890	Rm A103-A112 - 20 Lts, 2 EF	1	2	Existing Load	500	3 #12 in 1/2" cond.	1,390	
3 #12 in 1/2" cond.	822	Rm A113-A119 - 20 Lts, 2 EF	3	4	Existing Receptacles	540	3 #12 in 1/2" cond.		1,362
3 #12 in 1/2" cond.	500	Exit Lights	5	6	Existing Receptacles	540	3 #12 in 1/2" cond.	1,040	
3 #12 in 1/2" cond.	125	Exterior - 4 Lts	7	8	Existing Receptacles	540	3 #12 in 1/2" cond.		665
3 #12 in 1/2" cond.	500	Fire Alarm	9	10	Existing Receptacles	540	3 #12 in 1/2" cond.	1,040	
3 #12 in 1/2" cond.	540	Existing Receptacles	11	12	Existing Receptacles	540	3 #12 in 1/2" cond.		1,080
3 #12 in 1/2" cond.	500	Telephone Board	13	14	Existing Receptacles	540	3 #12 in 1/2" cond.	1,040	
	500	SPARE	15	16	Existing Receptacles	540	3 #12 in 1/2" cond.		1,040
	500	SPARE	17	18	Existing Receptacles	540	3 #12 in 1/2" cond.	1,040	
	500	SPARE	19	20	Existing Receptacles	540	3 #12 in 1/2" cond.		1,040
2 #12 & 1 #12 G	2,256	EWH	21	22	Existing Receptacles	540	3 #12 in 1/2" cond.	2,796	
in 1/2" cond.	2,256	**(25A)****	23	24	Existing Receptacles	540	3 #12 in 1/2" cond.		2,796
	500	SPARE	25	26	Inspection - 1 Rec	180	3 #12 in 1/2" cond.	680	
3 #12 in 1/2" cond.	720	RR, Ext - 4 Rec	27	28	Inspection - 1 Rec	180	3 #12 in 1/2" cond.		900
3 #12 in 1/2" cond.	500	Storage - IDF	29	30	Inspection - 1 Rec	180	3 #12 in 1/2" cond.	680	
3 #12 in 1/2" cond.	300	Recirculation Pump	31	32	Inspection - 1 Rec	180	3 #12 in 1/2" cond.		480
3 #12 in 1/2" cond.	180	Inspection - 1 Rec	33	34	Inspection - 1 Rec	180	3 #12 in 1/2" cond.	360	
3 #12 in 1/2" cond.	180	Inspection - 1 Rec	35	36	Inspection - 1 Rec	180	3 #12 in 1/2" cond.		360
3 #12 in 1/2" cond.	180	Inspection - 1 Rec	37	38	Inspection - 1 Rec	180	3 #12 in 1/2" cond.	360	
3 #12 in 1/2" cond.	180	Inspection - 1 Rec	39	40	Inspection - 1 Rec	180	3 #12 in 1/2" cond.		360
3 #12 in 1/2" cond.	180	Inspection - 1 Rec	41	42	Inspection - 1 Rec	180	3 #12 in 1/2" cond.	360	
								10,786	10,083

NOTE: Unless otherwise noted, all single pole breakers are 20 Amp with #12 THHN copper wire. All breakers serving motor loads shall be HACR type or Motor Circuit rated per NEC requirements.

NOTE**: Verify circuit breaker and wire size with manufacturer.

NOTE: For all existing receptacles and loads removed during demo label circuit breakers as "SPARE".

TOTAL LOAD ON PANEL: 20,869 VA
Diversified Load = -467 VA
/240 **(240/1/60 VAC)**
85.01 AMPS

(7) PANEL "LA"
N.T.S.

600A

WIRE/COND	CIRCUIT LOAD	LOAD NAME	CKT	CKT	LOAD NAME	CIRCUIT LOAD	WIRE/COND	PHASE LOADS A	PHASE LOADS B	PHASE LOADS C
3 #10 & 1 #10 G	2,810	CU-A1	1	2	AH-A1	4,567	3 #10 & 1 #10 G	7,377		
in 1/2" cond.	2,810	——	3	4	——	4,567	in 1/2" cond.		7,377	
——	2,810	**(30A)****	5	6	**(35A)****	4,567	——			7,377
3 #10 & 1 #10 G	2,810	CU-A2	7	8	AH-A2	4,567	3 #10 & 1 #10 G	7,377		
in 1/2" cond.	2,810	——	9	10	——	4,567	in 1/2" cond.		7,377	
——	2,810	**(30A)****	11	12	**(35A)****	4,567	——			7,377
		Space	13	14	Space			0		
		↓	15	16	↓				0	
			17	18						0
		Space	19	20	SPARE			0		
		↓	21	22	——				0	
			23	24	**(225A)**					0
3 #12 & 1 #12 G	2,242	CU-A3	25	26	AH-A3	4,567	3 #10 & 1 #10 G	6,809		
in 1/2" cond.	2,242	——	27	28	——	4,567	in 1/2" cond.		6,809	
——	2,242	**(25A)****	29	30	**(35A)****	4,567	——			6,809
3 #12 & 1 #12 G	2,242	CU-A4	31	32	AH-A4	4,567	3 #10 & 1 #10 G	6,809		
in 1/2" cond.	2,242	——	33	34	——	4,567	in 1/2" cond.		6,809	
——	2,242	**(25A)****	35	36	**(35A)****	4,567	——			6,809
3 #1 & 1 #6 G	10,786	Panel "LA"	37	38	Panel "LC"	13,153	3 #1 & 1 #6 G	23,939		
in 1-1/4" cond.	10,083	**(125A)**	39	40	**(125A)**	13,761	in 1-1/4" cond.		23,845	
								52,311	52,217	28,372

NOTE: All breakers serving motor loads shall be HACR type or Motor Circuit rated per NEC requirements.

NOTE**: Verify circuit breaker and wire size with manufacturer.

TOTAL LOAD ON PANEL: 132,900 VA
Diversified Load = -30,310 VA
/415 **(240/3/60 VAC)**
247.20 AMPS

(6) PANEL "MDP"
N.T.S.

MARK	TYPE	MOUNTING	MANUFACTURER CATALOG NO.	LAMPS TYPE	REMARKS
A1	2' x 4' FLUSH LED FIXTURE	CEILING RECESSED LAY-IN	LITHONIA LIGHTING CPX 2X4 4000LM 80CRI 40K SWL MIN10 ZT MVOLT	39.3W LED, 4000K, 5194 LUMENS	
A1-S	2' x 4' FLUSH LED FIXTURE	CEILING RECESSED LAY-IN	LITHONIA LIGHTING CPX 2X4 4000LM 80CRI 40K SWL MIN10 ZT MVOLT E10WLCP	39.3W LED, 4000K, 5194 LUMENS	SWITCHED EMERGENCY DRIVER, SEE NOTE AT BOTTOM OF SCHEDULE
B1	4' SURFACE LED FIXTURE	WALL OR SURFACE MOUNTED	LITHONIA LIGHTING CLX L48 3000LM SEF FDL MVOLT GZ10 40K 80CRI WH WITH LSXR 610 SENSOR	20.3W LED, 4000K, 3190 LUMENS	FLAT DIFFUSE LENS, WITH OPTIONAL SENSOR
B1-S	4' SURFACE LED FIXTURE	WALL OR SURFACE MOUNTED	LITHONIA LIGHTING CLX L48 3000LM SEF FDL MVOLT GZ10 40K 80CRI PS1050 SPD WH WITH LSXR 610 SENSOR	20.3W LED, 4000K, 3190 LUMENS	FLAT DIFFUSE LENS, WITH OPTIONAL SENSOR SWITCHED EMERGENCY DRIVER SEE NOTE AT BOTTOM OF SCHEDULE
D1	EXTERIOR LED WALL PACK DOWN LIGHT	WALL MOUNTED, RE: ELEV. PLANS FOR MOUNTING HEIGHT	LITHONIA LIGHTING WST LED P2 40K VF MVOLT DDBXD	25W LED, 4000K, 3469 LUMENS	DARK BRONZE FINISH, NON-INTEGRAL PHOTOCELL, WET LOCATION RATED
D1-S	EXTERIOR LED WALL PACK DOWN LIGHT	WALL MOUNTED, RE: ELEV. PLANS FOR MOUNTING HEIGHT	LITHONIA LIGHTING WST LED P2 40K VF MVOLT E7WC DDBXD	25W LED, 4000K, 3469 LUMENS	DARK BRONZE FINISH, NON-INTEGRAL PHOTOCELL, WET LOCATION RATED, SWITCHED EMERGENCY DRIVER, SEE NOTE AT BOTTOM OF SCHEDULE
E1	LED EMERGENCY EXIT SIGN WITH BATTERY BACKUP, STEEL HOUSING	WALL OR CEILING MOUNTED	EELP LIGHTING STXE2RWEMSD	3.8W LED LAMP CONT. ON	DIRECTION ARROWS SHADED PORTION INDICATES LIGHTED FACE
H1	6" LED RECESSED DOWNLIGHT	CEILING RECESSED	LITHONIA LIGHTING LDN6 40/15 LO6AR LS MVOLT GZ10	17.5W LED, 4000K, 1514 LUMENS	SPECULAR CLEAR, DAMP LOCATION RATED
H1-S	6" LED RECESSED DOWNLIGHT	CEILING RECESSED	LITHONIA LIGHTING LDN6 40/15 LO6AR LS MVOLT GZ10 ELSD	17.5W LED, 4000K, 1514 LUMENS	SPECULAR CLEAR, DAMP LOCATION RATED, SWITCHED EMERGENCY DRIVER, SEE NOTE AT BOTTOM OF SCHEDULE
S	MOTION SENSOR	CEILING MOUNTED	ACUITY CM PDT 10		
S	MOTION SENSOR	WALL MOUNTED	ACUITY LWS (H) PDT		
PP	SENSOR POWER PACK	CEILING MOUNTED	ACUITY PP20		
$	LIGHT SWITCH				
$3	LIGHT SWITCH 3-WAY				
	CEILING MOUNTED EXHAUST FAN				REFERENCE MECHANICAL DWGS.

EMERGENCY DRIVER NOTE: APPLICABLE TO FIXTURES ABOVE INDICATED BY "_-S". IN ADDITION TO A STANDARD AC DRIVER, PROVIDE AN EMERGENCY DRIVER WITH 90 MIN. Ni-CAD BATTERY PACK. PROVIDE POWER TO EMERGENCY DRIVER FROM THE SAME BRANCH CIRCUIT AS THE STANDARD DRIVER. PROVIDE AN INDICATING LIGHT VISIBLE FROM THE ROOM TO INDICATE THE EMERGENCY DRIVER IS POWERED.

FOR FIXTURES MARKED "_-S": WIRE THE EMERG. DRIVER TO SWITCH THE BACKUP LAMP ON AND OFF W/ THE FIXTURE. THE BATTERY PACK WILL POWER THE LIGHT ONLY UPON LOSS OF POWER TO THE BRANCH CIRCUIT. TO FACILITATE TESTING AND MAINTENANCE OF THE BATTERY PACKS, MARK THE BRANCH CIRCUIT BREAKER "EB" TO INDICATE THE PRESENCE OF AN EMERGENCY DRIVER ON THAT CIRCUIT.

LED LIGHTING: PROVIDE A TRANSFORMER/DRIVER THAT MEETS THE MANUFACTURER'S REQUIREMENTS. VERIFY WITH THE MANUFACTURER THE MINIMUM AND MAXIMUM NUMBER OF FIXTURES THAT CAN BE POWERED FROM A SINGLE TRANSFORMER/DRIVER SO AS TO PROVIDE STABLE, FLICKER-FREE OPERATION AND LONG LIFE.

(11) LIGHTING SCHEDULE
N.T.S.

1. ELECTRICAL TO CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC CODE (N.E.C.) AND APPLICABLE ENERGY CODE.

2. ELECTRICAL CONTRACTOR TO SUPPLY CUT SHEETS FOR PROPOSED CONSTRUCTION FOR ACTUAL EQUIPMENT USED AND SUBMIT TO THE ENGINEER FOR APPROVAL.

3. PROVIDE ELECTRICAL LIGHT SWITCH AND RECEPTACLES AT LOCATIONS AS SHOWN ON THE PLANS. UNLESS OTHERWISE NOTED ON THE PLANS, THE HEIGHT OF WALL SWITCHES AND RECEPTACLES SHALL COMPLY WITH ALL APPLICABLE CODE REQUIRED ACCESSIBILITY REQUIREMENTS. PROVIDE STAINLESS STEEL COVERS FOR LIGHT SWITCHES, RECEPTACLES, AND COVER PLATES. (U.N.O.)

4. BUILDING WIRING TO BE MINIMUM 12-GAUGE GROUNDED COPPER WIRING INSTALLED IN METALLIC CONDUIT (EMT).

5. ALL CONDUIT TO EQUIPMENT IN PUBLIC AREAS SHALL BE IN WALLS.

6. USE MULTIPLE GANG J-BOX AND COVER PLATE WHENEVER POWER RECEPTACLES AND/OR SWITCHES ARE IN CLOSE PROXIMITY TO EACH OTHER.

7. COMPUTER/DATA/COMMUNICATIONS/CABLE TERMINALS SHALL NOT BE COMBINED WITH ADJACENT POWER RECEPTACLES INTO A COMMON J-BOX.

8. FIXTURES, RECEPTACLES, EQUIPMENT, ETC., WILL BE WIRED TO CIRCUITS AS SHOWN ON DRAWINGS. PROPOSED MODIFICATIONS TO THE DRAWINGS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

9. FOR ELECTRICAL PANELS WITH SPARE CIRCUIT BREAKERS SHOWN, STUB UP 1"Ø CONDUIT TO 6" ABOVE THE CEILING WITH A PULL STRING. CAP THE OPEN END OF THE CONDUIT.

10. WIRE SIZES SHOWN ARE BASED ON ESTIMATED LENGTHS. FOR BRANCH CIRCUITS EXCEEDING 75 FEET ACTUAL LENGTH, VERIFY THAT THE VOLTAGE DROP DOES NOT EXCEED 3% PER N.E.C. RECOMMENDATIONS. AMPACITY OF MULTIPLE CONDUCTORS IN A SINGLE CONDUIT MUST ALSO BE ADJUSTED PER N.E.C. RECOMMENDATIONS. IF CONDUCTOR SIZE IS INCREASED, INCREASE GROUND WIRE AS REQUIRED BY CURRENT N.E.C.

11. UNLESS OTHERWISE NOTED, SWITCHES, RECEPTACLES, J-BOXES, ETC., ARE DIAGRAMMATICALLY SHOWN ON THE THE PLANS TO CONVEY THE APPROXIMATE LOCATIONS FOR INSTALLATION. EVEN IF SHOWN BACK TO BACK ON THE PLANS, ALL BOXES ON EITHER SIDE OF A WALL OR PARTITION MUST BE SEPARATED HORIZONTALLY BY AT LEAST 6 INCHES. UNLESS SHOWN ON THE PLANS, REFER TO NOTES, LEGENDS, ADA REQUIREMENTS, ETC. FOR CORRECT MOUNTING HEIGHTS.

12. REFER TO THE ARCHITECTURAL DRAWINGS, CIVIL DRAWINGS, AND DEMOLITION DRAWINGS FOR PERTINENT INFORMATION RELATED TO THE PROJECT {ELECTRICAL/PLUMBING/MECHANICAL} WORK.

13. ALL WIRES AND CABLES WILL BE SUPPORTED AS REQUIRED BY THE CURRENT VERSION OF THE N.E.C., WIRES AND CABLES **WILL NOT** BE SUPPORTED BY THE CEILING GRID. **NO EXCEPTIONS.**

14. ALL CIRCUITS WITH SENSITIVE ELECTRONIC EQUIPMENT (EXAMPLES: COMPUTERS AND PRINTERS) ARE TO BE POWERED FROM A QUALITY UPS (UNINTERRUPTIBLE POWER SUPPLY). NOTE: PROVISION OF UPS'S ARE NOT IN THE SCOPE OF THE PROJECT.

15. ALL OPENINGS AROUND ELECTRICAL PENETRATIONS INTO OR THROUGH FIRE-RATED WALLS, PARTITIONS, FLOORS, OR CEILINGS SHALL BE FIRE-STOPPED USING U.L. APPROVED MATERIALS AND METHODS TO MAINTAIN THE FIRE RESISTANCE RATING IN ACCORDANCE WITH N.E.C. 300.21 AND APPLICABLE CODES.

16. ALL ABOVE COUNTER RECEPTACLES SHALL BE MOUNTED ABOVE BACK SPLASH, RE: INTERIOR PLANS.

17. CONTRACTOR SHALL COORDINATE ALL WALL MOUNTED ITEMS WITH INTERIOR ELEVATIONS. PENETRATIONS AND CUTOUTS IN ACOUSTICAL WALL PANELS SHALL NOT BE ALLOWED. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF ALL DAMAGED ACOUSTICAL WALL PANELS.

18. CONTRACTOR TO PROVIDE AND INSTALL LOCAL DISCONNECT AND CONNECT TO HVAC SINGLE POINT ELECTRICAL CONNECTION, RE: MECHANICAL SCHEDULES. [IF DISCONNECT IS PROVIDED INTEGRAL WITH EQUIPMENT, PROVIDE POWER AS REQUIRED; NO NEED FOR SEPARATE DISCONNECT.]

19. COORDINATE WITH MILLWORK FOR LOCATION OF RECEPTACLES.

20. DATA CABLES SHALL NOT EXCEED 300 LINEAR FEET.

21. WHEN TRENCHING IS REQUIRED, REFER TO SPECIFICATION SECTIONS AND GEOTECH REPORT REQUIREMENTS FOR UTILITY TRENCH BACKFILL.

22. CONTRACTOR SHALL PROVIDE LABELING ON ALL JUNCTION BOXES AND COVER PLATES IDENTIFYING BRANCH CIRCUIT. PROVIDE ADDITIONAL LABELING IN ACCORDANCE WITH N.E.C. AND A.H.J. REQUIREMENTS.

23. IN AREAS WHERE ELECTRICAL SUPPORTS, DEVICES, AND CONDUITS WILL BE EXPOSED TO PUBLIC VIEW, COORDINATE WITH OTHER DISCIPLINES AND THE PAINTER. ALL ELECTRICAL SUPPORTS, DEVICES, AND CONDUITS SHALL BE INSTALLED ON TIME FOR THE PAINTER TO COMPLETE WORK COINCIDENT WITH OTHER PAINTING REQUIREMENTS IN THE AREA.

DEMOLITION ELECTRICAL NOTES

1. PRIOR TO THE DEMOLITION OF WORK BY ANY TRADE, PROVIDE A QUALIFIED ELECTRICIAN TO DISCONNECT ALL SOURCES OF POWER SERVING EQUIPMENT, LIGHT FIXTURES, AND OUTLETS WITHIN THE AREA OF DEMOLITION. VERIFY BY TESTING THAT POWER HAS BEEN DISCONNECTED. THE ELECTRICIAN SHALL REMAIN ON SITE DURING DEMOLITION TO DISCONNECT AND TEST ALL ELECTRICAL WORK THAT BECOMES ACCESSIBLE DURING THE COURSE OF DEMOLITION.

2. ALL DEMOLITION ITEMS SHALL BECOME THE CONTRACTORS PROPERTY AND SHALL BE REMOVED FROM THE SITE. HAZARDOUS MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH FEDERAL REGULATIONS AND THE CONTRACT DOCUMENTS.

3. THE DISPOSAL OF LAMPS AND BALLASTS SHALL BE IN ACCORDANCE WITH EPA STANDARDS AND GUIDELINES.

4. WHERE EQUIPMENT, WIRING DEVICES, AND/OR LIGHT FIXTURES ARE SCHEDULED FOR DEMOLITION, REMOVE THE ASSOCIATED WIRE AND RACEWAY BACK TO THE CIRCUIT BREAKER SERVING THE EQUIPMENT, UNLESS SPECIFICALLY NOTED OTHERWISE.

5. WHERE CEILINGS OR WALLS ARE SCHEDULED FOR DEMOLITION ON THE ARCHITECTURAL DRAWINGS, DISCONNECT AND REMOVE ALL WIRING DEVICES, LIGHT FIXTURES, AND SPEAKERS ASSOCIATED WITH THOSE WALLS AND CEILINGS.

6. IDENTIFY CONDUITS AND WIRE PASSING THROUGH THE AREA OF DEMOLITION AND SERVING LOADS OUTSIDE THE AREA THAT WILL REMAIN. MARK AND PROTECT THESE CONDUITS DURING DEMOLITION.

7. THE ELECTRICAL SERVICE TO AREAS NOT WITHIN THE DEMOLITION SCOPE OF WORK SHALL NOT LOSE POWER UNLESS SCHEDULED AND AGREED TO BY THE OWNER.

(2) ELECTRICAL NOTES
N.T.S.

	110 DUPLEX RECEPTACLE WITH 1 GANG BOX
	110 QUADRAPLEX RECEPTACLE WITH 2 GANG BOX
	EQUIPMENT SERVICE DISCONNECT, NON-FUSED, LOCKABLE, U.N.O.
R	CONTROL RELAY
TC	TIMECLOCK
PE	PHOTOELECTRIC
AC	J-BOX MOUNTED AT 10" ABOVE COUNTER, UNLESS NOTED OTHERWISE. COORDINATE J-BOX HEIGHT WITH MILLWORK.
WP	WEATHERPROOF / WATERPROOF WITH GFCI
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
— · — · —	CONDUIT UNDER SLAB OR IN SLAB
—UGE—	CONDUIT UNDERGROUND
J	1 GANG JUNCTION BOX - 1"Ø EMPTY CONDUIT TO 12" ABOVE CEILING
	DATA ONLY WALL OUTLET FOR CAMPUS NETWORK
	VOICE ONLY WALL OUTLET
	COMBINED VOICE & CAMPUS NETWORK DATA WALL OUTLETS IN SAME FACEPLATE
AV	FIRE ALARM, AUDIO/VISUAL, CEILING MOUNTED
V	FIRE ALARM, VISUAL, CEILING MOUNTED
AV	FIRE ALARM, AUDIO/VISUAL, @ 80" A.F.F. WALL MOUNTED
V	FIRE ALARM, VISUAL, @ 80" A.F.F. WALL MOUNTED
F	FIRE ALARM PULL STATION @ 48" A.F.F. WALL MOUNTED
S	SMOKE DETECTOR, CEILING MOUNTED (REFER TO REFLECTED CEILING PLAN)

(1) ELECTRICAL LEGEND
N.T.S.

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VEHICLE SEARCH / INVESTIGATION BUILDING
BEAUMONT, TX

No.	Revision	Date

NOTE: DO NOT SCALE DRAWING
CONSTRUCTION DOCUMENTS

STATE OF TEXAS
JUSTIN R. FENLEY
118566
LICENSED
PROFESSIONAL ENGINEER
10/19/2023

GLS PROJECT #154079
GLS
ARCHITECTURE - ENGINEERING - INTERIORS
LANDSCAPE - SURVEYING
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4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700
455 RICE ROAD STE. 107 - TYLER, TEXAS 75703 - (903) 581-3805

Project Number	JCVIB-23
Date	10-18-23
Scale	1/4"=1'-0"

ELECTRICAL DETAILS

E9.31