Date Due: March 12, 2021
DUE NO LATER THAN 11:00 A.M.
LOCAL TIME IN HOUSTON, TEXAS
Proposals received later than the above
date and time will not be considered.

# YES Prep Public Schools

REQUEST FOR PROPOSAL Cover Sheet

REQUEST FOR PROPOSAL: FY21\_7 Fifth Ward Safety & Security Vestibule

NOTE TO PROPOSERS!!! Carefully read all instructions, requirements, and specifications. Fill out all forms properly and completely. Submit your proposal with all appropriate supplements and/or samples and return as instructed in Special Requirements/Instructions.

**RETURN PROPOSAL TO:** 

#### **Cheris Kotalik**

Construction Manager 5515 S Loop E, Suite B Houston, Texas 77033

For additional information, contact Cheris Kotalik, cheris.kotalik@yesprep.org or 346-235-5776.

You must sign below in INK; failure to sign WILL disqualify the proposal. All prices must be typewritten or printed in ink.

Vendor Name:		
Vendor Address:		
City, State, Zip Code:		
Taxpayer Identification Number (T.I.N.):		
Telephone No.:	Fax No.:	
Email:		
Print Name:	Signature:	

[Your signature attests to your proposal to provide the goods and/or services in this proposal according to the published provisions of this Request for Proposal unless modifications or alterations are clearly noted in your proposal submission.]

### TABLE OF CONTENTS – REQUEST FOR PROPOSAL PACKAGE

The items below represent components which comprise this Request for Proposal (hereinafter "RFP") package. Suppliers are asked to review the package to be sure that all applicable parts are included. If any portion of the package is missing, please notify Cheris Kotalik, Construction Manager immediately at cheris.kotalik@yesprep.org or 346-235-5776.

It is the Vendor's responsibility to be thoroughly familiar with all Requirements and Specifications. Be sure you understand the following before you return your proposal packet.

### 1. Cover Sheet

Your company name, address, and your signature (IN INK) should appear on this page.

### 2. Table of Contents

This page is the Table of Contents.

### 3. General Requirements

You should be familiar with all of the General Requirements.

### 4. Special Requirements/Instructions

This section provides information you must know in order to make a complete and proper proposal.

### 5. Specifications

This section contains the detailed description of the products/services sought.

### 6. Attachments

- A. Submittals 1 4
- B. Questionnaire
- C. Workers' Compensation Certification
- D. Insurance Coverage Requirements
- E. Proposed Exceptions, Alterations, Additions, or Modifications to RFP (if any)
- F. Scoring Rubric

#### INTRODUCTION

YES Prep Public Schools is a free, open-enrollment public school system that serves 15,000 students across nineteen (21) schools in the Houston area. YES Prep has been ranked as among the top 100 public high schools in the nation by Newsweek and U.S. News & World Report. Every year, 100 percent of YES Prep's graduating seniors have been accepted into four-year colleges, including Harvard, Yale, Columbia, Rice, and Stanford. YES Prep combines a highly successful 6th-12th grade model along with high standards for student achievement.

#### **GENERAL REQUIREMENTS**

Proposals will be accepted by Yes Prep Public Schools no later than 11:00 a.m. (local time), **March 12, 2021**. Every proposal must be enclosed in an envelope clearly marked "FY21\_7 FW Safety & Security Vestibule" and shall include one copy.

All questions, requests, responses, and proposals shall be submitted to:
Cheris Kotalik, Construction Manager
YES Prep Public Schools
5515 S Loop E, Suite B
Houston, TX 77033
Cheris.kotalik@yesprep.org

Questions and responses regarding this RFP will be posted to the YES Prep Public Schools web site during the RFP phase so all interested parties will have access to the same information. Web site is located at: <a href="http://www.yesprep.org/notices">http://www.yesprep.org/notices</a>

The appropriate committee shall review all timely responses, and if necessary, the full Board of Trustees prior to acceptance/bid award. Responses may be hand delivered. Any response or proposal received after the above deadline shall be considered late, and will not be opened or considered.

### **Time Frame**

The timeframe for all responses must be complete and in possession of YES Prep Public Schools by 11:00 a.m. (local time) on **March 12, 2021**. Each submission/proposal must be complete. Any incomplete responses may be rejected. All respondents will comply with this RFP as a basis for the award of the proposal.

All guestions are due by 5:00 p.m. (local time) on March 8, 2021.

### **Approval**

The actual acceptance of any proposal may be delayed. Therefore, all responses must remain valid for a period of no less than one hundred and twenty (120) days. It is intended that proposals will be recommended to the Board of Trustees at an upcoming board meeting. The Board of Trustees reserves the right to reject any and all proposals.

### **ACCESS TO RECORDS**

Proposer (hereinafter "Vendor") may be required to allow duly authorized representatives of YES Prep Public Schools (hereinafter "YES"), and local, state, and federal governments, access to contracts, books, documents, and records necessary to verify the nature, extent, and cost of services provided by the Vendor.

#### AWARD

YES reserves the right to reject any and all proposals, and reserves the sole right at its discretion to accept any proposal(s) it considers most favorable to the interest of YES and waive any and all minor irregularities in any proposal(s). YES further reserves the right to reject any proposal(s) and seek new proposals through the issuance of a new or amended Request for Proposal (hereinafter "RFP") if such action is deemed in the best interest of YES.

### **OFFER COMPLETION**

Fill out and return to Cheris Kotalik, Construction Manager, one complete proposal form, and two copies, as instructed under the Special Requirements section of this document. An authorized Vendor representative should sign the Cover Sheet. Completion of these forms is intended to verify that the Vendor has submitted the proposal, is familiar with its contents, and has submitted the material in accordance with all requirements.

The submission of a response shall be prima facie evidence that the Vendor has full knowledge of the scope, nature, quantity, and quality of work to be performed, the detailed requirements of the project, and the conditions under which the work is to be performed. All terms, conditions, specifications, stipulations, and Vendor requirements stated in the RFP, any attached Appendices to the RFP, and any and all Addenda issued shall become part of the contract entered into between YES and the Vendor.

### **OFFER RETURNS**

Vendors must return all completed proposals to the office of Cheris Kotalik as indicated on the Cover Sheet of this package. Late proposals will not be accepted. It is the responsibility of the responding Vendor to assure that the response is received prior to the date and time indicated on the Cover Sheet of this package.

### **DIGITAL FORMAT**

If Vendor obtained the proposal specifications in digital format in order to prepare a response, the proposal must be submitted in hard copy according to the instructions contained in this package. If, in its response, Vendor makes any changes whatsoever to the YES published RFP specifications, the RFP specifications as published by YES shall control. Furthermore, if an alteration of any kind to the RFP specifications as published is discovered after the contract is executed, the contract is subject to immediate cancellation at the sole option of YES.

### **DISQUALIFICATION OF VENDOR**

Upon signing this RFP, Vendor certifies that the proposal has not violated the antitrust laws of this state codified in §15.01, *et seq.*, Business & Commerce Code, or the federal antitrust laws, and has not communicated directly or indirectly the proposal made to any competitor or any other person engaged in such line of business. Any or all proposals may be rejected if YES believes that collusion exists among the Vendors. Proposals in which the prices are obviously unbalanced may be rejected.

### **EVALUATION**

In evaluating the proposals submitted, YES will apply the "Best Value" process in selecting the Vendor to be awarded a contract for this project. **Purchase price is not the only criteria that will be used in the evaluation process**. The selection process will include, but not be limited to, the following considerations:

- 1. The quality and range of goods and/or services the Vendor proposes to provide;
- 2. The extent to which the goods and/or services meet YES needs;
- 3. The Vendor's overall experience, reputation, expertise, stability, and financial responsibility;
- 4. The Vendor's past relationship, if any, with YES;
- 5. The experience and qualifications of the Vendor staff (i.e. drivers, supervisors, dispatchers, mechanics, etc.) that will be assigned to service the YES account:
- 6. The ability to provide service in a safe, reliable, expedient, and efficient manner:
- 7. Facilities and business processes and practices (computerized information systems, access to industry facilities, quality and range of management reports, etc.) that will be used in servicing the YES account;
- 8. The Vendor's financial terms offered to YES;
- 9. The total long-term cost to YES to acquire the Vendor's goods or services; and/or
- 10. Any other relevant factor(s) specifically listed in the RFP.

YES reserves the right to contact references from the Vendor's client list, or any other persons considered relevant by YES. YES reserves the right to conduct personal interviews of any or all potential Vendors prior to selection.

YES will not be liable for any costs incurred by the Vendor in connection with such interviews or with the submission of any response.

#### **DOCUMENT INTERPRETATION**

In the event of any conflict of interpretation of any part of this overall document, the interpretation of YES shall govern.

#### **GOVERNING LAW**

Any agreements resulting from this RFP shall be governed by, construed, and enforced in accordance with the laws of the State of Texas applicable to contracts made and wholly performed within such state (without regard to the conflicts or choice of law principles thereof). The parties irrevocably consent to the jurisdiction of the State of Texas, and agree that any court of competent jurisdiction sitting in the County of Harris, State of Texas, shall be an appropriate and convenient place of venue, and shall be the sole and exclusive place of venue, to resolve any dispute with respect to any such agreements.

### **HOLD HARMLESS AGREEMENT**

The successful Vendor(s) shall indemnify, hold harmless, and defend YES, its directors, officers, and employees (paid or volunteer) from and against any and all claims, demands, and causes of action of whatever kind or nature arising out of error, omission, misrepresentation, negligent act, conduct, or misconduct of the Vendor and its subcontractors, agents, and employees (paid or volunteer) in the provision of goods or the performance of services arising out of the preparation of this proposal and execution and performance of any contracts resulting therefrom. Such indemnification shall also include reasonable attorneys' fees, court costs, and expenses.

### **INSPECTIONS**

YES reserves the right to inspect any item(s) or service location for compliance with specifications, requirements, and needs of YES. If a Vendor cannot furnish a sample of a proposed item, where applicable, for review, or fails to satisfactorily show an ability to perform, YES can reject the Vendor as inadequate.

### **TESTING**

YES reserves the right to test equipment, supplies, materials, and goods proposed for quality, compliance with specifications, and ability to meet the needs of YES. Demonstration units must be available for review. Should the goods or services fail to meet requirements and/or be unavailable for evaluation, the proposal is subject to rejection.

### INVOICES AND PAYMENTS

YES standard payment terms are Net 30 days after receipt of invoice.

Invoices should be provided to YES in a timely manner. Vendors are requested to invoice YES within 30 days of providing goods and/or services to YES. Vendors who continuously invoice YES in a manner that is outside of generally accepted business practices may affect their continuing relationship with YES.

In the event a Vendor presents YES with invoices, statements, reports, etc. that are incomplete or inaccurate, YES may be required to perform substantial research which could result in delay of payment. YES will not be responsible for any interest charges and/or late fees as a result of delayed payment due to time delays caused by inadequate, incomplete, or inaccurate information provided in invoices by Vendor.

#### **PRICING**

Prices for all goods and/or services shall be negotiated to a firm amount for the duration of this contract or as agreed to in terms of time frame and/or method of determining price escalations, if any, by Vendor. All prices and methods of determining prices must be written in ink or typewritten. Where unit pricing and extended pricing differ, unit pricing prevails.

### SCANNED OR RE-TYPED RESPONSE

If in its response, Vendor either electronically scans, re-types, or in some way reproduces the YES-published RFP package, then in the event of any conflict between the terms and provisions of the published RFP package, or any portion thereof, and the terms and provisions of the response made by the Vendor, the RFP package *as published* by YES shall control. Furthermore, if an alteration of any kind to the YES-published RFP package is only discovered after the contract is executed, the contract is subject to immediate cancellation at the sole option of YES.

#### **SEVERABILITY**

If any section, subsection, paragraph, sentence, clause, phrase, or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications, and it is hereby declared that such remaining portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.

### **SUPPLEMENTAL MATERIALS**

Vendors are responsible for including all pertinent product data in the returned offer package. Literature, brochures, data sheets, specification information, completed forms requested as part of the offer package, and any other facts which may affect the evaluation and subsequent contract award should be included. Materials such as legal documents and contractual agreements, which the Vendor wishes to include as a condition of the proposal, must also be in the returned proposal package. Failure to include all necessary and proper supplemental materials may be cause to reject the entire proposal.

### **TAXES**

YES is exempt from federal, state, and local taxes. In the event that taxes are imposed on the goods or services purchased, YES will not be responsible for payment of the taxes. The Vendor shall absorb the taxes entirely. Texas Limited Sales Tax Exemption Certificates will be furnished to Vendors upon written request to YES.

### **TERM CONTRACTS**

The successful Vendor, as determined by YES, shall be required to execute a contract to furnish all goods and/or services and other deliverables required for successful completion of the proposed project. No Vendor shall obtain any interest or right in any award until YES has executed a contract, and any such interest and rights shall be subject to the terms and conditions as contained in such contract.

The successful Vendor may not assign, sell, or otherwise transfer its interest in the contract award, or any part thereof, without prior written consent from the YES.

### **QUANTITY**

There is no guaranteed amount of business, expressed or implied, to be purchased or contracted for by YES. However, the Vendor(s) awarded the contract shall furnish all required goods and/or services to YES at the stated price, when and if required.

### **CONTRACT TYPE**

The preferred contract type to be awarded is a fixed fee contract. However, if a Vendor has reason to believe a better (more cost effective) method is practical, then the Vendor is encouraged to offer that better pricing option as an alternative in its submitted proposal. YES will consider that type of contract as it compares with other recommended contract options.

#### **TERMINATION**

YES reserves the right to terminate the contract without cause with 60 days prior written notice for convenience and with 30 days prior written notice for cause if Vendor breaches any of the terms therein, including warranties of Vendor or if the Vendor becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other

remedies which YES may have in law or equity. Cause may be construed as, but not limited to, failure to deliver the proper goods and/or services within the proper amount of time, and/or to properly perform any and all services required to YES's satisfaction, and/or to meet all other obligations and requirements.

If the Vendor breaches any provision of the proposal stipulations, becomes insolvent, enters voluntary or involuntary bankruptcy, or receivership proceedings, or makes an assignment for the benefit of creditors, YES will have the right (without limiting any other rights or remedies that it may have in the contract or by law) to terminate any contract with 30 days prior written notice to the Vendor.

YES will then be relieved of all obligations, except to pay the reasonable value of the Vendor's prior performance (at a cost not exceeding the contract rate). The Vendor will be liable to YES for all costs exceeding the contract price that YES incurs in completing or procuring the service as described in the proposal. YES's right to require strict performance of any obligation in this contract will not be affected by any previous waiver, forbearance, or course of dealing.

#### **FUNDING OUT OPTION**

Any contract resulting from this RFP is contingent upon the continued availability of budget appropriations and is subject to cancellation, without penalty to YES, either in whole or in part, if funds are not appropriated by the YES Board of Directors or otherwise not made available to YES.

### **WARRANTIES**

Vendors shall furnish all data pertinent to warranties or guarantees which may apply to items in the proposal. Vendors may not limit or exclude any implied warranties.

#### **ASSOCIATION**

Vendors may not use the YES official logo(s), or any phrase associated with YES, without written permission from YES.

#### DISCLOSURE

All information and documentation related to this RFP submitted by Vendors may be subject to public disclosure under the Texas Public Information Act (Texas Government Code Section 552.001, et seq.).

### **EXCEPTIONS, ALTERATIONS, ADDITIONS, and MODIFICATIONS**

If any exceptions, alterations, additions, or modifications are submitted by Vendor to any portion of this RFP, the Vendor must clearly indicate the exceptions, alterations, additions, and modifications and include a full explanation as a separate attachment to the proposal. The failure to identify exceptions, alterations, additions, or modifications will constitute acceptance by the Vendor of the RFP as proposed by YES. YES reserves the right to reject a proposal containing exceptions, alterations, additions, or modifications.

### PROPOSAL PREPARATION COSTS

All costs related to the preparation and submission of this proposal shall be paid by the Vendor. Issuance of this RFP does not commit YES, in any way, to pay any costs in the preparation and submission of the proposal, nor does the issuance of the RFP obligate YES to award a contract or purchase any goods and services stated in the RFP.

### RETENTION OF PROPOSAL DOCUMENTATION

All proposal materials and supporting documentation that is submitted in response to this proposal becomes the permanent property of YES.

### MODIFICATION/WITHDRAWL OF PROPOSAL

Proposals may be modified in writing at any time prior to the due date. Proposals may be withdrawn in writing, by facsimile written transmission or in person, before the response date.

### **PAYMENT TERMS**

Invoices that are submitted by the awarded contractor are required to provide accurate and current addresses including any discounts for early payment. Payment of undisputed invoices will be paid monthly provided that the invoices are received by dates provided to the winning bid. Disputed portions of invoices will be held until the dispute is resolved.

#### PROPOSAL REQUIREMENTS

- Vendor is required to provide evidence of a valid State of Texas Business License
- Vendor is required to provide an insurance certificate with YES Prep named as an additional insured.

The entity legally responsible for fulfilling this agreement shall be identified in the proposal response.

### Right to Seek a New Proposal

YES Prep Public Schools reserves the right to receive, accept, or reject any and all proposals for any or all reasons.

Proposals will be awarded to the best overall respondent as determined to be in the best interests of Yes Prep. In comparing the responses to this RFP and making awards, Yes Prep may consider such factors as quality and thoroughness of a proposal, the record of experience, the references of the respondents, and the integrity, performance and assurances in the proposal in addition to that of the proposal price.

It is the responsibility of the vendor to ensure that the equipment proposed is fully functional with existing two-way radio equipment: handheld radios, base stations and school bus radios.

### **Applicable Law**

The successful Contractor(s) agrees that they shall comply with all local, state and federal laws, statutes, rules, and regulations including, but not limited to, the Rehabilitation Act of 1973 and the Americans with Disabilities Act. In the event that any claims should arise with regards to this contract, for a violation of any such local, state, or federal law, statues, rules, or regulations, the provider will indemnify and hold Huntington County Community School Corporation harmless for any damages, including court costs or attorney fees which might be incurred.

### **Dispute resolution**

It is expected that any conflicts or disagreements can be settled through face-to-face meetings. Unresolved disputes will require mediation before filing litigation. Both parties will split the cost of mediation.

### SPECIAL REQUIREMENTS/INSTRUCTIONS

### **EVALUATION AND AWARD**

This RFP in no manner obligates YES to the eventual rental, lease, or purchase of any equipment or service described, implied, or which may be proposed, until confirmed by a written contract. Progress toward this end is solely at the discretion of YES and may be terminated at any time prior to the signing of the contract.

YES may initiate discussions with Vendor personnel authorized to contractually obligate the Vendor. Discussions will develop into negotiating sessions with the successful Vendor(s). If YES is unable to agree to contract terms, YES reserves the right to terminate contract negotiations with a Vendor and initiate negotiations with another Vendor. YES reserves the right to select services and products from any number of Vendors if, in its sole discretion, it is in the best interest of YES to do so.

Evaluation will consider the Vendor(s) best meeting the needs and requirements of YES and such evaluation and determination of best value shall be solely at the discretion of YES.

Purchase price is not the only criteria that will be used in the evaluation process.

Submission of qualifications implies the Vendor's acceptance of the evaluation criteria and Vendor's recognition that subjective judgments can and will be made by those individuals evaluating qualifications.

References, site visits, and product inspections may be used to make judgments directly affecting the award of this contract.

### NON-PERFORMANCE BY VENDOR

Performance, before and during the contract term, will be a major consideration of current contract award, renewals, and future award considerations. Failure to perform, in any sense relative to this contract, may result in the probation and/or termination of this agreement by YES on the basis of nonperformance. Non-performance shall be determined as follows:

- 1. Failure to meet and maintain all qualifications required in this RFQ/RFP;
- 2. Failure to meet required personnel standards and operating performance standards;
- 3. Failure to maintain appropriate and/or necessary personnel licenses and certifications;
- 4. Failure to meet all vehicle inspections and certifications which are needed to comply with federal, state, and/or local requirements;
- 5. Failure to keep and maintain all required insurance coverage; and/or
- 6. Failure to cure deficiencies within a reasonable amount of time as stated herein.

### **INSURANCE**

All Vendors must provide evidence of insurance or insurability and a Workers' Compensation

Certificate (see Attachments C and D).

### **GOVERNMENT VIOLATIONS**

Vendor shall notify YES of all health and safety violations, OSHA violations, wage and hour violations, or labor violations assessed by any city, state, or federal government department or agency.

### NON-COMPLIANCE NOTIFICATION

In the event a Vendor is determined by YES to have failed to perform services in accordance with the requirements listed herein, YES will forward a written notification specifying the violation or the area of non-compliance to the Vendor. The Vendor in non-compliance shall immediately remedy all violations as determined by YES. Any violations not so remedied shall be grounds for termination of the contract, in whole or in part.

### **OWNERSHIP**

YES shall retain ownership rights to all materials or any other product produced in conjunction with the work described herein.

### SPECIAL CONDITIONS AND PROJECT INFORMATION

YES Prep Public Schools is a free, open-enrollment public school system that currently serves 15,000 students across nineteen (19) schools in the Houston area. In August 2020, YES Prep will open 2 new elementary schools in the Houston area. YES Prep has been ranked as among the top 100 public high schools in the nation by Newsweek and U.S. News & World Report. Every year, 100 percent of YES Prep's graduating seniors have been accepted into four-year colleges, including Harvard, Yale, Columbia, Rice, and Stanford. YES Prep combines a highly successful 6th-12th grade model along with high standards for student achievement.

### A schedule duration MUST be included with RFP response.

- Project will be permitted through City of Houston. Contractor will be responsible for scheduling all inspections and finals.
- Owner will contract direct for fire alarm and data. Contractor will be required to work with and coordinate with Owner contractors.
- Work to start on Monday, June 14, 2021 and Certificate of Occupancy no later than, July 28, 2021.
- Owner will provide area in enclosed parking lot for small laydown and contractor furnished dumpster. Dumpster must have plywood underneath to not damage asphalt.
- Contractor to maintain front entry access for school personnel and students throughout the summer.
- All shutdowns must be coordinated 48hrs in advance with Owner. Building wide shutdowns will take place after-hours.
- Contractor to provide temporary toilet for all workers. Use of Owner facilities is prohibited.
- Contractor must provide daily onsite supervision anytime workers are present.
- Contractor will be responsible for submittals and RFI's with the A/E team before and during construction.
- Contractor to provide one (1) warranty on all work.

# REQUIRED SUBMITTALS (Attachment A)

### Submittal 1

Experience in Electrical

Vendor shall provide a statement of its qualifications to provide the specific materials and services requested herein.

### Submittal 2

Staffing Plan

Vendor shall submit a staffing plan that provides the qualifications of your employees.

#### Submittal 3

References

Vendor shall supply a list of three (3) references for which Vendor has experience in the scope of work that the proposal is submitted for.

### Submittal 4

Customer Feedback

Vendor shall provide a description of its formal customer feedback system, provide sample tools used to gather data, and describe how results were shared with customers and used to improve service.

All submittals must be included in the RFP package returned on March 12, 2021 by 11:00 AM. It is recommended that each submittal be typed on a separate sheet of paper with the heading "Response to Submittal #\_\_\_ for YES RFP" at the top and the name of the Vendor underneath.

# QUESTIONNAIRE (Attachment B)

All Vendor must provide answers to the following questions, typed on 8  $\frac{1}{2}$  x 11 inch paper, in the order below. Attachments to the questionnaire answers should reference the question number.

- 1. Provide the full name and address of your organization.
- 2. Provide contact person(s) for information concerning this offer: name, title, phone, fax, email address.
- 3. What form of business is your organization (e.g. proprietorship, partnership, corporation) and is your organization local only, statewide, or nationwide?
- 4. List all the names under which this Vendor has operated in the last ten (10) years in the State of Texas.
- 5. Provide a copy of your insurance coverage.
- 6. Multi-part question:
  - a. Do you currently have any investigations pending by or on behalf of a government entity or other licensing entity?
  - b. Have you had investigations by or on behalf of a government entity or other licensing entity in the past?
    - 1. If the answer to either question is yes, please provide copies of relevant paperwork.
- 7. Do you have any relevant experience or projects in the past with education institutions? If so, please provide a high-level overview of these projects.

# WORKERS' COMPENSATION CERTIFICATE (Attachment C)

YES requires Vendor to provide workers' compensation as per state law requirements. The Vendor shall sign and submit the following certificate with the written proposal:

- Minimum Workers' Compensation and Employer's Liability Limits
  - o Each Accident \$1,000,000
  - o Disease Each Employee \$1,000,000
  - o Disease Policy Limit \$1,000,000

Vendor Name	
Signature of Authorized Agent	
Date Signed	

Note: Vendor may attach current certificate of coverage with a signed statement that if awarded the contract, they will obtain said aforementioned coverage if the current coverage does not meet the stated minimum requirements.

# INSURANCE COVERAGE REQUIREMENTS (Attachment D)

### **General and Excess Liability Minimum Coverages**

• General Liability: \$2,000,000

Umbrella Liability: \$1,000,000	
Vendor Name	
Signature of Authorized Agent	
Date Signed	

YES will be named as Additional Insured on the Certificate of Insurance if the Vendor is awarded a contract.

# Proposed Exceptions, Alterations, Additions, or Modifications to RFP (Attachment E)

Vendor should submit as Attachment F, any and all proposed exceptions, alterations, additions, or modifications to the YES RFP for Fifth Ward Safety & Security Vestibule.

# SCORING RUBRIC (ATTACHMENT F)

YES will utilize the following RFP Evaluation Rubric for evaluation of all YES Prep FW Safety & Security Vestibule.

### 1. Charges/Cost to YES PREP: 40 Points.

- a. Favorable = 40 Points. Unfavorable = 0 points.
- b. Evaluate the Overall Value of proposed materials and services to be provided.

### 2. Technical and Education Experience: 20 Points.

- a. Favorable = 20 Points. Unfavorable = 0 points.
- b. Proposal demonstrates the Vendor's ability to deliver quality services to schools.
- c. Includes references, Vendor staff, and/or Vendor's or certifications, qualifications, experience, expertise, and resumes.

### 3. Proposed Operational Delivery: 10 Points.

- a. Favorable = 10 Points. Unfavorable = 0 points.
- b. Proposal defines services and scope in enough detail that YES can confidently determine that the proposed services will be met.

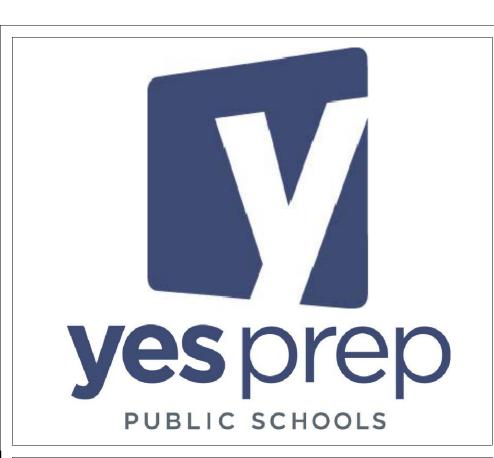
### 4. Project Understanding and Methodology: 30 Points.

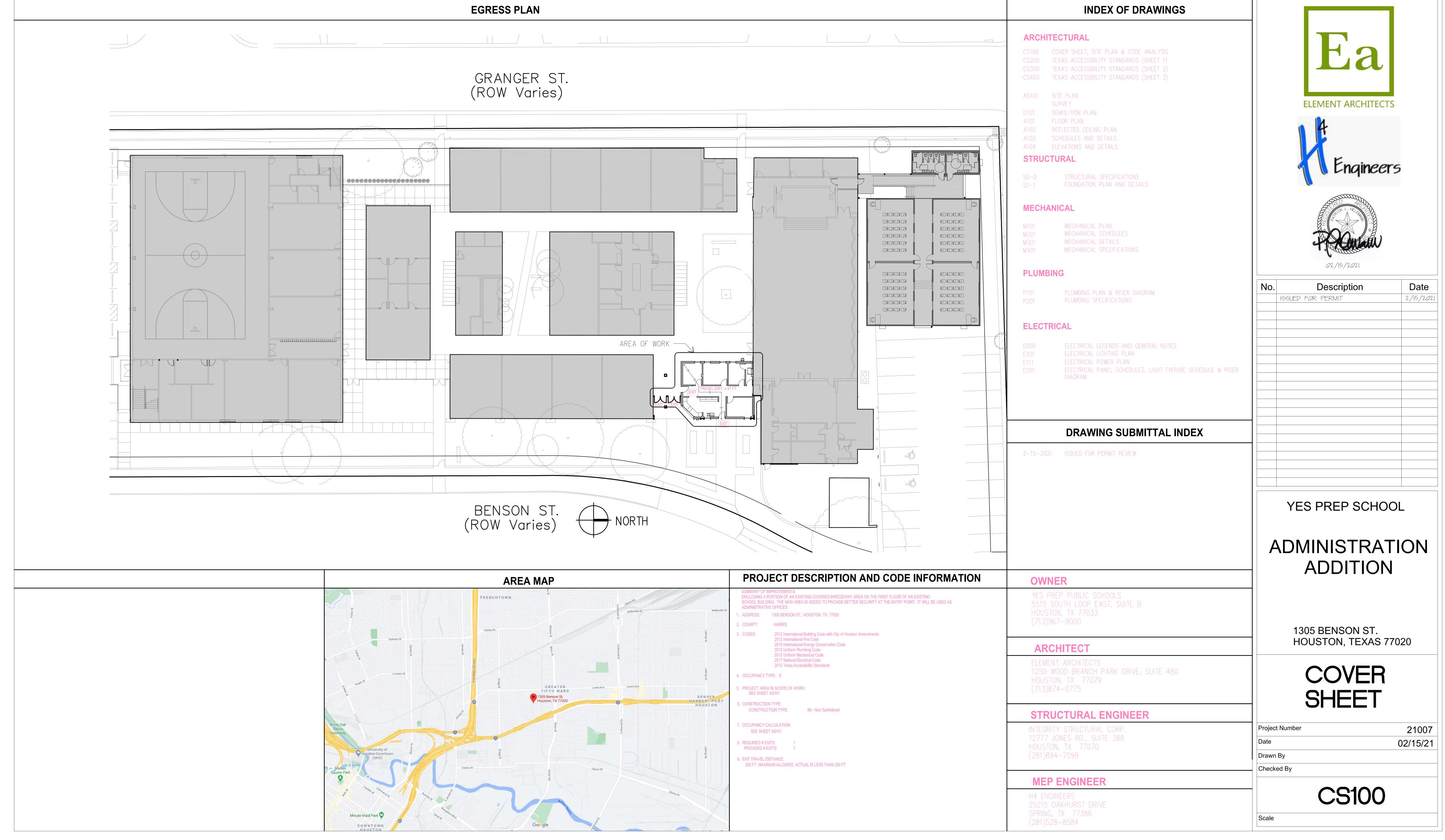
- a. Favorable = 30 Points. Unfavorable = 0 points.
- b. Proposal addresses the project in terms of the scope of work and substantive issues essential to proper service and care of YES facilities. Proposal includes a detailed description of services to be provided and any constraints as to procedure, time, personnel, or equipment that needs to be communicated to YES for use during contract negotiations.

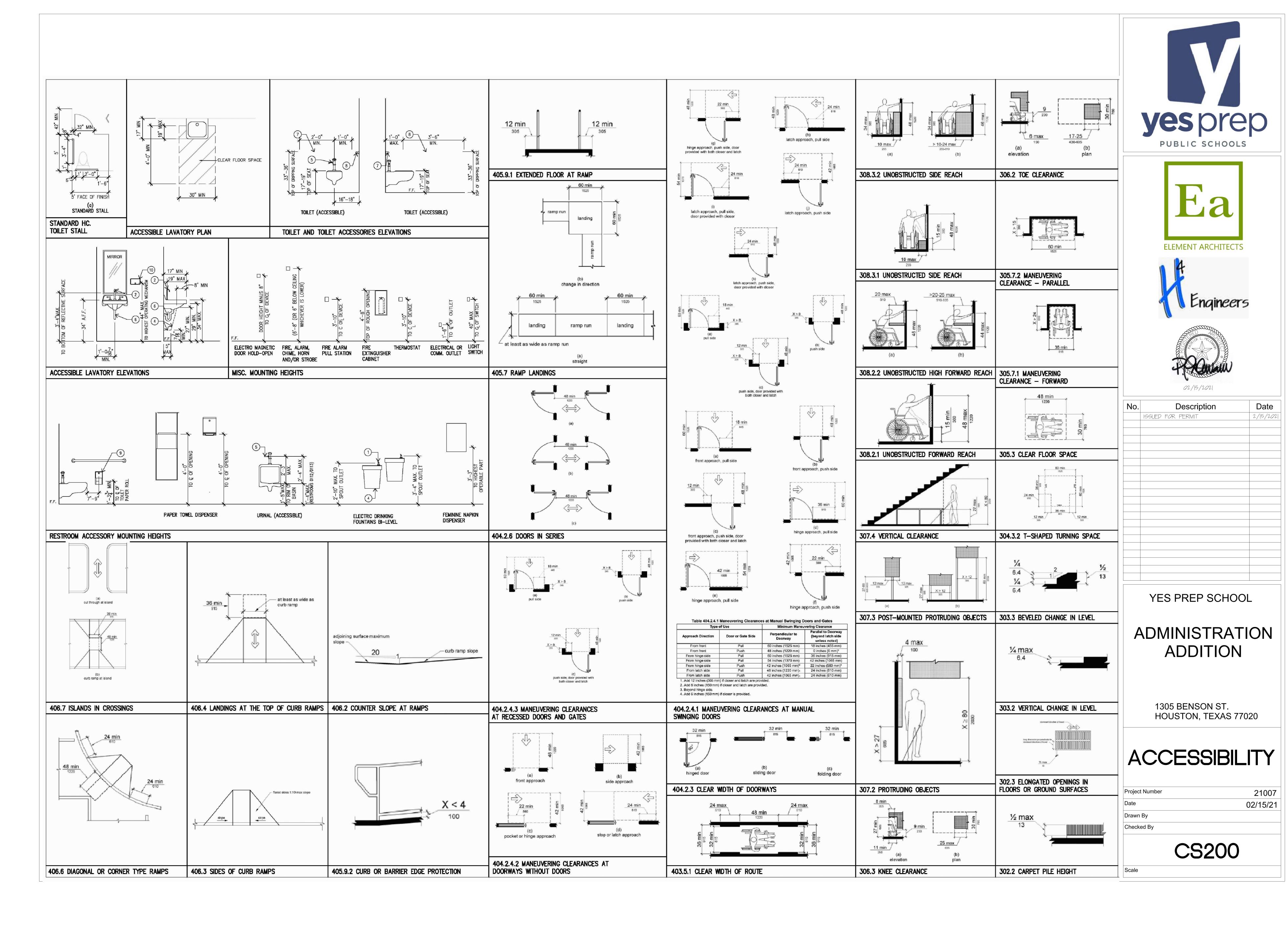
# **END OF YES RFP PACKAGE FOR Fifth Ward Safety & Security Vestibule**

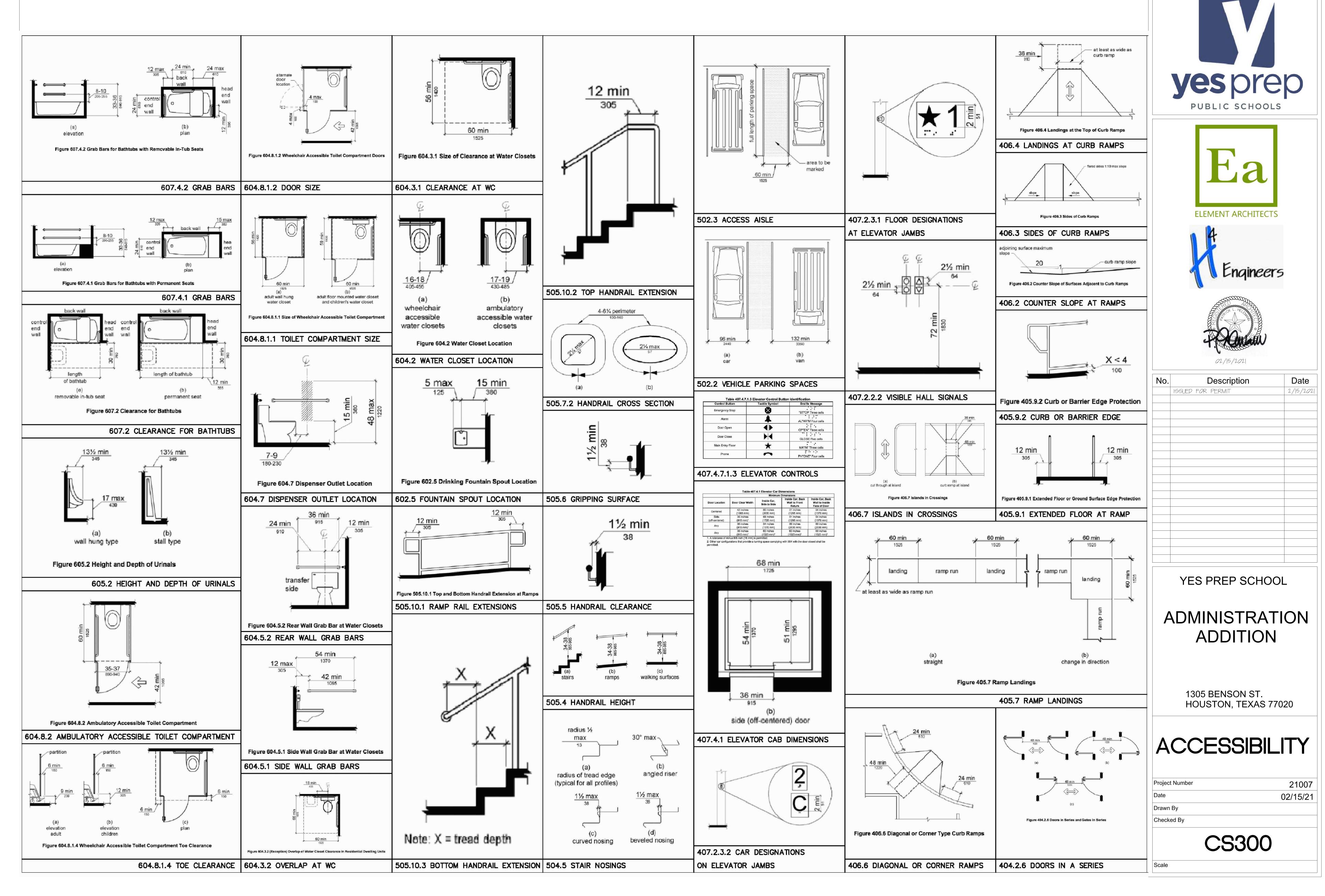
# YES PREP PUBLIC SCHOOLS ADMINISTRATION ADDITION

1305 BENSON STREET - HOUSTON, T X 77020

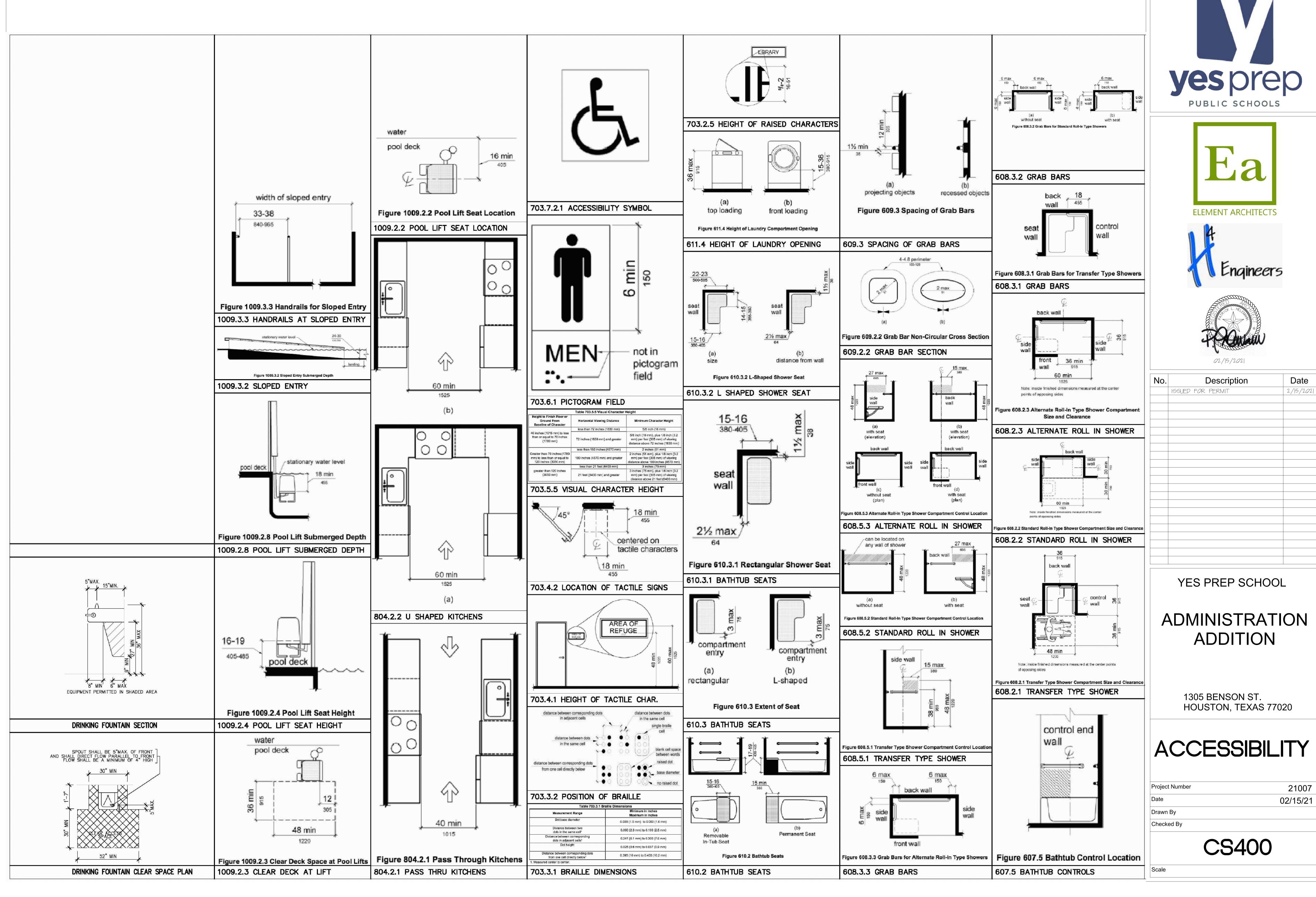


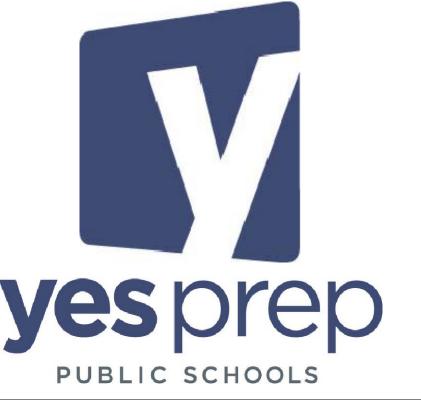












# CODE ANALYSIS OF EXISTING CAMPUS (ADJACENT TO MODULARS):

OCCUPANCY TYPE: E - EDUCATION

CONSTRUCTION TYPE: II-B HEIGHT: 2 STORY NON - SPRINKLERED

TABLE 503: ALLOWABLE AREA (PER FLOOR): 14,500 S.F + 10,875 S.F. (AREA FRONTAGE INCREASE) = 25,375 S.F./FLOOR (SEC. 506.2)  $I_f = \text{AREA INCREASE DUE TO FRONTAGE}$   $I_f = 100 \left[ \frac{F}{P} - 0.25 \right] \frac{W}{30}$   $I_f = 100 \left[ \frac{809'}{809'} - 0.25 \right] \frac{30}{30} = 75\% = 10,875 \text{ S.F.}$ ACTUAL AREA: 1ST LEVEL 22,833 S.F. 2ND LEVEL 16,608 S.F.

# MANUAL FIRE ALARM SYSTEM COMPLYING WITH SECTION 907.2.3

CODE ANALYSIS OF EXISTING MODULARS

TOTAL BLDG. 39,441 S.F.

OCCUPANCY TYPE:
E - EDUCATION

CONSTRUCTION TYPE: V-B
HEIGHT: 1 STORY
NON - SPRINKLERED

TABLE 503:
ALLOWABLE AREA (PER FLOOR): 9,500 SF
ACTUAL AREA:

1,536SF CLASSROOM MODULAR
1,536SF CLASSROOM MODULAR
438SF RESTROOM MODULAR
1,244SF CANOPY STRUCTURE

4,754 SF TOTAL (ALL TOGETHER)

# CODE ANALYSIS OF ADMINISTRATION ADDITION (THIS PERMIT):

OCCUPANCY TYPE:
E - EDUCATION

CONSTRUCTION TYPE: II-B
HEIGHT: 2 STORY
NON - SPRINKLERED

ADDITION AREA: 1,079 SQ. FT. AT FIRST FLOOR

ALLOWABLE AREA: 25,375 S.F. / FLOOR

ACTUAL AREA: 1ST LEVEL

1ST LEVEL 22,833 S.F (EXISTING) + 1,079 (NEW) = 23,912 S.F.
2ND LEVEL 16,608 S.F.

TOTAL BLDG. 40,520 S.F.

\* SCOPE OF WORK ENCLOSES EXISTING COVERED BREEZEWAY AREA

\* OCCUPANCY NOT INCREASED AS SCOPE OF WORK DOES NOT INCREASE STUDENT OCCUPANTS

\* MANUAL FIRE ALARM SYSTEM COMPLYING WITH SECTION 907.2.3

### PARKING REQUIREMENTS:

REQUIRED PARKING:

880 TOTAL OCCUPANTS

308 HIGH SCHOOL OCCUPANTS @ 1 SPACE / 3 STUDENTS = 103 SPACES

572 MIDDLE SCHOOL STUDENTS @ 1 SPACE / 7 STUDENTS = 82 SPACES

TOTAL SPACES REQUIRED: 185 SPACES

PROVIDED PARKING::

171 EXISTING PARKING SPACES

INCLUDING 8 ACCESSIBLE PARKING SPACES

4 BIKE RACK SPACES FOR REMAINING 14 PARKING SPACES AT 4 BIKE SPACES

PER 1 PARKING SPACE = 14 X 4 = 56 BIKE RACKS (UP TO 10% ALLOWED)

TOTAL SPACES PROVIDED: 185 SPACES

# yesprep Public schools







No.	Description	Date
	ISSUED FOR PERMIT	2/15/2

YES PREP SCHOOL

# ADMINISTRATION ADDITION

1305 BENSON ST. HOUSTON, TEXAS 77020

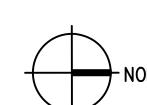
# SITE PLAN

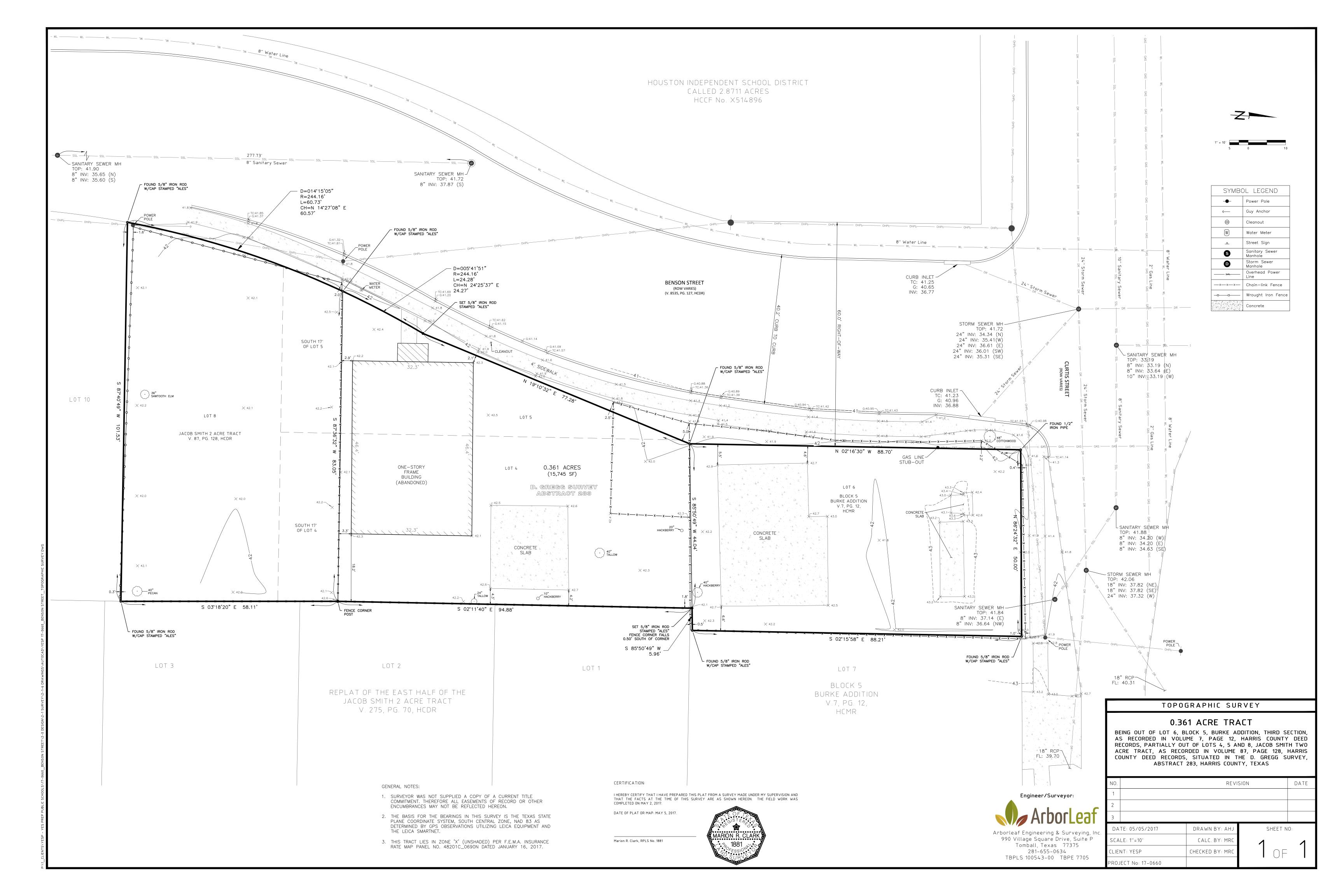
Project Number	21007
Date	02/15/21
Drawn By	
Checked By	

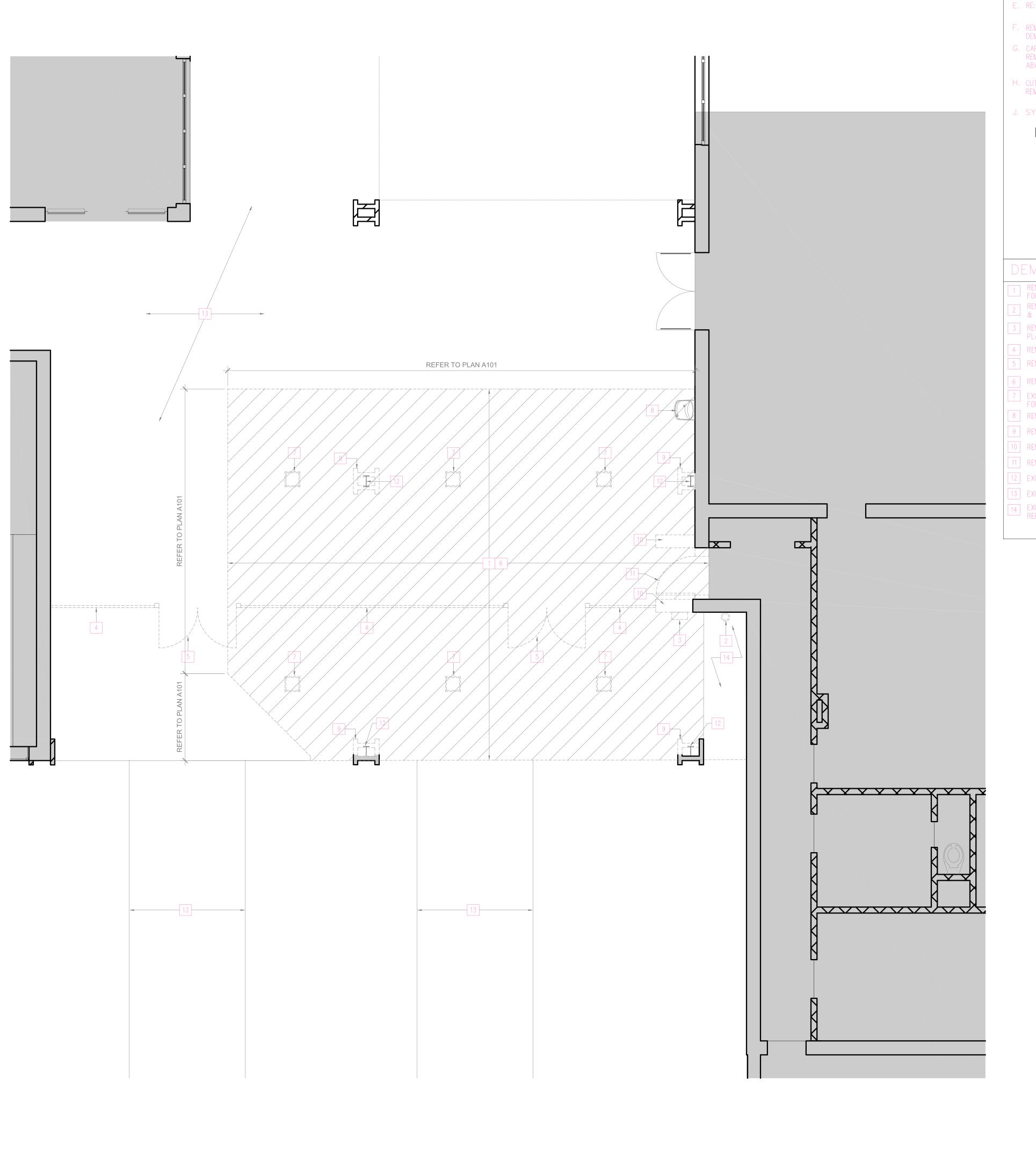
**AS101** 

ARCHITECTURAL SITE PLAN SCALE: 1" = 30'-0"

	*				
		GRANGER ST. (ROW Varies)	PROPERTY LINE –	10FT. BUILDING SETBACK LINE	FT. BUILDING TBACK LINE
		N02°16'22"W 690.56'			
EXSTING PARKING (NO CHANGES)	EXISTING CAMPUS (NO PROPOSED WORK)	EXISTING CAMPUS (NO PROPOSED WORK)  AREA OF WORK  S02°15′22″W 440.71′  BENSON ST. (ROW Varies)  EXISTING BIKE IS (56 SPACES)	RACKS	S WORK)  EXISTING PARKING (NO CHANGES)	RTIS ST.
		S87°40°49"W 101.53"	S02°11'40"E 94.88' \$85°50'49"W 5.96'	N02°16'30"W 88.70'	60.00' R.O.W.







GENERAL DEMOLITION NOTES

- CONTRACTOR SHALL VERIFY ALL CONDITIONS AT THE SITE AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES ON THE DRAWINGS.
- B. ALL EXISTING TO REMAIN FLOOR AND WALL FINISHES ARE TO BE
- C. ALL EXISTING WALLS AFFECTED BY NEW WORK ARE TO BE PATCHED, MADE FLUSH WITH SIMILAR MATERIALS AND MAKE READY FOR NEW
- FINISHES.

  D. PEFER TO MECHANICAL HIVAC ELECTRICAL DILIMBING DRAWINGS

FOR REMOVAL OR MODIFICATIONS TO RESPECTIVE TRADE WORK.

- F RE- MEP PLANS FOR ADDITIONAL DEMOLITION REQUIREMENTS
- DEMOLISHED WALL AND CONCRETE SLAB.

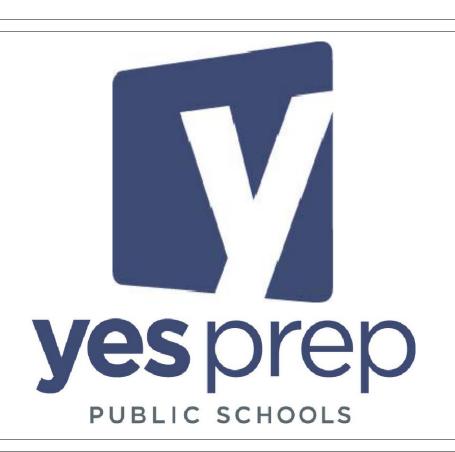
  G. CAP ALL WIRES, CONDUIT AND PIPING ASSOCIATED WITH ANY
- H. CUT POWER SUPPLY BEFORE START ANY WORK IN LINES TO BE REMOVED, DEMOLISHED OR ABANDON IN PLACE.
- SYMBOLS:

EXISTING WALL TO REMAIN

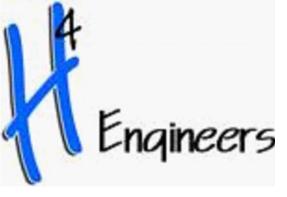
EXISTING WALL TO BE REMOVED

- REMOVE EXISTING PAVING (HATCHED AREA) AND PREP. FOR FOR NEW
- FOUNDATION, RE: STRUCTURAL DWGS.

  REMOVE EXISTING COLLAPSED DOWNSPOUT CONNECTION TO STORM SEWE
- REMOVE EXISTING COLLAPSED DOWNSPOUT CONNECTION TO STORM SEWER & REPLACE W/ NEW.
- REMOVE EXISTING KNOX BOX & PRESERVE FOR RE-USE RE: FLOOR PLAN FOR NEW LOCATION
- 4 REMOVE EXISTING STL. TUBE FENCE
- 5 REMOVE EXISTING DOORS & STL. TUBE FRAMES AND RETAIN FOR RE-USE.
- 6 REMOVE EXISTING PLASTER CEILING IN HATCHED AREA
- 8 REMOVE EXISTING DRINKING FOUNTAIN & RETAIN FOR RE-USE
- 9 REMOVE A PORTION OF BRICK COLUMN SURROUND (NON-SHADED AREA)
- 10 REMOVE A PORTION OF EXISTING BRICK WALL (NON-SHADED AREA)
- Principle comme book, from a firman
- 13 EXISTING SIDEWALK TO REMAIN
- EXISTING SIDEWALK REPLACE OR REPAIR AS NEEDED TO REPAIR COLLAPSED STORM DRAIN CONNECTION









No.	Description	Date
	ISSUED FOR REVIEW	2/15/2021

YES PREP SCHOOL

# ADMINISTRATION ADDITION

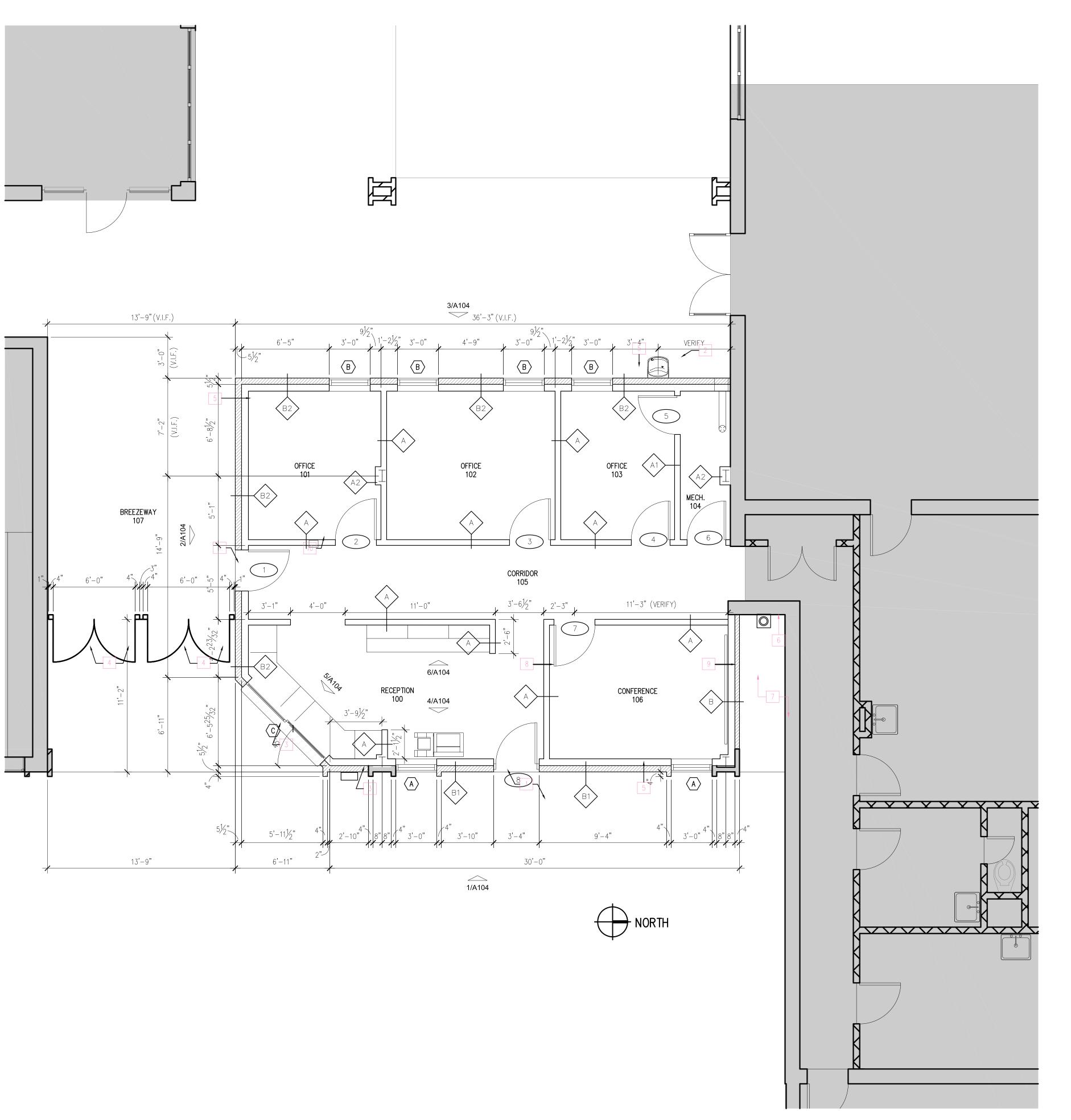
1305 BENSON ST. HOUSTON, TEXAS 77020

# D101

2100
02/15/2

DEMOLITION PLAN

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



### GENERAL NOTES

CONTRACTOR TO REVIEW DRAWINGS AND REPORT ANY DISCREPANCIES TO . PROVIDE HOT & COLD WATER TO ALL SINKS & LAVATORIES. CONTRACTORS TO VISIT SITE & VERIFY EXISTING CONDITIONS PRIOR TO

. COMPUTER CABLING, & TELEPHONE SYSTEMS SHALL BE PROVIDED & "J" BOXES, & PULL STRINGS WHERE REQUIRED & DIRECTED BY THE OWNER.

. ALL INTERIOR DOOR HINGE SIDE JAMBS SHALL BE 3" FROM EDGE OF WALL (IF NEW DOOR OPENING)

9. USE 5/8" TYPE "X" GYPSUM BOARD ON ALL PARTITIONS. O. INSTALL FIRE RATED BLOCKING AS REQUIRED FOR MOUNTING OF WALL 1. VERIFY ANY EQUIPMENT ROUGH-INS AND MOUNTING REQUIREMENTS WITH

PUBLIC USE AREAS SHALL COMPLY WITH ADA AND TAS (AMERICANS A. CLEAR DOOR OPENING WIDTH SHALL BE 2'-8" (USE 3'-0"

B. USE COMMERCIAL GRADE HARDWARE WITH LEVER-TYPE HANDLE AT

E. DOOR SIGNAGE SHALL COMPLY WITH ADA SECTION 4.3.

14. INSULATION IN BUILDING SHALL HAVE A FLAME SPREAD NOT MORE THAN 25 AND A SMOKE DEVELOPMENT RATING NOT MORE THAN 450.

1 PROVIDE A NEW LEVEL CONCRETE TRANSITION AT DOOR TO THE OUTSIDE WITH A MAX. SLOPE OF 2% IN ANY DIRECTION

3 RELOCATED KNOX BOX

RELOCATED DOORS AND STEEL TUBE FRAMES, RE-CONNECT EXISTING

5 NEW BRICK TO MATCH EXISTING BRICK

6 REPLACE DAMAGED DOWNSPOUT CONNECTION TO STORM DRAIN

REPLACE DISTURBED CONCRETE SIDEWALK (IF REQUIRED) TO REPAIR

8 PAINT THIS WALL WITH AN ACCENT COLOR

9 8FT.WIDE x 4FT. HT. MARKER BOARD, INSTALL BOTTOM AT 36"A.F.F.,

1/A104 INTERIOR ELEVATION MARK - RE: SHEET A104

7//////// NEW BRICK, MATCH EXISTING BRICK









No.	Description	Date
	ISSUED FOR PERMIT	2/15/2021
,		
	1	

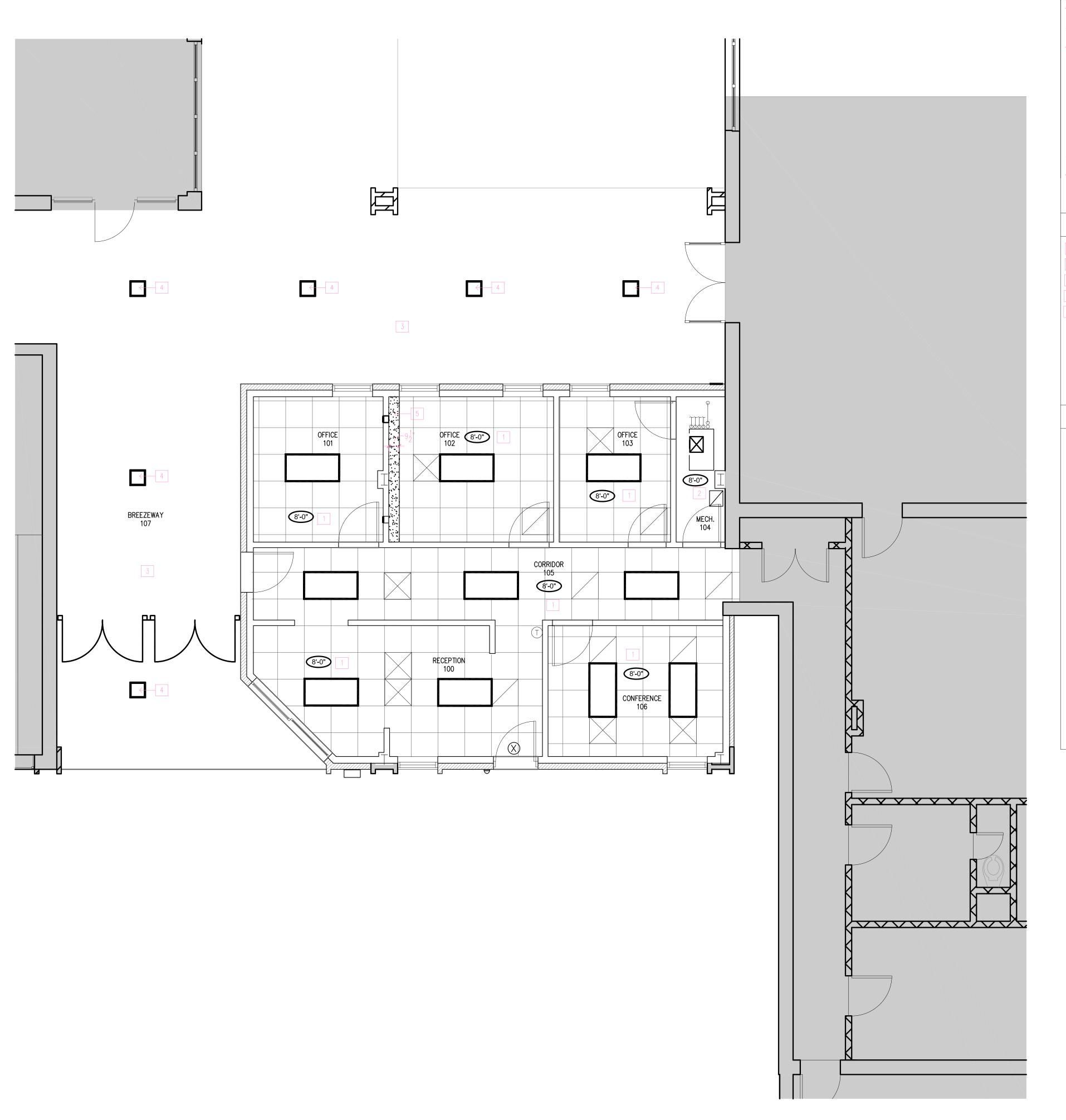
YES PREP SCHOOL

# ADMINISTRATION **ADDITION**

1305 BENSON ST. HOUSTON, TEXAS 77020

# NEW FLOOR PLAN

	A101	
Checked By		
Drawn By		
Date		02/15/2
Project Number		21007



### **GENERAL NOTES**

- THE ARCHITECT PRIOR TO INSTALLATION.

  2. PROVIDE HOT & COLD WATER TO ALL SINKS & LAVATORIES.

  3. ALL DIMENSIONS ARE TO WALL FINISH UNLESS NOTED OTHERWISE.

  DASH—DOT DIMENSION LINES INDICATE A DIMENSION TO CENTERLINE.

  4. CONTRACTORS TO VISIT SITE & VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTIO N.
- ON SHEET ATOS

  COMPUTER CABLING, & TELEPHONE SYSTEMS SHALL BE PROVIDED & INSTALLED BY THE OWNER. GENERAL CONTRACTOR SHALL PROVIDE POWER, "J" BOXES, & PULL STRINGS WHERE REQUIRED & DIRECTED BY THE OWNER. PROVIDE CONDUIT IN INSULATED WALLS.
- N/A
  LINTERIOR DOOR HINGE SIDE JAMBS SHALL BE 3" FROM EDGE OF WALL
  (IF NEW DOOR OPENING)
- USE 5/8" TYPE "X" GYPSUM BOARD ON ALL PARTITIONS.
   INSTALL FIRE RATED BLOCKING AS REQUIRED FOR MOUNTING OF WALL EQUIPMENT AND ACCESSORIES.
   VERIFY ANY EQUIPMENT ROUGH—INS AND MOUNTING REQUIREMENTS WITH SUPPLIER.
   PUBLIC USE AREAS SHALL COMPLY WITH ADA AND TAS (AMERICANS

WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARDS.):

- A. CLEAR DOOR OPENING WIDTH SHALL BE 2'-8" (USE 3'-0" DOOR)
  B. USE COMMERCIAL GRADE HARDWARE WITH LEVER-TYPE HANDLE AT 36" A.F.F. (VERIFY WITH EXISTING)
  C. DOOR OPENING FORCE SHALL NOT EXCEED 5 POUNDS.
  D. THRESHOLDS SHALL NOT EXCEED 1/2" IN HEIGHTS, UNLESS NOTED OTHERWISE
  E. DOOR SIGNAGE SHALL COMPLY WITH ADA SECTION 4.3.
- 13. GLAZING IN HAZARDOUS LOCATIONS SHALL COMPLY WITH SECTION 2406.
  14. INSULATION IN BUILDING SHALL HAVE A FLAME SPREAD NOT MORE THAN 25 AND A SMOKE DEVELOPMENT RATING NOT MORE THAN 450.

# KEY NOTES

- 1 NEW 2'X2' LAY-IN CELING TILES
- 2 NEW § GYP. BD. CEILING
- 4 EXISTING LIGHT FIXTURE
- 5 | PAINTED GYP. BD. FURRDOWN @ 7'-0" A.

### LEGEND



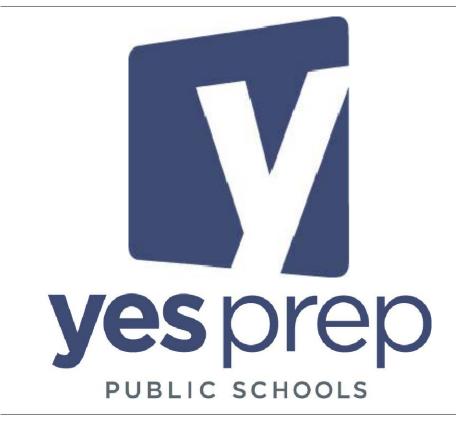


NEW 2' X 4' LAY-IN LED FIXTURE

XX

SUPPLY AIR GRILL, RE:

RETURN AIR GRILL MECH









	01/15/101	
Vo.	Description	Date
	ISSUED FOR PERMIT	2/15/2021

YES PREP SCHOOL

# ADMINISTRATION ADDITION

1305 BENSON ST. HOUSTON, TEXAS 77020

# REFLECTED CEILING PLAN

Project Number 21007

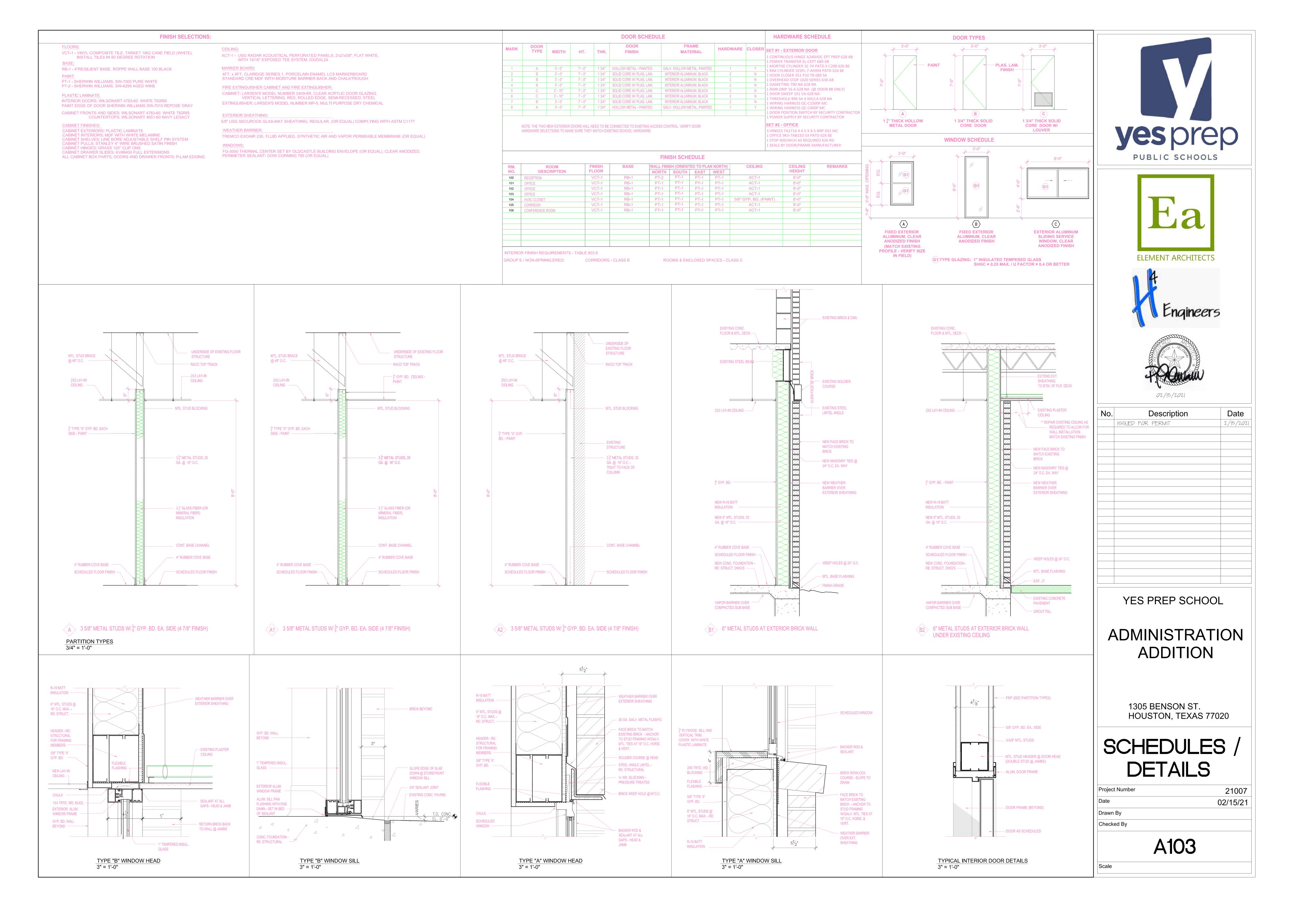
Date 02/15/21

Drawn By

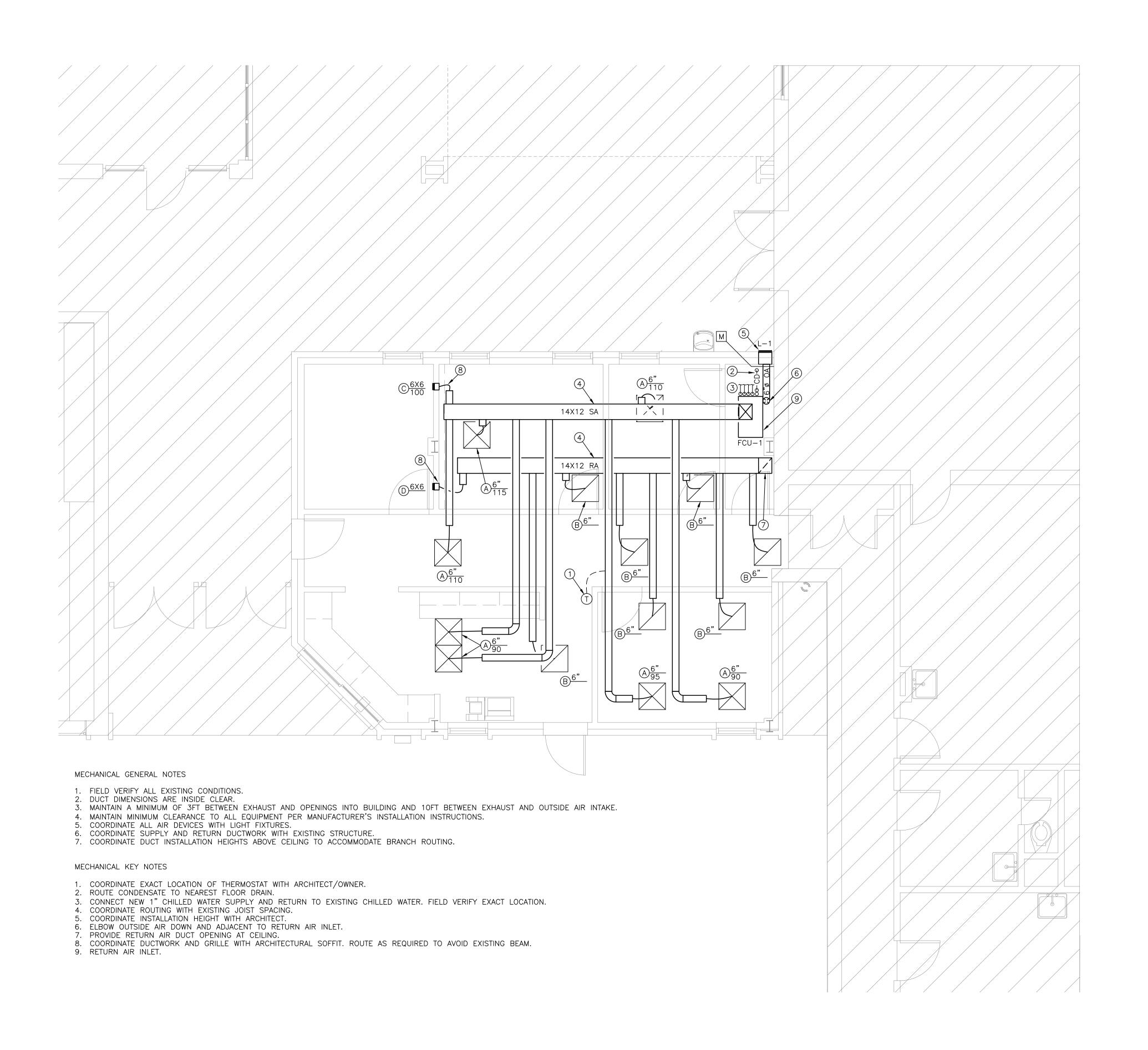
Checked By

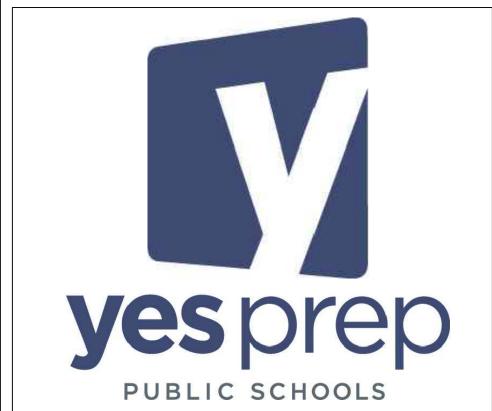
A102

REFLECTED CEILING PLAN SCALE: 1/4" = 1'-0" 1











No.	Description	Date
	Issue for Permit	02.15

YES PREP SCHOOL

# SECURITY VESTIBULE ADDITION

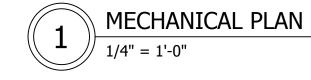
1305 BENSON ST. HOUSTON, TEXAS 77020

# **MECHANICAL PLAN**

Project Number	21007
Date	01/22/21
Drawn By	MGG
Checked By	SEH

M101

ale





SYSTEM	DUCT/PIPING MATERIAL	BASIS OF DESIGN INSULATION MATERIAL
CONDENSATE DRAINS	TYPE "L" HARD DRAWN COPPER	AP ARMAFLEX (25/50 RATED), 3/4" THICKNESS MINIMUM, THICKER IF REQUIRED PREVENT CONDENSATION AT 85°F AND 70% RELATIVE HUMIDITY
SUPPLY & RETURN DUCT (RECTANGULAR)	GALVANIZED SHEET METAL LINER	JOHNS MANVILLE PERMACOTE LINACOUSTIC OR EQUAL, 1-1/2 LB/CU FT, NFPA 25, FLAME SPREAD AND SMOKE DEVELOPED RATING. MINIMUM INSTALLED R-6 INSIDE AR-8 OUTSIDE BUILDING ENVELOPE.
SUPPLY & RETURN DUCT (SPIRAL/ROUND)	SPIRAL/ROUND DUCT LINER INSULATION	CERTAINTEED TOUGHGUARD ULTRA*ROUND SPIRAL DUCT LINER, NFPA 25/50 FLAM SPREAD AND SMOKE DEVELOPED RATING. MINIMUM INSTALLED R-6 INSIDE AND R-OUTSIDE BUILDING ENVELOPE.
FLEXIBLE SUPPLY DUCT	UL 181, CLASS 1, INTERLOCKING SPIRAL OF ALUMINUM FOIL	THERMAFLEX M-KE, FIBERGLASS INSULATION, FIBERGLASS REINFORCED VAPOR-BARRIER FILM. MINIMUM INSTALLED R-6 INSIDE AND R-8 OUTSIDE BUILDII ENVELOPE.
SUPPLY, RETURN & OUTSIDE AIR DUCT	GALVANIZED SHEET METAL DUCT WRAP	1-1/2 LB/CU FT DENSITY FIBERGLASS FOIL-BACK, FLAME SPREAD RATING 25 OLESS, SMOKE DEVELOPED RATING 50 OR LESS. MINIMUM INSTALLED R-6 INSIDE AR-8 OUTSIDE BUILDING ENVELOPE.
CHILLED WATER SUPPLY & RETURN	SCHEDULE 40 BLACK STEEL	PHENOLIC FOAM INSULATION, 2" THICK

DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESS										
	RECTANGULAR DUCTS									
MAXIMUM SIZE (INCHES)	MAXIMUM SIZE (INCHES)  STEEL (MINIMUM THICKNESS, NORMAL)									
THROUGH 12	0.022 INCH (26 GAGE, GALV.)									
13 THROUGH 30		0.028 INCH (24 GAGE, GALV.)								
31 THROUGH 54		0.034 INCH (22 GAGE, GALV.)								
	ROUND	DUCTS								
MAYIMLIM SIZE (INICLIES)	SPIRAL SEAM DUCT	LONGITUDINAL SEAM DUCT	FITTINGS							
MAXIMUM SIZE (INCHES)	STEEL (MINIMUM THICKNESS, NORMAL)	STEEL (MINIMUM THICKNESS, NORMAL)	STEEL (MINIMUM THICKNESS, NORMAI							
THROUGH 12	0.019 INCH (28 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)							
13 THROUGH 18	0.022 INCH (26 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)							
19 THROUGH 28	0.028 INCH (24 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)							

GRILLE — REGISTER — DIFFUSER SCHEDULE									
NO.	SIZE	TYPE	BASIS OF DESIGN MANUFACTURER AND MODEL	FINISH	DESCRIPTION	NOTES			
Α	24X24	CEILING SUPPLY	TITUS OMNI	WHITE	PLAQUE FACE, NECK SIZE PER PLANS, SQ TO RND TRANSITION, STEEL CONSTRUCTION	1,3			
В	24X24	CEILING RETURN	TITUS PAR	WHITE	PERFORATED FACE RETURN, NECK SIZE PER PLANS, ALUMINUM CONSTRUCTION	1,3			
С	PER PLAN	SIDEWALL SUPPLY	TITUS 300FL	WHITE	35 DEGREE DEFLECTION, 3/4" SPACING, OPPOSED BLADE DAMPER, ALUMINUM CONSTRUCTION	2,3			
D	PER PLAN	SIDEWALL RETURN	TITUS 350FL	WHITE	35 DEGREE DEFLECTION, 3/4" SPACING, OPPOSED BLADE DAMPER, ALUMINUM CONSTRUCTION	2,3			

1. COORDINATE MOUNTING FRAME WITH CEILING TYPE.

DUCT MOUNTED. 3. PROVIDE MODEL SPECIFIED OR APPROVED EQUAL (KRUEGER, METAL-AIRE, PRICE).

	Occupancy	Aroo	People Outdoor Air Rate	Zone Population*	Area Outdoor Air Rate	Zone Area	Breathing Zone Outdoor Air Flow	Zone Air Distribution Effectiveness	Zone Outdoor Air Flow	Outdoor Air Intake Flow	Broyidad
Zone	Occupancy Category	Area (sf)	Rp (cfm/ppl)	Population* Pz (ppl)	Ra (cfm/ft2)	Az	Vbz = RpPz+RaAz		Voz = Vbz/Ez		(cfm)
Reception	Reception Area	155	5	2	0.06	155	19	1	19	101	1
Conference	Conference	161	5	4	0.06	161	30	1	30		
Corridor	Corridor	244	0	0	0.06	244	15	1	15		
Office 101	Office Space	109	5	1	0.06	109	12	1	12		
Office 102	Office Space	136	5	1	0.06	136	13	1	13		
011100 102					0.06	136	13	4	13	1	

	FAN COIL UNIT SCHEDULE													
EQUIPMEN NO.	SERVICE	SUPPLY CFM	OUTSIDE AIR CFM	FAN MOTOR HP	FAN MOTOR ESP	ELECTRICAL V/ø/Hz	COOLING COIL MBH (TH/SH)	COOLING COIL EAT (DB/WB)	COOLING COIL LAT	GPM	HEAT (KW)	BASIS OF DESIGN MANUFACTURER AND MODEL	WEIGHT (LBS)	NOTES
FCU-1	OFFICE	800	90	0.5	0.75	208/3/60	30/19	78/64	57	6.4	8	CARRIER 42DVA108RNNNDLWMKG	300	ALL

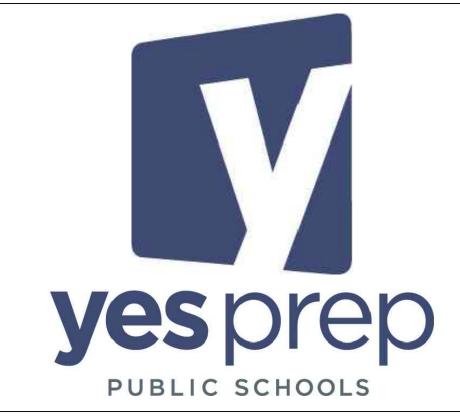
# PROVIDE MERV 8 FILTERS. 2. PROVIDE MODEL SPECIFIED OR APPROVED EQUAL (TRANE, JOHNSON CONTROLS). 3. PROVIDE MANUFACTURER-APPROVED FLOAT SWITCH IN PRIMARY DRAIN PAN TO DE-ENERGIZE UNIT TO PREVENT OVERFLOW.

4. CONNECT THERMOSTAT TO EXISTING BAS. 5. 44 EWT/53 LWT.

6. MINIMUM 8 ROW COIL.

7. PROVIDE MANUFACTURER-APPROVED DISCONNECT SWITCH FOR FAN COIL UNIT AND ACCESSORY HEAT.

8. MOTORIZED OUTSIDE AIR DAMPER INTERLOCKED WITH FAN.





No.	Description	Date
	Issue for Permit	02.15.2

YES PREP SCHOOL

# SECURITY **VESTIBULE ADDITION**

1305 BENSON ST. HOUSTON, TEXAS 77020

# **MECHANICAL SCHEDULES**

	Project Number	21007
	Date	01/22/21
	Drawn By	MGG
	Checked By	SEH

M201

Scale

	LOUVER SCHEDULE								
EQUIPMENT NO.	CFM	MIN FREE AREA SQ FT	BASIS OF DESIGN MANUFACTURER AND MODEL	NOTES					
L-1	90	0.18	RUSKIN ELF375DX 12X12	ALL					

1. PROVIDE MODEL SPECIFIED OR APPROVED EQUAL (GREENHECK, NAILOR).

# 2. PROVIDE BIRD SCREEN.

# ENERGY CODE COMPLIANCE REQUIREMENTS

COMMISSIONING PLAN

A. AIR SYSTEM BALANCE 1. ADJUST ALL AIR SYSTEM DAMPERS AND VOLUME CONTROLLERS TO OBTAIN PROPER AIR BALANCE THROUGHOUT THE CONDITIONED AREA. THE AIR QUANTITIES SHOWN ON THE DRAWINGS FOR INDIVIDUAL OUTLETS MAY BE CHANGED TO OBTAIN UNIFORM TEMPERATURE WITHIN EACH ZONE AND SHALL BE WITHIN +/- 10% OF SCHEDULED VALUES AND THE TOTAL AIR QUANTITY SHOWN FOR EACH ZONE MUST BE OBTAINED WITHIN +/- 10%. MAXIMUM TEMPERATURE VARIATION WITHIN A ZONE SHALL BE 2°F.

EXHAUST AND OUTSIDE AIR SUPPLY. 3. CALIBRATE, SET, AND ADJUST ALL AUTOMATIC TEMPERATURE CONTROLS.

2. ADJUST ALL BLOWER DRIVES TO OBTAIN PROPER TOTAL AMOUNTS OF AIR, INCLUDING

4. PROVIDE A WRITTEN REPORT TO THE OWNER IN ACCORDANCE WITH AABC, NEBB, OR ASHRAE 111.

B. FUNCTIONAL PERFORMANCE TESTING 1. EQUIPMENT FUNCTIONAL PERFORMANCE TESTING SHALL DEMONSTRATE THE INSTALLATION AND OPERATION OF COMPONENTS, SYSTEMS, AND SYSTEM-TO-SYSTEM INTERFACING RELATIONSHIPS IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS SUCH THAT OPERATION, FUNCTION, AND MAINTENANCE SERVICEABILITY FOR EACH OF THE COMMISSIONED SYSTEMS IS CONFIRMED. TESTING SHALL INCLUDE ALL MODES AND

SEQUENCE OF OPERATION, INCLUDING UNDER FULL-LOAD, PART-LOAD, AND THE FOLLOWING EMERGENCY CONDITIONS: a. ALL MODES AS DESCRIBED IN SEQUENCE OF OPERATION.

b. REDUNDANT OR AUTOMATIC BACK-UP MODE.

c. PERFORMANCE OF ALARMS. d. MODE OF OPERATION UPON A LOSS OF POWER AND RESTORATION OF POWER. e. EXCEPTION: UNITARY OR PACKAGED HVAC EQUIPMENT LISTED IN TABLES C403.2.3(1) THROUGH C403.2.3(3) THAT DO NOT REQUIRE SUPPLY AIR ECONOMIZERS.

C. CONTROLS 1. HVAC CONTROL SYSTEMS SHALL BE TESTED TO DOCUMENT THAT CONTROL DEVICES, COMPONENTS, EQUIPMENT, AND SYSTEMS ARE CALIBRATED AND ADJUSTED AND OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS. 2. SEQUENCES OF OPERATION SHALL BE FUNCTIONALLY TESTED TO DOCUMENT THEY

D. COMMISSIONING REPORT 1. MECHANICAL CONTRACTOR SHALL PROVIDE A REPORT OF THE ABOVE COMMISSIONING TEST PROCEDURES AND RESULTS AND PROVIDE TO GENERAL CONTRACTOR TO COMPILE WITH ELECTRICAL AND PLUMBING REPORTS. 2. REPORT SHALL IDENTIFY ANY DEFICIENCIES THAT HAVE NOT YET BEEN CORRECTED, DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION

OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

BECAUSE OF CLIMATIC CONDITIONS, AND CLIMATIC CONDITIONS REQUIRED FOR PERFORMANCE OF THE DEFERRED TESTS. 3. GENERAL CONTRACTOR SHALL PROVIDE COMPILED REPORT TO OWNER/REPRESENTATIVE.

DOCUMENTATION REQUIREMENTS

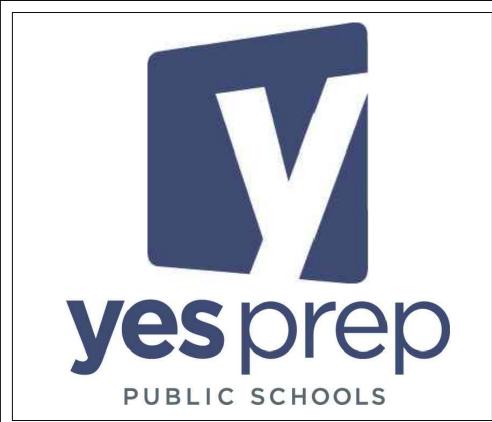
A. WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE THE FOLLOWING DOCUMENTS SHALL BE PROVIDED TO THE OWNER: 1. MANUALS: OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED AND INCLUDE THE FOLLOWING:

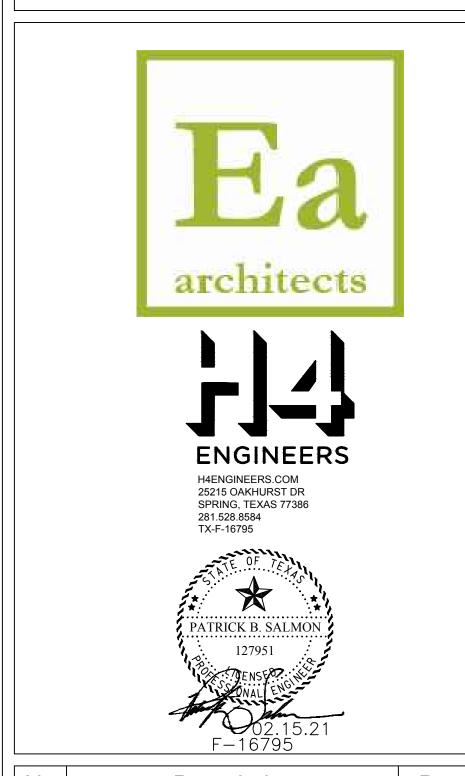
a. SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. b. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT

REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. c. NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY.

d. HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET-POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR FOR DIGITAL CONTROL SYSTEMS IN PROGRAMMING COMMENTS.

e. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET-POINTS.





No.	Description	Da
	Issue for Permit	02.1

YES PREP SCHOOL

# SECURITY VESTIBULE **ADDITION**

1305 BENSON ST. HOUSTON, TEXAS 77020

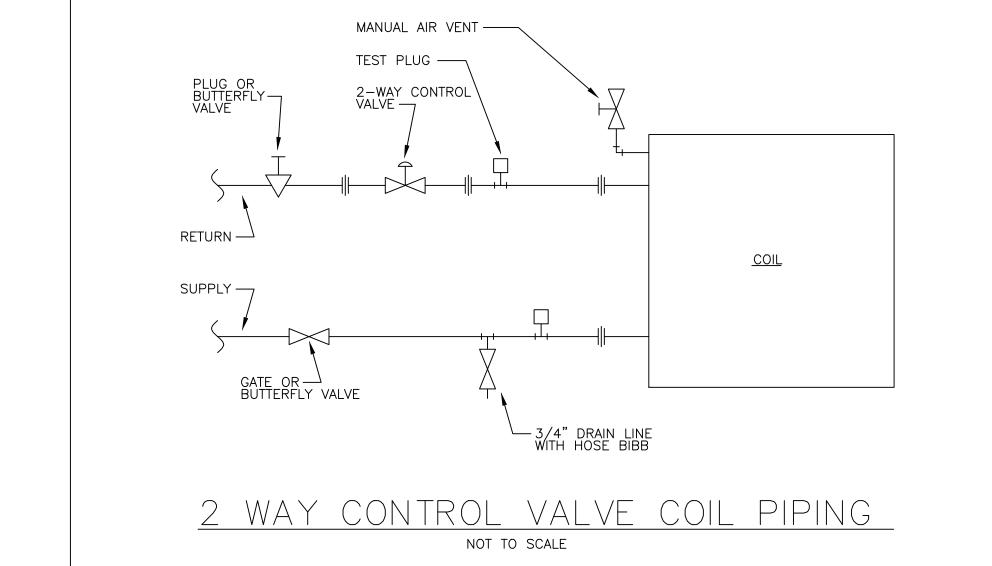
# **MECHANICAL DETAILS**

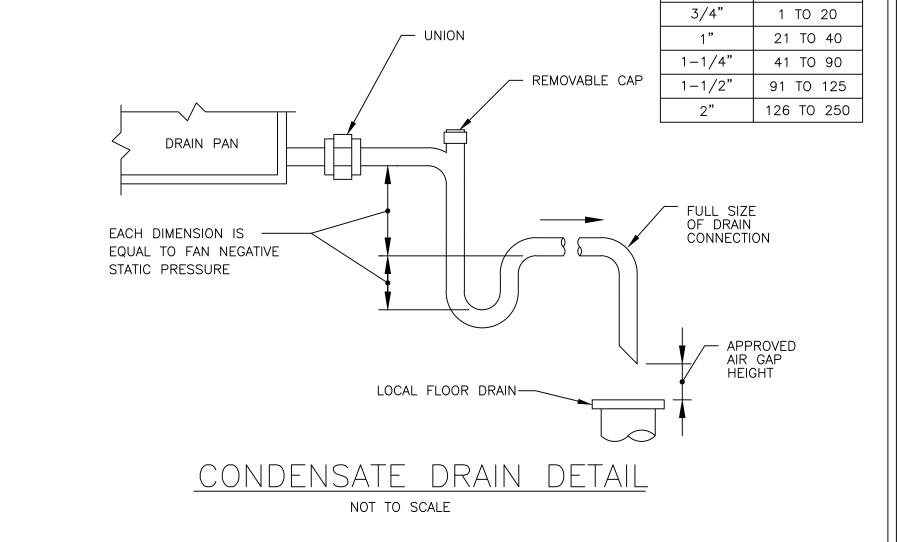
Project Number	21007
Date	01/22/21
Drawn By	MGG
Checked By	SEH

M301

Scale

LIANOED AND CHODOOT DETAILS FOR





BOTTOM CHORD OF STEEL JOIST

3/8" ALL THREAD SEE PROJECT DRAWINGS FOR NUMBER & SIZE

MULTIPLE DUCT RUNS ON TRAPEZE HANGERS

\_EXPANSION SHIELD \_ WASHER

DUCT-SEE PROJECT PLAN FOR SIZE

POWDER ACTUATED PIN(IF ALLOWED BY CODE)

- CONCRETE SLAB

→1" X 22 GA: → STRAPS

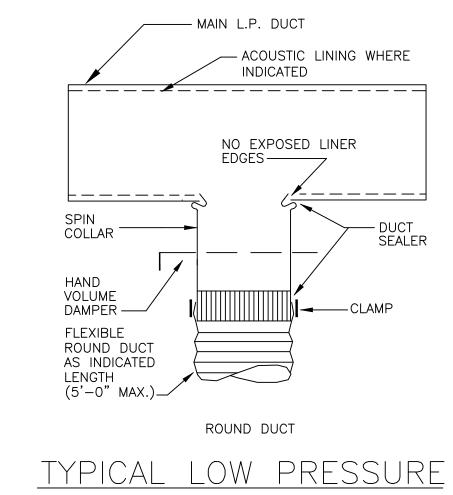
SINGLE RECTANGULAR DUCT

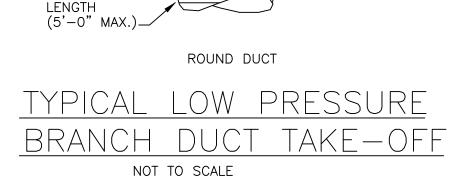
CONDENSATE PIPE SIZE TONS

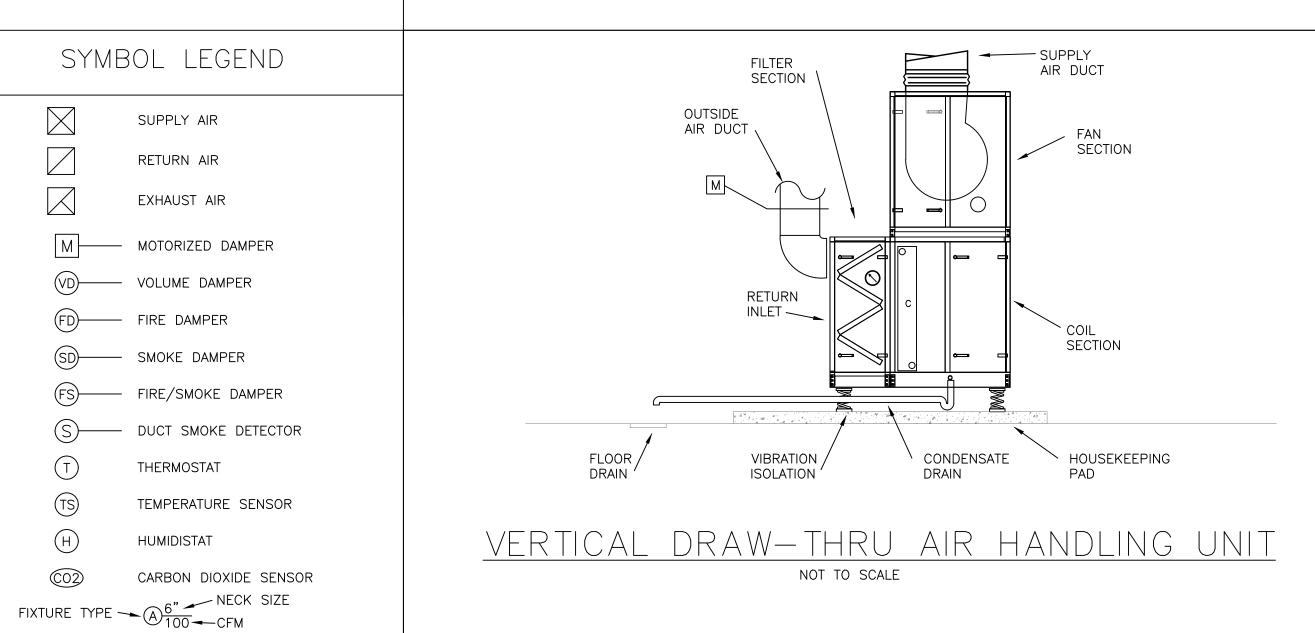
STEEL BEAM —

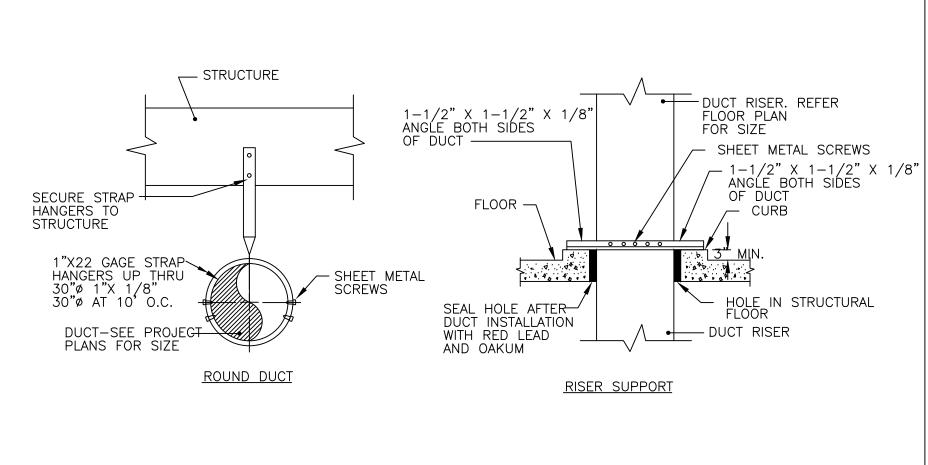
USE THIS METHOD WHENEVER DUCTS \_\_\_\_\_\_\_ CAN BE GROUPED TOGETHER 3/8" ALL THREAD

NOTE: DUCTS SHALL BE SUPPORTED AT NOT LESS THAN 10FT. O.C.









2"X2" X 3/16" ANGLE (WHERE LENGTH OF ANGLE EXCEEDS 6FT. USE INTERMEDIATE SUPPORT)

<u>hanger a</u>	<u>and Support</u>	<u>DETAI</u>	<u>LS FO</u>	<u>R</u>				
LOW PRESSUI	RE DUCTWORK	(UP	THRU	2"	WG)			
(VARIOUS METHODS OF ATTACHMENT)								
	NOT TO SCALE							

### DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING

### 230000 HVAC BASIC REQUIREMENTS

CONSERVATION CODE.

- A. MINIMUM STANDARDS FOR ALL WORK SHALL BE CITY OF HOUSTON AMENDMENTS TO 2012 INTERNATIONAL BUILDING CODE, 2012 UNIFORM MECHANICAL CODE, AND 2015 INTERNATIONAL ENERGY
- B. REFERENCES: THE STANDARDS MENTIONED HEREIN WILL BE REFERRED TO IN THE DESIGN OF MECHANICAL SYSTEMS. THE ENGINEER WILL SELECT APPROPRIATE SECTIONS OF THE STANDARD TO BE APPLIED IN ACCORDANCE WITH ESTABLISHED ENGINEERING PRINCIPLES AND PRACTICES.
- 1. APPLICABLE SECTIONS OF NFPA
  2. AMERICANS WITH DISABILITIES ACT (ADA)
- 3. TEXAS ACCESSIBILITY STANDARDS (TAS)
  C. SITE CONDITIONS: BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND DETERMINE ANY CONDITIONS THAT MAY AFFECT THE WORK. NO ALLOWANCE SHALL BE MADE FOR FAILURE TO MAKE SURE EXAMINATIONS.
- D. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
- SPECIFIED OR IMPLIED.

  E. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES INCLUDING ARCHITECT, STRUCTURAL, CIVIL, PLUMBING,
- AND ELECTRICAL.

  F. DO NOT SCALE FROM THE ENGINEERED DRAWINGS. REFER TO THE DIMENSIONED DRAWINGS OF THE ARCHITECT FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC.
- G. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED FOR THE INSTALLATION OF WORK AND PAY ALL INCIDENTAL CHARGES.
- H. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL TESTS NECESSARY TO PREVENT CONCEALMENT OF DEFECTIVE OR IMPROPER WORK. UPON COMPLETION OF WORK, TEST INSTALLATION THOROUGHLY AND RENDER IT FROM LEAKS OR IMPROPER
- CONNECTIONS.

  I. PROTECT EQUIPMENT AND WORK FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION. REMOVE ALL EXCESS DEBRIS AND CLEAN ALL EQUIPMENT UPON COMPLETION OF WORK. TOUCH UP WITH PAINT WHERE REQUIRED.

### 230513 COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT

A. PROVIDE HIGH EFFICIENCY MOTORS IN ACCORDANCE WITH INTERNATIONAL ENERGY CONSERVATION CODE.

### 230517 SLEEVES AND SLEEVE SEALS

- A. INSTALL SLEEVES FOR PIPING PASSING THROUGH PENETRATIONS IN FLOORS, PARTITIONS, ROOFS, AND WALLS.
   1. CAST—IRON PIPE SLEEVES: CAST OR FABRICATED OF CAST OR
- DUCTILE IRON AND EQUIVALENT TO DUCTILE—IRON PRESSURE PIPE, WITH PLAIN ENDS AND INTEGRAL WATERSTOP COLLAR.

  2. GALVANIZED—STEEL SHEET PIPE SLEEVES: 0.0239—INCH MINIMUM THICKNESS; ROUND TUBE CLOSED WITH WELDED LONGITUDINAL
- B. MAINTAIN INDICATED FIRE OR SMOKE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT PENETRATIONS. COORDINATE WITH ARCHITECTURAL. SEAL ALL HVAC AND PIPE PENETRATIONS WITH FIRE— AND SMOKE—STOP MATERIALS. COMPLY WITH REQUIREMENTS FOR FIRESTOPPING AND FILL MATERIALS SPECIFIED IN DIVISION 07 "PENETRATION AND FIRESTOPPING."

### 230548 VIBRATION ISOLATION

- A. VIBRATION ISOLATION WILL BE PROVIDED AS REQUIRED TO MINIMIZE TRANSMISSION TO STRUCTURE. EQUIPMENT AND PIPING SHALL HAVE ISOLATORS INSTALLED AT POINTS OF SUPPORT. APPROVED MANUFACTURERS: AMBER/BOOTH, MASON, KINETICS NOISE CONTROL, VIBRO—ACOUSTICS.
- B. INSTALLATION OF VIBRATION ISOLATORS MUST NOT CAUSE ANY CHANGE OF POSITION OF EQUIPMENT, PIPING, OR DUCTWORK RESULTING IN STRESSES OR MISALIGNMENT.
- C. INSTALL FLEXIBLE CONNECTIONS IN PIPING WHERE ADJACENT SECTIONS OR BRANCHES ARE SUPPORTED BY DIFFERENT STRUCTURAL ELEMENTS AND WHERE THE CONNECTIONS TERMINATE WITH CONNECTION TO EQUIPMENT THAT IS ANCHORED TO A DIFFERENT STRUCTURAL ELEMENT FROM THE ONE SUPPORTING THE CONNECTIONS AS THEY APPROACH EQUIPMENT.

# 230593 TESTING, ADJUSTING, AND BALANCING FOR HVAC

- A. ADJUST ALL AIR SYSTEM DAMPERS AND VOLUME CONTROLLERS TO OBTAIN PROPER AIR BALANCE THROUGHOUT THE CONDITIONED AREA. THE AIR QUANTITIES SHOWN ON THE DRAWINGS FOR INDIVIDUAL OUTLETS MAY BE CHANGED TO OBTAIN UNIFORM TEMPERATURE WITHIN EACH ZONE, BUT THE TOTAL AIR QUANTITY SHOWN FOR EACH ZONE MUST BE OBTAINED WITHIN +/- 10%. MAXIMUM TEMPERATURE VARIATION WITHIN A ZONE SHALL BE 2°F.
- B. ADJUST ALL BLOWER DRIVES TO OBTAIN PROPER TOTAL AMOUNTS OF AIR, INCLUDING EXHAUST AND OUTSIDE AIR SUPPLY.
- C. CALIBRATE, SET, AND ADJUST ALL AUTOMATIC TEMPERATURE
- D. PROVIDE A WRITTEN REPORT TO THE OWNER AND ENGINEER IN ACCORDANCE WITH AABC, NEBB, OR ASHRAE 111.

# 230713 DUCT INSULATION

- A. INSULATION WRAP: 3/4" LB. DENSITY GLASS FIBER WRAP WITH FOIL BACK VAPOR BARRIER JACKET.
- B. ALL INSULATION THICKNESS SHALL MEET THE MINIMUM REQUIREMENTS OF INTERNATIONAL ENERGY CONSERVATION CODE.

# 230719 HVAC PIPING INSULATION

A. CONDENSATE DRAIN PIPING SYSTEMS WITHIN AIR CONDITIONED SPACES: FACTORY MOLDED FIBERGLASS PIPE COVERING DENSITY NOT LESS THAN 3 LBS. PER CU.FT., CONDUCTIVITY (K) NOT HIGHER THAN 0.27 AT 75°F WITH FACTORY ATTACHED WHITE SELF SEALING LAP AS—J SSL VAPOR BARRIER JACKET.

# 230993 SEQUENCE OF OPERATIONS FOR HVAC CONTROLS

- A. SYSTEM CHILLED WATER FAN COIL UNIT
- SYSTEM OFF WHEN THE SYSTEM IS OFF:
   a. THE SUPPLY AIR FAN SHALL BE OFF.
- b. THE MOTORIZED DAMPER FOR OUTSIDE AIR INTAKE SHALL BE CLOSED.
- 2. SYSTEM START-UP SHALL BE INITIATED:c. AUTOMATICALLY BY THE THERMOSTAT BASED ON PROGRAM
- VIA BAS.

  3. SYSTEM OPERATION WHEN SYSTEM START—UP HAS BEEN
- a. THE SUPPLY AIR FAN SHALL START. b. THE MOTORIZED DAMPER FOR OUTSIDE AIR INTAKE SHALL
- MODULATE OPEN TO THE SCHEDULED VENTILATION AIRFLOW.

  c. COOLING MODE: THE CHILLED WATER VALVE SHALL MODULATE

INITIATED, THE FOLLOWING SEQUENCES SHALL BE IMPLEMENTED:

- TO MAINTAIN SPACE TEMPERATURE.

  d. HEATING MODE: ELECTRIC HEATER SHALL TURN ON.
- 4. SETPOINTS THE SETPOINTS FOR THE SYSTEM SHALL BE DETERMINED AS FOLLOWS:
- a. THE ROOM AIR TEMPERATURE SETPOINT SHALL BE SET VIA BAS AND SHALL BE SET INITIALLY AT 75°F FOR COOLING MODE AND 70°F FOR HEATING MODE (ADJ.).
- 5. SYSTEM SHUTDOWN SYSTEM SHUTDOWN SHALL BE INITIATED:

  a. AUTOMATICALLY BY THE THERMOSTAT BASED ON
  PROGRAMMED TIME SCHEDULE.

### 233113 METAL DUCTS

- A. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF DUCT SYSTEM. INDICATED DUCT LOCATIONS, CONFIGURATIONS, AND ARRANGEMENTS WERE USED TO SIZE DUCTS AND CALCULATE FRICTION LOSS FOR AIR—HANDLING EQUIPMENT SIZING AND FOR OTHER DESIGN CONSIDERATIONS. INSTALL DUCT SYSTEMS AS INDICATED UNLESS DEVIATIONS TO
- LAYOUT ARE APPROVED ON SHOP DRAWINGS.

  B. GENERAL MATERIAL REQUIREMENTS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE" FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESS, AND DUCT CONSTRUCTION METHODS UNLESS OTHERWISE INDICATED. SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS.

  1. DUCTS CONNECTED TO AIR HANDLING EQUIPMENT: GALVANIZED SHEET STEEL: COMPLY WITH ASTM A 653/A 653M.

  a. GALVANIZED COATING DESIGNATION: G60.
- C. HANGER SPACING: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE," TABLE 5-1, "RECTANGULAR DUCT HANGERS MINIMUM SIZE," AND TABLE 5-2, "MINIMUM HANGER SIZES FOR ROUND DUCT," FOR MAXIMUM HANGER SPACING; INSTALL HANGERS AND SUPPORTS WITHIN 24 INCHES OF EACH ELBOW AND WITHIN 48 INCHES OF EACH BRANCH INTERSECTION.

### 233300 AIR DUCT ACCESSORIES

- A. VOLUME DAMPERS: PROVIDE VOLUME DAMPERS IN BRANCH
  DUCTWORK AS REQUIRED FOR PROPER BALANCING OF THE SUPPLY
  AND RETURN AIR SYSTEMS.
   B. FLEXIBLE DUCTWORK
- 1. INSULATED, FLEXIBLE DUCT: UL 181, CLASS 1, INTERLOCKING SPIRAL OF ALUMINUM FOIL; FIBERGLASS INSULATION; FIBERGLASS REINFORCED VAPOR-BARRIER FILM WITH A FLAME SPREAD LESS THAN 25; SMOKE DEVELOPED LESS THAN 50 SIMILAR TO THERMAFLEX M-KE, MINIMUM R-6 INSIDE AND R-8 OUTSIDE BUILDING ENVELOPE.
- 2. CONNECT FLEXIBLE DUCT TO METAL DUCT WITH ADHESIVE AND SHEET METAL SCREWS.
- 3. CONNECT AIR DEVICES WITH A MAXIMUM 5'-0" LENGTH OF FLEXIBLE DUCT CLAMPED OR STRAPPED IN PLACE.
   C. FLEXIBLE CONNECTORS: PROVIDE FLEXIBLE CONNECTORS AT ALL
- AIR HANDLING EQUIPMENT.

  1. INDOOR FLEXIBLE CONNECTOR FABRIC: GLASS FABRIC DOUBLE
- COATED WITH NEOPRENE.

  a. MINIMUM WEIGHT: 26 OZ./SQ.YD.
- b. TENSILE STRENGTH: 480 LBF/INCH N THE WARP AND 360 LBF/INCH IN THE FILLING.
- c. SERVICE TEMPERATURE: MINUS 40 TO PLUS 200 DEG F.

### 233600 FAN COIL UNITS (CHILLED WATER)

- A. CASINGS: CONSTRUCTED OF 18-GAUGE GALVANIZED STEEL, INSULATED WITH ONE-INCH, FIBERGLASS FIRE RESISTANT AND ODORLESS GLASS FIBER MATERIAL TO PROVIDE THERMAL AND ACOUSTICAL INSULATION. FAN HOUSING SIDES ARE DIRECTLY ATTACHED TO THE AIR HANDLER TOP AND BOTTOM PANELS STRENGTHENING THE ENTIRE UNIT ASSEMBLY. COIL ACCESS PANELS ARE LOCATED ON BOTH SIDES OF THE AIR HANDLER AND ALLOW EASY REMOVAL OF INTERNAL COILS AND DRAIN PAN. ACCESS PANELS PROVIDE ACCESS TO FAN, MOTOR, AND DRIVE FROM BOTH SIDES OF AIR HANDLER.
- B. COILS: COPPER TUBE, ALUMINUM FIN.
- C. ELECTRIC HEAT: FACTORY PROVIDED AND MOUNTED, UL RECOGNIZED RESISTANCE OPEN—WIRE HEATER WITH A DISC—TYPE AUTOMATIC THERMAL PRIMARY SAFETY DEVICE. TWO STAGE OF CONTROL. SINGLE POINT POWER CONNECTION.
   D. CONTROLS: UNIT MOUNTED CONTROL BOARD.
- E. RESET BACK-UP PROTECTION: SECONDARY MANUAL RESET BACK-UP PROTECTION PROVIDED.F. DISCONNECT SWITCH: FACTORY PROVIDED DISCONNECT SWITCH WITH

EQUIPPED WITH HEAVY-DUTY ADJUSTABLE SPEED V-BELT DRIVES.

- AN INTERLOCKING DOOR ON THE HEATER CONTROL PANEL.

  G. LINE FUSE: SAFETY FUSE LOCATED IN ELECTRIC HEATER'S LINE OF POWER TO PREVENT POWER SURGE DAMAGE TO ELECTRIC HEATER.

  H. FAN: FANS ARE FORWARD CURVED, CENTRIFUGAL BLOWER TYPE
- FAN SHAFT IS SUPPORTED BY HEAVY-DUTY, PERMANENTLY SEALED BALL BEARINGS. FAN IS DYNAMICALLY BALANCED.

  I. FILTER: UNITS ARE EQUIPPED WITH 2" FLAT PLEATED MEDIA FILTERS,
- MERV 8 PER ASHRAE 52.2.

  J. MOTOR: 60 HZ, 1750 RPM MOTOR WITH +/- 10% VOLTAGE
  UTILIZATION RANGE. MOTOR IS OPEN DRIP-PROOF WITH
  PERMANENTLY SEALED BALL BEARINGS, INTERNAL OVERLOAD

PROTECTION, MINIMUM 1.15 SERVICE FACTOR, AND SIZE 56

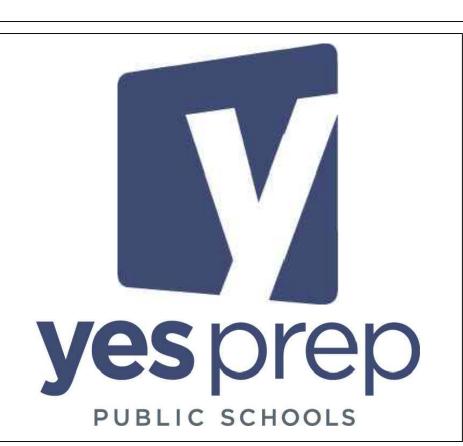
- RESILIENT BASE FRAMES. MOTOR IS FACTORY INSTALLED AND WIRED TO THE AIR HANDLER JUNCTION BOX.

  K. DRAIN PAN: DRAIN PAN IS NONCORROSIVE AND DOUBLE SLOPED TO ALLOW CONDENSATE DRAINAGE. DRAIN PAN IS CONSTRUCTED OF STAINLESS STEEL. COILS MOUNT ABOVE THE DRAIN PAN TO ALLOW THE DRAIN PAN TO BE FULLY INSPECTED AND CLEANED. DRAIN PAN CAN BE REMOVED FOR CLEANING. MAIN DRAIN CONNECTION IS LOWEST POINT OF DRAIN PAN. AN AUXILIARY DRAIN CONNECTION IS
- L. THERMOSTAT CONTROL INTERFACE: BAS.M. APPROVED EQUAL BY CARRIER, TRANE, OR JOHNSON CONTROLS.

PROVIDED ON THE SAME SIDE AS THE MAIN CONNECTION.

# 233713 DIFFUSERS, REGISTERS, AND GRILLES

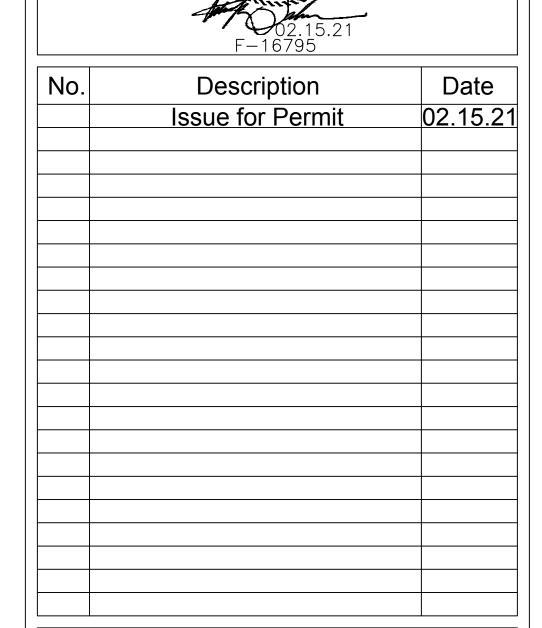
- A. PROVIDE DIFFUSERS, REGISTERS AND GRILLES IN ACCORDANCE WITH SCHEDULE ON DRAWINGS.
- B. ACCEPTABLE MANUFACTURERS: KRUEGER, TITUS, METAL—AIRE, AND PRICE.





PATRICK B. SALMON

127951



YES PREP SCHOOL

# SECURITY VESTIBULE ADDITION

1305 BENSON ST. HOUSTON, TEXAS 77020

# MECHANICAL SPECIFICATIONS

Project Nui	mber	21007
Date		01/22/21
Drawn By		MGG
Checked B	Sy	SFH

M401

Scale

	ELECTRICAL SYMBOLS
SYMBOL	DESCRIPTION
\$ 000	OCCUPANCY SENSOR SWITCH
\$	SINGLE POLE SWITCH
\$3	THREE WAY SWITCH
\$	MANUAL MOTOR STARTER
$\oplus$	NEMA 5-20R DUPLEX RECEPTACLE
<u></u>	NEMA 5-20R DUPLEX RECEPTACLE (ABOVE COUNTER)
∯gFi	NEMA 5-20R GFI RECEPTACLE
$\oplus$	NEMA 5-20R QUADRAPLEX RECEPTACLE
FLR	FLUSH FLOOR RECEPTACLE
В	PEDESTAL MOUNTED NEMA 5-15R DUPLEX RECEPTACLE
$\nabla$	DATA OUTLET 1" CONDUIT TO ABOVE CEILING
•	VOICE OUTLET
<b>◆</b>	COMBINATION DATA/VOICE OUTLET
	FLUSH FLOOR DATA OUTLET
	CIRCUIT HOMERUN-ARROWHEADS INDICATE QUANTITY OF CIRCUITS
	CONCEALED CONDUIT
/ \	EXTERIOR CONDUIT BELOW GRADE
\ \ \	CONCEALED CONDUIT BELOW SLAB
$\Diamond$	MOTOR
TV	TV CABLE OUTLET
$\otimes$	EXIT LIGHT
F	POLE-MOUNTED SITE LAMP
(	JUNCTION BOX
S	SMOKE DETECTOR
FI	FIRE ALARM — HORN/STROBE
	EMERGENCY LIGHT — WALL PACK
	DISCONNECT

### ENERGY CODE COMPLIANCE REQUIREMENTS

A. FUNCTIONAL PERFORMANCE TESTING: EQUIPMENT FUNCTIONAL PERFORMANCE TESTING SHALL PROVIDE EVIDENCE THAT THE LIGHT CONTROL SYSTEMS HAVE BEEN TESTED TO ENSURE THAT THE CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS.

1. OCCUPANT SENSOR CONTROLS: THE FOLLOWING PROCEDURES SHALL BE PERFORMED: a. CERTIFY THAT THE OCCUPANT SENSOR HAS BEEN LOCATED AND AIMED IN ACCORDANCE WITH MANUFACTURER

RECOMMENDATIONS. b. FOR PROJECTS WITH SEVEN OR FEWER OCCUPANT SENSORS, EACH SENSOR SHALL BE TESTED. c. FOR PROJECTS WITH MORE THAN SEVEN OCCUPANT SENSORS, TESTING SHALL BE DONE FOR EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY. WHERE MULTIPLES OF EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY ARE PROVIDED. NOT LESS THAN 10%. BUT IN NO CASE LESS THAN 1%, OF EACH COMBINATION SHALL BE TESTED WHERE 30% OR MORE OF THE TESTED CONTROLS FAIL, ALL REMAINING IDENTICAL COMBINATIONS SHALL BE TESTED. d. FOR OCCUPANT SENSOR CONTROLS TO BE TESTED, VERIFY THE

**FOLLOWING:** d.a. WHERE OCCUPANT SENSOR CONTROLS INCLUDE STATUS INDICATORS, VERIFY CORRECT OPERATION.

d.b. THE CONTROLLED LIGHTS TURN OFF OR DOWN TO THE PERMITTED LEVEL WITHIN THE REQUIRED TIME. d.c. FOR AUTO-ON OCCUPANT SENSOR CONTROLS, THE LIGHTS TURN ON TO THE PERMITTED LEVEL WHEN AN OCCUPANT ENTERS THE SPACE. d.d.FOR MANUAL-ON OCCUPANT SENSOR CONTROLS, THE

LIGHTS TURN ON ONLY WHEN MANUALLY ACTIVATED. d.e. THE LIGHTS ARE NOT INCORRECTLY TURNED ON BY MOVEMENT IN ADJACENT AREAS OR BY HVAC OPERATION. 2. TIME SWITCH CONTROLS: THE FOLLOWING PROCEDURES SHALL BE

PERFORMED: a. CONFIRM THAT THE TIME SWITCH CONTROL IS PROGRAMMED WITH ACCURATE WEEKDAY, WEEKEND, AND HOLIDAY SCHEDULES. b. PROVIDE DOCUMENTATION TO THE OWNER OF TIME SWITCH CONTROLS PROGRAMMING INCLUDING WEEKDAY, WEEKEND, HOLIDAY SCHEDULES, AND SETUP AND PREFERENCE PROGRAM

c. VERIFY THE CORRECT TIME AND DATE IN THE TIME SWITCH.

d. VERIFY THAT ANY BATTERY BACK-UP IS INSTALLED AND e. VERIFY THAT THE OVERRIDE TIME LIMIT IS SET TO NOT MORE THAN 2 HOURS.

f. SIMULATE OCCUPIED CONDITION. VERIFY AND DOCUMENT THE FOLLOWING: f.a. ALL LIGHTS CAN BE TURNED ON AND OFF BY THEIR RESPECTIVE AREA CONTROL SWITCH.

f.b. THE SWITCH ONLY OPERATES LIGHTING IN THE ENCLOSED SPACE IN WHICH THE SWITCH IS LOCATED. g. SIMULATE UNOCCUPIED CONDITION. VERIFY AND DOCUMENT THE FOLLOWING:

g.a. NONEXEMPT LIGHTING TURNS OFF. g.b. MANUAL OVERRIDE SWITCH ALLOWS ONLY THE LIGHTS IN THE ENCLOSED SPACE WHERE THE OVERRIDE SWITCH IS LOCATED TO TURN ON OR REMAIN ON UNTIL THE NEXT SCHEDULED SHUT-OFF OCCURS. 3. DAYLIGHT RESPONSIVE CONTROLS: THE FOLLOWING PROCEDURES

SHALL BE PERFORMED: a. CONTROL DEVICES HAVE BEEN PROPERLY LOCATED, FIELD CALIBRATED, AND SET FOR ACCURATE SETPOINTS AND THRESHOLD LIGHT LEVELS.

b. DAYLIGHT CONTROLLED LIGHTING LOADS ADJUST TO LIGHT LEVEL SET POINTS IN RESPONSE TO AVAILABLE DAYLIGHT. c. THE LOCATIONS OF CALIBRATION ADJUSTMENT EQUIPMENT ARE READILY ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL.

COMMISSIONING REPORT 1. ELECTRICAL CONTRACTOR SHALL PROVIDE A REPORT OF THE ABOVE COMMISSIONING TEST PROCEDURES AND RESULTS AND PROVIDE TO GENERAL CONTRACTOR TO COMPILE WITH MECHANICAL

AND PLUMBING REPORTS. 2. REPORT SHALL IDENTIFY ANY DEFICIENCIES THAT HAVE NOT YET BEEN CORRECTED. DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION BECAUSE OF CLIMATIC CONDITIONS, AND CLIMATIC CONDITIONS REQUIRED FOR

PERFORMANCE OF THE DEFERRED TESTS. 3. GENERAL CONTRACTOR SHALL PROVIDE COMPILED REPORT TO OWNER/REPRESENTATIVE.

# DOCUMENTATION REQUIREMENTS

WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE THE FOLLOWING DOCUMENTS SHALL BE PROVIDED TO THE OWNER: 1. MANUALS: OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED AND INCLUDE THE FOLLOWING:

a. SUBMITTAL DATA INDICATING ALL SELECTED OPTIONS FOR EACH PIECE OF LIGHTING EQUIPMENT AND LIGHTING CONTROLS. b. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF LIGHTING EQUIPMENT. REQUIRED ROUTINE MAINTENANCE ACTIONS, CLEANING, AND RECOMMENDED

RELAMPING SHALL BE CLEARLY IDENTIFIED. c. A SCHEDULE FOR INSPECTING AND RECALIBRATING ALL LIGHTING CONTROLS.

d. NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY. e. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET-POINTS.

### DIVISION 26 - ELECTRICAL

260000 ELECTRICAL BASIC REQUIREMENTS

A. MINIMUM STANDARDS FOR ALL WORK SHALL BE CITY OF HOUSTON AMENDMENTS TO THE 2020 NATIONAL ELECTRICAL CODE, 2020 INTERNATIONAL ENERGY CONSERVATION CODE, AND 2012 INTERNATIONAL BUILDING CODE

B. REFERENCES: THE STANDARDS MENTIONED HEREIN WILL BE REFERRED TO IN THE DESIGN OF ELECTRICAL SYSTEMS. THE ENGINEER WILL SELECT APPROPRIATE SECTIONS OF THE STANDARD TO BE APPLIED IN ACCORDANCE WITH ESTABLISHED ENGINEERING PRINCIPLES AND PRACTICES.

1. APPLICABLE SECTIONS OF NFPA 2. AMERICANS WITH DISABILITIES ACT (ADA)

3. TEXAS ACCESSIBILITY STANDARDS (TAS) C. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID DATE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING INSTALLATIONS. DETERMINE THE EXTENT OF THE NEW WORK TO PERFORM THIS CONTRACT. NO ALLOWANCES WILL BE MADE FOR FAILURE TO COMPLY WITH THIS REQUIREMENT OR LACK OF FAMILIARIZATION WITH EXISTING INSTALLATIONS. D. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY

A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED. E. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES

INCLUDING ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, AND PLUMBING. F. DO NOT SCALE FROM THE ENGINEERED DRAWINGS. REFER TO THE DIMENSIONED DRAWINGS OF THE ARCHITECT FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC.

G. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED FOR THE INSTALLATION OF WORK AND PAY ALL INCIDENTAL CHARGES. H. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL TESTS NECESSARY TO PREVENT CONCEALMENT OF DEFECTIVE OR IMPROPER WORK. UPON COMPLETION OF WORK, TEST INSTALLATION THOROUGHLY AND RENDER IT FROM MALFUNCTIONS, SAFETY ISSUES, AND IMPROPER CONNECTIONS.

PROTECT EQUIPMENT AND WORK FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION. REMOVE ALL EXCESS DEBRIS AND CLEAN ALL EQUIPMENT UPON COMPLETION OF WORK. TOUCH UP WITH PAINT WHERE REQUIRED.

J. ALL MATERIAL SHALL BE NEW, UNDAMAGED, AND UNBLEMISHED AND UL LISTED EXACT K. ALL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE TIME OF

OWNER ACCEPTANCE. WORK OR EQUIPMENT FOUND TO BE SUB-STANDARD OR FAULTY SHALL BE CORRECTED DURING THESE PERIODS AT NO COST TO OWNER. PROVIDE TEMPORARY SERVICE AS REQUIRED FOR CONSTRUCTION POWER AND REMOVE

SUCH TEMPORARY SERVICE WHEN WORK IS COMPLETE. M. ELECTRICAL CONTRACTOR TO PROVIDE A COMPLETE F.A. SYSTEM TO MEET LOCAL FIRE MARSHALL REQUIREMENTS AND OBTAIN ALL LOCAL PERMITS. RELOCATE AND MATCH EXISTING FIRE ALARM EQUIPMENT AS REQUIRED.

### 260519 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

A. ALL WIRE SHALL BE COPPER COMPLYING WITH ASTM B3 FOR BARE ANNEALED TYPE AND ASTM B8 FOR STRANDED CONDUCTORS. MINIMUM SIZE NO. 12 AWG TYPE THHN OR

B. ALL WIRING SHALL BE LISTED AND LABELED AS DEFINED IN NFPA (NEC) 70, BY A

QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND USE. C. NO WIRE SMALLER THAN #12 FEEDER WIRE SHALL BE THW OR THWN INSULATED. D. FIXTURE WIRE SHALL BE TYPE PF.

E. CONDUCTOR INSULATION: 1. TYPE NM: COMPLY WITH UL 83 AND UL 719.

2. TYPES RHH AND RHW-2: COMPLY WITH UL 44.

3. TYPES USE-2 AND SE: COMPLY WITH UL 854. 4. TYPES THHN AND THWN-2: COMPLY WITH UL 83.

5. TYPES THW AND THW-2: COMPLY WITH NEMA WC-70/ICEA S-95-658 AND UL 83. 6. TYPE XHHW-2: COMPLY WITH UL 44. CONNECTORS AND SPLICES: FACTORY-FABRICATED CONNECTORS, SPLICES AND LUGS OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR APPLICATION AND SERVICE

FESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND USE. G. JACKETED CABLE CONNECTORS: FOR STEEL AND ALUMINUM JACKETED CABLES, ZINC DIE-CAST WITH SET SCREWS, DESIGNED TO CONNECT CONDUCTORS SPECIFIED IN THIS

INDICATED. LISTED AND LABELED AS DEFINED IN NFPA (NEC) 70, BY A QUALIFIED

H. LUGS: ONE PIECE, SEAMLESS, COPPER, DESIGNED TO TERMINATE CONDUCTORS SPECIFIED IN THIS SECTION.

I. FEEDERS AND BRANCH CIRCUITS: SOLID FOR NO. 10 AWG AND SMALLER; STRANDED FOR NO. 8 AWG AND LARGER. J. SERVICE ENTRANCE: TYPE THHN/THWN-2, SINGLE CONDUCTORS IN RACEWAY; TYPE

XHHW-2. SINGLE CONDUCTORS IN RACEWAY; TYPE USE, SINGLE CONDUCTOR IN RACEWAY; TYPE SE, MULTICONDUCTOR CABLE. K. EXPOSED FEEDERS: TYPE THHN/THWN-2, SINGLE CONDUCTORS IN RACEWAY; TYPE XHHW-2, SINGLE CONDUCTORS IN RACEWAY; TYPE AC, ARMORED CABLE; TYPE MC,

METAL-CLAD CABLE; TYPE NM, NONMETALLIC-SHEATHED CABLE. L. FEEDERS CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: TYPE THHN/THWN-2, SINGLE CONDUCTORS IN RACEWAY; TYPE AC, ARMORED CABLE; TYPE MC, METAL-CLAD CABLE; TYPE NM, NONMETALLIC-SHEATHED CABLE.

M. EXPOSED BRANCH CIRCUITS: REFER TO "FEEDERS CONCEALED IN CEILINGS, WALLS, AND PARTITIONS." N. BRANCH CIRCUITS CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: REFER TO

"FEEDERS CONCEALED IN CEILINGS, WALLS, AND PARTITIONS." O. CORD DROPS AND PORTABLE APPLIANCE CONNECTIONS: TYPE SO, HARD SERVICE CORD WITH STAINLESS-STEEL, WIRE MESH, STRAIN RELIEF DEVICE AT TERMINATIONS TO SUIT

APPLICATION. P. PERFORM TESTING IN ACCORDANCE WITH APPLICABLE NATIONAL ELECTRICAL TESTING ASSOCIATION STANDARDS TO ENSURE A SAFE INSTALLATION THAT OPERATES AS DESIGNED.

# 260526 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

A. ALL WORK SHALL BE GROUNDED TO COMPLY WITHOUT EXCEPTION WITH ALL PROVISIONS OF ARTICLE 250 OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. ALL CIRCUITS SHALL CONTAIN INSULATED GROUNDING CONDUCTOR. ALL RECEPTACLES SHALL HAVE AN INSULATED GREEN GROUNDING CONDUCTOR TERMINATED ON THE DEVICE GROUND SCREW.

B. COMPLY WITH IEEE C2 GROUNDING REQUIREMENTS FOR UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS.

C. COMPLY WITH UL 467 FOR GROUNDING AND BONDING MATERIALS AND EQUIPMENT. D. INSULATED CONDUCTORS: COPPER WIRE OR CABLE INSULATED FOR 600 V UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE OR AUTHORITIES HAVING JURISDICTION.

1. SOLID CONDUCTORS: ASTM B3. 2. STRANDED CONDUCTORS: ASTM B8.

E. BARE COPPER CONDUCTORS:

3. TINNED CONDUCTORS: ASTM B33. 4. BONDING CABLE: 28 KCMIL, 14 STRANDS OF NO. 17 AWG CONDUCTOR, 1-1/4" IN

5. BONDING CONDUCTOR: NO. 4 OR NO. 6 AWG, STRANDED CONDUCTOR. 6. BONDING JUMPER: COPPER TAPE, BRAIDED CONDUCTORS TERMINATED WITH COPPER

FERRULES; 1-5/8" WIDE AND 1/16" THICK. 7. TINNED BONDING JUMPER: TINNED-COPPER TAPE, BRAIDED CONDUCTORS

TERMINATED WITH COPPER FERRULES; 1-5/8" WIDE AND 1/16" THICK. CONNECTORS: LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING LABORATORY AND IN COMPLIANCE WITH THE FOLLOWING:

BOLTED CONNECTORS (CONDUCTORS AND PIPES): COPPER OR COPPER ALLOY. 2. WELDED CONNECTORS: EXOTHERMIC-WELDING KITS OF TYPES RECOMMENDED BY KIT MANUFACTURER FOR MATERIALS BEING JOINED AND INSTALLATION CONDITIONS. 3. BUS-BAR CONNECTORS: MECHANICAL TYPE, CAST SILICON BRONZE, SOLDERLESS COMPRESSION TYPE WIRE TERMINALS, AND LONG-BARREL, TWO-BOLT CONNECTION

TO GROUND BUS BAR. F. GROUNDING ELECTRODES: COPPER-CLAD STEEL RODS, 3/4" X 10'. G. GROUNDING AND BONDING FOR PIPING:

METAL WATER SERVICE PIPE: INSTALL INSULATED COPPER GROUNDING CONDUCTORS IN CONDUIT, FROM BUILDING'S MAIN SERVICE EQUIPMENT, OR GROUNDING BUS, TO MAIN METAL WATER SERVICE ENTRANCES TO BUILDING. CONNECT GROUNDING CONDUCTORS TO MAIN METAL WATER SERVICE PIPES; USE A BOLTED CLAMP CONNECTOR OR BOLT A LUG-TYPE CONNECTOR TO A PIPE FLANGE BY USING ONE OF THE LUG BOLTS OF THE FLANGE. WHERE A DIELECTRIC MAIN WATER FITTING IS INSTALLED, CONNECT GROUNDING CONDUCTOR ON STREET SIDE OF FITTING. BOND METAL GROUNDING CONDUCTOR CONDUIT OR SLEEVE TO CONDUCTOR AT EACH END. 2. WATER METER PIPING: USE BRAIDED-TYPE BONDING JUMPERS TO ELECTRICALLY

BYPASS WATER METERS. CONNECT TO PIPE WITH A BOLTED CONNECTOR. 3. BOND EACH ABOVE GROUND PORTION OF GAS PIPING SYSTEM DOWNSTREAM FROM EQUIPMENT SHUTOFF VALVE.

PERFORM TESTS AND INSPECTIONS. INSPECT PHYSICAL AND MECHANICAL CONDITION. VERIFY TIGHTNESS OF ACCESSIBLE, BOLTED, ELECTRICAL CONNECTIONS WITH A CALIBRATED TORQUE WRENCH ACCORDING TO MANUFACTURER'S WRITTEN

# 260529 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

INSTRUCTIONS.

MALLEABLE IRON.

A. STEEL SLOTTED SUPPORT SYSTEMS: COMPLY WITH MFMA-4 FACTORY-FABRICATED COMPONENTS FOR FIELD ASSEMBLY.

B. CONDUIT AND CABLE SUPPORT DEVICES: STEEL HANGERS, CLAMPS, AND ASSOCIATED FITTINGS. DESIGNED FOR TYPES AND SIZES OF RACEWAY OR CABLE TO BE SUPPORTED. C. SUPPORT FOR CONDUCTORS IN VERTICAL CONDUIT: FACTORY-FABRICATED ASSEMBLY CONSISTING OF THREADED BODY AND INSULATING WEDGING PLUGS OR PLUGS FOR NONARMORED ELECTRICAL CONDUCTORS OR CABLES IN RISER CONDUITS. PLUGS SHALL HAVE NUMBER, SIZE, AND SHAPE OF CONDUCTOR GRIPPING PIECES AS REQUIRED TO SUIT INDIVIDUAL CONDUCTORS OR CABLES SUPPORTED. BODY SHALL BE MADE OF

D. STRUCTURAL STEEL FOR FABRICATED SUPPORTS AND RESTRAINTS: ASTM A36/A36M

STEEL PLATES, SHAPES, AND BARS; BLACK AND GALVANIZED E. MOUNTING, ANCHORING, AND ATTACHMENT COMPONENTS: ITEMS FOR FASTENING ELECTRICAL ITEMS OR THEIR SUPPORTS TO BUILDING SURFACES INCLUDE THE FOLLOWING:

1. POWDER-ACTUATED FASTENERS: THREADED-STEEL STUD, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE, STEEL, OR WOOD, WITH TENSION, SHEAR, AND PULLOUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS

2. MECHANICAL EXPANSION ANCHORS: INSERT-WEDGE-TYPE, STAINLESS STEEL, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE, WITH TENSION, SHEAR, AND

PULLOUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS 3. CONCRETE INSERTS: STEEL OR MALLEABLE IRON, SLOTTED SUPPORT SYSTEM UNITS

ARE SIMILAR TO MSS TYPE 18 UNITS AND COMPLY WITH MFMA-4 OR MSS SP-58. 4. CLAMPS FOR ATTACHMENT TO STEEL STRUCTURAL ELEMENTS: MSS SP-58 UNITS ARE SUITABLE FOR ATTACHED STRUCTURAL ELEMENT.

5. THROUGH BOLTS: STRUCTURAL TYPE, HEX HEAD, AND HIGH STRENGTH. COMPLY WITH ASTM A325. 6. TOGGLE BOLTS: STAINLESS STEEL SPRINGHEAD TYPE 7. HANGER RODS: THREADED STEEL.

F. FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES: WELDED OR BOLTED STRUCTURAL STEEL SHAPES, SHOP OR FIELD FABRICATED TO FIT DIMENSIONS OF SUPPORTED EQUIPMENT. COMPLY WITH INDUSTRY-ACCEPTED STANDARDS FOR STEEL SHAPES AND

### 260533 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

A. METAL CONDUITS, TUBING, AND FITTINGS SHALL BE LISTED AND LABELED AS DEFINED IN NFPA (NEC) 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED

LOCATION AND APPLICATION. B. APPLY RACEWAY PRODUCTS (MINIMUM 3/4" TRADE SIZE) AS SPECIFIED BELOW U.O.N. 1. OUTDOORS

1.1. EXPOSED: RNC, EPC-80-PVC. 1.2. CONCEALED ABOVEGROUND: EPC-80-PVC.

1.3. UNDERGROUND: RNC, EPC-80-PVC, DIRECT BURIED.

1.4. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): LFMC. 1.5. BOXES AND ENCLOSURES, ABOVEGROUND: NEMA 250, TYPE 3R. 2. INDOORS:

2.1. EXPOSED, NOT SUBJECT TO DAMAGE: EMT.

2.2. EXPOSED, SUBJECT TO DAMAGE: GRC. 2.3. CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: EMT OR MC. 2.4. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): FMC,

EXCEPT USE LFMC IN DAMP OR WET LOCATIONS. C. IN ADDITION TO NFPA (NEC) 70 COMPLIANCE, COMPLY WITH NECA 1 AND NECA 101 FOR INSTALLATION REQUIREMENTS.

D. SEAL ALL CONDUIT PENETRATIONS THROUGH WALLS WITH UL LISTED FIRE RETARDANT E. KEEP RACEWAYS AT LEAST 6" AWAY FROM PARALLEL RUNS OF HOT-WATER PIPES.

INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER PIPING. F. BOXES, ENCLOSURES, AND CABINETS INSTALLED IN WET LOCATIONS SHALL BE LISTED FOR USE IN WET LOCATIONS.

G. SHEET METAL OUTLET AND DEVICE BOXES: COMPLY WITH NEMA OS1 AND UL 514A. H. CAST-METAL OUTLET AND DEVICE BOXES: COMPLY WITH NEMA FB1. FERROUS ALLOY,

TYPE FD, WITH GASKETED COVER I. NONMETALLIC OUTLET AND DEVICE BOXES: COMPLY WITH NEMA OS2 AND UL 514C. J. METAL FLOOR BOXES: CAST METAL, FULLY ADJUSTABLE, LISTED AND LABELED AS

K. NONMETALLIC FLOOR BOXES: NONADJUSTABLE, ROUND, LISTED AND LABELED AS DEFINED IN NEPA (NEC) 70 L. LUMINAIRE OUTLET BOXES: NONADJUSTABLE, DESIGNED FOR ATTACHMENT OF LUMINAIRE WEIGHING 50 LB. OUTLET BOXES DESIGNED FOR ATTACHMENT OF LUMINAIRES WEIGHING

MORE THAN 50 LB. SHALL BE LISTED AND MARKED FOR THE MAXIMUM ALLOWABLE M. PADDLE FAN OUTLET BOXES: NONADJUSTABLE, DESIGNED FOR ATTACHMENT OF PADDLE FAN WEIGHING 70 LB, LISTED AND LABELED AS DEFINED IN NFPA (NEC) 70.

N. SMALL SHEET METAL PULL AND JUNCTION BOXES: COMPLY WITH NEMA OS1. O. CAST-METAL, ACCESS, PULL, AND JUNCTION BOXES: COMPLY WITH NEMA FB1 AND UL 1773, GALVANIZED, CAST IRON WITH GASKETED COVER.

P. HINGED-COVER ENCLOSURES: COMPLY WITH UL 50 AND NEMA 250, TYPE 1 OR TYPE 3R WITH CONTINUOUS HINGE COVER WITH FLUSH LATCH U.O.N. Q. CABINETS:

1. NEMA 250, TYPE 1 OR TYPE 3R, GALVANIZED STEEL BOX WITH REMOVABLE INTERIOR PANEL AND REMOVABLE FRONT, FINISHED INSIDE AND OUT WITH MANUFACTURER'S STANDARD ENAMEL.

HINGED DOOR IN FRONT COVER WITH FLUSH LATCH AND CONCEALED HINGE. 3. KEY LATCH TO MATCH PANELBOARDS

4. METAL BARRIERS TO SEPARATE WIRING OF DIFFERENT SYSTEMS AND VOLTAGE. 5. ACCESSORY FEET WHERE REQUIRED FOR FREESTANDING EQUIPMENT. 6. NONMETALLIC CABINETS SHALL BE LISTED AND LABELED AS DEFINED IN NFPA (NEC)

70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

# 260544 SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING

A. PROVIDE U.L. LISTED FIRESTOP SEALING SYSTEMS AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS. B. WALL SLEEVES SHALL COMPLY WITH THE FOLLOWING:

1. STEEL PIPE SLEEVES SHALL COMPLY WITH ASTM A53/A53M, TYPE E, GRADE B, SCH. 40, ZINC COATED, PLAIN ENDS. 2. CAST-IRON PIPE SLEEVES SHALL BE CAST OR FABRICATED "WALL PIPE," EQUIVALENT TO DUCTILE-IRON PRESSURE PIPE, WITH PLAIN ENDS AND INTEGRAL WATERSTOP

# 260553 IDENTIFICATION FOR ELECTRICAL SYSTEMS

DEFINED IN NFPA (NEC) 70.

A. COMPLY WITH ASME A13.1, IEEE C2, NFPA (NEC) 70, 29 CFR 1910.144, 29 CFR 1910.145, ANSI Z535.4 (SAFETY SIGNS AND LABELS). B. ADHESIVE-ATTACHED LABELING MATERIALS, INCLUDING LABEL STOCKS, LAMINATING ADHESIVES, AND INKS USED BY LABEL PRINTERS, SHALL COMPLY WITH UL 969.

C. ACCESSIBLE RACEWAYS AND METAL-CLAD CABLES, 600 V OR LESS, FOR SERVICE, FEEDER, AND BRANCH CIRCUITS, MORE THAN 30 A AND 120 V TO GROUND: IDENTIFY WITH SELF-ADHESIVE VINYL LABELS AT 30' MAXIMUM INTERVALS. D. ACCESSIBLE RACEWAYS AND CABLES WITHIN BUILDINGS: IDENTIFY THE COVERS OF EACH JUNCTION AND PULL BOX WITH SELF-ADHESIVE VINYL LABELS CONTAINING THE WORD "POWER" AND SYSTEM VOLTAGE.

E. POWER-CIRCUIT CONDUCTOR IDENTIFICATION, 600 V OR LESS: WITHIN VAULTS, PULL AND JUNCTION BOXES, MANHOLES, AND HANDHOLES, USE COLOR-CODING CONDUCTOR TAPE TO IDENTIFY THE PHASE. USE INDUSTRY STANDARD COLORS FOR UNGROUNDED SERVICE FEEDER AND BRANCH-CIRCUIT CONDUCTORS.

F. CONTROL-CIRCUIT CONDUCTOR IDENTIFICATION: FOR CONDUCTORS AND CABLES IN PULL AND JUNCTION BOXES, MANHOLES, AND HANDHOLES, USE WRITE-ON TAGS WITH THE CONDUCTOR OR CABLE DESIGNATION, ORIGIN, AND DESTINATION G. CONTROL—CIRCUIT CONDUCTOR TERMINATION IDENTIFICATION: PROVIDE HEAT—SHRINK

PREPRINTED TUBES WITH THE CONDUCTOR DESIGNATION. H. CONDUCTORS TO BE EXTENDED IN THE FUTURE: ATTACH WRITE-ON TAGS MARKER TAPE TO CONDUCTORS AND LIST SOURCE. I. AUXILIARY ELECTRICAL SYSTEMS CONDUCTOR IDENTIFICATION: IDENTIFY FIELD-INSTALLED

ALARM, CONTROL, AND SIGNAL CONNECTIONS J. LOCATIONS OF UNDERGROUND LINES: IDENTIFY WITH UNDERGROUND-LINE WARNING TAPE FOR POWER, LIGHTING, COMMUNICATION, CONTROL WIRING, AND OPTICAL-FIBER CABLE. K. WORKSPACE INDICATION: INSTALL FLOOR MARKING TAPE TO SHOW WORKING CLEARANCES

IN THE DIRECTION OF ACCESS TO LIVE PARTS. WORKSPACE SHALL COMPLY WITH NFPA (NEC) 70 AND 29 CFR 1926.403 U.O.N. L. WARNING LABELS FOR INDOOR CABINETS, BOXES, AND ENCLOSURES FOR POWER AND

LIGHTING: SELF-ADHESIVE WARNING LABELS.

OPERATION AND MAINTENANCE MANUAL.

M. ARC FLASH WARNING LABELING: SELF-ADHESIVE THERMAL TRANSFER VINYL LABELS. COMPLY WITH NFPA 70E AND ANSI Z535.4. N. OPERATING INSTRUCTION SIGNS: INSTALL INSTRUCTION SIGNS TO FACILITATE PROPER OPERATION AND MAINTENANCE OF ELECTRICAL SYSTEMS AND ITEMS TO WHICH THEY

O. EMERGENCY OPERATING INSTRUCTION SIGNS: INSTALL INSTRUCTION SIGNS WITH WHITE LEGEND ON A RED BACKGROUND WITH MINIMUM 3/8" HIGH LETTERS FOR EMERGENCY INSTRUCTIONS AT EQUIPMENT USED FOR POWER TRANSFER. P. EQUIPMENT IDENTIFICATION LABEL: ON EACH UNIT OF EQUIPMENT, INSTALL A UNIQUE

DESIGNATION LABEL THAT IS CONSISTENT WITH WIRING DIAGRAMS, SCHEDULES, AND

# 260923 LIGHTING CONTROL DEVICES

A. OCCUPANCY SENSOR SIMILAR TO ACUITY SENSOR SWITCH CM10-PDT CEILING MOUNT (DUAL TECHNOLOGY), POWER PACK PP20 AND SPODM (3X-MULTI-WAY) MANUAL WALL

B. OCCUPANCY SENSOR SIMILAR TO ACUITY SENSOR SWITCH WSX-PDT (DUAL TECHNOLOGY) WALL MOUNT WITH MANUAL OVERRIDE SWITCH.

C. AREAS WITHOUT OCCUPANCY SENSORS SHALL BE ON TIME SWITCH CONTROL (LIGHTING CONTROL PANEL) WITH LIGHTING REDUCTION CONTROLS (DUAL SWITCHING).

D. DUAL SWITCHING: MANUAL WALL SWITCH CONNECTED TO LIGHTING CONTROL PANEL. LIGHT REDUCTION CONTROLS WITH MULTIPLE SWITCHES REDUCING THE CONNECTED LOAD BY AT LEAST 50%.

H. INSTALLATION 1. OCCUPANCY SENSORS AND POWER PACKS: INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. MULTIPLE SENSORS CAN BE CONNECTED TO A SINGLE POWER PACK.

2. ADJUST OCCUPANCY SENSORS FOR COMPLETE COVERAGE. 3. OCCUPANCY SENSORS TO BE MANUAL ON AND AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE. FULL AUTOMATIC ON IS PERMITTED IN PUBLIC CORRIDORS, STAIRWAYS, RESTROOMS, PRIMARY BUILDING ENTRANCES AND

### 262200 LOW VOLTAGE TRANSFORMERS

TEMPERATURE.

A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED BY NFPA (NEC) 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

B. TRANSFORMERS RATED 15KVA AND LARGER: COMPLY WITH NEMA TP1 ENERGY-EFFICIENCY LEVELS AS VERIFIED BY TESTING ACCORDING TO NEMA TP2.

PERCENT TAP BELOW NORMAL FULL CAPACITY.

C. TRANFORMERS SMALLER THAN 30KVA SHALL HAVE CORE AND COILS COMPLETELY RESIIN ENCAPSULATED.

D. DISTRIBUTION TRANSFORMERS SHALL COMPLY WITH NFPA (NEC) 70 AND UL 1561. E. TAPS FOR TRANSFORMERS 7.5 TO 24KVA: ONE 5 PERCENT TAP ABOVE AND ONE 5

F. TAPS FOR TRANSFORMERS 25KVA AND LARGER: TWO 2.5 PERCENT TAPS ABOVE AND TWO 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY. G. INSULATION CLASS, SMALLER THAN 30 KVA: 185 DEG C, UL COMPONENT RECOGNIZED

INSULATION SYSTEM WITH A MAXIMUM OF 115 DEG C RISE ABOVE 40 DEG C AMBIENT H. INSULATION CLASS, 30 KVA AND LARGER: 220 DEG C, UL COMPONENT RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 150 DEG C RISE ABOVE 40 DEG C AMBIENT

I. NAMEPLATES: ENGRAVED, LAMINATED PLASTIC OR METAL NAMEPLATE FOR EACH DISTRIBUTION TRANSFORMER, MOUNTED WITH CORROSION RESISTANT SCREWS. J. TEST AND INSPECT TRANSFORMERS ACCORDING TO IEEE C57.12.01 AND IEEE C57.12.91.

K. INSTALLATION 1. VERIFY THAT GROUND CONNECTIONS ARE IN PLACE AND REQUIREMENTS IN 260526

GROUND AND BONDING HAVE BEEN MET. 2. ENCLOSURES SHALL BE RATED FOR THE ENVIRONMENT IN WHICH THEY ARE

3. INSTALL WALL MOUNTED TRANSFORMERS LEVEL AND PLUMB WITH WALL BRACKETS FABRICATED BY TRANSFORMER MANUFACTURER 4. INSTALL TRANSFORMERS LEVEL AND PLUMB ON A CONCRETE BASE WITH VIBRATION DAMPENING SUPPORTS. LOCATE TRANSFORMERS AWAY FROM CORNERS AND NOT PARALLEL TO ADJACENT WALL SURFACE.

5. SECURE TRANSFORMER TO CONCRETE BASE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. 6. SECURE COVERS TO ENCLOSURE AND TIGHTEN ALL BOLTS TO

MANUFACTURER-RECOMMENDED TORQUES TO REDUCE NOISE GENERATION. 7. REMOVE SHIPPING BOLTS, BLOCKING, AND WEDGES.

L. CONNECTIONS 1. GROUND EQUIPMENT ACCORDING TO 260526 GROUNDING AND BONDING.

2. CONNECT WIRING ACCORDING TO 260519 POWER CONDUCTORS AND CABLES. 3. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS ACCORDING TO MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES. IF MANUFACTURER'S TORQUE VALUES ARE NOT INDICATED, USE THOSE SPECIFIED IN UL 486A-486B.

4. PROVIDE FLEXIBLE CONNECTIONS AT ALL CONDUIT AND CONDUCTOR TERMINATIONS AND SUPPORTS TO ELIMINATE SOUND AND VIBRATION TRANSMISSION TO THE BUILDING STRUCTURE.

### 262416 PANELBOARDS

A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA (NEC) 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR

INTENDED LOCATION AND APPLICATION. B. COMPLY WITH NEMA PB1 AND NFPA (NEC) 70.

C. ENCLOSURES: FLUSH AND SURFACE-MOUNTED, DEAD-FRONT CABINETS. 1. INDOOR DRY, CLEAN LOCATIONS: NEMA 250, TYPE 1.

2. OUTDOOR LOCATIONS: NEMA 250, TYPE 3R.

3. KITCHEN AREAS: NEMA 250, TYPE 4X, STAINLESS STEEL. 4. OTHER WET AND DAMP INDOOR LOCATIONS: NEMA 250, TYPE 4X. 5. INDOOR LOCATIONS SUBJECT TO DUST, FALLING DIRT, AND DRIPPING NONCORROSIVE

LIQUIDS: NEMA 250, TYPE 5. D. CONDUCTOR CONNECTORS AND PHASE, NEUTRAL, AND GROUND BUSES: HARD-DRAWN COPPER, 98% CONDUCTIVITY. E. POWER PANELBOARDS:

BRANCH OVERCURRENT PROTECTIVE DEVICES. 1.1. ALL BREAKERS SERVING HVACR EQUIPMENT SHALL BE HACR TYPE. 2. FUSED SWITCHES FOR BRANCH OVERCURRENT PROTECTIVE DEVICES. 3. CONTACTORS IN MAIN BUS: NEMA ICS 2, CLASS A, MECHANICALLY HELD,

1. DISTRIBUTION TYPE, CIRCUIT BREAKER MAINS, BOLT-ON CIRCUIT BREAKERS FOR

AS PANELBOARD. 3.1. EXTERNAL CONTROL POWER SOURCE: 120 V BRANCH CIRCUIT. F. LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS: 1. LIGHTING AND APPLIANCE BRANCH-CIRCUIT TYPE, LUG MAINS, BOLT-ON CIRCUIT BREAKERS FOR BRANCH OVERCURRENT PROTECTIVE DEVICES (REPLACEABLE WITHOUT

DISTURBING ADJACENT UNITS). 1.1. ALL BREAKERS SERVING HVACR EQUIPMENT SHALL BE HACR TYPE. 2. CONTACTORS IN MAIN BUS: NEMA ICS 2, CLASS A, MECHANICALLY HELD, GENERAL-PURPOSE CONTROLLER, WITH SAME SHORT-CIRCUIT INTERRUPTING RATING

GENERAL-PURPOSE CONTROLLER, WITH SAME SHORT-CIRCUIT INTERRUPTING RATING

AS PANELBOARD. 2.1. EXTERNAL CONTROL POWER SOURCE: 120 V BRANCH CIRCUIT. 3. COLUMN-TYPE PANELBOARDS: SINGLE ROW OF OVERCURRENT DEVICES WITH NARROW GUTTER EXTENSION AND OVERHEAD JUNCTION BOX EQUIPPED WITH GROUND

AND NEUTRAL TERMINAL BUSES. 4. DOORS: CONCEALED HINGES, SECURED WITH FLUSH LATCH WITH TUMBLER LOCK;

# KEYED ALIKE.

A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA (NEC) 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR

B. COMPLY WITH NFPA (NEC) 70. C. COORDINATE FUSE RATINGS WITH UTILIZATION EQUIPMENT NAMEPLATE LIMITATIONS OF MAXIMUM FUSE SIZE AND WITH SYSTEM SHORT-CIRCUIT CURRENT LEVELS.

D. NEMA FU 1, CURRENT-LIMITING, NONRENEWABLE CARTRIDGE FUSES WITH VOLTAGE RATINGS CONSISTENT WITH CIRCUIT VOLTAGES. 1. TYPE RK-1: 250V OR 600V, 0-600A RATING, 200 KAIC TIME DELAY.

2. TYPE RK-5: 250V OR 600V, 0-600A RATING, 200 KAIC TIME DELAY.

3. TYPE CC: 600V, 0-30A RATING, 200 KAIC, FAST ACTING. 4. TYPE CD: 600V, 31-60A RATING, 200 KAIC, FAST ACTING. 5. TYPE J: 600V, 0-600A RATING, 200KAIC TIME DELAY. 6. TYPE L: 600V, 601-6000A RATING, 200KAIC, TIME DELAY.

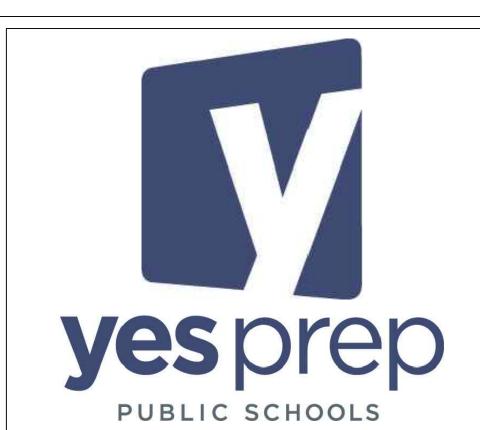
7. TYPE T: 250V. 0-1200A RATING, 200KAIC, TIME DELAY.

8. TYPE T: 600V, 0-800A RATING, 200KAIC, TIME DELAY.

# 262816 ENCLOSED SWITCHES AND CIRCUIT BREAKERS

INTENDED LOCATION AND APPLICATION.

A. FUSIBLE SWITCHES 1. TYPE GD, GENERAL DUTY, SINGLE THROW, 800A AND SMALLER: UL 98 AND NEMA KS 1, HORSEPOWER RATED, WITH CARTRIDGE FUSE INTERIORS TO ACCOMMODATE INDICATED FUSES, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.





	F-16/95	
No.	Description	Date
	Issue for Permit	02.15.21
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	_	
1 1		

YES PREP SCHOOL

# SECURITY VESTIBULE ADDITION

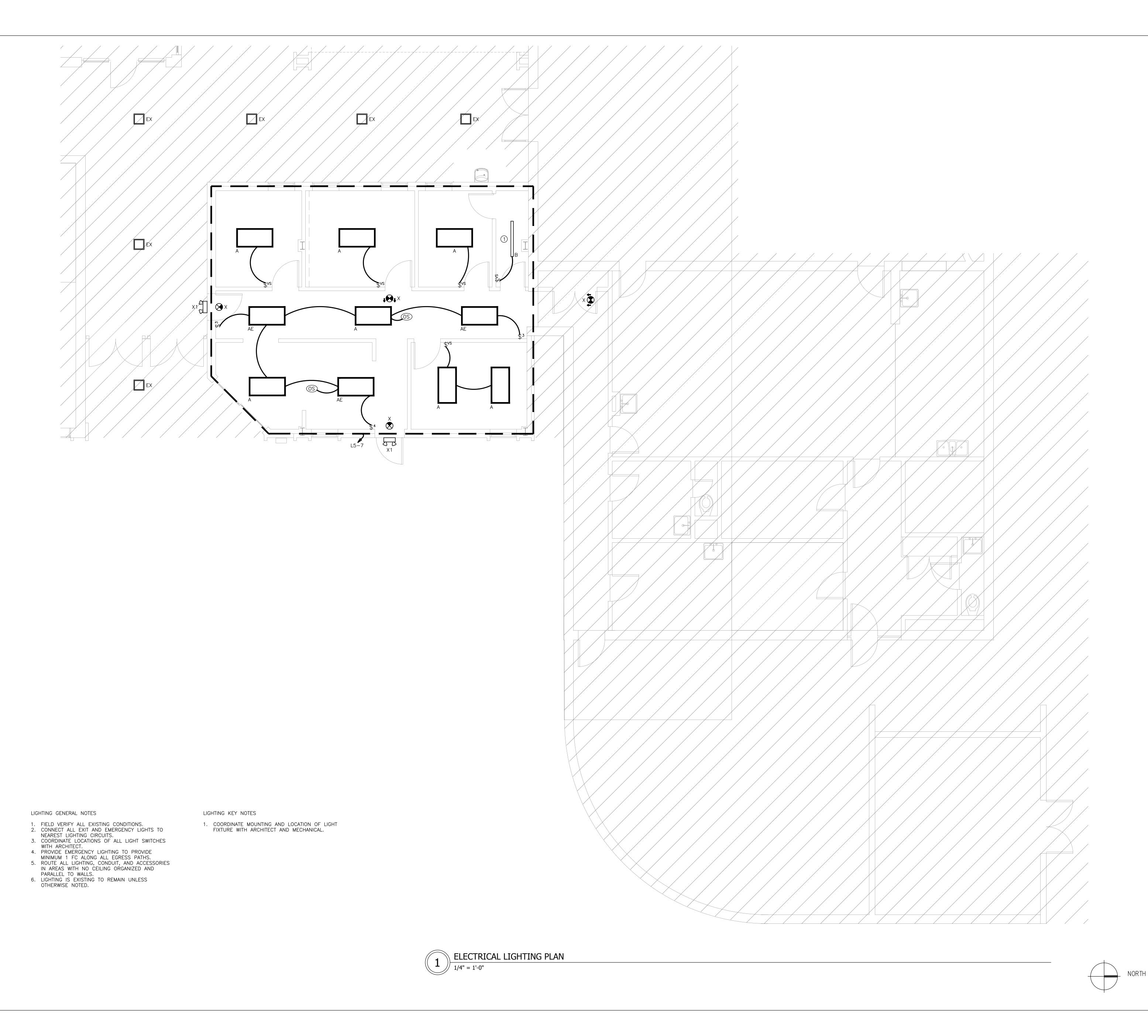
1305 BENSON ST. HOUSTON, TEXAS 77020

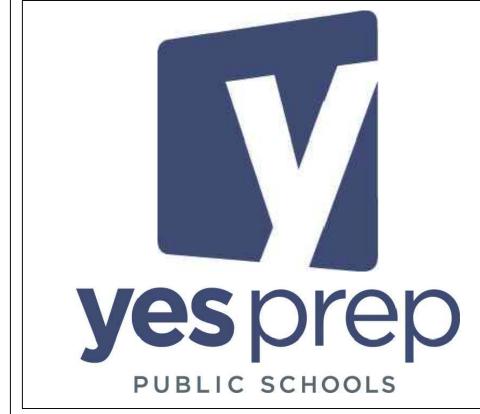
# **ELECTRICAL NOTES**

Project Number	21007
Date	01/22/21
Drawn By	DS
Checked By	SEH/BBB

E000

Scale







No.	Description	Date
	Issue for Permit	02.15.2

YES PREP SCHOOL

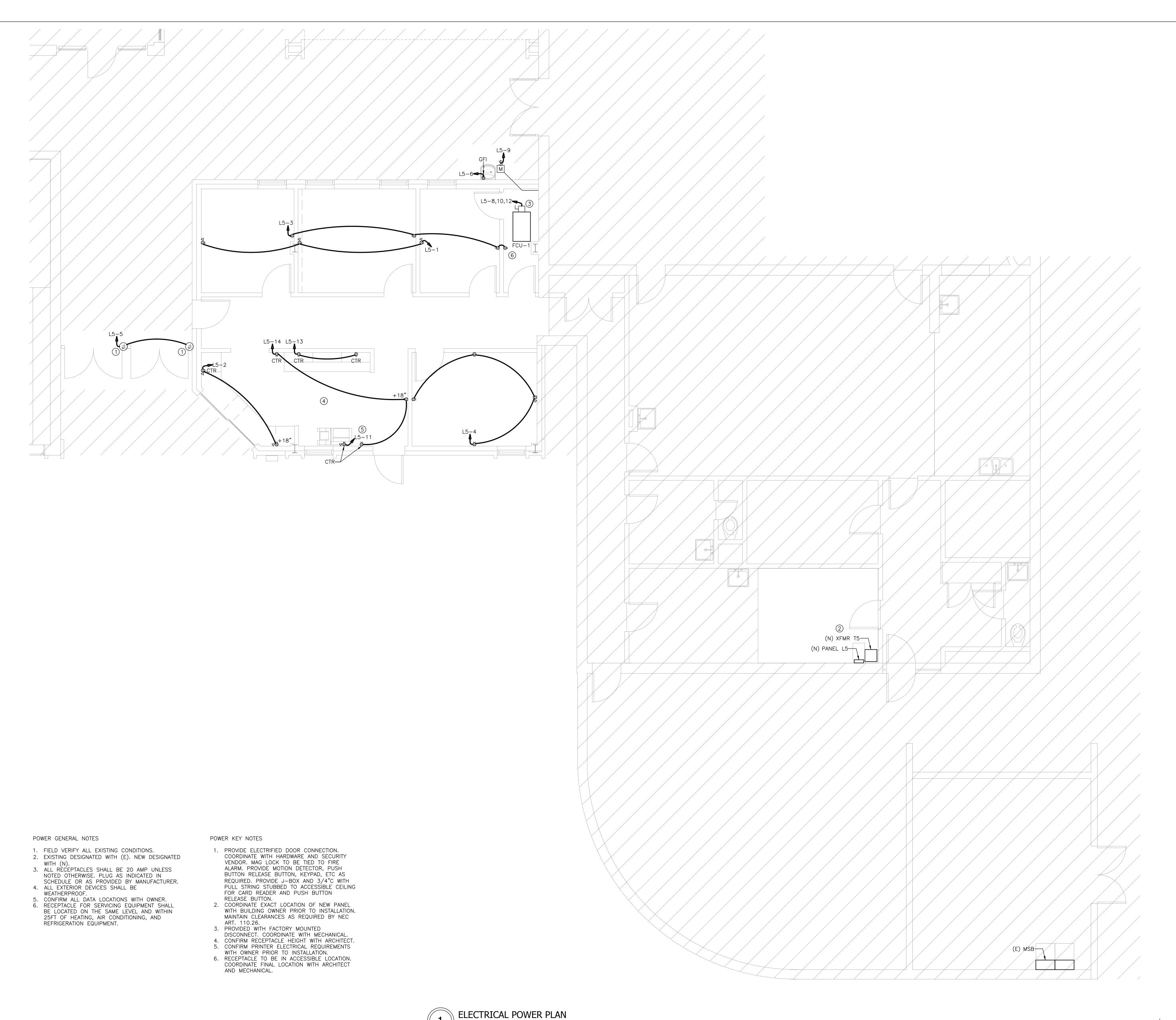
SECURITY **VESTIBULE ADDITION** 

1305 BENSON ST. HOUSTON, TEXAS 77020

LIGHTING PLAN

Project Number	21007
Date	01/22/21
Drawn By	DS
Checked By	SEH/BBB

E101







No.	Description	Date
	Issue for Permit	02.15.21

YES PREP SCHOOL

# SECURITY VESTIBULE ADDITION

1305 BENSON ST. HOUSTON, TEXAS 77020

# **POWER PLAN**

- 1		
	Project Number	21007
	Date	01/22/21
	Drawn By	DS
	Checked By	SEH/BBB

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	TYPICAL MOUNTING H	EIGHTS					
WITH ARCHITECTURAL PLANS SHALL TAKE PRECEDENCE	OORDINATE THE MOUNTING HEIGHTS OF A S AND ELEVATIONS. SPECIAL MOUNTING H OVER THOSE GIVEN BELOW. ALL MOUNTIN , UNLESS NOTED OTHERWISE.	EIGHTS ARE SHOWN ON THE PLANS					
LIGHT FIXTURES, INTERIOR	WALL MOUNTED, SCONCE	6'-6"					
	WALL MOUNTED, ABOVE MIRROR	0'-8" ABOVE TOP OF COUNTER					
	WALL MOUNTED, ABOVE DOOR	CENTER BETWEEN FRAME & CEILING					
	WALL MOUNTED, ABOVE STAIR LANDING IN SOFFIT	7'-0" (SEE ARCH DETAIL)					
LIGHT FIXTURES, EXTERIOR	WALL MOUNTED, BESIDE DOOR	6'-0" (SEE ARCH DETAIL)					
	STEP MOUNTED	6'-0" (SEE ARCH DETAIL)					
	WALL MOUNTED, NEAR GRADE	6'-0" (SEE ARCH DETAIL)					
	WALL MOUNTED, NEAR ROOF	2'-6" BELOW PARAPET					
SWITCHES	WALL SWITCHES AND DIMMERS	3'-10"					
	MANUAL MOTOR STARTERS	3'-10"					
RECEPTACLES	WALL	1'-6"					
	ABOVE COUNTER WITHOUT BACKSPLASH	0'-8" ABOVE TOP OF COUNTER					
	ABOVE COUNTER WITH BACKSPLASH	0'-4" ABOVE TOP OF BACKSPLASH					
	WALL HUNG SINKS (GFCI)	3'-6"					
	CLOCK	1'-0" BELOW CEILING					
TELEPHONE	DESK/TABLE	1'-6"					
	WALL TELEPHONE	3'-10"					
	ABOVE COUNTER WITHOUT BACKSPLASH	0'-8" ABOVE TOP OF COUNTER					
	ABOVE COUNTER WITH BACKSPLASH	0'-4" ABOVE TOP OF BACKSPLASH					
DATA	WALL	1'-6"					
	ABOVE COUNTER WITHOUT BACKSPLASH	0'-8" ABOVE TOP OF COUNTER					
	ABOVE COUNTER WITH BACKSPLASH	0'-4" ABOVE TOP OF BACKSPLASH					
ELECTRICAL EQUIPMENT	SAFETY SWITCH	6'-6" TO TOP OF ENCLOSURE					
	MOTOR STARTER	6'-6" TO TOP OF ENCLOSURE					
	PANEL BOARD	6'-6" TO TOP OF ENCLOSURE					
	COMMUNICATIONS CABINET	6'-6" TO TOP OF ENCLOSURE					

MCB AMPS 150  AMP BUS RATING: 150			(NI) DANEL LE									AIC RATING: 22,000							
			(N) PANEL L5										NOTES						
VOLTS 120/208								NIE	B #	^ 4						1. BALAN	. BALANCE ALL LOADS		
PHASE 3 WIRE 4				NEMA 1												2. LABEI	AL	L CIRCUITS	
CIRCUIT DESCRIPTION	*	WATT LOAD	WRE	BRKR								WATT LOAD	*	CIRCUIT DESCRIPTION					
3 PC	4	540	#12	20/1	1	540			Α	360			2	20/1	#12	360	4	2 DUPLEX	
4 DUPLEX	4	720	#12	20/1	3		720		В		720		4	20/1	#12	720	4	4 DUPLEX	
SECUIRTY DOORS	1	500	#12	20/1	5			500	С			500	6	20/1	#12	500	1	WATER FOUNTAIN	
LIGHTING	2	310	#12	20/1	7	310			Α	2899			8		#8	2899.2	1		
MOTORIZED DAMPER	1	250	#12	20/1	9		250		В		2899		10	40/3	#8	2899.2	1	FCU-1	
PRINTER	1	1000	#12	20/1	11			1000	С			2899	12	i	#8	2899.2	1		
2 DUPLEX	4	720	#12	20/1	13	720			Α	540			14	20/1	#12	540	4	3 DUPLEX	
SPACE		0			15		0		В		0		16			0		SPACE	
SPACE		0			17			0	С			0	18			0		SPACE	
SPACE		0			19	0			Α	0			20			0		SPACE	
SPACE		0			21		0		В		0		22			0		SPACE	
SPACE		0			23			0	С			0	24			0		SPACE	
SPACE		0			25	0			Α	0			26			0		SPACE	
SPACE		0			27		0		В		0		28			0		SPACE	
SPACE		0			29			0	С			0	30			0		SPACE	
SPACE		0			31	0			Α	0			32			0		SPACE	
SPACE		0			33		0		В		0		34			0		SPACE	
SPACE		0			35			0	С			0	36			0		SPACE	
SPACE		0			37	0			Α	0			38			0		SPACE	
SPACE		0			39		0		В		0		40			0		SPACE	
SPACE		0			41			0	С			0	42			0		SPACE	
	CO	MNIECTE	D		DEM	IAND													
NON-CONTINUOUS	1	NNECTE 10948	r	0%	109														
CONTINUOUS		310		5%		38													
KITCHEN EQUIPMENT	*3	0		5%		)													
RECEPTACLE	*4	3600	NEC 2	220.44	36	00													
TOTAL		LOAD	APH	B PH	C PH	1													
101/1		(VA)	(AMP)	(AMP)	(AMP)														
		14935		38.243	140	1													

MCB AMPS 1600 (SERVICE DISCONNECT)  AMP BUS RATING: 1600  VOLTS 277/480		(E) PANEL MSB												AIC RATING: 65,000 (EXISTING)  NOTES  1. BALANCE ALL LOADS				
				NEMA 1														And the second s
PHASE 3 WRE 4																Z. LABEL	AL	L CIRCUITS
CIRCUIT		WATT		DD1/D					RCU					DD1/D		WATT		CIRCUIT
DESCRIPTION	*	LOAD <b>5446.7</b>	WRE	BRKR	4	5447		I NU	MBE A	=R 0			2	BRKR	WRE	LOAD 0	*	DESCRIPTION SPACE
SUBFEED PANEL L5		4589.2	#4	70/3	3	3447	4589		В	0	0		4			0		SPACE
SOBILED I AIREE EO		4899.2	#4	7070	5		4000	4899	С			0	6			0		SPACE
		0			7	0			Α	8310			8			8310	1	
SPARE		0		70/3	9		0		В		8310		10	70/3		8310	1	EXISTING LOAD
		0			11			0	С			8310	12	1		8310	1	
		0			13	0			Α	13850			14	ı		13850	1	
SPARE		0		225/3	15		0		В		13850		16	100/3		13850	1	EXISTING LOAD
		0			17			0	С			13850	18			13850	1	
		0			19	0			Α	0			20			0		NO SPACE
SPARE		0		250/3	21		0		В		0		22			0		NO SPACE
		0			23			0	С			0	24			0		NO SPACE
		0			25	0			Α	27700			26			27700	1	
SPARE		0		250/3	27		0		В		27700		28	250/3		27700	1	EXISTING LOAD
		0			29			0	С			27700	30	•		27700	1	
		0			31	0				41550			32	1		41550	1	
SPARE		0		400/3	33		0		В		41550		34	400/3		41550	1	EXISTING LOAD
		0			35			0	С			41550	36	•		41550	1	
	1	41550		100/0	37	41550				41550			38	100/0		41550	1	5.405.10 L 0.45
EXISTING LOAD	1	41550		400/3	39		41550		В		41550		40	400/3		41550	1	EXISTING LOAD
	1	41550			41	00050		41550		0		41550	42	-		41550	1	NO CDACE
EMOTING LOAD	1	69250		600/2	43	69250			A	0	_		44			0		NO SPACE
EXISTING LOAD	1	69250 69250		600/3	45 47		69250	69250	В		0	0	46 48			0		NO SPACE NO SPACE
	1	69250			47	69250		09250	Α	0		U	50			0		NO SPACE
EXISTING LOAD	1	69250		600/3	51	09200	69250		В	U	0		52			0	_	NO SPACE
2/10/11/10 20/20	1	69250		00070	53		00200	69250	$\vdash$			0	54			0		NO SPACE

	LOAD A	NALYSIS MSB			
Code Reference					
	Lighting	Greater			
per NEC Table 220.12	per NEC	2030sf x 3	3000	=	3000
	actual		388	omit	
per NEC 220.60/220.51	HVAC	at 100%		=	8697.6
	Equipment	at 100%		=	2250
	Water Heater	at 100%		=	C
per NEC 220.88	Kitchen Equipm	at 65%		=	C
per NEC 220.14(I)	Receptacles	180 x 14 =	3600	=	3600
per Table 220.44	Recept Demand Factor	10,000		=	(
		50% Remainder		=	(
	*Existing Load	at 125%	933000	=	1166250
per NEC 220.14(F)	Sign	1200		=	1200
per NEC 430.24	25% Motor	largest 5hp		=	933
			total	=	1185931
*EXISTING PEAK kVA		•			
CONFIRMED WITH		V	Phase		Amps
CENTERPOINT	А	t 480	3	=	1426
ENERGY		SE	RVICE SIZE 1	600 AMPS	

		LIGHT	FIXTURE S	CHEDUL	E	
TYPE	MANUFACTURER	MODEL	VOLTS	FIXTURE WATTAGE	DESCRIPTION	NOTES
Α	LITHONIA	EPANL 24 4800LMHE 80CRI 40K MVOLT	120	31	LED 2X4 FIXTURE	1,3,4
AE	LITHONIA	EPANL 24 4800LMHE 80CRI 40K MVOLT	120	31	LED 2X4 FIXTURE W/ 90 MIN. EMERGENCY BATTERY BACKUP	1,2,3,4
В	LITHONIA	CLX L48 4000LM HEF 120 40K 80CRI	120	24.75	LED 4' LINEAR	1,3,4
Х	LITHONIA	LQC	120	5	LED EXIT SIGN W/ 90 MIN. EMERGENCY BATTERY BACKUP	1,2,3,4
X1	LITHONIA	ELM6L UVOLT	120	10.6	LED EGRESS FIXTURE W/ 90 MIN. EMERGENCY BATTERY BACKUP	1,2,3,4
EX	EXISTIN	G TO REMAIN			EXISTING TO REMAIN	

- 1. OWNER TO SELECT FIXTURE BASED ON LAMP QUANTITY AND WATTAGE PROVIDED. 2. BATTERY BACKUP TO BE INSTALLED IN FIXTURE. BATTERY BACK-UP MUST MEET OR EXCEED LUMENS SPECIFIED.
- 3. COORDINATE WITH CEILING TYPE.
- 4. CONFIRM FIXTURE COLOR AND STYLE WITH ARCHITECT PRIOR TO ORDERING.

	X	3 Pt	HASE COI	PP	ER F	FEEDER SCHEDULE		
NUMBER	CONDUCTORS	COND	W/O NEUTRAL	N	IUMBER	CONDUCTORS	COND	W/O NEUTRAL
02	4#12, 1#12 GND	3/4"	3/4"		38	4#500 KCMIL, 1#3 GND	3 1/2"	3"
03	4#10, 1#10 GND	3/4"	3/4"		42	4#600 KCMIL, 1#2 GND	4"	3 1/2"
05	4#8, 1#10 GND	1"	3/4"		46	(2 SETS) 4#4/0, 1#2 GND	2 1/2"	2"
06	4#6, 1#8 GND	1 1/4"	1"		51	(2 SETS) 4#250 KCMIL, 1#2 GND	3"	2 1/2"
80	4#4, 1#8 GND	1 1/4"	1 1/4"		62	(2 SETS) 4#350 KCMIL, 1#1 GND	3"	3"
10	4#3, 1#8 GND	1 1/4"	1 1/4"		76	(2 SETS) 4#500 KCMIL, 1#1/0 GND	3 1/2"	3 1/2"
11	4#2, 1#6 GND	1 1/2"	1 1/4"		85	(3 SETS) 4#300 KCMIL, 1#1/0 GND	3 1/2"	3"
13	4#1, 1#6 GND	2"	1 1/2"		93	(3 SETS) 4#350 KCMIL, 1#2/0 GND	3"	3"
15	4#1/0, 1#6 GND	2"	1 1/2"		100	(3 SETS) 4#400 KCMIL, 1#2/0 GND	3 1/2"	3"
17	4#2/0, 1#6 GND	2"	2"		126	(3 SETS) 4#600 KCMIL, 1#3/0 GND	4"	3 1/2"
20	4#3/0, 1#6 GND	2 1/2"	2"		138	(3 SETS) 4#700 KCMIL, 1#3/0 GND	5"	4"
23	4#4/0, 1#4 GND	2 1/2"	2"		168	(4 SETS) 4#600 KCMIL, 1#4/0 GND	4"	3 1/2"
25	4#250 KCMIL, 1#4 GND	3"	2 1/2"		210	(5 SETS) 4#600 KCMIL, 1#250 KCMIL GND	4"	3 1/2"
28	4#300 KCMIL, 1#4 GND	3"	2 1/2"		20m/	3#3/0, 1#6 GND	3"	3"
31	4#350 KCMIL, 1#3 GND	3"	3"		30m	3#250 KCMIL, 1#2 GND	3"	3"
33	4#400 KCMIL, 1#3 GND	3"	3"		40mv	(2 SETS) 3#3/0, 1#6 GND	3"	3"

- NOTES

  1. WHERE THE FEEDER SYMBOL IS SHOWN WITH SUBSCRIPT

  MV = MEDIUM VOLTAGE COPPER CONDUCTOR

  N = NO NEUTRAL CONDUCTOR

  G = NO EQUIPMENT GROUNDING CONDUCTOR

  E = EXISTING TO REMAIN

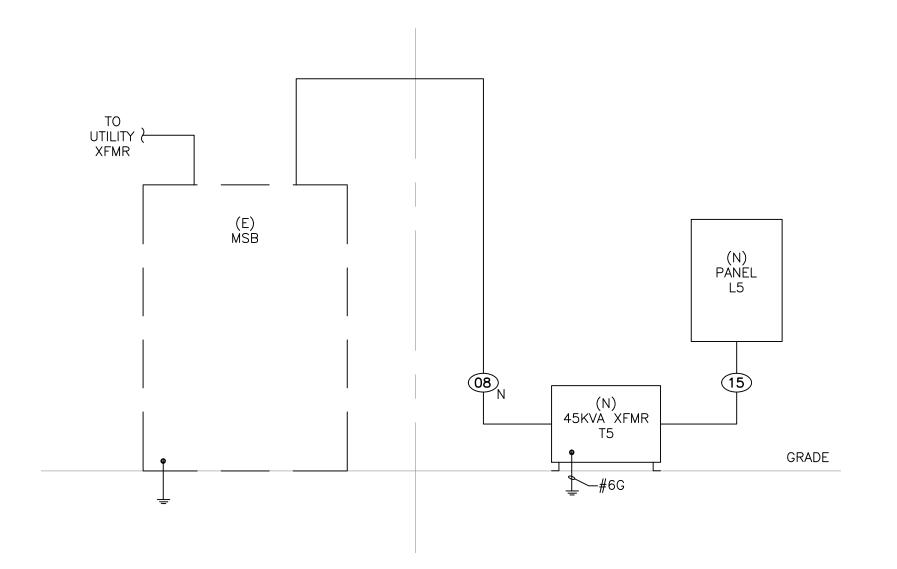
  2. 5KV MEDIUM VOLTAGE CABLE CALCULATED IN SCHEDULE 40 PVC. ALL OTHERS IN RMC.

  3. ALL CONDUIT CALCULATIONS BASED ON THHN COPPER CONDUCTORS.

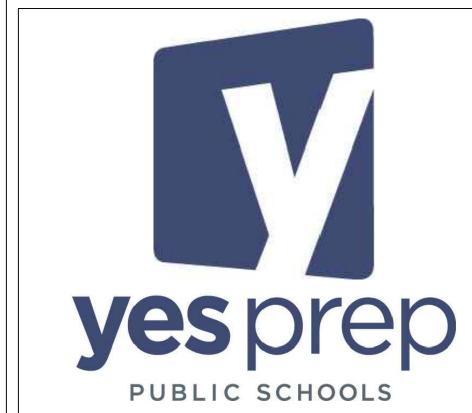
  4. AMPACITIES BASED ON 75°C TEMPERATURE RATING OF CONDUCTORS.

NOTE: AT TIME OF INSTALLATION, PROVIDE PERMANENTLY AFFIXED LABEL WITH DATE, FAULT CURRENT, AND CALCULATION. THE LABEL SHALL BE 2"X3" IN SIZE AND SHALL BE BLUE LETTERING ON A CONTRASTING BACKGROUND.
---

ALL GROUNDING AND BONDING AS PER NEC, ART 250









No.	Description	Date	
	Issue for Permit	02.15.2	

YES PREP SCHOOL

SECURITY **VESTIBULE ADDITION** 

1305 BENSON ST. HOUSTON, TEXAS 77020

**ELECTRICAL RISER** 

Project Number	2100
Date	01/22/2
Drawn By	DS
Checked By	SEH/BBE

E201

Scale

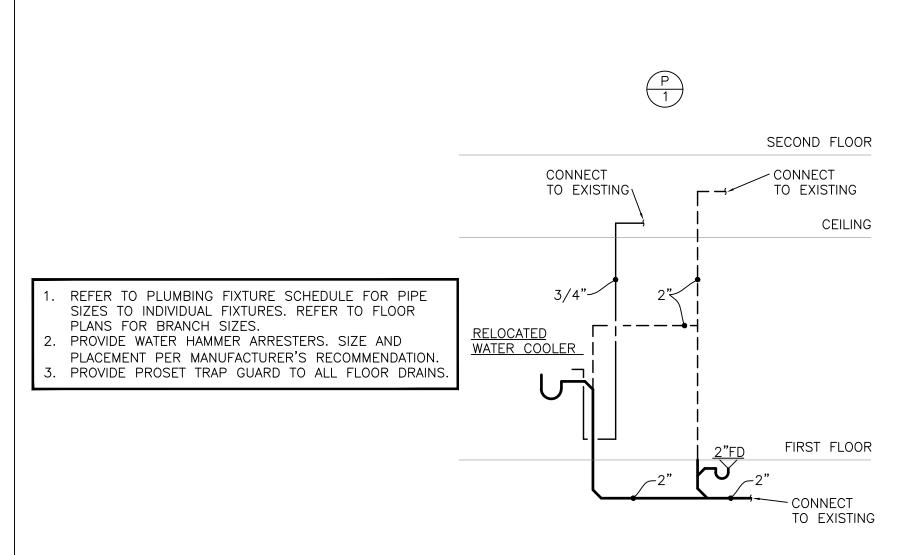
PIPING MATERIAL SCHEDULE				
SYSTEM	MATERIAL			
SANITARY WASTE/VENT ABOVE GRADE, INSIDE BLDG	CAST IRON PIPE AND FITTINGS WITH HUB OR NO-HUB JOINTS			
SANITARY WASTE/VENT BELOW GRADE	SCHEDULE 40 PVC PIPE AND FITTINGS			
DOMESTIC WATER ABOVE GRADE, INSIDE BLDG	TYPE "L" COPPER WITH SOLDER-JOINT FITTINGS			
<u>NOTES</u>				

PVC NOT TO BE USED IN RETURN AIR PLENUM.
 REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND OPTIONS.

2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

PIPING INSULATION SCHEDULE						
SYSTEM	PIPE SIZE	MATERIAL				
DOMESTIC COLD WATER (EXTERIOR WALLS AND EXPOSED/UNCONDITIONED SPACE)	ALL	MINERAL FIBER, PREFORMED, TYPE I, 1" THICK				
FLOOR DRAINS, TRAPS, AND SANITARY DRAIN PIPING WITHIN 10FT OF DRAIN RECEIVING CONDENSATE BELOW 60°F	ALL	MINERAL FIBER, PREFORMED, TYPE I, 1/2" THICK				
NOTES  1. PROVIDE ALUMINUM JACKET ON EXPOSED INSULATED PIPING. REFER TO SPECIFICATIONS.						

SYMBOL	LEGEND	
SANITARY WASTE ABOVE SLAB	X GATE VALVE	
SANITARY WASTE BELOW SLAB	P RISER SYMBO	L
VENT	VTR VENT THROUG	SH ROOF
COLD WATER	WCO WALL CLEAN-	-OUT
	FCO FLOOR CLEAN	N-OUT

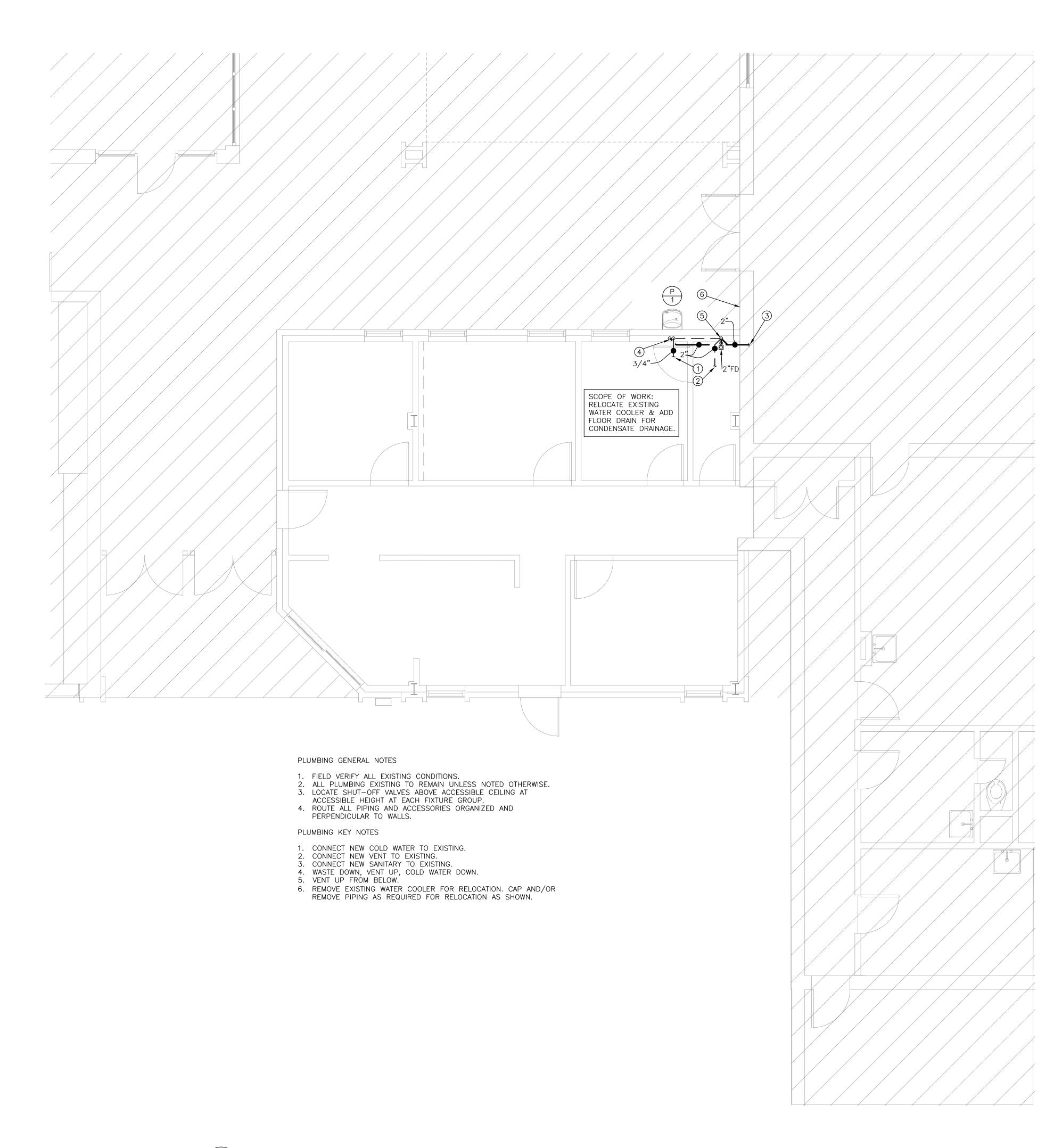


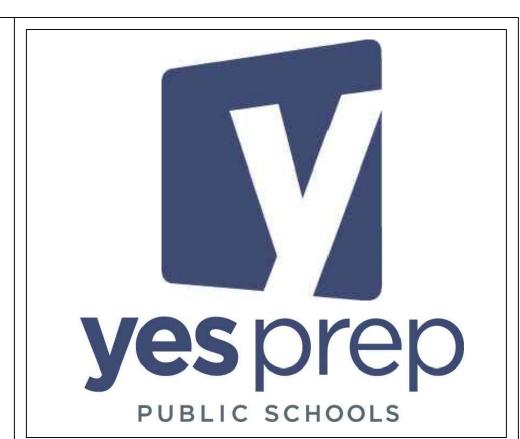


		PLUMBII	NG FIXT	ure sch	HEDULE	
FIXTURE	DESCRIPTION	WASTE	VENT	COLD WATER	HOT WATER	BASIS OF DESIGN MANUFACTURER AND MODEL
FD	FLOOR DRAIN, MECH ROOMS	PER PLANS	2"			MIFAB F1320-C-1-5, CAST IRON BODY WITH FLASHING COLLAR, 9" ROUND ADJUSTABLE TRACTOR GRATE NICKEL BRONZE STRAINER WITH METAL INTERNAL BUCKET

NOTES

1. CONNECT TO WASTE AND VENT AS INDICATED ON DRAWINGS AND AS REQUIRED BY PLUMBING CODE. PROVIDE ALL NECESSARY TRAPS, SUPPLIES, STOPS, AND OTHER ACCESSORIES TO INSTALL AND OPERATE PLUMBING FIXTURES PER PLUMBING CODE AND MANUFACTURER'S RECOMMENDATION.
2. PROVIDE MODEL SPECIFIED OR APPROVED EQUAL (JAY R. SMITH, ZURN).







No.	Description	Date
	Issue for Permit	02.15.2

YES PREP SCHOOL

SECURITY VESTIBULE ADDITION

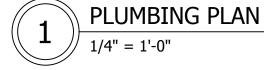
1305 BENSON ST. HOUSTON, TEXAS 77020

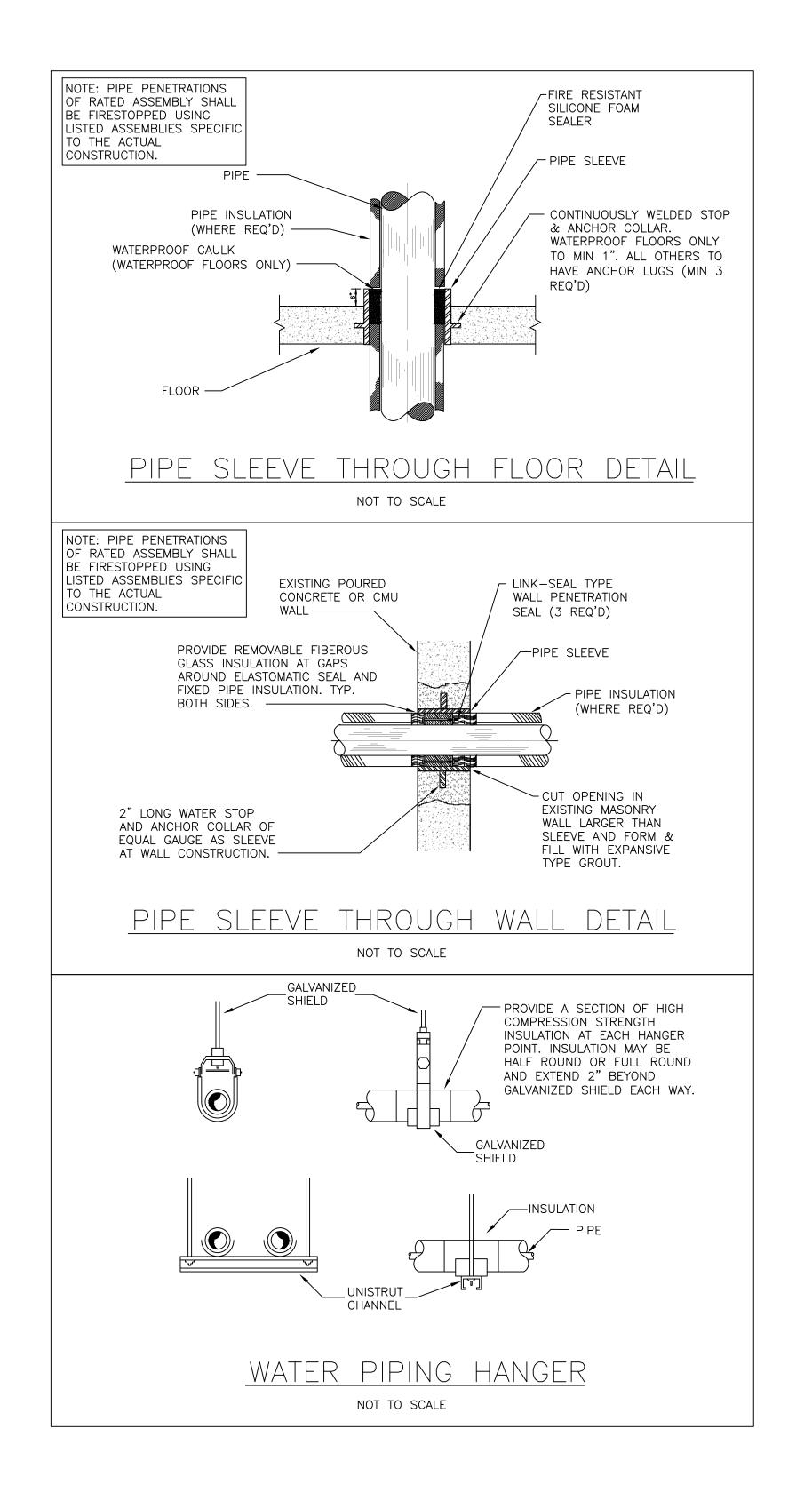
**PLUMBING PLAN** 

Project Number	2100
Date	01/22/2
Drawn By	MGC
Checked By	SEH

P101

NORTH





### DIVISION 22 - PLUMBING

### 220000 PLUMBING BASIC REQUIREMENTS

- A. MINIMUM STANDARDS FOR ALL WORK SHALL BE CITY OF HOUSTON AMENDMENTS TO 2012 INTERNATIONAL BUILDING CODE, 2012 UNIFORM PLUMBING CODE, AND 2015 INTERNATIONAL
- ENERGY CONSERVATION CODE. B. THE PLUMBING SYSTEMS SHALL INCLUDE DOMESTIC COLD WATER, DOMESTIC HOT WATER,
- SANITARY WASTE, AND VENT. C. REFERENCES: THE STANDARDS MENTIONED HEREIN WILL BE REFERRED TO IN THE DESIGN OF PLUMBING SYSTEMS. THE ENGINEER WILL SELECT APPROPRIATE SECTIONS OF THE STANDARD TO BE APPLIED IN ACCORDANCE WITH ESTABLISHED ENGINEERING PRINCIPLES AND PRACTICES.
- APPLICABLE SECTIONS OF NFPA 2. AMERICANS WITH DISABILITIES ACT (ADA) 3. TEXAS ACCESSIBILITY STANDARDS (TAS)
- D. SITE CONDITIONS: BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND DETERMINE ANY CONDITIONS THAT MAY AFFECT THE WORK. NO ALLOWANCE SHALL BE MADE
- FOR FAILURE TO MAKE SURE EXAMINATIONS. E. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A
- COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED. F. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES INCLUDING
- ARCHITECT, STRUCTURAL, CIVIL, MECHANICAL, AND ELECTRICAL. G. DO NOT SCALE FROM THE ENGINEERED DRAWINGS. REFER TO THE DIMENSIONED DRAWINGS OF THE ARCHITECT FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC.
- H. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED FOR THE INSTALLATION OF WORK AND PAY ALL INCIDENTAL CHARGES. I. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL TESTS NECESSARY TO PREVENT CONCEALMENT OF DEFECTIVE OR IMPROPER WORK. UPON COMPLETION OF WORK,
- TEST INSTALLATION THOROUGHLY AND RENDER IT FROM LEAKS OR IMPROPER CONNECTIONS. J. PROTECT EQUIPMENT AND WORK FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION. REMOVE ALL EXCESS DEBRIS AND CLEAN ALL EQUIPMENT

### 220517 SLEEVES AND SLEEVE SEAL SYSTEMS FOR PLUMBING PIPING

A. PROVIDE U.L. LISTED FIRESTOP SEALING SYSTEMS AT ALL PIPING PENETRATIONS OF RATED

UPON COMPLETION OF WORK. TOUCH UP WITH PAINT WHERE REQUIRED.

- FLOORS AND WALLS. B. INSTALL SLEEVES FOR PIPING PASSING THROUGH PENETRATIONS IN FLOORS, PARTITIONS,
- ROOFS, AND WALLS. C. INSTALL SLEEVE—SEAL SYSTEMS IN SLEEVES FOR ALL PENETRATIONS IN EXTERIOR WALLS AND SLABS-ON-GRADE.
- D. WALL AND FLOOR SLEEVES SHALL COMPLY WITH THE FOLLOWING: 1. STEEL PIPE SLEEVES SHALL COMPLY WITH ASTM A53/A53M, TYPE E, GRADE B, SCH. 40, ZINC COATED, PLAIN ENDS.
- 2. CAST—IRON PIPE SLEEVES SHALL BE CAST OR FABRICATED "WALL PIPE," EQUIVALENT TO DUCTILE-IRON PRESSURE PIPE, WITH PLAIN ENDS AND INTEGRAL WATERSTOP U.O.N.
- 3. PVC PIPE SLEEVES SHALL COMPLY WITH ASTM 1785, SCHEDULED 40. E. WALL AND FLOOR SLEEVE-SEAL SYSTEMS SHALL COMPLY WITH THE FOLLOWING:
- 1. SEALING ELEMENTS SHALL BE EPDM-RUBBER INTERLOCKING LINKS SHAPED TO FIT
- SURFACE OF PIPE. 2. ACCEPTABLE MANUFACTURERS: ADVANCE PRODUCTS & SYSTEMS, CALPICO, METRAFLEX

### 220719 PLUMBING PIPING INSULATION

### A. MINERAL FIBER, PREFORMED, TYPE AND THICKNESS PER SCHEDULE. B. INSTALLATION

- 1. CLEAN AND DRY SURFACES TO RECEIVE INSULATION.
- 2. INSTALL INSULATION WITH LONGITUDINAL AT TOP AND BOTTOM OF HORIZONTAL RUNS.

COMPANY, PIPELINE SEAL AND INSULATOR, PROCO PRODUCTS.

- 3. INSTALL MULTIPLE LAYERS OF INSULATION WITH LONGITUDINAL AND END SEAMS
- 4. KEEP INSULATION MATERIALS DRY DURING APPLICATION AND FINISHING. 5. INSTALL INSULATION WITH TIGHT AND LONGITUDINAL SEAMS AND END JOINTS. BOND
- SEAMS AND JOINTS WITH ADHESIVE RECOMMENDED BY INSULATION MATERIAL
- 6. CUT INSULATION IN MANNER TO AVOID COMPRESSING INSULATION MORE THAN 75 PERCENT OF ITS NOMINAL THICKNESS.
- 7. FINISH INSTALLATION WITH SYSTEMS AT OPERATING CONDITIONS. REPAIR JOINT SEPARATIONS AND CRACKING DUE TO THERMAL MOVEMENT.
- 8. REPAIR DAMAGED INSULATION FACINGS BY APPLYING SAME FACING MATERIAL OVER DAMAGED AREAS. EXTEND PATCHES AT LEAST 4 INCHES BEYOND DAMAGED AREAS. ADHERE, STAPLE, AND SEAL PATCHES SIMILAR TO BUTT JOINTS.

### 221116 DOMESTIC WATER PIPING

### A. PIPING MATERIAL PER SCHEDULE.

1. PIPE, PIPE FITTINGS, JOINTS, VALVES, FAUCETS AND FIXTURE FITTINGS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES SHALL COMPLY WITH NSF 61 AND NSF 372 AND SHALL HAVE A WEIGHTED AVERAGE LEAD CONTENT OF 0.25 PERCENT

# B. INSTALLATION

- 1. INSTALL PIPING LEVEL WITHOUT PITCH AND PLUMB.
- 2. INSTALL PIPING CONCEALED FROM VIEW AND PROTECTED FROM PHYSICAL CONTACT BY BUILDING OCCUPANTS UNLESS OTHERWISE INDICATED AND EXCEPT IN EQUIPMENT ROOMS AND SERVICE AREAS. 3. INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND
- SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE
- 4. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL AND COORDINATE WITH OTHER SERVICES OCCUPYING THE SPACE.
- 5. INSTALL PIPING TO PERMIT VALVE SERVICING.
- 6. INSTALL PIPING FREE OF SAGS AND BENDS. 7. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.
- 8. PROVIDE SHUT-OFF VALVE AT EACH MAJOR BRANCH LINE.
- 9. EACH WATER SUPPLIED FIXTURE AND PIECE OF EQUIPMENT SHALL BE PROVIDED WITH ITS OWN INDIVIDUAL AND ACCESSIBLE SHUT-OFF/STOP VALVE.
- 10. INSTALL DIELECTRIC FITTINGS IN PIPING AT CONNECTIONS OF DISSIMILAR METAL PIPING

# C. HANGER AND SUPPORT INSTALLATION

- 1. PIPE HANGERS a. VERTICAL PIPING: MSS TYPE 8 OR 42, CLAMPS
- b. INDIVIDUAL, STRAIGHT, HORIZONTAL PIPING RUNS
- i. 100 FEET AND LESS: MSS TYPE 1, ADJUSTABLE, STEEL CLEVIS HANGERS ii. LONGER THAN 100 FEET: MSS TYPE 43, ADJUSTABLE ROLLER HANGERS
- c. MULTIPLE, STRAIGHT, HORIZONTAL PIPING RUNS 100 FEET OR LONGER: MSS TYPE 44, PIPE ROLLS. SUPPORT PIPE ROLLS ON TRAPEZE.
- d. BASE OF VERTICAL PIPING: MSS TYPE 52, SPRING HANGERS
- 2. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR. 3. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, TO A MINIMUM
- OF 3/8 INCH. 4. INSTALL HANGERS FOR COPPER TUBING WITH THE FOLLOWING MAXIMUM HORIZONTAL
- SPACING AND MINIMUM DIAMETERS:
- a. NPS 3/4 AND SMALLER: 60 INCHES WITH 3/8-INCH ROD b. NPS 1 AND NPS 1-1/4: 72 INCHES WITH 3/8-INCH ROD
- c. NPS 1-1/2 AND NPS 2: 96 INCHES WITH 3/8-INCH ROD
- d. NPS 2-1/2: 108 INCHES WITH 1/2-INCH ROD
- 5. INSTALL SUPPORTS FOR VERTICAL COPPER TUBING EVERY 10 FEET.

# D. PIPING INSPECTIONS

- 1. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN INSPECTED AND APPROVED BY AUTHORITY HAVING JURISDICTION (AHJ).
- 2. IF AHJ FIND THAT PIPING WILL NOT PASS TEST OR INSPECTIONS, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR REINSPECTION.
- 3. PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AHJ.
- E. PIPING TESTS
- 1. FILL DOMESTIC WATER PIPING. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT AIR BOUND AND THAT PIPING IS FULL OF WATER.
- 2. TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT A SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.
- 3. LEAVE NEW, ALTERED, EXTENDED, OR REPLACED DOMESTIC WATER PIPING UNCOVERED
- AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. 4. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING
- PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW IT TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED. 5. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS, RETEST PIPING OR PORTION
- THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED. 6. PREPARE REPORTS FOR TESTS AND FOR CORRECTIVE ACTION REQUIRED.
- F. CLEAN AND DISINFECT POTABLE DOMESTIC WATER PIPING.

### 221316 SANITARY WASTE AND VENT SYSTEM

### A. PIPING MATERIAL PER SCHEDULE.

- B. PIPING INSTALLATION 1. INSTALL PIPING IN CONCEALED LOCATIONS UNLESS OTHERWISE INDICATED AND EXCEPT IN
- EQUIPMENT ROOMS AND SERVICE AREAS. 2. INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND
- SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE.
- 3. INSTALL PIPING ABOVE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL
- REMOVAL. 4. INSTALL PIPING AT MINIMUM SLOPES.
- i. HORIZONTAL SANITARY: 1/4" PER FOOT IN DIRECTION OF FLOW. NPS 4 AND LARGER MAY BE SLOPED AT 1/8" PER FOOT IN DIRECTION OF FLOW WITH APPROVAL OF AUTHORITY HAVING JURISDICTION (AHJ).
- ii. VENT PIPING: 1/8" PER FOOT DOWN TOWARD VERTICAL FIXTURE VENT OR TOWARD
- VENT STACK. 5. INSTALL PIPING FREE OF SAGS AND BENDS.
- 6. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.
- 7. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AHJ.
- C. HANGERS AND SUPPORT INSTALLATION 1. INSTALL HANGERS FOR CAST IRON PIPING WITH THE FOLLOWING MAXIMUM HORIZONTAL

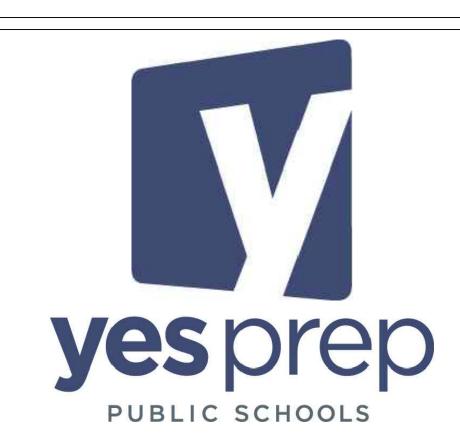
a. NPS 1-1/2 AND NPS 2: 60 INCHES WITH 3/8-INCH ROD

- SPACING AND MINIMUM ROD DIAMETERS:
- b. NPS 4: 60 INCHES WITH 5/8-INCH ROD 2. INSTALL SUPPORTS FOR VERTICAL CAST IRON PIPING EVER 15 FT.
- D. TEST SANITARY DRAINAGE AND VENT PIPING
- E. PREPARE REPORTS FOR TESTS AND REQUIRED CORRECTIVE ACTION.
- F. CLEANING
- 1. CLEAN INTERIOR OF PIPING. 2. PROTECT DRAINS DURING REMAINDER OF CONSTRUCTION PERIOD TO AVOID CLOGGING WITH DIRT AND DEBRIS AND TO PREVENT DAMAGE FROM TRAFFIC AND CONSTRUCTION
- 3. PLACE PLUGS IN ENDS OF UNCOMPLETED PIPING AT END OF DAY AND WHEN WORK STOPS.

### 224000 PLUMBING FIXTURES

- A. INSTALL LEVEL AND PLUMB. B. PROVIDE FIXTURE CARRIER SUPPORT FOR WALL-HUNG FIXTURES.
- C. ADJUSTING 1. OPERATE AND ADJUST FIXTURES AND CONTROLS.
- D. CLEANING AND PROTECTION 1. CLEAN FIXTURES AND FITTINGS WITH MANUFACTURER'S RECOMMENDED CLEANING
- METHODS AND MATERIALS. 2. INSTALL PROTECTIVE COVERING FOR INSTALLED FIXTURES AND FITTINGS.

3. DO NOT ALLOW USE OF FIXTURES FOR TEMPORARY FACILITIES.





No.	Description	Date
	Issue for Permit	02.15.2

YES PREP SCHOOL

# SECURITY VESTIBULE ADDITION

1305 BENSON ST. HOUSTON, TEXAS 77020

# **PLUMBING SPECIFICATIONS**

Project Number	21007
Date	01/22/21
Drawn By	MGG
Checked By	SEH

P201

Scale

1. THE DESIGN OF THE STRUCTURES SHOWN WITHIN THESE CONTRACT DRAWINGS IS IN ACCORDANCE WITH:

THE 2012 INTERNATIONAL BUILDING CODE WITH CITY OF HOUSTON AMENDMENTS.

THESE PLANS MAY NOT BE USED FOR CONSTRUCTION WITHOUT PERMIT APPROVAL FROM THE GOVERNING JURISDICTION. PERMIT MUST BE APPLIED FOR WITHIN ONE YEAR OF PLAN ISSUANCE DATE, AND CONSTRUCTION MUST START WITHIN ONE YEAR OF RECEIPT OF PERMIT. CONTACT EOR TO REQUEST UPDATED PLANS FOR PERMIT SUBMISSION OR CONSTRUCTION WORK BEYOND THESE LIMITS, WHICH MAY REQUIRE REVISIONS BASED ON THE LATEST COMPANY, INDUSTRY, AND BUILDING CODE STANDARDS.

3. ALL REFERENCES TO STANDARDS (SUCH AS ASTM, ACI, AISC ETC.) SHALL BE THE LATEST ACCEPTED STANDARD REFERRED TO BY THE CODE NOTED

4. CONTRACTOR IS RESPONSIBLE FOR ALL METHODS AND PROCEDURES DURING CONSTRUCTION. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN INTEGRITY OF STRUCTURE DURING CONSTRUCTION.

5. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE DRAWINGS, SPECIFICATION, AND BUILDING CODE REFERENCED ABOVE.

6. Where discrepancies occur between plans, detail, structural notes and specifications, the greater requirement shall govern. 7. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING FOR SLEEVES, CURBS, INSERTS, DEPRESSIONS, ETC., NOT SHOWN ON STRUCTURAL DRAWINGS. CONTRACTOR SHALL VERIFY ALL DROPS, OFFSETS, BLOCK-OUTS, FINISHES, AND DIMENSIONS WITH OTHER DISCIPLINES PRIOR TO PROJECT LAYOUT.

8. Openings that are required by subcontractors shall be submitted to engineer for review. Additional structural members or REINFORCEMENT MAY BE NECESSARY.

9. ESTABLISH AND VERIFY ALL OPENINGS, INSERTS, OR EQUIPMENT FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADE. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE SUBCONTRACTORS AND EQUIPMENT SUPPLIERS. EQUIPMENT BEING SUPPORTED BY OR SUSPENDED FROM THE STRUCTURE SHALL BE COORDINATED WITH THE MANUFACTURER OF ANY PRE-ENGINEERED FRAMING OR COMPONENTS. ALL OPENINGS SHALL BE PROPERLY REINFORCED AND APPROVED BY THE ENGINEER. DO NOT PENETRATE ANY STRUCTURAL ELEMENTS (BEAMS, COLUMNS, WALLS, DECKING, SLABS, ETC.) WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES 11. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT

PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES. 12. THE STRUCTURAL INTEGRITY OF THE BUILDING RELIES ON THE FULL INTERACTION OF ALL ITS COMPONENT PARTS WITH NO PROVISIONS MADE FOR

CONDITIONS AND/OR SEQUENCES OF CONSTRUCTION AND THE STRUCTURAL DESIGN IS BASED ON THIS PREMISE. THEREFORE, THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING OF THE STRUCTURE DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF BRACING FOR ALL WALLS, FORMWORK, AND SHORING DURING CONSTRUCTION. 13. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT DURING CONSTRUCTION.

14. ALL ERECTION PROCEDURES SHALL COMPLY WITH OSHA STANDARDS.

15. CONTRACTOR SHALL DETERMINE THE SCOPE OF WORK FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE INCLUDING ARCHITECTURAL, CIVIL INTERIOR DESIGN, LANDSCAPE AND MEP DRAWINGS. THE STRUCTURAL DRAWINGS SHALL NOT BE CONSIDERED SEPARATELY FOR THE PURPOSES OF BIDDING THE STRUCTURAL WORK. CONTRACTOR SHALL REVIEW THE ENTIRE DRAWING PACKAGE IN ORDER TO DETERMINE THE SCOPE OF STRUCTURAL WORK INCLUDING NECESSARY COORDINATION SHOWN IN OTHER CONSULTANT DRAWINGS.

16. THE USE OR REPRODUCTION OF THESE DRAWINGS BY ANY CONTRACTOR, IN LIEU OF PREPARATION OF SHOP DRAWINGS, SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, DUE TO ANY ERRORS THAT MAY

17. NOTED SCALES ARE FOR GRAPHIC PURPOSES ONLY. CONTRACTOR SHALL NOT SCALE DRAWINGS FOR THE PURPOSE OF DETERMINING DIMENSIONAL 18. Approved alternates may be submitted by contractor and reviewed by design team. If alternate is accepted, contractor shall be

RESPONSIBLE FOR COORDINATING THE CHANGES AND COSTS NECESSARY TO IMPLEMENT THE CHANGES. 19. ALL ASPECTS OF THE FOUNDATION CONSTRUCTION SHALL BE IN COMPLIANCE WITH THESE DRAWINGS AND THE REFERENCED GEOTECHNICAL REPORT.

A. GEOTECHNICAL REPORT BY: PARADIGM CONSULTANTS, INC B. PROJECT NUMBER: 11-1012 C. REPORT DATE: **MARCH 2011** 

D. MINIMUM GRADE BEAM EMBEDMENT 30" BELOW EXTERIOR GRADE

E. NET ALLOWABLE BEARING CAPACITY:

i. TOTAL LOAD 4.5 KSF ii. Dead load

# SUBMITTALS AND CONSTRUCTION DOCUMENTATION

A. CONCRETE MIX DESIGNS

B. CONCRETE ACCESSORIES (CHAIRS, CURING COMPOUNDS, ADD MIXTURES ETC.) C. CONSTRUCTION AND CONTRACTION JOINTS LAYOUTS IF APPLICABLE

. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE FOLLOWING:

D. COLD-FORMED METAL FRAMING E. REINFORCING STEEL

F. MISCELLANEOUS STEEL G. EMBEDDED ITEMS

H. ANY ITEMS NOT SPECIFICALLY DESIGNED BY THE ENGINEER THAT REQUIRE ENGINEER TO REVIEW FOR LOADING REQUIREMENTS

THOSE ITEMS NOT DESIGNED BY THE ENGINEER SHALL BE DESIGNED BY A THIRD-PARTY PROFESSIONAL ENGINEER EMPLOYED BY CONTRACTOR LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. ENGINEER IS NOT RESPONSIBLE FOR THE DESIGN PREPARED BY THIRD PARTY ENGINEERS ON DEFERRED ITEMS. CONTRACTOR AND THIRD-PARTY ENGINEER SHALL RETAIN ALL RESPONSIBILITY FOR THE DESIGN OF THE PRODUCTS AND THE CONNECTIONS OF

THE PRODUCTS TO THE BUILDING STRUCTURE. 3. ALL SHOP DRAWINGS AND SUBMITTALS SHALL BE REVIEWED BY GENERAL CONTRACTOR AND STAMPED APPROVED OR EXCEPTIONS NOTED PRIOR TO BEING SENT TO ENGINEER. THOSE ITEMS THAT ARE NOT REVIEWED OR NOT REVIEWED ADEQUATELY BY GENERAL CONTRACTOR WILL BE RETURNED TO GENERAL CONTRACTOR BY THE ENGINEER WITHOUT BEING REVIEWED AND THIS SHALL NOT BE CAUSE FOR DELAY.

4. CONTRACTOR SHALL PREPARE SUBMITTALS PER ARCHITECTS' PROJECT MANUAL 5. The failure by the contractors to submit a shop drawing or submittal shall not relieve the contractor of the responsibility to

FURNISH AND INSTALL THE WORK. 6. Engineer shall be provided at least 10 full working days (not including delivery time) to review shop drawings and 2 full working DAYS TO REVIEW RFIS. RFIS OR SUBSTITUTIONS THAT REQUIRED REDESIGN OR ANY OTHER CHANGES TO THE DRAWINGS MAY EXCEED TYPICAL REVIEW

7. Shop drawings and submittals will only be reviewed for the limited purpose of checking for general compliance with the design INTENT SHOWN IN THE DRAWINGS

8. THE ENGINEER'S REVIEW IS LIMITED TO REVIEWING THAT THE APPLICABLE LOADS USED IN THE DESIGN PERFORMED BY THE THIRD-PARTY ENGINEER WERE GENERALLY IN CONFORMANCE WITH THE REQUIREMENTS LISTED ON DRAWINGS.

9. No work on any structural items indicated on engineer's drawings may proceed until all submittals related to that item have

BEEN SUBMITTED AND REVIEWED BY ENGINEER WITH NO EXCEPTIONS TAKEN. 10. Any changes to engineer's design that are required to accommodate any issue by third party engineer shall be clearly marked and

LOCATED AS A NOTIFICATION TO ENGINEER ON THE SUBMITTAL 11. REVIEW OF SHOP DRAWINGS SHALL NOT BE CONSTRUED AS AN APPROVAL OF ANY MEANS AND METHODS.

12. THE USE OF REPRODUCTIONS OF HARD COPIES OR USE OF ENGINEERS ELECTRONIC COPIES IN LIEU OF THE INDEPENDENT PREPARATION OF SHOP DRAWINGS OR SUBMITTALS SIGNIFIES CONTRACTORS ACCEPTANCE OF ALL INFORMATION SHOWN IN HARD COPIES OR ELECTRONIC FILES AS CORRECT AND OBLIGATES HIMSELF TO ANY JOB EXPENSES REAL OR IMPLIED ARISING DUE TO ERRORS OR INCONSISTENCIES THAT ARE IN THE HARD COPIES OR ELECTRONIC FILES. USE OF SUCH FILES IS SOLELY AT THE CONTRACTOR'S RISK.

# BUILDING PAD SPECIFICATIONS

1. Building pad shall be prepared so that PVR does not exceed  $1^{\prime\prime}$ . Refer to the Geotechnical report for pad preparation required to ACHIEVE THE PVR NOTED.

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2. ALL GRADE BEAMS SHALL BEAR A MINIMUM OF 30" BELOW FINISHED GRADE.

3. Provide aggregate base course and/or Radon mitigation system underneath slab on grade as indicated by geotechnical report. 4. THE CONTRACTOR SHALL EXCAVATE, PREPARE, AND COMPACT THE BUILDING PAD IN ACCORDANCE WITH THE GEOTECHNICAL REPORT NOTED IN THE

5. THE CONTRACTOR SHALL ADVISE THE ENGINEER OF RECORD OF SITE CONDITIONS WHICH MAY NOT BE DESCRIBED ON THE PLANS OR IN THE GEOTECHNICAL REPORT 6. SLAB SHALL NOT BE PLACED ON UNCONSOLIDATED FILLS OF ANY SIZE UNLESS THE FILL HAS BEEN CONSIDERED IN THE DESIGN OR THE SLAB IS SUPPORTED

7. Unless specified otherwise in the geotechnical report, all fills shall be compacted to 95% proctor density as determined in ASTM D 698. DEEP FILL SHALL BE LAYERED WITH CONSOLIDATED LAYERS OF 8 INCH MAXIMUM THICKNESS 8. If ANY PORTION OF THE STRUCTURE IS PLACED ON DEEP FILL, THE ENGINEER OF RECORD SHALL BE NOTIFIED PRIOR TO CONSTRUCTION.

9. Trenches for buried plumbing shall not run along or under the grade beams except to cross at right angles. Trench backfill shall BE THOROUGHLY COMPACTED. A CLAY MOISTURE PLUG SHALL BE USED AT THE EDGE OF THE FOUNDATION FOR ALL TRENCHES BACKFILLED WITH SAND.

10. Grade beams and footings shall be clean and per plan in size. Beams or footings excavated differently in size or location than SHOWN ON PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD.

11. LOOSE SOILS, CLODS, MUD, STANDING WATER, ICE OR FROST, ORGANICS AND VEGETATION, AND TRASH SHALL BE REMOVED FROM THE GRADE BEAMS AND BUILDING PAD PRIOR TO CONCRETE PLACEMENT. 12. PROVIDE A VAPOR RETARDER OR VAPOR BARRIER AS DIRECTED BY THE ARCHITECT OVER THE PREPARED BUILDING PAD. THE THICKNESS SHALL BE AS

DETERMINED BY THE ARCHITECT, BUT SHALL NOT BE LESS THAN 10 MIL. THE VAPOR RETARDER/BARRIER SHALL BE LAPPED A MINIMUM OF 12 INCHES AND TAPED AT THE JOINTS TO PROVIDE A CONTINUOUS SHEET UNDER THE ENTIRE SLAB. SECURING THE VAPOR RETARDER/BARRIER TO THE SIDES OF THE GRADE BEAMS AND CUTTING THE MATERIAL IN THE BOTTOM OF THE BEAMS PRIOR TO CONCRETE PLACEMENT IS RECOMMENDED IN ORDER TO GREATLY REDUCE ANY BRIDGING THAT MAY OCCUR.

13. ALL GRADE ADJUSTMENTS SHALL BE MADE WITH ENGINEER FILL AS INDICATED IN GEOTECHNICAL REPORT. 14. FOUNDATION CONDITIONS WHICH DIFFER FROM GEOTECHNICAL REPORT SHALL BE BROUGHT TO ATTENTION OF ENGINEER.

# BRICK, STONE & CMU FACADE SUPPORT SPECIFICATIONS

# Design of brick, stone, and CMU facades, and their attachment, is by others. All work and design shall meet the following

2. LOOSE LINTELS SHALL BE MANUFACTURED FROM STEEL ANGLES COMPLYING WITH ASTM A36.

3. LINTELS SHALL BE MANUFACTURED FROM ONE CONTINUOUS PIECE WITHOUT SPLICES AND SHALL BE PROTECTED FROM CORROSION AS INDICATED BY THE ARCHITECT, WITH PAINT AS A MINIMUM.

4. LINTELS SHALL BEAR A MINIMUM OF 8" ON EACH END.

5. THE COMPRESSIVE STRENGTH OF THE BRICK, STONE AND CMU FACADES SHALL BE AS REQUIRED TO SUPPORT ALL OF THE STACKING TRIBUTARY AREA OF BRICK AND STONE ABOVE IT FOR THE REQUIRED FAÇADE HEIGHTS AND GRAVITY LOAD PATHS AROUND OPENINGS. 6. VERTICAL JOINTS SHALL BE PROVIDED IN LONG HORIZONTAL RUNS OF BRICK TO ACCOMMODATE THERMAL EXPANSION MOVEMENT AND RELIEVE

ASSOCIATED STRESSES. Brick, stone, and CMU facade construction shall utilize brick ties that are capable of accommodating volume changes from THERMAL EXPANSION/CONTRACTION AND THE DEFLECTION, WOOD SHRINKAGE, AND FRAMING GAP TAKE-UP LISTED ON THESE PLANS, IN ADDITION

TO HORIZONTAL DEFLECTIONS OF COMPARABLE TOTAL MAGNITUDES AS A RESULT OF SHORT-TERM LATERAL LOADS. 8. Provide soft movement joints between brick, stone, and CMU façades supported at different elevations or by different STRUCTURAL SYSTEMS.

9. MASON TO SIZE LINTELS, IN NO CASE BEING LESS THAN FOLLOWS:

 $L \le 4'-0''$  L 3 % x 3 % x 5/16L 5 x 3 ½ x 5/16 LLV 4'-0" < L <= 6'-0" L5x3½x3/8LLV 6'-0" < L <= 8'-0" 8'-0" < L <= 10'-0" L6x3½x3/8LLV 10'-0" < L <= 12'-0" L7x4x3/8LLV 12'-0" < L CONTACT ENGINEER

# **DESIGN LOADS**

1. THE DESIGN LOADS PERTINENT TO THE STRUCTURAL DESIGN OF THE STRUCTURES ARE AS FOLLOWS: A. FLOOR LIVE LOADS:

i. Corridors & offices 100 PSF ii. Mechanical/Electrical rooms 100 PSF 125 PSF iii. STORAGE SPACES

B. WIND LOADS: 139 MPH i. Basic Design Wind Speed – V WIND EXPOSURE iii. Risk Category iv. Design Method DIRECTIONAL

±0.18 v. Internal Pressure Coefficient vi. Component & Cladding Wind Pressures (ASD): (LOADS ARE BASED ON THE TRIBUTARY AREAS LISTED AND MAY POTENTIALLY BE REDUCED FOR LARGER AREAS; CONTACT THE EOR.)

a. Walls & Soffits (10 s.f.) i. Zone 4 +25/-25 PSF ii. Zone 5 +25/-46 PSF C. <u>EARTHQUAKE LOADS:</u>

i. Ss 0.039 ii. S1 iii. SITE CLASS iv. Sds v. SD1

viii. Seismic Importance Factor ix. Analysis Procedure EQUIVALENT LATERAL FORCE

# REINFORCED CONCRETE SPECIFICATIONS

1.	ALL CONCRETE SHALL COMPLY WITH THE FOLLOWING:					
		Concrete	Max		Max	
		Strength	W/CM		Aggregate	
	LOCATION	F'c	Ratio	AIR CONTENT	SIZE	
	SLABS ON GRADE	3,000 PSI	0.55	0+1.5%	1"	
	PIERS	3,000 PSI	0.55	0+1.5%	1"	
	GRADE BEAMS	3,000 PSI	0.55	0+1.5%	3/4"	
2.	. This specification also applies to micro & macro fiber slabs as well as un-reinforced topping slabs.					

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3. CONCRETE SUPPLIER SHALL DETERMINE SLUMP FOR EACH MIX DESIGN TO PROVIDE PROPER WORKABILITY, ADEQUATE CONSOLIDATION AROUND REINFORCING STEEL, GOOD FINISHING AND GOOD OVERALL PERFORMANCE.

4. CONCRETE SLUMP SHALL BE SHOWN ON EACH CONCRETE MIX DESIGN. SLUMP SHALL BE TESTED AT EACH TRUCK FOR THE PURPOSE OF DETERMINING AND ESTABLISHING CONSISTENCY. THOSE BATCHES FOR WHICH THE TESTED SLUMP DOES NOT MATCH THE MIX DESIGN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND MAY BE REJECTED.

5. CONCRETE FOR PIERS SHALL HAVE A SLUMP OF 8".

vi. Seismic Design Category

vii. RISK CATEGORY

6. IN NO CASE SHALL CONCRETE THAT IS STEEL TROWEL FINISHED INCLUDE ENTRAINED AIR.

7. ADMIXTURES, AGGREGATES ETC, MAY NOT CONTAIN CHLORIDE SALTS. 8. CONCRETE MATERIALS SHALL COMPLY WITH THE FOLLOWING:

A. PORTLAND CEMENT Type 1 and conforming to the requirements of ASTM C150

B. MAXIMUM SOLUBLE CHLORIDE ION CONTENT SHALL BE LESS THAN 0.06 PERCENT BY WEIGHT OF CEMENT IN ACCORDANCE WITH ACI 350,

SECTION 4.4.1 . Normal Weight Aggregate ASTMC330 D. LIGHT WEIGHT AGGREGATE E. FINE AGGREGATE

F. FLY ASH ASTM C618, CLASS C OR F 20% MAX, INCLUDING POZZOLANS AND SILICA FUME

G. SILICA FUME ASTM C1240, 10% MAX H. SLAG CEMENT ASTM C989, 50% MAX, INCLUDING POZZOLANS AND SILICA FUME

I. WATER ASTM C94 AND POTABLE ASTM C494 J. WATER REDUCING MIXTURES

K. AIR ENTRAINING ADMIXTURES ASTM C260 9. THE FOLLOWING DESIGN STANDARDS SHALL APPLY:

ACI 117 A. TOLERANCES FOR CONST.

B. READY-MIX CONCRETE ASTM C94 AND C685 C. MIXING, TRANSPORTING ASTM 301, ACI 304, ACI 318 AND PLACEMENT

ACI 315 D. Detailing E. FINISHING ACI 302.1R F. CURING ACI 308R AND ACI 302.1R G. HOT AND COLD WEATHER ACI 305R AND 306R

10. COVER AND PROTECTION OF CONCRETE SHALL COMPLY WITH ACI 318 AS WELL AS MINIMUM COVER FOR FIRE RESISTANCE IBC TABLE 721.1 UNLESS NOTED OTHERWISE IN THE DRAWINGS, DETAILS, OR STANDARD DETAILS, COVER SHALL BE AS FOLLOWS:

A. SLAB ON GRADE INSIDE CONDITIONED SPACES

AND FINISHED FLUSH WITH ADJOINING SURFACE.

¾″ Top B. Piers & Beams 11. CONCRETE SUPPLIER SHALL BE CERTIFIED ACCORDING TO THE NATIONAL READY MIXED CONCRETE ASSOCIATION'S CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES.

12. CONCRETE MIX DESIGNS SHALL BE DETERMINED BY QUALIFIED LAB AND REGISTERED ENGINEER. MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST 7 DAYS PRIOR TO THE DELIVERY OF THE MIX TO THE JOB SITE.

13. AIR CONTENT FOR EACH BATCH OF CONCRETE SHALL BE TESTED IN ACCORDANCE WITH ASTM C173 OR C231 AT THE POINT OF PLACEMENT. 14. HARD TROWELED SURFACES SHALL NOT BE AIR ENTRAINED.

15. CONCRETE FOR CYLINDERS AND SLUMP TESTS SHALL BE TAKEN AT THE POINT OF PLACEMENT.

16. WATER MAY NOT BE ADDED TO BATCH AT THE SITE UNLESS IT IS SPECIFICALLY NOTED THAT IT MAY BE ADDED ON THE TICKET PROVIDED BY THE READY-MIX COMPANY. IN NO CASE MAY MORE WATER BE ADDED TO MIX THAN ALLOWED ON TICKET. 17. FOR SLABS ON GRADE THAT ARE NOT POST-TENSIONED, CONSTRUCTION OR CONTROL JOINTS, U.N.O. ON PLAN, SHALL BE CONSTRUCTED AS NOTED

IN SLAB ON GRADE SPECIFICATIONS. COORDINATE LOCATIONS WITH ARCHITECT. 18. CONTROL JOINTS SHALL BE SAWED AS SOON AS PRACTICALLY POSSIBLE. JOINTS SHOULD BE SAWED AS SOON AS THE CONCRETE WILL WITHSTAND THE ENERGY OF SAWING WITHOUT RAVELING OR DISLODGING AGGREGATE PARTICLES. 19. CONSTRUCTION JOINTS ARE NOTED ON PLAN BUT MAY BE MOVED OR NEW ONES ADDED IF APPROVED BY ENGINEER.

20. HORIZONTAL JOINTS SHALL NOT BE ALLOWED UNLESS NOTED IN THE DRAWINGS. IF APPROVED BY ENGINEER VERTICAL JOINTS IN FLEXURAL MEMBERS SHALL OCCUR AT THE 1/3 POINT OF A SPAN. 21. Construction joints between Piers and Grade beams shall be prepared by roughening the contact surface to a depth of  $\frac{1}{2}$ " over

THE FULL CONTACT AREA. AFTER ROUGHENING, THE SURFACES SHALL BE CLEANED AND ALL LOOSE MATERIAL SHALL BE REMOVED. 22. ALL EXPOSED CORNERS SHALL BE CHAMFERED  $\frac{3}{4}$ " UNLESS NOTED OTHERWISE.

23. PRIOR TO CONSTRUCTING FORMS OR PLACING CONCRETE, CONTRACTOR SHALL VERIFY FINISHES WITH ARCHITECT. 24. CONTRACTOR SHALL IDENTIFY EACH TYPE OF FLOORING UTILIZED ON THE PROJECT AND DETERMINE FLOOR SURFACE CLASSIFICATION FOR EACH TYPE

IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY STANDARDS. CONTRACTOR SHALL PROVIDE APPROPRIATE FLATNESS AND LEVELNESS FOR EACH CLASSIFICATION IN ACCORDANCE WITH ACI 117.

25. PRIOR TO CONSTRUCTING FORMS OR PLACING CONCRETE, CONTRACTOR SHALL NOTIFY SUBCONTRACTORS TO BE SURE SLEEVES, CONDUIT, CHASES, EMBEDDED ITEMS, BLOCK-OUTS, ETC. ARE PROPERLY INSTALLED. CONTRACTOR SHALL NOTIFY ENGINEER OR OWNERS' REPRESENTATIVE AT LEAST 48 HOURS PRIOR TO PLACING CONCRETE TO ALLOW TIME FOR OBSERVATION OF FORMS AND REINFORCING. 26. CONCRETE SHALL BE PROTECTED FROM RAIN.

27. After finishing, concrete shall be cured by keeping concrete damp and covering with plastic or burlap for a minimum of 72 HOURS. A CURING COMPOUND MAY BE USED INSTEAD IF APPROVED BY ENGINEER. 28. REPAIR RUNS, AND OTHER DAMAGED AREAS AS DIRECTED BY ENGINEER.

29. Repair concrete exhibiting honeycombs, rock pockets, and spall, or otherwise damaged surfaces with dry pack cement grout

each inside corner each inside corner 1" Clear (Min.) 1" Clear (Min.)

At Exterior Columns

REINFORCING STEEL SPECIFICATIONS FLASTOMERIC JOINT SEALANT

1. REINFORCING BARS SHALL BE GRADE 60 AND CONFORM TO THE REQUIREMENTS OF ASTM A615 2. COMPLETE REINFORCEMENT DRAWINGS SHALL BE PREPARED BY FABRICATOR AND SUBMITTED TO ENGINEER FOR REVIEW. 3. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE LATEST EDITION OF ACI 318 AND THE CRSI "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION", AND AS MODIFIED BY THE DRAWINGS.

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PERMITTED, IT SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.4.

A. SPLICE CONNECTION SHALL DEVELOP FULL TENSILE CAPACITY OF BAR OR,

**B.** INSERTS SHALL BE "ZAP SCREW LOCK" TYPE II.

MINIMUM OF ONE LAP LENGTH.

APPROVED BY THE ENGINEER.

PATTERN OF CONTROL JOINTS.

PLACEMENT.

FOUR HOURS APART.

GEOTECHNICAL REPORT.

OF DEPTH NOT EXCEEDING 1'' IN TOTAL.

**DRILLED PIER SPECIFICATIONS** 

3. CONCRETE SHOULD BE PLACED IN ONE CONTINUOUS PLACEMENT.

1. PIERS SHOULD BE DRILLED AND CONCRETE PLACED IN A CONTINUOUS MANNER.

AGGREGATE SHALL BE EXPOSED UNIFORMLY LEAVING NO LOOSE DEBRIS.

ENCOUNTERED, OR AS NECESSARY TO COMPLY WITH REFERENCED CODE.

HAS BEEN INSPECTED AND APPROVED BY THE ENGINEER OR TESTING LAB.

15. TREMIE SHALL BE USED TO PLACE CONCRETE WITHIN 4' OF ITS FINAL LOCATION.

LOADS INDICATED ON DRAWING AND DEFLECTION LIMITS AS NOTED BELOW:

FOLLOWING ASTM STANDARDS: A653, A875, A792 OR A463.

SPECIFICATION AND THE 2012 NORTH AMERICAN SPECIFICATION

DESIGN, OR APPROVED CONNECTION DETAILS.

MINIMUM PROTECTIVE COATING EQUAL TO G-90 GALVANIZED FINISH.

REFER TO BUILDEX, INC. TECHNICAL INFORMATION FOR TEKS SCREW DATA.

10. CUT FRAMING MEMBERS BY SAWING OR SHEARING; DO NOT TORCH CUT.

CODE – STEEL", AND AWS D1.3, "STRUCTURAL WELDING CODE – SHEET STEEL."

11. STRUCTURAL MEMBERS ARE NOT PERMITTED TO HAVE SPLICES OR CUTOUTS IN THE FLANGES.

14. TEMPORARY BRACING SHALL BE PROVIDED AND REMAIN IN PLACE UNTIL WORK IS COMPLETELY STABILIZED.

-4~#4 DIAGONAL BARS FOR @ MAT OF REINFORCEMENT-

48 DB

2. SPREAD AND/OR CUT REINF. AT OPENINGS, SPREAD NO MORE THAN

HALF OF TYPICAL BAR SPACING ADD ADDITIONAL REINF. AS SHOWN

East a light is a single of sing in the world and in the world in the

. REINF. SHOWN APPLIES 12" SQ. 12"Ø AND LARGER.

AND ALL DISCREPANCIES RESOLVED IMMEDIATELY.

MAXIMUM ECCENTRICITY FROM PIER TO COLUMN LOAD SHALL NOT EXCEED 5% OF THE PIER DIAMETER.

16. VERTICAL BAR SPACERS SHALL BE USED AT 4' O.C. MAX ON THREE SIDES OF THE CAGE TO KEEP CAGE CENTERED IN HOLE.

L/360 L/360

THE SAME AMOUNT AS THE LENGTH OF THE CASING INSERTED INTO THE BEARING STRATA.

COLD-FORMED METAL FRAMING SPECIFICATIONS

EXTERIOR – BRITTLE FIN. N/A L/240

EXTERIOR – FLEXIBLE FIN. N/A L/120

ENGINEER.

4. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.

5. WELDING OF REINFORCING BARS SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE ENGINEER OF RECORD. IF WELDING IS

7. UNLESS NOTED OTHERWISE, LAP SPLICES IN CONCRETE SHALL BE CLASS "B" TENSION LAP SPLICES PER SCHEDULE. STAGGER ALTERNATING SPLICES A

9. EXTEND ALL HORIZONTAL REINFORCING CONTINUOUSLY AROUND CORNERS AND INTERSECTIONS OR PROVIDE BENT CORNER BARS TO MATCH AND

11. REINFORCING BAR SPACING GIVEN ARE MAXIMUM ON CENTERS. BARS MAY NOT BE BUNDLES AND SPACED FARTHER APART UNLESS APPROVED BY

13. Securely tie and support all bars in position before placing concrete as required by ACI in order to secure detailed positioning

15. REINFORCING BARS NOTED "CONTINUOUS" OR WITH LENGTH NOT SHOWN SHALL BE FULLY CONTINUOUS AND SPLICED ONLY AS SHOWN, OR WHERE

4. CONVENTIONALLY REINFORCED SLABS ON GRADE SHALL HAVE CONTROL OR CONSTRUCTION JOINTS ON COLUMN CENTERLINES IN EACH DIRECTION.

5. WHERE THE SLAB IS TO RECEIVE SENSITIVE FLOOR MATERIAL SUCH AS TILE, THE JOINTS SHALL BE ALIGNED WITH THE JOINTS IN THE FINISHED FLOORING

6. THE CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL PLANS FOR THE AREAS WHERE THE SLAB ON GRADE IS STAINED, STAMPED OR TO RECEIVE A

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2. Drilled footing excavations should be filled with concrete immediately after the completion of the drilling and inspecting

4. Not more than 1 inch of water should be allowed over the bottom of the drilled footing excavation at the time of concrete

5. Drilled Piers with less than 2 Pier Diameters clear between shafts shall be excavated and concrete placed a minimum of twenty

6. If shafts cannot be formed without caving of the soil, the structural engineer shall be notified before any corrective action is

7. JOINTS BETWEEN PIERS AND PIER CAPS SHALL BE PREPARED BY ROUGHENING THE SURFACE OF THE CONCRETE IN AN APPROVED MANNER SO THAT THE

11. CASING MAY BE REQUIRED WHERE, IN THE OPINION OF THE GEOTECHNICAL ENGINEER, CAVING MAY BE A CONCERN, GROUND WATER IS

12. If CASING IS REQUIRED, THE EMBEDMENT INTO THE BEARING STRATA SHOWN ON PLANS, DETAILS OR GEOTECHNICAL REPORT SHALL BE INCREASED BY

13. NO SHAFT EXCAVATION SHALL BE FILLED WITH CONCRETE UNTIL IT HAS BEEN CLEANED OF ANY LOOSE DIRT OR RUBBLE AND UNTIL THE EXCAVATION

14. ALL ASPECTS OF PIER CONSTRUCTION SHALL COMPLY WITH ACI 318, IBC (REFERENCED EDITION), ACI 336.1, AND ACI336.3R LATEST EDITION AND

17. CONTRACTOR SHALL MAINTAIN INDEPENDENT RECORDS OF PIER INSTALLATION. THOSE RECORDS SHALL BE COMPARED TO THE TESTING LAB'S RECORDS

1. ALL COLD FORMED METAL FRAMING SHALL BE DESIGNED BY ENGINEER EMPLOYED BY METAL FRAMING CONTRACTOR IN ACCORDANCE WITH THE IBC

AND THE LATEST NORTH AMERICAN SPECIFICATION. SHOP DRAWINGS AND DESIGN SHALL BE PREPARED UNDER SUPERVISION OF ENGINEER FOR

LIVE SNOW OR WIND DEAD + LIVE

2. COLD-FORMED STRUCTURAL FRAMING MEMBERS SHALL BE MANUFACTURED FROM STRUCTURAL QUALITY STEEL HAVING MINIMUM YIELD STRENGTH

3. Structural properties and capacities of steel framing components shall be in accordance with the A.I.S.I cold-formed design

4. All structural accessories shall be formed from structural quality steel with a minimum yield strength of 33 KSI and have a

5. Structural Framing members shall be properly spaced, plumbed, leveled, squared, fit properly against abutting members and

6. Fastening of structural framing members shall be accomplished by screws, power actuated fasteners (PAF), welding, or a

7. UNLESS NOTED OTHERWISE OR REQUIRED BY DESIGN, REFER TO LITERATURE PUBLISHED BY HILTI FASTENING SYSTEMS, INC. FOR EXPANSION BOLT

8. Welding shall be performed in accordance with procedures and by personnel complying with AWS D1.1, "Structural Welding

9. STRUCTURAL FRAMING MEMBERS HAVING PROTECTIVE COATING REMOVED BY WELDING SHALL HAVE THE COATING REPAIRED BY PAINTING WITH A

**—** 

48 DB

COMBINATION OF METHODS. THE TYPE, SIZE, AND SPACING OF FASTENERS SHALL BE AS INDICATED BY THE CONTRACT DOCUMENTS, REQUIRED BY

AND POWDER DRIVEN FASTENER INFORMATION. USE 1'' MINIMUM EMBEDMENT FOR EACH POWDER DRIVEN FASTENER UNLESS NOTED OTHERWISE.

HELD SECURELY IN PLACE UNTIL PERMANENTLY FASTENED. WIRE TYING OF STRUCTURAL FRAMING MEMBERS IS NOT PERMITTED.

12. Install framing members in one-piece lengths, unless splice connections are indicated for track or tension members.

13. FASTEN HOLE REINFORCING PLATES OVER WEB PENETRATIONS THAT EXCEED SIZE OF MANUFACTURER'S STANDARD PUNCHED OPENINGS.

OF 33 KSI, AND HAVE MINIMUM PROTECTIVE COATING EQUAL TO G-90 GALVANIZED FINISH. THE STEEL SHALL CONFORM TO ONE OF THE

8. HOLES FOR PIERS SHALL BE DRILLED STRAIGHT AND TO SUCH A DEPTH AS SHOWN ON THE DRAWINGS OR TO A DEPTH SUITABLE TO THE ENGINEER. 9. THE MAXIMUM ACCEPTABLE TOLERANCE FROM PLUMB IN ANY HOLE, MEASURED IN THE CENTER OF THE HOLE SHALL NOT EXCEED 1/8" PER 10' FOOT

ADDITIONAL CONTROL OR CONSTRUCTION JOINTS SHALL BE ADDED SO THAT SPACING OF JOINTS DOES NOT EXCEED THE LESSER OF 24 X SLAB THICKNESS

OR 18 FEET IN EACH DIRECTION. ALSO, THE AREA BOUNDED BY THE JOINTS SHALL NOT EXCEED APPROXIMATELY 325 SQUARE FEET AND THE LENGTH

SHALL NOT EXCEED 1.5 TIMES THE WIDTH. THERE SHALL BE AN ADDITIONAL CONTROL JOINT PLACED 5 FEET FROM THE EDGE OF THE BUILDING.

6. REINFORCING BARS AND ACCESSORIES SHALL BE STORED ABOVE THE GROUND SURFACE UPON PLATFORMS, SKIDS OR OTHER SUPPORTS.

8. ALL SPLICE LOCATIONS SUBJECT TO APPROVAL AND SHALL BE MADE ONLY WHERE INDICATED ON THE DRAWINGS.

10. ALL REINFORCING STEEL BARS CROSSING A CONSTRUCTION JOINT SHALL CONFORM TO ONE OF THE FOLLOWING:

AND CLEARANCE DURING CONCRETE PLACEMENT AND PROVIDE STRAIGHT RUNS WITH NO SAGGING.

3. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED IN ADVANCE OF FOUNDATION CONSTRUCTION.

14. SPLICED BARS SHALL BE PLACED AT THE SAME EFFECTIVE DEPTH UNLESS NOTED OTHERWISE.

16. REINFORCING BAR HOOKS SHALL BE STANDARD ACI HOOKS UNLESS NOTED OTHERWISE.

**SLAB-ON-GRADE SPECIFICATIONS** 

1. ALL SLEEVES SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE OR PVC

12. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SKEW HOOKS AS NECESSARY TO PROVIDE ADEQUATE CONCRETE COVER.

2. No conduit larger than 1/2"  $\phi$  shall be run in structural concrete members or slab without approval of engineer.

CONTROL JOINTS MAY BE CUT OR FORMED. DEPTH OF CONTROL JOINTS SHALL BE 1/4 OF THE SLAB THICKNESS OR 1" MIN.

LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS.

COLD JOINT FIRST POUR 2ND POUR SCHEDULED

SLAB ON GRADE JOINT DETAIL

NOT TO SCALE —4-#4 ADDL. TIES ↑ UP TO 8" MAX. ☐ REST ALL TOP AND BOTTOM REINF STIRRUP SIZE TO BE CONTINUOUS THROUGH THE CONSTRUCTION JOINT. - 1-#6 EA. WAY-MEMBER UP TO 6" WIDE — TOP AND BOTTOM STEEL 2-#6 EA. WAY-MEMBER 7" TO 18" WIDE ADDITIONAL BOTTOM 2-#7 EA. WAY-MEMBER 19" TO 24" WIDE REINF. MATCH BOTTOM 3-#7 EA. WAY-MEMBER 25" TO 36" WIDE G.B. BARS

BOTTOM STEEL—

RE: SECTIONS

1. LOCATE CONSTRUCTION JOIN WITHIN THE MIDDLE THIRD OF THE SPAN. SUBMIT PROPOSED JOINT LOCATION FOR REVIEW PRIOR TO INSTALLATION. 4-#7 EA. WAY-MEMBER WIDER THAN 36" 2. CONSTRACTOR SHALL SUBMIT JOINT LAYOUT FOR ENGINEER'S REVIEW AND APPROVAL 3. PROVIDE ADDITIONAL REINFORCING AS SHOWN IN BEAMS WITH CONSTRUCTION JOINTS. 4. THIS DETAIL DOES NOT APPLY FOR TRANSFER GIRDERS. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN TRANSFER GIRDERS. 5. SCHEDULED REINFORCEMENT NOT SHOWN FOR CLARITY

BEAM CONSTRUCTION JOINT DETAIL

STD. 90° HOOK ON -

1~#5 HAIRPINS-

BEAM WIDTH

MINUS 6" L 36"

-TYPICAL BEAM REINF

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─ #7 CORNER BARS

TOP AND BOTTOM

CLASS "B" SPLIC

**BEAM CORNER DETAIL** 

RE: SECTIONS

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DISCONTINUED

PIPE ELEV. TO ALLOW G.B. T&B REINF. INTERRUPTION (TYP.) —TOP STEEL CONTINUOUS TOP STEEL RE: SECTIONS IN FIRST INTERIOR SPAN **╃**╤╤═<u>═┺┡</u>═══┸┑═╒┈┩┑┍╒╩╌╌┩╸╁┈╌╌┩┈╌┈┸┪┩╫╌╌┲┪┯╫╼╫╌╠╬╗╌╌╬╦┼╌╟┥╌┈╫╌╌╌<mark>┝</mark>╩╌ CLASS A SPLICE <del>╱</del>╶╣╸╸╩╌┟╌<del>┟╶┟╸╣</del>╌┈╴╴┊╣┰┈╴╴╬╸┧╴╫╸╶╶┧╸┈╸╴┈╬╾┈<u>╒</u>╶╸┈╣╴╏╧**╁**═╄╩╤══┿═╊┊╁╺┟╶┎┰╣╌╸╸┟╺╴ - BOTTOM STEEL └ INTERMEDIATE SKIN BARS └ STIRRUPS

MATCH BOTTOM REINF.

3 @ 8" MAX O

G.B. SCHEDULE ON EA. SIDE

ADD #3 STIRRUPS MATCHING

G.B. SCHEDULE ON EA. SIDE

3 @ 8" MAX.OR

RE: SECTIONS

- EXCEED 1/3 X BEAM DEPTH

- SLEEVE SHALL BE LOCATED IN

CENTER THIRD OF BEAM (TYP.)

& MUST BE PERPENDICULAR

TO BEAM SIDE FACE (TYP.)

STIRRUPS SHALL NO

BE CUT TERMINATE

LOCATION/ADJUST

TYPICAL STIRRUP SPACING - RE: SECTIONS AS SCHEDULED TYPICAL STIRRUP SPACING RE: SECTIONS GREATER L2 - RE: PLAN INTERIOR SPAN L1 - RE: PLAN - END SPAN TYPICAL SIMPLE SPAN BEAM PLACING DIAGRAM -CONTINUOUS TOP STEEL PROVIDE INTERMEDIATE -IN FIRST INTERIOR SPAN SKIN BARS 2~#5 STD. 90° HOOK AT (NO SPLICES) TOP STEEL | RE: SECTIONS — DISCONT. TOP STEE ╧┝╼╼╅╼┺╼┝╼<del>╽</del>╛╉╾╂ॅ╼╼┝╼╶╾╩╃╩╄╼╟╼╶╾╾╧╼┡╩┈╤╩╼┡┈╃╾╗╼┡┋┈┯╧╧┡╩╟╌┩┵╤┵╼╬╼╼╤╃╾**╂┈╌╌╩╌╌╩╌╌┼** OVER SUPPORT BOTTOM STEEL-BOTTOM STEEL-RE: SECTIONS RE: SECTIONS RE: SECTIONS ¬₩¬ n BEAM WIDTH TYPICAL STIRRUP TYPICAL STIRRUP SPACING TYPICAL STIRRUP SPACING - RE: SECTIONS RE: SECTIONS

WHERE BEAM DEPTH

EXCEEDS 3'-0" 2~#5 MIN.

TYPICAL CANTILEVER BEAM PLACING DIAGRAM

TENSION DEVELOPMENT LENGTHS FOR STANDARD END HOOKS (LDH) BEND DIAMETER SCHEDULE THE FOLLOWING ASSUMPTIONS HAVE BEEN MADE IN PREPARING THE SCHEDULE: BØ = 6Xdb (#3 THRU #8) FY = 60 KSI BØ = 8Xdb (#9, #10, & #11) CONCRETE WEIGHT = 150 PCF BØ = 10Xdb (#14 & #18) NON EPOXY-COATED BARS IF CONDITIONS VARY FROM THOSE NOTED ABOVE GREATER OF ADJUSTMENTS SHALL BE MADE TO SCHEDULED 4Xdb OR (21/2" MI VALUES IN ACCORDANCE WITH ACI 318. ADJUSTMENT VALUES TO SCHEDULED VALUES BAR SIZE | FC' = 3,000PSI | FC' = 4,000PSI | FC' = 5,000PSI | FC' = 6000PSI | FC' = 7,000PSI | FC' = 8,000PSI SHALL BE MADE AS FOLLOWS: COVER CONFINEMENT ADDITIONAL REINFORCEMENT ACI 318 SIDE PLANE COVER ACI 318 LIGHT WEIGHT CONCRETE ACI 318 TENSION LAP SPLICE LENGTHS NOTES FOR TENSION DEVELOPMENT LENGTHS AND LAP SPLICE SCHEDULES: FY = 60,000PSI, NON-EPOXY COATED, NORMAL WEIGHT CONCRETE THE FOLLOWING ASSUMPTIONS HAVE BEEN MADE IN PREPARING THE VALUES SHOWN ARE FOR TOP BARS: FOR OTHER BARS DIVIDE VALUES BELOW BY 1.3 FY = 60 KSI

CONCRETE WEIGHT = 150 PCF

IF CONDITIONS VARY FROM THAT NOTED ABOVE, ADJUSTMENTS SHALL BE

MADE TO SCHEDULED VALUES IN ACCORDANCE WITH ACI 318.

NON EPOXY COATED BARS

ADJUSTMENT VALUES FOR BARS WITH A CLEAR COVER OF LESS THAN 2.0 X DB AND A CLEAR SPACING BETWEEN BARS OF LESS THAN 4.0 X DB ARE NOT INCLUDED ABOVE. FABRICATOR SHALL MAKE SUCH ALLOWANCE IN ACCORDANCE WITH ACI 318. TOP BARS SHALL BE DEFINED AS BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BAR - THIS IS ONLY APPLICABLE FOR BARS THAT RUN HORIZONTALLY. TENSION DEVELOPMENT LENGTHS FOR STRAIGHT BARS (LD) FY = 60,000PSI, NON-EPOXY COATED, NORMAL WEIGHT CONCRET FC' = 6,000PSI FC' = 3,000PSI FC' = 4,000PSI FC' = 5,000PSI FC' = 7,000PSI TOP BARS OTHER BARS TOP BARS OTHER BARS OTHER BARS TOP BARS OTHER BARS TOP BARS OTHER BARS

FC' = 8,000PSI TOP BARS OTHER BARS

REBAR EMBEDMENTS AND SPLICING SCHEDULE

,000PSI FC' = 4,000PSI FC' = 5,000PSI FC' = 6,000PSI FC' = 7,000PSI FC

X FIRM #: F-5860

CONSTRUCTION@

NTEGRITYSTRUCTURAL.CO

CANTILEVER - RE: PLAN L1 - RE: PLAN - END SPAN REBAR EMBEDMENTS AND SPLICING SCHEDULE

> PROJECT NUMBER 580.021.21H

> > N.T.S.

DRAWING SCALE

**PROJECT NAME & LOCATION** YES PREP SCHOOL

**VESTIBULE ADDITION** 1305 BENSON SR. HOUSTON

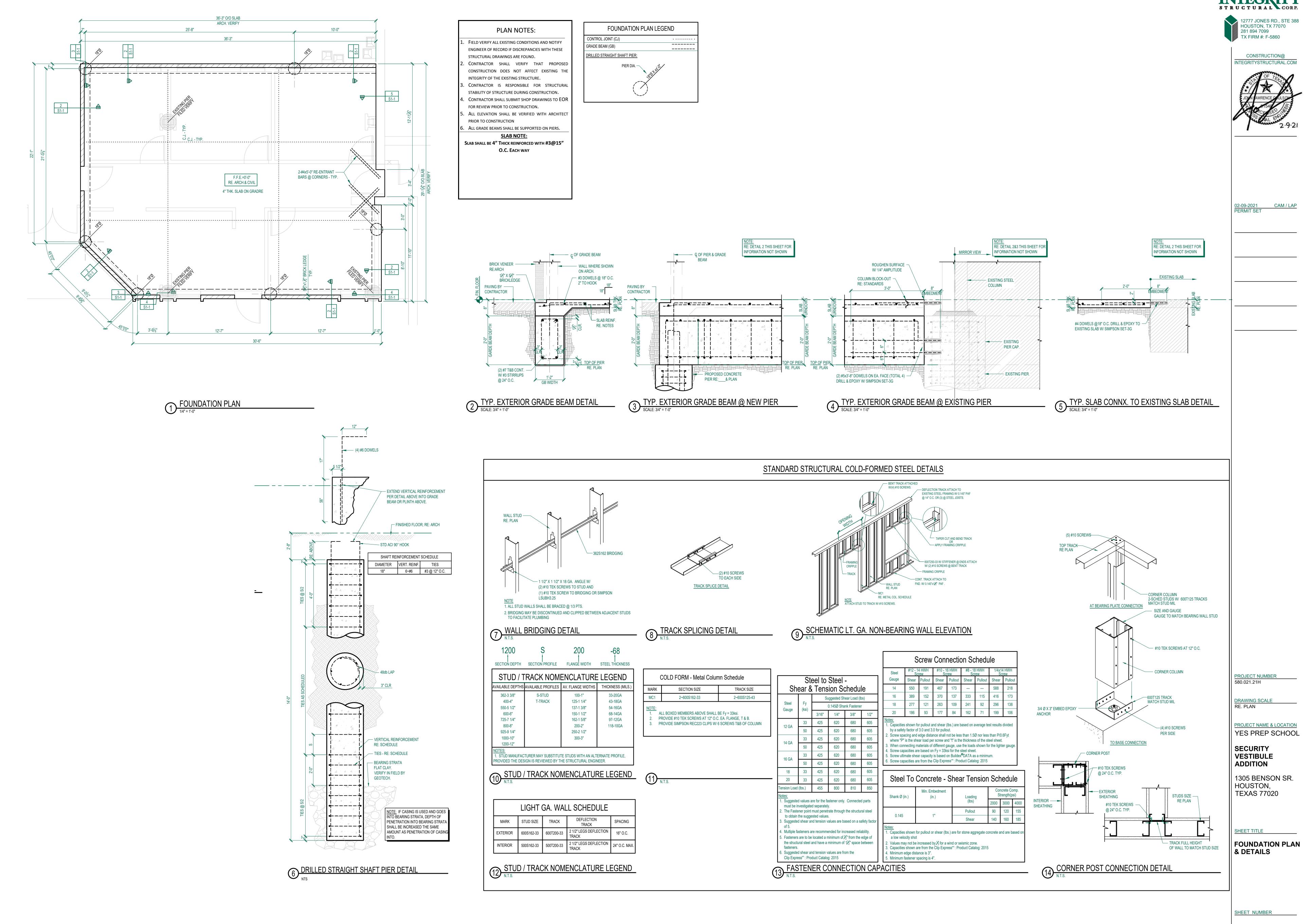
SECURITY

TEXAS 77020

**STRUCTURAL SPECIFICATIONS** & STANDARD REINFORCED CONCRETE

HEET NUMBER

**DETAILS** 



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