Date Due: March 4, 2020
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: North Central Cafeteria Renovation

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 (19) 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 4, 2020**. Every proposal must be enclosed in a envelope clearly marked "North Central Cafeteria Renovation" and shall include three copies.

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: http://www.yesprep.org/notices

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 4**, **2020**. 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.

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;
- 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;
- 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.

ONE-TIME MANDATORY BID WALK WILL TAKE PLACE ON THURDAY, FEB 20TH AT 2:00PM. IT IS THE CONTRACTORS RESPONSIBILITY TO BRING THE APPROPRIATE TOOLS NEEDED FOR ANYTHING YOU MAY NEED TO LOOK AT WHILE ONSITE.

- Owner will provide Harris County permit for the project. Contractor is responsible for coordinating final inspection from Harris County at project completion. Contractor is responsible for any trade permits that may be required to complete the project.
- Project will start on June 1, 2020 and end July 31, 2020. Campus operating hours are Mon-Fri 6:45AM-5:00PM. Any work outside of these hours MUST be coordinated in advance with Owner.
- This campus will be operating with students during summer. Contractor is responsible for creating a safety barrier to keep students/staff out of the construction area.
- Any shutdown will be coordinated 48-hours in advance with Owner.
- Contractor required to provide full-time supervision when workers are present.

CONTRACTOR TO PROVIDE and/or INCLUDE THE FOLLOWING:

- Price for all fire alarm work and permitting as required by Harris County. Current system is EST.
- Removal of all trash and equipment in contractor provided dumpster.
- Portable toilet is required for all construction workers.
- Floor prep is to be included in estimate.
- Include removal of 8 existing bulletin boards and reinstall after final paint is completed.
- Contractor to coordinate with Owner building alarm contractor for installation of exterior door contacts.
- Contractor to include final clean of the space. Owner will provide VCT waxing.
- Responsible for Issue for Permit drawings dated 2/5/2020 provided by Element Architects, H4 Engineers and Integrity Structural.
- One-year warranty period required for the project.

REQUIRED SUBMITTALS (Attachment A)

Submittal 1

Experience in Construction Management

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 4, 2020 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
 - 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: \$1,000,000

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 North Central Cafeteria Renovation.

SCORING RUBRIC (ATTACHMENT F)

YES will utilize the following RFP Evaluation Rubric for evaluation of all Southeast Campus Entry/Exit Driveway Proposals:

1. Charges/Cost to YES PREP: 30 Points.

- a. Favorable = 30 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 = 17.5 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: 15.5 Points.

- a. Favorable = 17.5 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. Design and Technical Execution: 19 Points.

- a. Favorable = 17.5 Points. Unfavorable = 0 points.
- b. Proposal includes information about the Vendor's ability to provide an efficient and cost-effective solution. Please include resources available to achieve the project and any concepts or innovations in design that have proven effective in the past that would be applicable to this model.

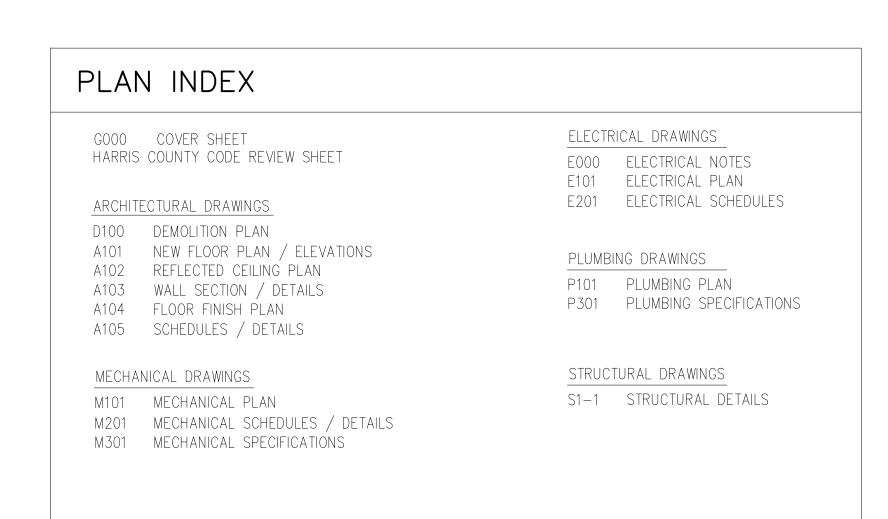
5. Project Understanding and Methodology: 15.5 Points.

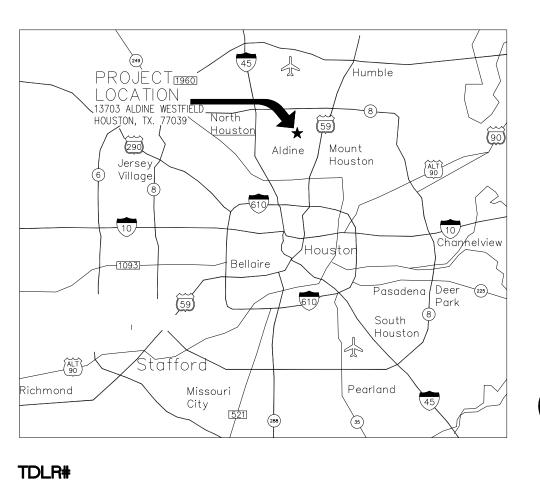
- a. Favorable = 17.5 Points. Unfavorable = 0 points.
- b. Proposal addresses the project in terms of the scope of work and substantive issues essential to proper service and care of YES facilities. Proposal includes a detailed description of services to be provided and any constraints as to procedure, time, personnel, or equipment that needs to be communicated to YES for use during contract negotiations.

END OF YES RFP PACKAGE FOR North Central Cafeteria Renovation

YES PREPARATORY PUBLIC SCHOOLS

NORTH CENTRAL CAMPUS CAFETERIA REMODEL 13703 ALDINE WESTFIELD, HOUSTON, TEXAS 77039 HARRIS COUNTY







FEBRUARY 5th, 2020

Issue for Permit

INTEGRITY STRUCTURAL CORP. STRUCTURAL ENGINEER

12777 JONES RD., SUITE 388 HOUSTON, TX 77070 (281)894-7099 x133 ATTN: LEVI PEREDA

H4 ENGINEERS

MECHANICAL / ELECTRICAL / PLUMBING ENGINEER

25215 OAKHURST DR. SPRING, TX 77386 (281)528-8584 ATTN: SHERIE HENSLEY

ELEMENT ARCHITECTS

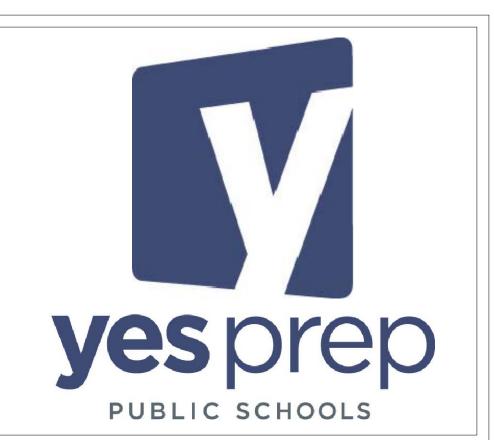
ARCHITECT

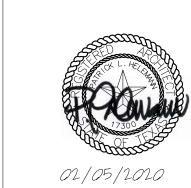
1250 WOOD BRANCH DRIVE, SUITE 480 HOUSTON, TX 77079 (713)874-0775 ATTN: PATRICK HELEMANN

YES PREP PUBLIC SCHOOLS

OWNER

5515 SOUTH LOOP EAST, SUITE B HOUSTON, TX 77033 (713)967-9000 ATTN: KEITH WEAVER









No.	Description	Date
	ISSUE FOR PERMIT	FEB. 5,2020

YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA **EXPANSION**

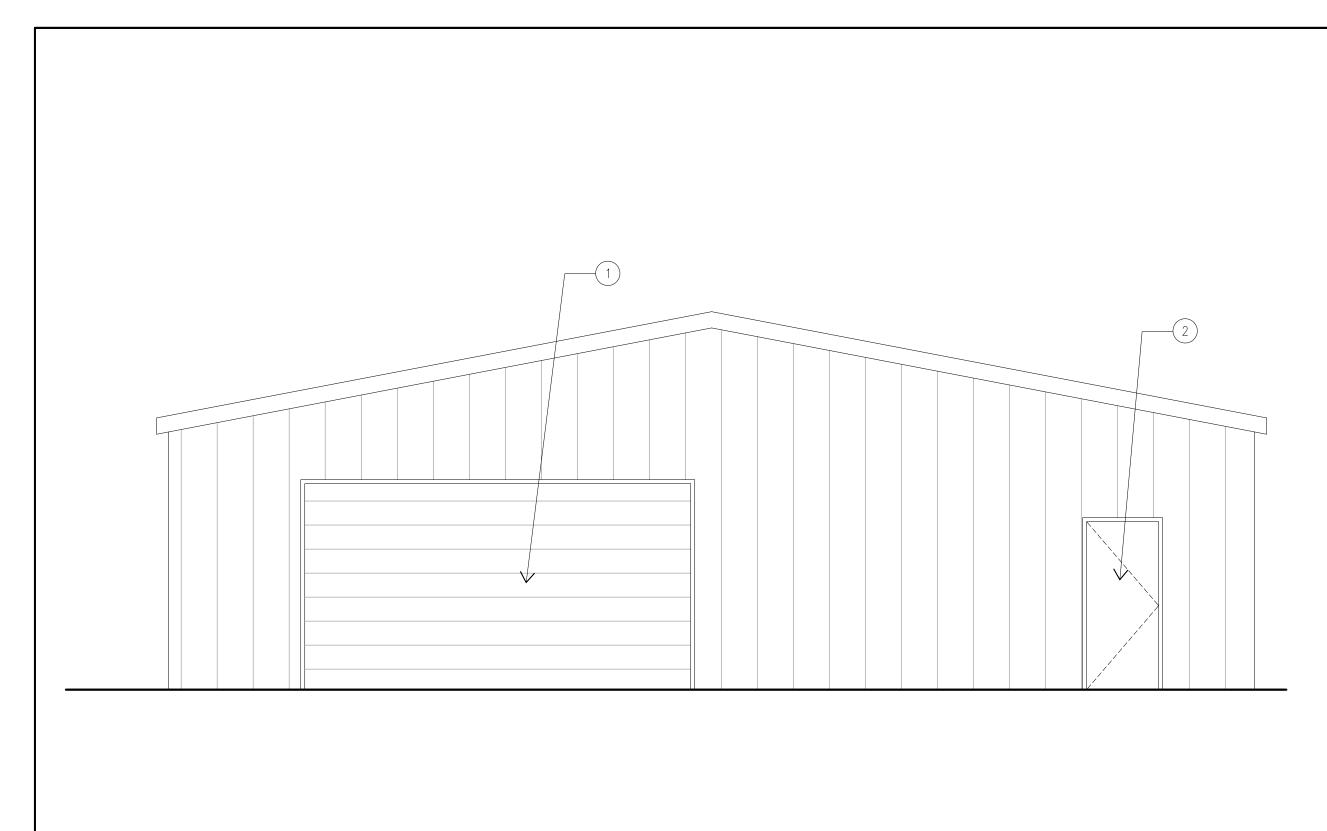
13703 ALDINE WESTFIELD HOUSTON, TX 77039

COVER SHEET

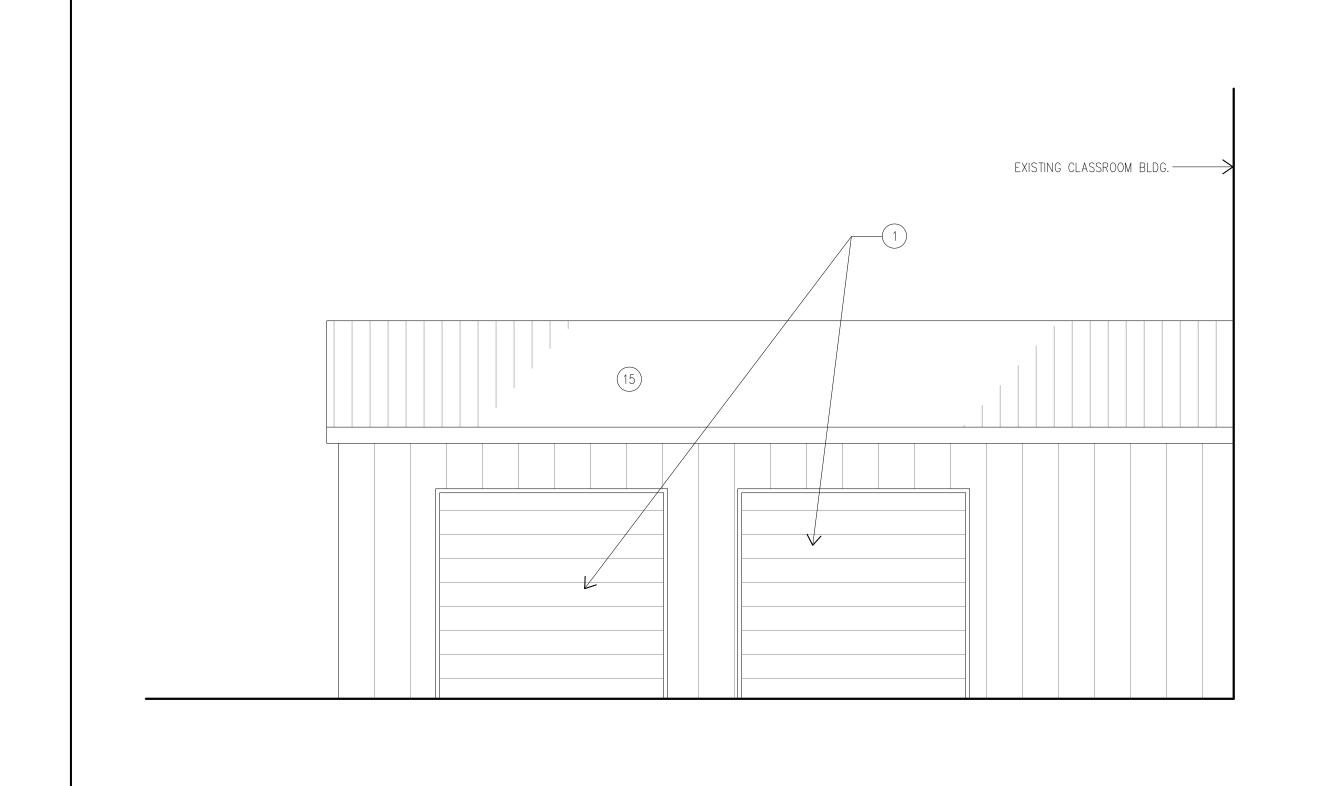
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Date		FEB.5, 202
Project Number		1909

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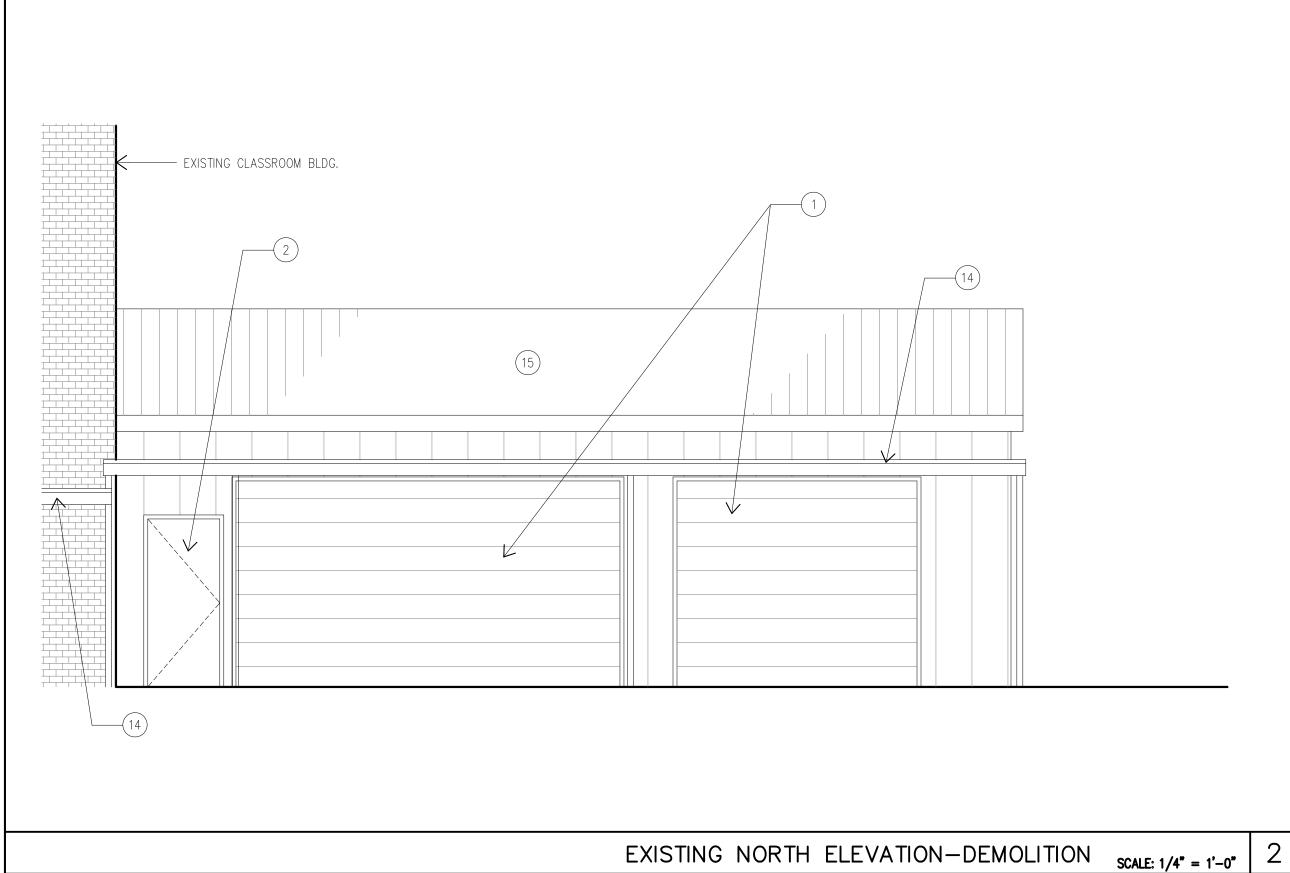
Scale



NEW SOUTH ELEVATION SCALE: 1/4" = 1'-0" 4



NEW WEST ELEVATION SCALE: 1/4" = 1'-0" 3



GENERAL NOTES

- 1. THE ARCHITECT AND ARCHITECT'S CONSULTANTS SHALL NOT BE HELD RESPONSIBLE FOR DEMOLITION OR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES FOR WORK PERFORMED BY CONTRACTOR.
- 2. CONTRACTOR SHALL COORDINATE WITH THE LOCAL UTILITY COMPANIES FOR THE DISCONNECTION OF ANY UTILITIES.
- 3. CONTRACTOR SHALL INVESTIGATE ALL EXISTING CONDITIONS PRIOR TO REMOVAL OF ANY CONSTRUCTION AND PROVIDE ADEQUATE REQUIRED SUPPORT OR BRACING OF ITEMS TO REMAIN
- 4. REFER TO MEP DRAWINGS FOR INFORMATION RELATED TO DEMOLITION OR RELOCATION OF ANY MECHANICAL, ELECTRICAL OR PLUMBING
- 5. ALL DEMOLITION WORK SHALL BE DONE IN THE SAFEST POSSIBLE MANNER AND IN CONFORMANCE WITH ALL GOVERNMENTAL REGULATIONS FOR HEALTH AND SAFETY.

ITEMS NOT ADDRESSED IN ARCHITECTURAL DEMOLITION SHEETS.

DEMOLITION - KEYNOTES

- 1) REMOVE OVERHEAD DOORS INCLUDING TRACKS AND HARDWARE
- 2 REMOVE DOOR AND DOOR FRAME

(3) REMOVE EXISTING WOOD DECKING AND RAMP

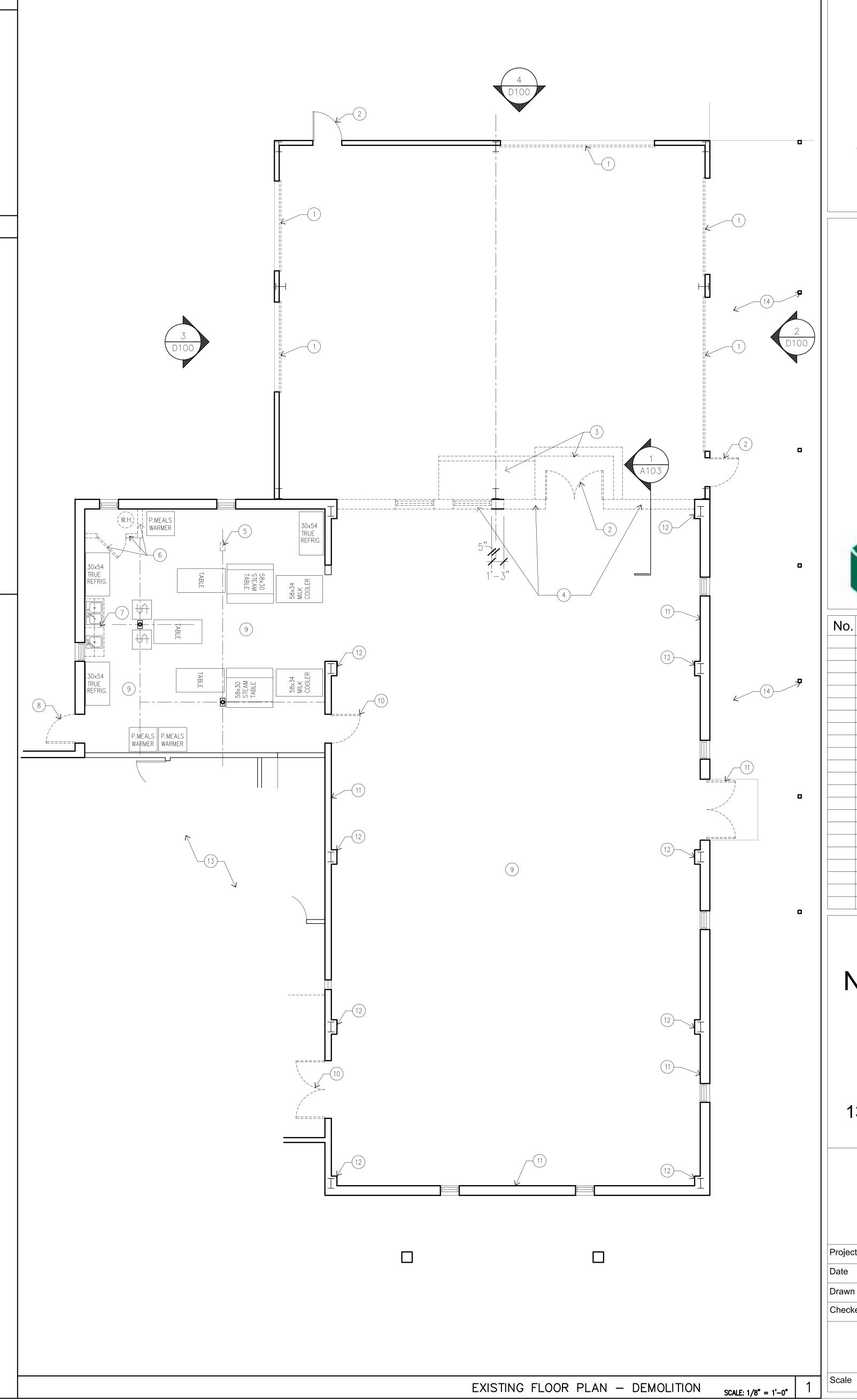
- REMOVE EXISTING WINDOWS/DOOR, WALL FRAMING AND BRICK TO ALLOW FOR NEW OPENING, REFER TO STRUCTURAL DRAWINGS FOR
- NEW STRUCTURAL SUPPORT PRIOR TO MODIFYING EXISTING FRAMING.

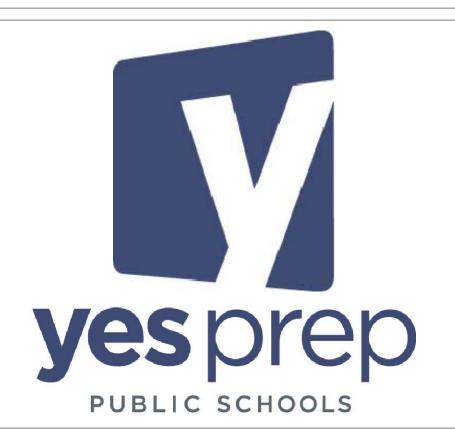
 5 REMOVE FALSE COLUMN AND REPAIR DISTURBED CEILING TILES AND FLOOR AS REQUIRED
- 6 REMOVE STORAGE, INCLUDING WALLS AND DOOR. REPAIR DISTURBED WALL, CEILING AND FLOOR AS REQUIRED TO MATCH ADJACENT AREAS. REMOVE WATER HEATER. REFER PLUMBING DRAWINGS FOR NEW WATER HEATER LOCATION.
- 7) REMOVE MILLWORK INCLUDING SINK AND REPAIR ANY DISTURBED
- 8 REMOVE EXISTING EXIT DOOR AND INFILL OPENING WITH MATCHING BRICK, RE: DETAIL 4/A103.
- (9) REMOVE EXISTING FLOOR TILE AND PREP. FOR NEW TILE

 (10) REMOVE EXISTING DOOR REPLACED WITH NEW DOOR. KEEP DOOR
- HARDWARE TO RE-USE ON NEW DOOR

 (11) REMOVE WOOD BASE AND TRIM THROUGHOUT CAFETERIA
- (12) REMOVE WOOD COLUMN COVER. REPLACE WITH DRYWALL AND PAINT
- REMOVE EXISTING MECHANICAL UNIT(S) IN SECOND FLOOR
 MECHANICAL ROOM SERVING EXISTING CAFETERIA AS PER
 MECHANICAL DRAWINGS. SEAL ANY LEFT OVER FLOOR PENETRATIONS
- WITH 1HR. RATED FIRE-STOPPING

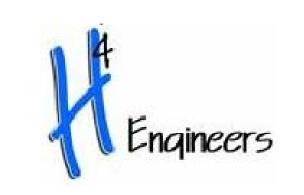
 (14) EXISTING EXTERIOR CANOPY TO REMAIN
- (15) EXISTING METAL ROOF TO REMAIN













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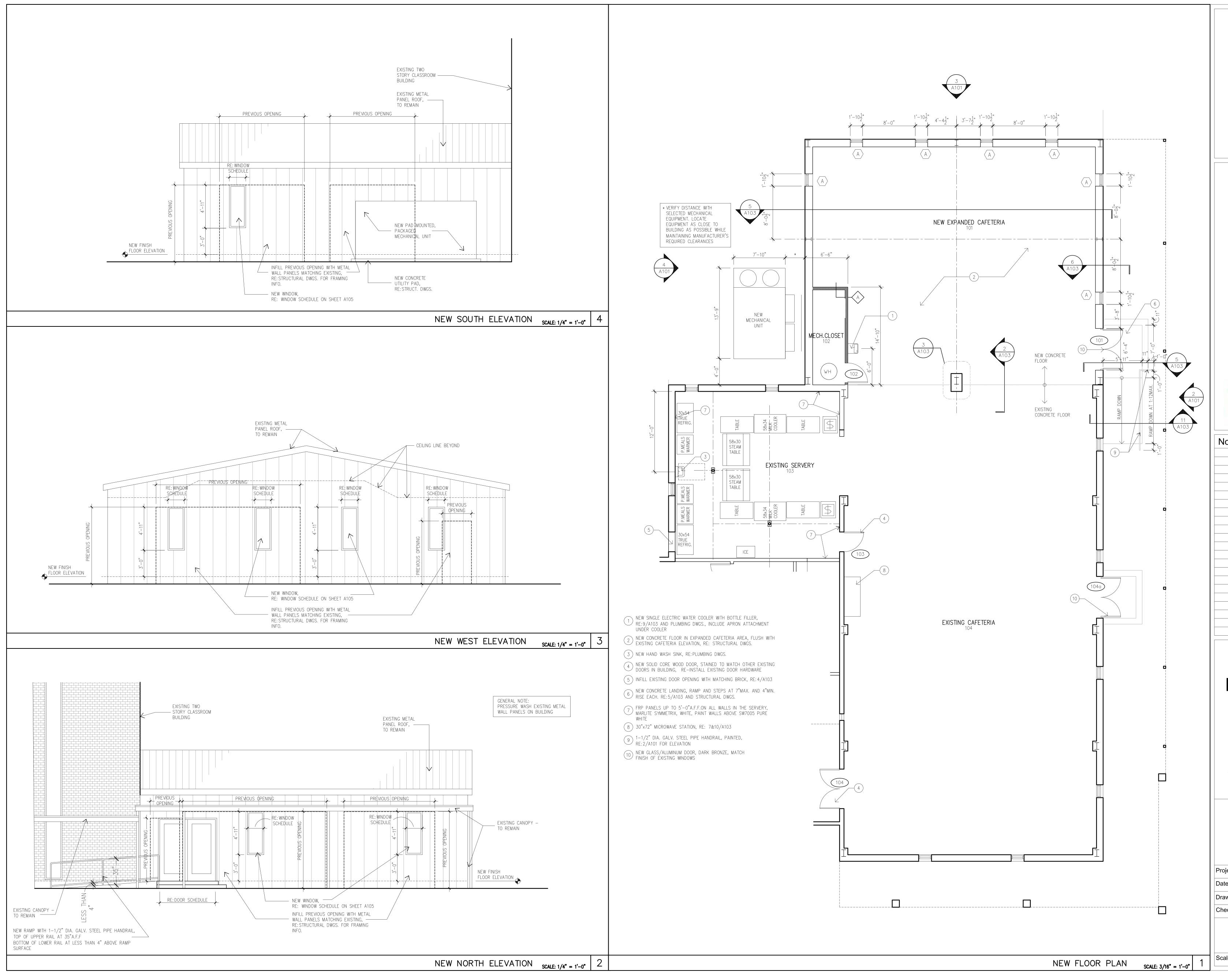
YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

13703 ALDINE WESTFIELD HOUSTON, TX 77039

EXISTING FLOOR PLAN / ELEVATIONS

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Checked By	
Drawn By	
Date	JAN.20, 2020
Project Number	19096













No.	Description	Date
	ISSUE FOR PERMIT	FEB. 5,2020

YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

13703 ALDINE WESTFIELD HOUSTON, TX 77039

NEW FLOOR PLAN

Project Number	19096
Date	FEB.5, 2020
Drawn By	
Checked By	

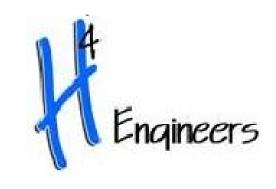
A101

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No.	Description	Date
	ISSUE FOR PERMIT	FEB. 5,2020

YES PREP SCHOOL

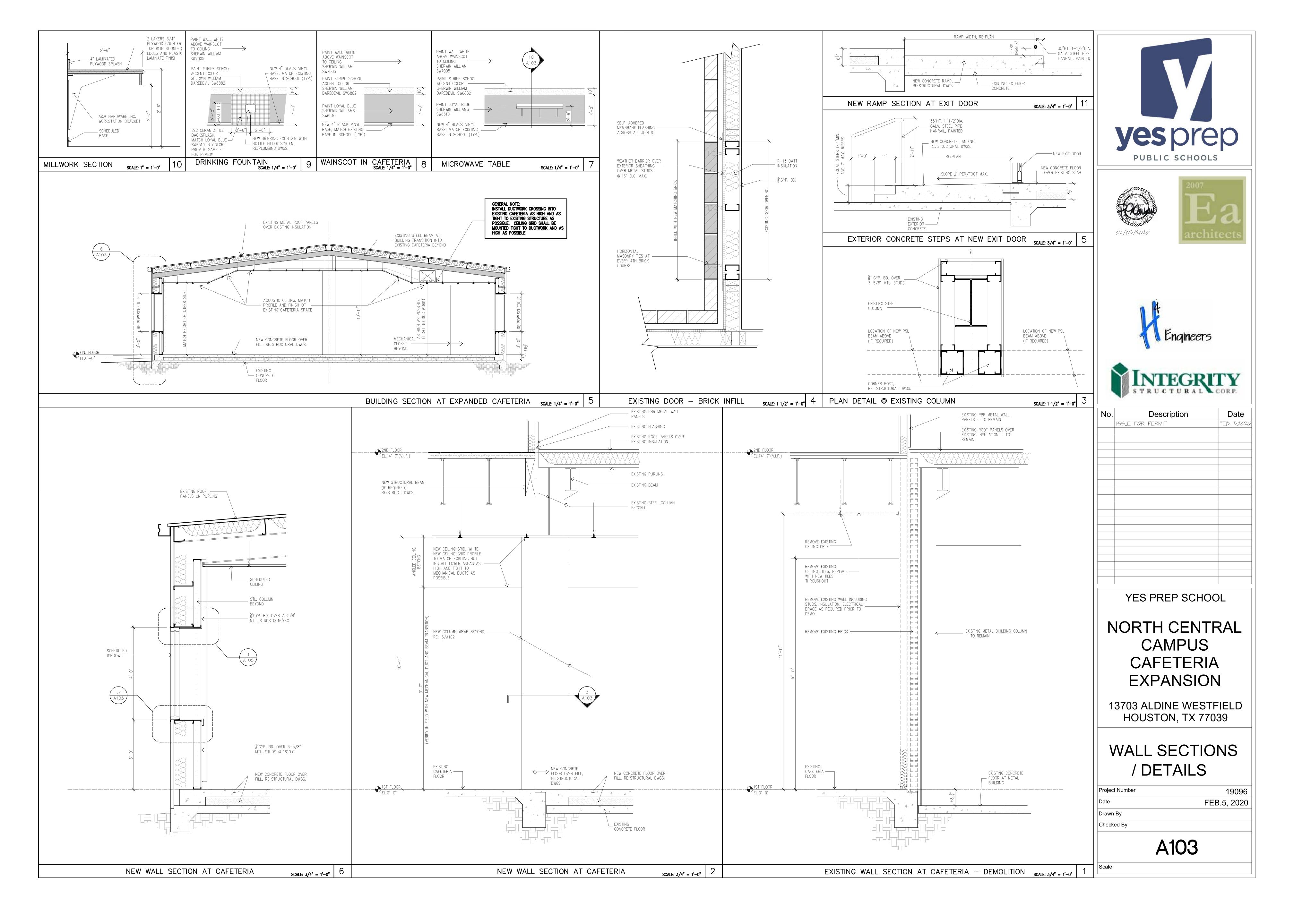
NORTH CENTRAL CAMPUS CAFETERIA **EXPANSION**

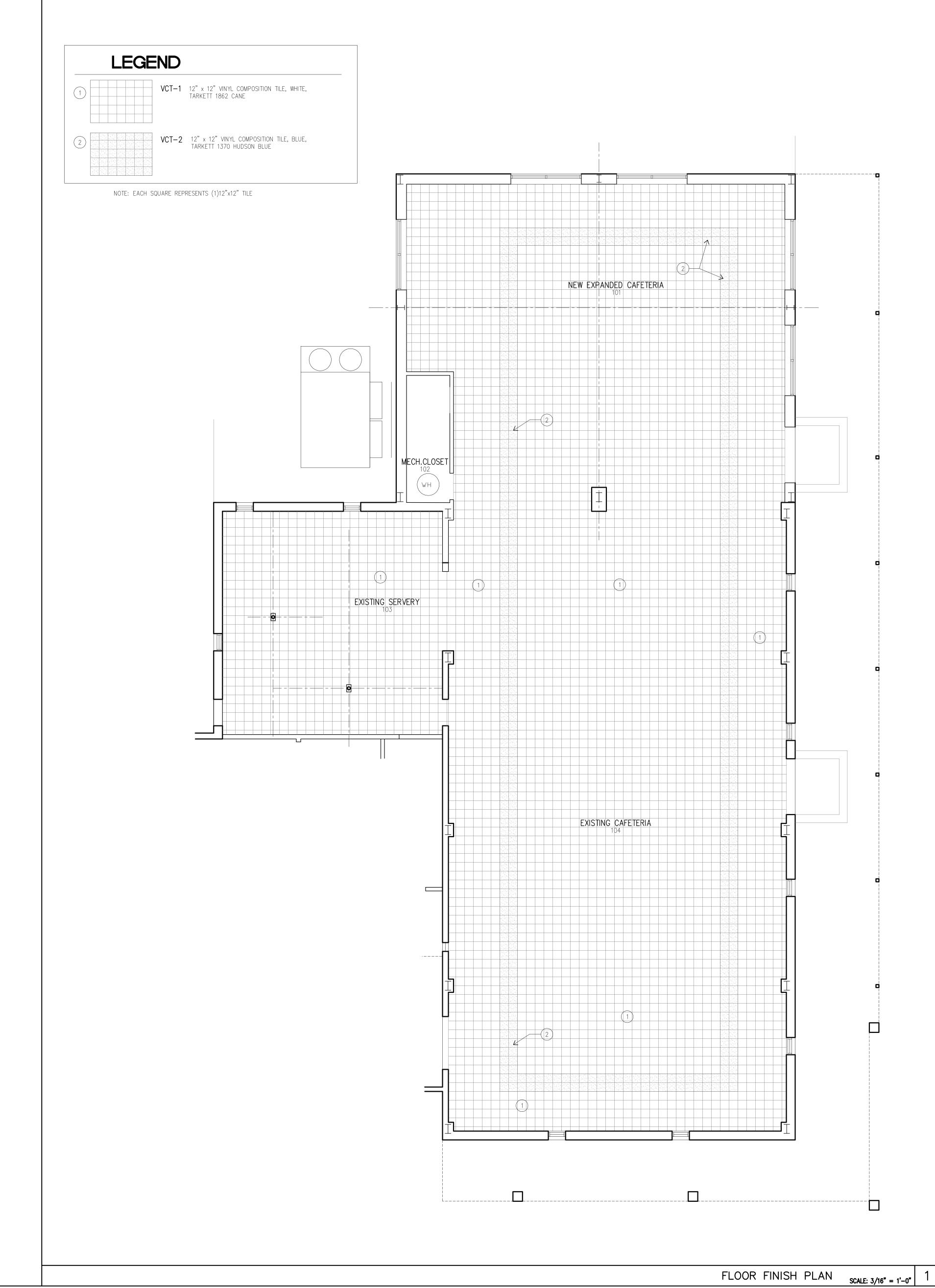
13703 ALDINE WESTFIELD HOUSTON, TX 77039

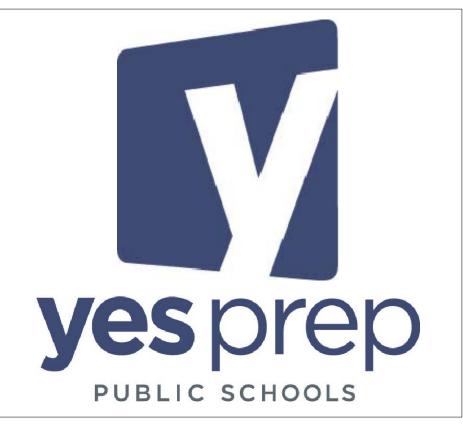
REFLECTED CEILING PLAN

Project Number	19096
Date	FEB.5, 2020
Drawn By	
Checked By	

A102

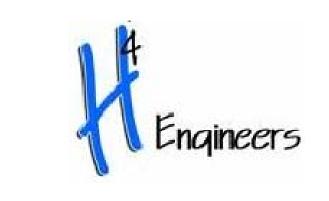














No.	Description	Date
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YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

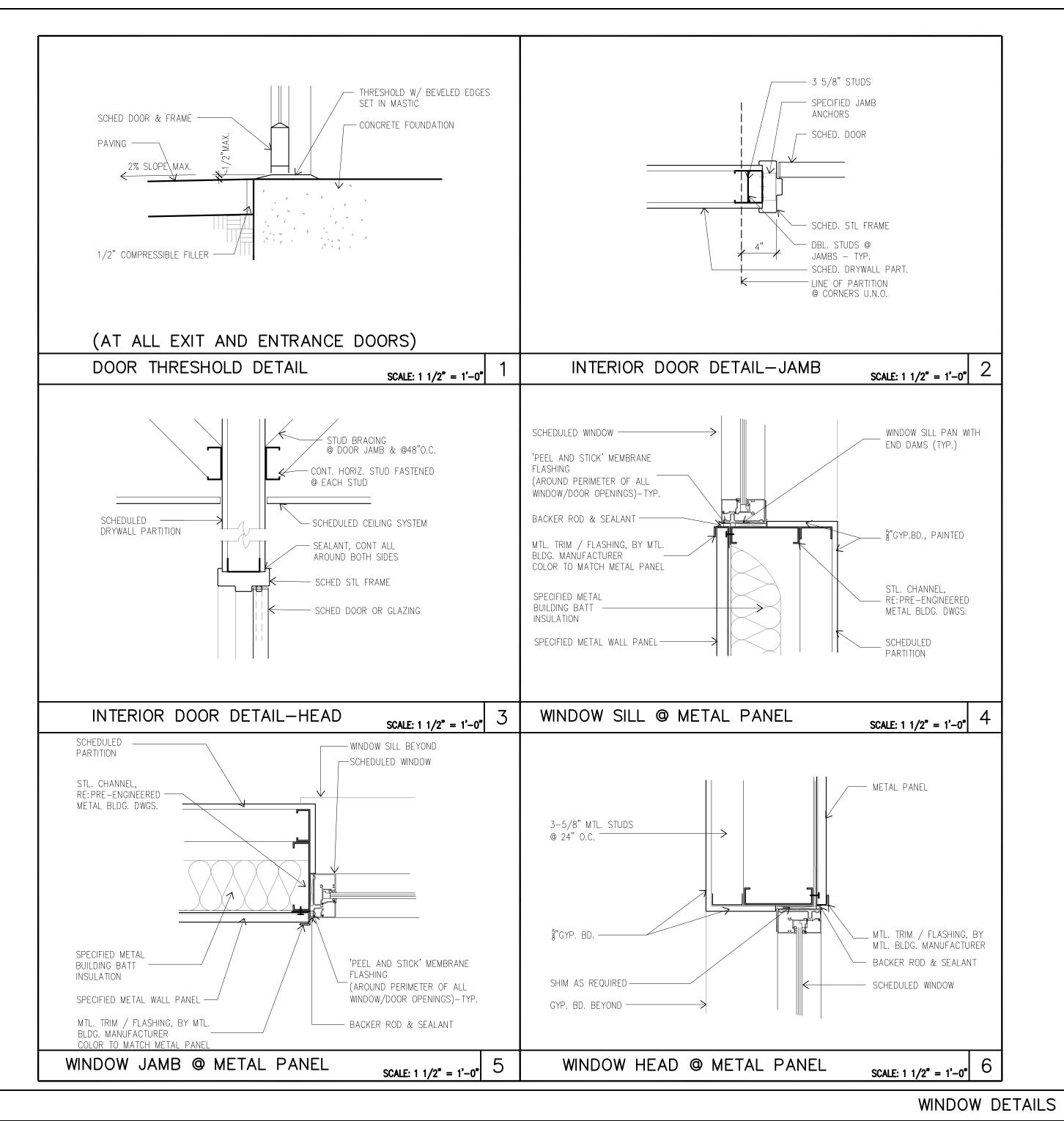
13703 ALDINE WESTFIELD HOUSTON, TX 77039

FLOOR FINISH PLAN

Project Number	19096
Date	FEB.5, 2020
Drawn By	
Checked By	

A104

Scale



1E-74 PATD CORMAX PATENTED KEYING 613 A001 1 Mortise Cylinder 613 1ESPL-7-A5994 PATD CORMAX PATENTED Rim Cylinder KEYING 1CC7A2 GRN A003 2 Construction Core

Note: BALANCE OF HARDWARE BY DOOR/FRAME MFR.

(VERIFY THAT THIS HARDWARE SELECTION MATCHES EXISTING DOOR A104a. IF NOT, PLEASE BRING IT TO THE OWNER'S AND ARCHITECT'S ATTENTION)

DOOR HARDWARE SET #2 - DOOR A102

DOOR HARDWARE SET #1 - DOOR A101, A104a

MC TA2714 4 1/2 X 4 1/2 NRP H010 3 Hinges BE 626 L006 1 Lockset 9K3-7D15D PATD AL/O CORMAX PATENTED KEYING S3 BE 1CC7A2 GRN A003 1 Construction Core RO 441H 1 Dome Stop

Note: SEALS PROVIDED BY FRAME MANUFACTURER

NOTE: VERIFY HARDWARE FINISH SELECTIONS WITH OWNER PRIOR TO ORDERING

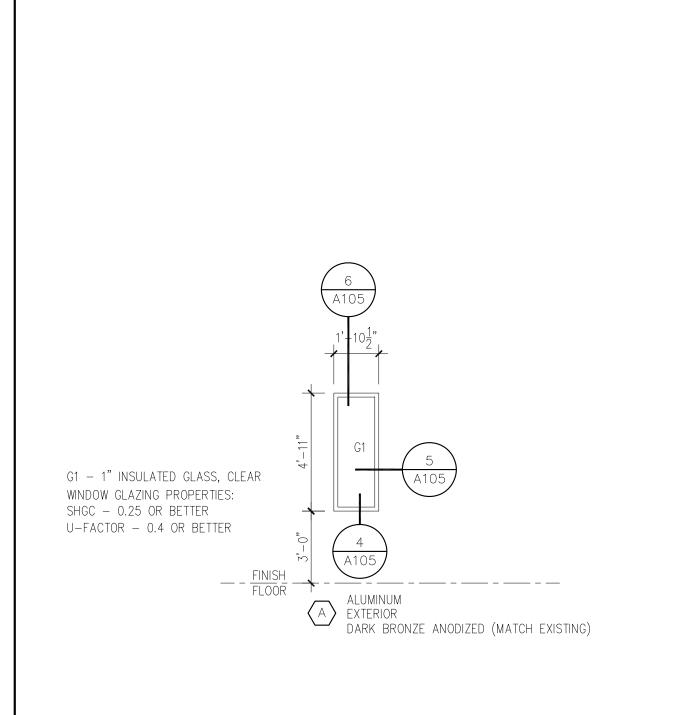
DOOR HARDWARE SCHEDULE

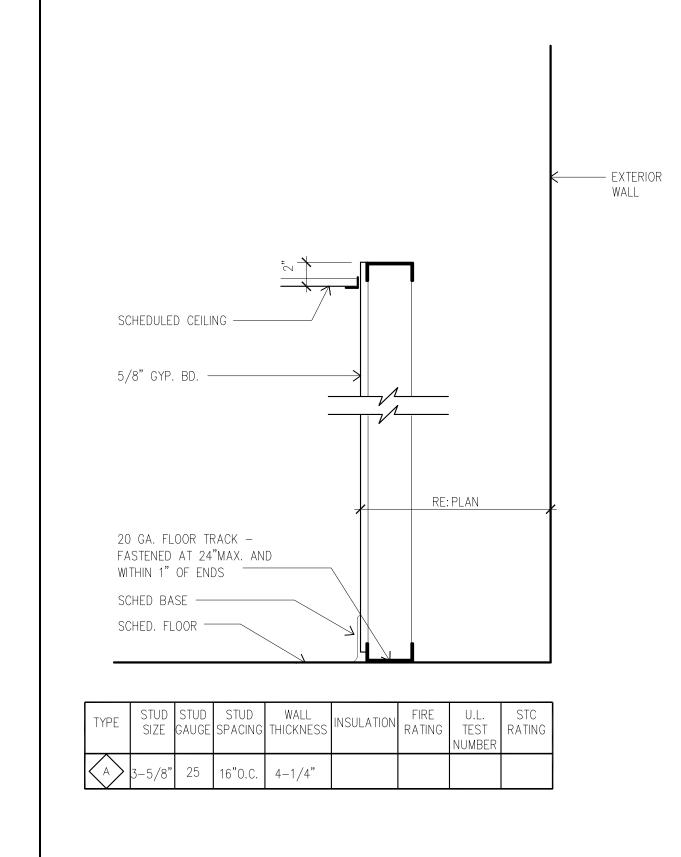
LOCATION

DOOR

NUMBER	NAME	BASE FINISH	CEILING FINISH	FLOOR FINISH	WALL FINISH	DOORS	COMMENTS
101	CAFETERIA	4" RESILIENT BASE—ROPPE WALL BASE — MATCH EXISTING BASE COLOR IN BUILDING	2x4 ACOUSTICAL CEILING TILE (LAY-IN), RADAR CLIMA PLUS BY USG, 2'x4'x8", WHITE, 18"TEE SYSTEM USG DONN BRAND DX/DXL ACOUST. SUSPENSION SYS. (WHITE	12"x12" VCT - 2 COLORS VCT-1 - 12" x 12" VINYL COMPOSITION TILE, WHITE, TARKETT 1862 CANE VCT-2 - 12" x 12" VINYL COMPOSITION TILE, BLUE, TARKETT 1370 HUDSON BLUE	SW6510 LOYAL BLUE WAINSCOT UP TO 4'-0" WITH DAREDEVIL SW6882 10" HIGH STRIPE AND SW7005 WHITE ABOVE TO CEILING, RE: 8/A103	NEW STOREFRONT ALUMINUM/GLASS DOOR, DARK BRONZE	-
02	MECHANICAL CLOSET	-	-	-		SOLID CORE WOOD, STAIN GRADE, MATCH EXISTING CAMPUS DOORS	-
103	SERVERY	4" RESILIENT BASE—ROPPE WALL BASE — MATCH EXISTING BASE COLOR IN BUILDING	2x4 ACOUSTICAL CEILING TILE (LAY-IN), RADAR CLIMA PLUS BY USG, 2'x4'x\begin{array}{c} 2'x4'x\begin{array}{c} 8", WHITE, VINYL COATED, RE-USE EXIST. CEILING GRID, PAINT EXIST. GRID WHITE	12"x12" VCT - 1 COLOR VCT-1 - 12" x 12" VINYL COMPOSITION TILE, WHITE, TARKETT 1862 CANE		SOLID CORE WOOD, STAIN GRADE, MATCH EXISTING CAMPUS DOORS	_
104	EXISTING CAFETERIA	4" RESILIENT BASE—ROPPE WALL BASE — MATCH EXISTING BASE COLOR IN BUILDING	2x4 ACOUSTICAL CEILING TILE (LAY-IN), RADAR CLIMA PLUS BY USG, 2'x4'x\begin{array}{c} 2'x4'x\begin{array}{c} 8'', & & & & & & & & & & & & & & & & & &	12"x12" VCT - 2 COLORS VCT-1 - 12" x 12" VINYL COMPOSITION TILE, WHITE, TARKETT 1862 CANE VCT-2 - 12" x 12" VINYL COMPOSITION TILE, BLUE, TARKETT 1370 HUDSON BLUE	SWOJIO EOTAL BEDE WAINGOOT OF TO 4-0 WITH DANEBEVIL SWOOD TO THIGH STRIFE AND SWYOOD WITH	SOLID CORE WOOD, STAIN GRADE NEW STOREFRONT ALUMINUM/GLASS DOOR, DARK BRONZE	-

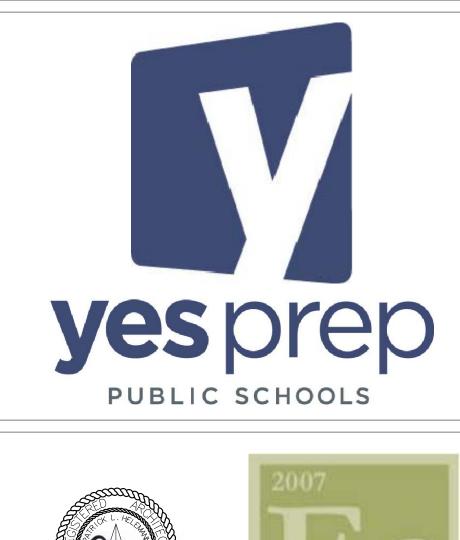
ROOM FINISH SCHEDULE

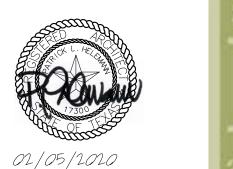




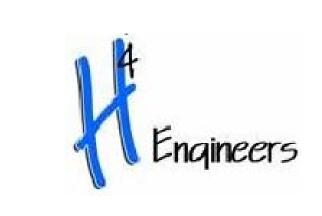


REMARKS:











No.	Description	Date
	ISSUE FOR PERMIT	FEB. 5,2020
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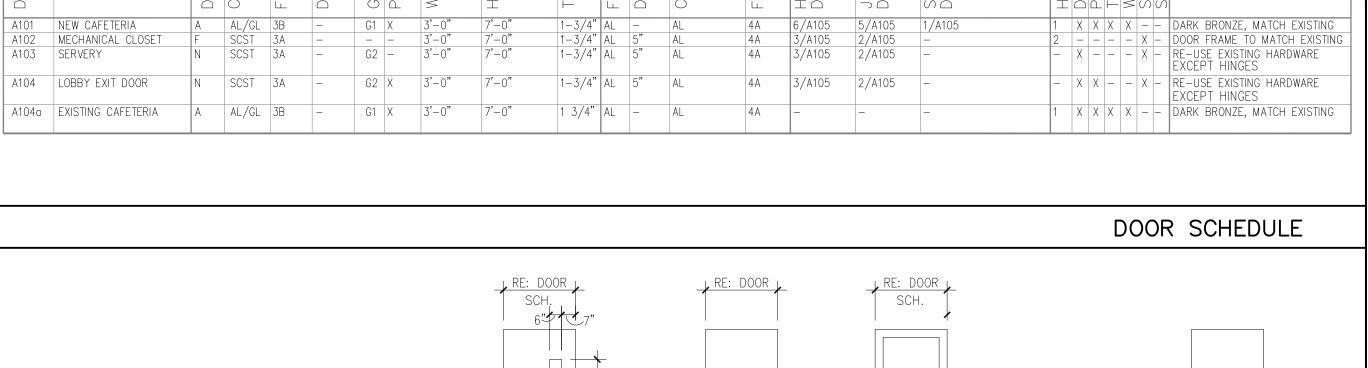
YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA **EXPANSION**

13703 ALDINE WESTFIELD HOUSTON, TX 77039

SCHEDULES / DETAILS

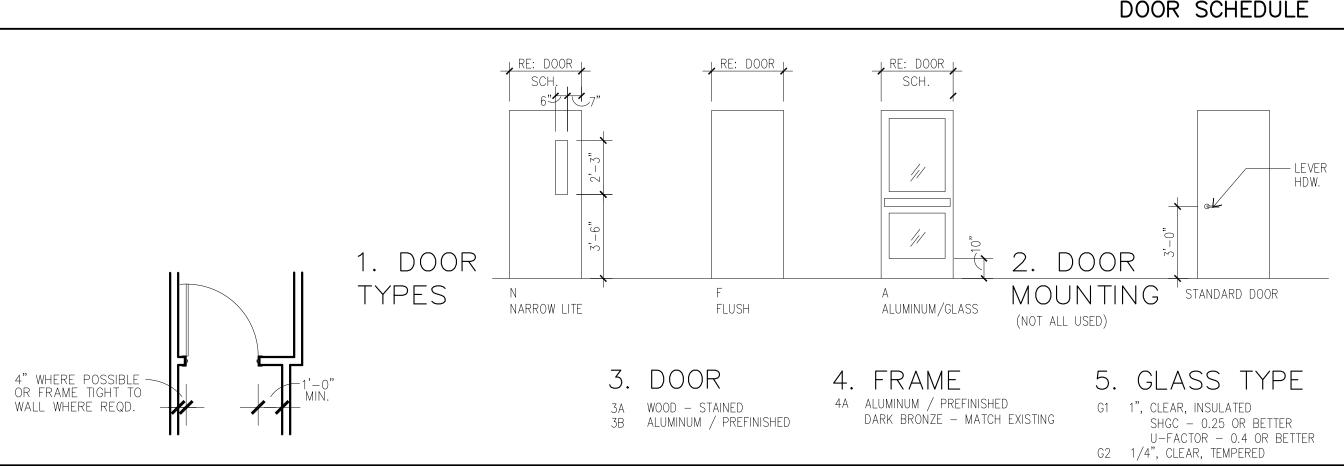
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Drawn By	
Date	FEB.5, 202
Project Number	19096



FRAME

DETAILS

WINDOW SCHEDULE



DOOR FRAME GENERAL NOTES DOOR GENERAL NOTES 1. COORDINATE ALL DOOR DETAILS TO PROVIDE ADEQUATE CLEARANCE 1. PROVIDE THE APPROPRIATE JAMB ANCHOR FOR LABELED OR NON AND FRAME REINFORCEMENT FOR HARDWARE TYPES. LABELED FRAMES. 2. COORDINATE DOOR UNDERCUT WITH FLOOR FINISH AND THRESHOLD. 2. PROVIDE A MINIMUM OF THREE ANCHORS PER JAMB OR SPACE 3. TYPICAL DOOR BEVEL TO BE 1/4" IN 2" UNLESS NOTED OTHERWISE BY HARDWARE AT 2'-0" MAX. O.C. WHICH EVER IS GREATER QUANTITY. TEMPLATE REQUIREMENTS.

DOOR SYMBOL KEY

DOOR MARK, RE: DOOR SCHEDULE

DOOR SCHEDULE ABBREVATIONS CLASS A (3 HOUR) SS STAINLESS STEEL CLASS B (90 MIN.) STL STEEL THR THRESHOLD CLASS C (3/4 HOUR) 20 MINUTE RATING W-STR WEATHER STRIP WD WOOD ALUMINUM SC WOOD SOLID CORE ALUMINUM & GLASS SCST WOOD SOLID CORE STAINED ELEVATOR DOOR GHM GALVANIZED HOLLOW METAL SCPLAM WOOD SOLID CORE PLASTIC FACE HC HOLLOW CORE

HM HOLLOW METAL

MECHANICAL GENERAL NOTES

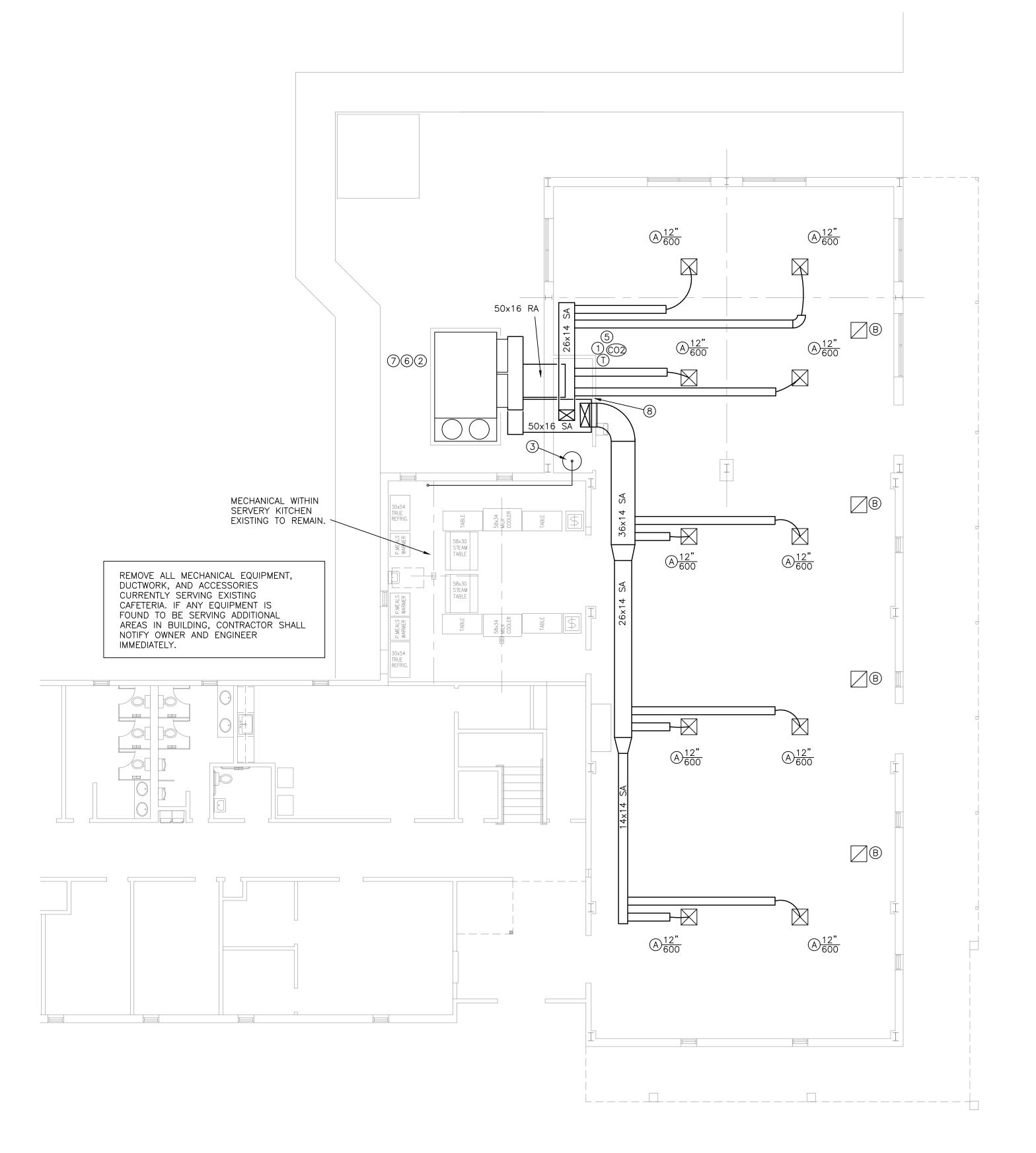
- 1. FIELD VERIFY ALL EXISTING CONDITIONS. 2. DUCT DIMENSIONS ARE INSIDE CLEAR.
- 3. MAINTAIN A MINIMUM OF 3FT BETWEEN EXHAUST AND OPENINGS INTO BUILDING AND 10FT BETWEEN EXHAUST AND OUTSIDE AIR INTAKE. 4. MAINTAIN MINIMUM CLEARANCE TO ALL EQUIPMENT PER
- MANUFACTURER'S INSTALLATION INSTRUCTIONS. 5. COORDINATE ALL AIR DEVICES WITH LIGHT FIXTURES.

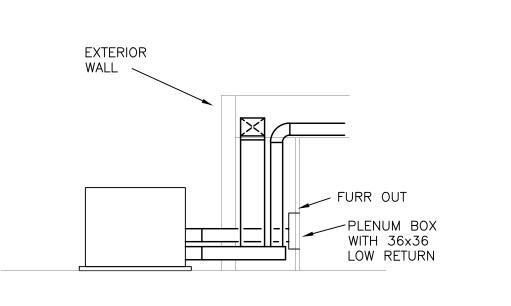
MECHANICAL KEY NOTES

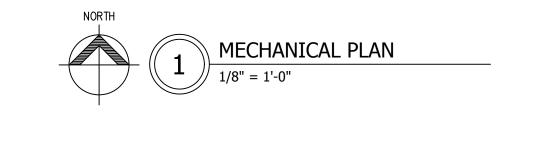
5. DEMAND CONTROL VENTILATION.

- 1. COORDINATE EXACT LOCATION OF PROGRAMMABLE THERMOSTAT WITH ARCHITECT/OWNER.
- 2. PROVIDE CONCRETE PAD. 3. CONNECT NEW FLUE (MATCH EXISTING SIZE) TO WATER HEATER. INSTALL PER MANUFACTURER'S INSTALLATION
- INSTRUCTIONS. 4. ROUTE FLUE AND CONNECT TO EXISTING FLUE TO BUILDING EXTERIOR.
- 6. ROUTE CONDENSATE DRAIN TO GRAVEL BED. REFER TO
- 7. LOCATE RTU AS CLOSE TO BUILDING AS POSSIBLE WHILE MAINTAINING MANUFACTURER'S REQUIRED CLEARANCES.

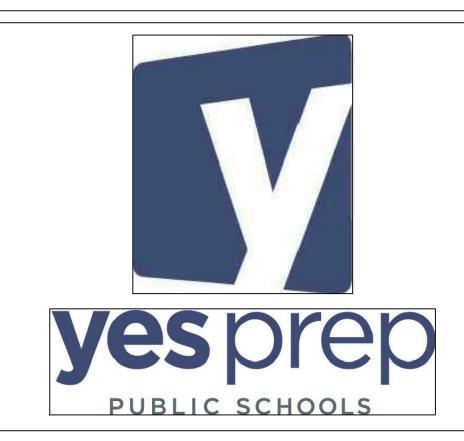
8. PROVIDE RETURN AIR PATH/OPENING MINIMUM 1.6 SF.













No.	Description	Date
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NORTH CENTRAL CAMPUS CAFETERIA **EXPANSION**

13703 ALDINE WESTFIELD HOUSTON, TEXAS 77039

MECHANICAL PLAN

Project Number	19096
Date	DEC. 5, 2019
Drawn By	SEH
Checked By	SEH

M101

DUCT CC	NSTRUCTION MINIMUM SHEET	METAL THICKNESS							
RECTANGULAR DUCTS									
MAXIMUM SIZE (INCHES)	STEEL (MINIMUM THICKNESS, NORMAL)	ALUMINUM (MINIMUM THICKNESS, NORMAL)							
THROUGH 12	0.022 INCH (26 GAGE, GALV.)	0.020 INCH (NO. 24 B&S GAGE)							
13 THROUGH 30	0.028 INCH (24 GAGE, GALV.)	0.025 INCH (NO. 22 B&S GAGE)							
31 THROUGH 54	0.034 INCH (22 GAGE, GALV.)	0.032 INCH (NO. 20 B&S GAGE)							
	ROUND DUCTS								

	KOOND	00013	
MAXIMUM SIZE (INCHES)	SPIRAL SEAM DUCT	LONGITUDINAL SEAM DUCT	FITTINGS
MAXIMOM SIZE (INCITES)	STEEL (MINIMUM THICKNESS, NORMAL)	STEEL (MINIMUM THICKNESS, NORMAL)	STEEL (MINIMUM THICKNESS, NORMAL)
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.)

DUCT	& PIPING MATERIA	L & INSULATION SCHEDULE
SYSTEM	DUCT/PIPING MATERIAL	INSULATION MATERIAL
SUPPLY & RETURN DUCT (RECTANGULAR)	GALVANIZED SHEET METAL LINER	JOHNS MANVILLE PERMACOTE LINACOUSTIC OR EQUAL, 1-1/2" THICK, 1-1/2 LB/CI FT, NFPA 25/50 FLAME SPREAD AND SMOKE DEVELOPED RATING. MINIMUM R-6 INSIDE AND R-8 OUTSIDE BUILDING ENVELOPE.
SUPPLY & RETURN DUCT (SPIRAL/ROUND)	SPIRAL/ROUND DUCT LINER INSULATION	CERTAINTEED TOUGHGUARD ULTRA*ROUND SPIRAL DUCT LINER, 1-1/2" THICK, NFPA 25/50 FLAME SPREAD AND SMOKE DEVELOPED RATING. MINIMUM R-6 INSIDE AND R-8 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 R-6 INSIDE AND R-8 OUTSIDE BUILDING ENVELOPE
SUPPLY, RETURN & OUTSIDE AIR DUCT	GALVANIZED SHEET METAL DUCT WRAP	1-1/2" THICK, 1-1/2 LB/CU FT DENSITY FIBERGLASS FOIL-BACK, FLAME SPREAD RATING 25 OR LESS, SMOKE DEVELOPED RATING 50 OR LESS. MINIMUM R-6 INSIDE AND R-8 OUTSIDE BUILDING ENVELOPE.
REFRIGERANT PIPING	TYPE "L" HARD DRAWN COPPER	ARMAFLEX 1" THICKNESS MINIMUM FOR LIQUID

NOTES:

1. FIRST 20 FT OF SUPPLY AND RETURN AIR DUCTWORK DOWNSTREAM OF AIR HANDLING EQUIPMENT SHALL BE LINED. REMAINING DUCTWORK SHALL BE WRAPPED UNLESS OTHERWISE NOTED.

2. DUCT AND PLENUMS SHALL BE SEALED IN ACCORDANCE WITH THE MECHANICAL CODE AND SMACNA METHOD A.
3. PROVIDE DUCTWORK LOCATED OUTSIDE THE BUILDING ENVELOPE WITH ALUMINUM JACKET.

	ROOF TOP UNIT SCHEDULE																	
					SU	JPPLY F	FAN		cc	OLING COI	IL	HEATIN	NG COIL	EL FOTDIONI				
_	EQUIPMENT NO	SERVICE	LOCATION	OUTSIDE AIR CFM	CFM	ESP (IN WG)	HP	FAN HP	MBH (TH/SH)	EAT (DB/WB)	LAT	INPUT MBH	OUTPUT MBH	ELECTRICAL V/PH/HZ	MANUFACTURER AND MODEL	EER	WEIGHT (LBS)	NOTES
	RTU-1	CAFETERIA	AT GRADE	1710	6000	1.25	10	2@ 6.5FLA	290/162	81/70	55	350	284	460/3/60	CARRIER 48A4V027MNN54GXF	9.9	4522	ALL
1			-															

NOTES:

1. PROGRAMMABLE THERMOSTAT SIMILAR TO ECOBEE3 LITE, WI-FI ENABLED.

SINGLE POINT ELECTRICAL CONNECTION.
 PROVIDE DUCT SMOKE DETECTOR.

4. UNITS RATED AT 105°F AMBIENT CONDITIONS.5. PROVIDE ECONOMIZER WITH BAROMETRIC RELIEF.

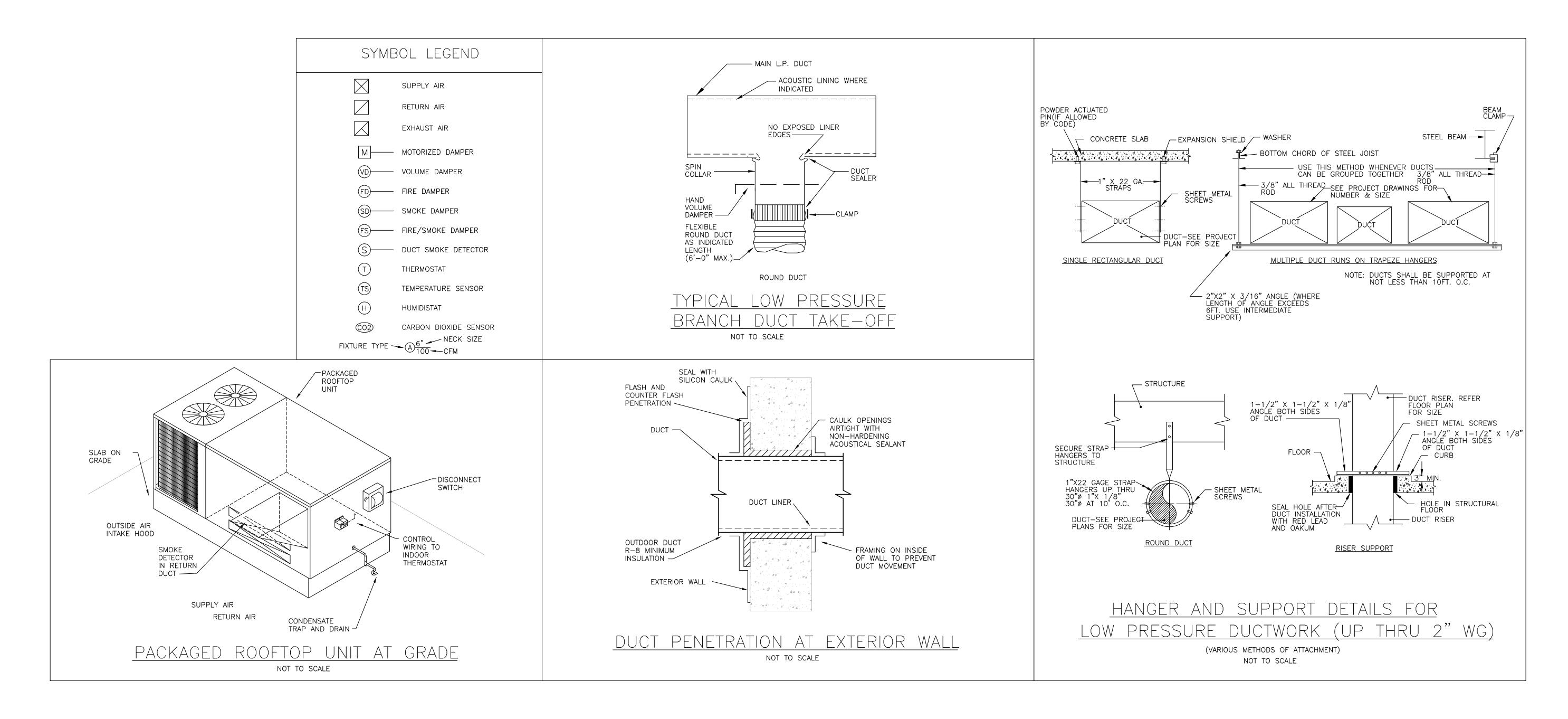
6. PROVIDE CONVENIENCE OUTLET.

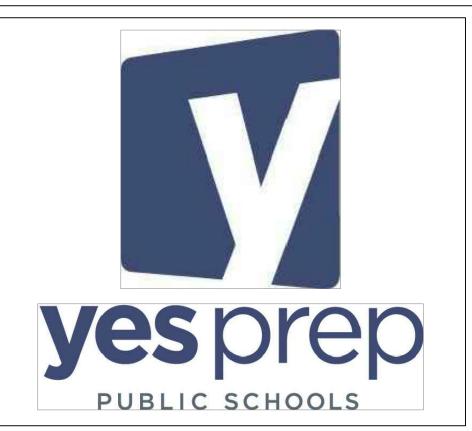
7. LOW SOUND CONDENSER FANS, E-COATED COIL, OUTDOOR/RETURN AIR RELATIVE HUMIDITY SENSOR, LOW SOUND BLANKET.

OUTSIDE AIR CALCULATION

Zone Cafeteria Existing	Occupancy Category Multi-Purpose	2700		180		2700		1	Zone Outdoor Air Flow Voz = Vbz/Ez 1062	Provided (cfm)
Cafeteria New	Multi-Purpose	1550	5	104	0.06	1550	613	1	613 1675	1710 RTU-1

GRILLE - REGISTER - DIFFUSER SCHEDULE												
NO.	SIZE	TYPE MANUFACTURER AND MODEL FINISH DESCRIPTION										
А	24X24	CEILING SUPPLY	TITUS TDC	WHITE	LOUVERED FACE, 18X18 DIMENSION FOR UNIFORM APPEARANCE, NECK SIZE PER PLANS, SQ TO RND TRANSITION, ALUMINUM CONSTRUCTION							
В	24X24	CEILING RETURN	TITUS PAR	WHITE	PERFORATED FACE RETURN, NECK SIZE PER PLANS, ALUMINUM CONSTRUCTION							







No.	Description	Date
19	SUE FOR PERMIT	02.05.20

YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

13703 ALDINE WESTFIELD HOUSTON, TEXAS 77039

MECHANICAL SCHEDULES & DETAILS

19096
DEC. 5, 2019
SEH
SEH

M201

Scale

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING

230000 HVAC BASIC REQUIREMENTS

SPECIFIED OR IMPLIED.

- A. MINIMUM STANDARDS FOR ALL WORK SHALL HARRIS COUNTY AMENDMENTS TO 2018 INTERNATIONAL BUILDING CODE, 2018 INTERNATIONAL MECHANICAL CODE, AND 2015 INTERNATIONAL ENERGY CONSERVATION CODE.
- 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
- 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.

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.

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 CONTROLS.
- D. PROVIDE A WRITTEN REPORT TO THE OWNER AND ENGINEER IN ACCORDANCE WITH AABC, NEBB, OR ASHRAE 111.

230713 DUCT INSULATION

- A. ACOUSTICAL LINER: JOHNS MANVILLE PERMACOTE LINACOUSTIC OR APPROVED EQUAL; DENSITY 1-1/2 LB PER CUBIC FOOT OR GREATER, "K" VALUE NOT MORE THAN 0.28 AT 75°F MEAN TEMPERATURE DIFFERENCE. INTERIOR FACE OF LINER SHALL BE COATED WITH A SMOOTH, POLYMER BASED SUBSTANCE THAT INHIBITS MICROBIOLOGICAL GROWTH, DOES NOT HAVE CAVITIES FOR COLLECTION OF DIRT AND DEBRIS, AND MEETS NFPA 25/50 STANDARDS FOR FLAME SPEED AND SMOKE DEVELOPED RATINGS. THE MANUFACTURER SHALL CERTIFY THAT THE SURFACE COATING IS CLEANABLE WITH INDUSTRY STANDARD DUCT CLEANING EQUIPMENT AND SHOW TYPE OF EQUIPMENT. 1. PROVIDE LINER IN THE FIRST 20 FEET OF ALL SUPPLY AND RETURN DUCTWORK, ALL EXPOSED DUCTWORK AND IN ALL
- RETURN TRANSFER DUCTS. B. INSULATION WRAP: 3/4" LB. DENSITY GLASS FIBER WRAP WITH FOIL BACK VAPOR BARRIER JACKET. C. OUTDOOR, EXPOSED DUCTS: INSTALL ALUMINUM JACKET OVER INSULATION MATERIAL. PITCH DUCT TO PREVENT WATER
- D. ALL INSULATION THICKNESS SHALL MEET THE MINIMUM REQUIREMENTS OF INTERNATIONAL ENERGY CONSERVATION CODE.

230993 SEQUENCE OF OPERATIONS FOR HVAC CONTROLS

ACCUMULATION ON DUCT.

- A. SYSTEM PACKAGED AIR HANDLING UNITS 1. SYSTEM OFF - WHEN THE SYSTEM IS OFF:
- a. THE SUPPLY AIR FAN SHALL BE OFF.
- b. THE COMPRESSOR AND CONDENSER FANS SHALL BE OFF. c. THE MOTORIZED DAMPER FOR OUTSIDE AIR INTAKE SHALL BE
- 2. SYSTEM START-UP SHALL BE INITIATED: a. BY AN OPERATOR MANUALLY ENTERED COMMAND AT THE
- b. AUTOMATICALLY BY THE THERMOSTAT BASED ON
- PROGRAMMED TIME SCHEDULE. 3. SYSTEM OPERATION - WHEN SYSTEM START-UP HAS BEEN
- INITIATED, THE FOLLOWING SEQUENCES SHALL BE IMPLEMENTED: a. THE SUPPLY AIR FAN SHALL START.
- b. THE COMPRESSOR AND CONDENSER FANS SHALL STAGE ON TO MAINTAIN THE ROOM AIR TEMPERATURE SETPOINT. c. THE MOTORIZED DAMPER FOR OUTSIDE AIR INTAKE SHALL MODULATE OPEN TO THE SCHEDULED VENTILATION AIRFLOW.
- d. WHEN THE COMPRESSOR IS OFF, STAGE ON THE GAS HEAT TO MAINTAIN THE ROOM AIR TEMPERATURE SETPOINT. NO SIMULTANEOUS COOLING AND HEATING SHALL BE ALLOWED. e. AUTOMATIC SHUTDOWN OF SUPPLY FAN VIA DUCT MOUNTED
- SMOKE DETECTOR FOR UNITS OVER 2,000 CFM. 4. SETPOINTS - THE SETPOINTS FOR THE SYSTEM SHALL BE DETERMINED AS FOLLOWS:
- MANUALLY BY THE OPERATOR 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. THE ROOM AIR TEMPERATURE SETPOINT SHALL BE SET

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

a. BY OPERATOR ENTERED MANUAL COMMAND AT THE

- B. PROVIDE THE NECESSARY SENSORS, CONTROLS AND ACTUATORS TO CONTROL THE SYSTEM AS OUTLINED BELOW. 1. SUPPLY ROOM TEMPERATURE CONTROL
 - a. SUPPLY AIR TEMPERATURE SENSOR
 - b. RETURN AIR TEMPERATURE SENSOR c. FAN START/STOP CONTROL BASED ON OCCUPIED AND
 - UNOCCUPIED CONDITIONS d. AIR FLOW VERIFICATION THROUGH AIR FLOW SWITCH
- e. DUCT PRESSURE CONTROL THROUGH VFD AND DUCT STATIC PRESSURE SENSOR f. ROOM STAGED AIR TEMPERATURE CONTROL BASED ROOM TEMPERATURE, SUPPLY TEMPERATURE, RETURN
- TEMPERATURE, AND SPACE SUPPLY 2. ECONOMIZER CONTROL
- a. PROVIDE OUTSIDE AND RETURN AIR ENTHALPY SENSORS AND DAMPER ACTUATORS TO PROVIDE OUTSIDE AIR COOLING WHEN THE OUTSIDE AIR HAS LESS HEAT CONTENT THAN THE RETURN AIR
- b. PROVIDE THE CAPABILITY TO CLOSE THE OUTSIDE AIR DAMPER DURING UNOCCUPIED MODES
- c. PROVIDE THE CAPABILITY TO OPEN THE DAMPER TO MAX SET
- d. CO2 SENSOR SHALL MODULATE THE ECONOMIZER AND PROVIDE DEMAND CONTROL VENTILATION d.a. ECONOMIZER CONTROL: THE CO2 SENSOR SHOULD PROVIDE CONTROL TO THE AIR HANDLER OUTSIDE AIR
- DAMPER WHENEVER THE FRESH AIR ECONOMIZER CANNOT BE USED. IF OUTSIDE AIR IS SUITABLE FOR FREE COOLING, AND THERE IS A DEMAND FOR COOLING THE ECONOMIZER SHALL HAVE PRIORITY. d.b. MINIMUM POSITION FOR CO2 CONTROL: THE SYSTEM
- SHALL BE CONFIGURED TO PROVIDE A BASE VENTILATION RATE TO CONTROL NON-OCCUPANT RELATED SOURCES IN THE SPACE DURING ALL OCCUPIED HOURS. THE DAMPER SHALL BE CLOSED DURING UNOCCUPIED HOURS.
- d.c. MAXIMUM POSITION FOR CO2 CONTROL: THE MAXIMUM POSITION FOR THE DAMPER DURING CO2 CONTROL SHOULD BE SET TO TO EQUAL THE DESIGN VENTILATION RATE (OUTSIDE AIR) FOR THE SPACE.
- d.d. CONTROL: THE OUTSIDE AIR DAMPER SHALL BE MODULATED BETWEEN THE MINIMUM POSITION AND THE MAXIMUM POSITION DESCRIBED ABOVE TO PROVIDE THE DESIGN VENTILATION RATE TO THE SPACE BASED ON CO2 CONCENTRATIONS. PROPORTIONAL CONTROL APPROACH SHALL BE USED TO MODULATE THE DAMPER BASED ON CO2 READINGS BETWEEN A LOWER AND UPPER CONTROL
- 3. PRESSURE RELIEF VIA BAROMETRIC RELIEF.

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.
- . CONNECT AIR DEVICES WITH A MAXIMUM 6 FT LENGTH OF FLEXIBLE DUCT CLAMPED OR STRAPPED IN PLACE.
- C. FLEXIBLE CONNECTORS: PROVIDE FLEXIBLE CONNECTORS AT ALL AIR HANDLING EQUIPMENT. 1. OUTDOOR FLEXIBLE CONNECTOR FABRIC: GLASS FABRIC DOUBLE
- COATED WITH WEATHERPROOF, SYNTHETIC RUBBER RESISTANT TO UV RAYS AND OZONE. a. MINIMUM WEIGHT: 24 OZ./SQ.YD.
- b. TENSILE STRENGTH: 530 LBF/INCH N THE WARP AND 440 LBF/INCH IN THE FILLING.
- c. SERVICE TEMPERATURE: MINUS 50 TO PLUS 250 DEG F.
- PACKAGED, OUTDOOR, CENTRAL STATION AIR HANDLING UNITS
 - A. UNITS SHALL BE SPECIFICALLY DESIGNED FOR OUTDOOR APPLICATION. STRUCTURAL MEMBERS AND CASING PANELS SHALL BE ALL GALVANIZED. ROOF AND SIDE WALL PANELS SHALL BE GALVANIZED SHEET STEEL CONSTRUCTION WITH MINIMUM 1/6" THICK, 1 LB DENSITY, FLEXIBLE FIBERGLASS INSULATION, NEOPRENE COATED ON THE AIR SIDE. ROOF AND SIDEWALL SEAMS SHALL BE CONTINUOUSLY CAULKED AND COVERED
 - WITH SEAM CAPS. B. COILS: ALUMINUM PLATE FIN AND SEAMLESS COPPER TUBE IN STEEL CASING WITH EQUALIZING-TYPE VERTICAL. POLYMER STRIP SHALL PREVENT ALL COPPER COILS FROM CONTACTING STEEL COIL FRAME OR CONDENSATE PAN. COIL SPLIT: FACE SPLIT. FACE VELOCITY SHALL NOT EXCEED 500 FPM. CAPACITY RATINGS SHALL BE ARI CERTIFIED. COILS SHALL BE REMOVABLE. CAPACITY SHALL BE BASED ON 105°F AMBIENT.
 - C. EVAPORATOR FAN: BLOWER FAN SHALL BE VAN AXIAL FAN DESIGN WITH 75% LESS MOVING PARTS THAN A CONVENTIONAL BELT DRIVE SYSTEM. CAST ALUMINUM STATOR AND HIGH IMPACT COMPOSITE MATERIAL ON ROTOR AND AIR INLET CASING.
 - D. BELT-DRIVEN SUPPLY-AIR FANS: DOUBLE WIDTH, FORWARD CURVED, CENTRIFUGAL; WITH PERMANENTLY LUBRICATED, SINGLE-SPEED MOTOR INSTALLED ON AN ADJUSTABLE FAN BASE RESILIENTLY MOUNTED IN THE CASING. ALUMINUM OR PAINTED-STEEL WHEELS, AND GALVANIZED- OR PAINTED-STEEL FAN SCROLLS.

E. CONDENSER-COIL FAN: PROPELLER, MOUNTED ON SHAFT OF

- PERMANENTLY LUBRICATED MOTOR. F. REFRIGERANT CIRCUIT COMPONENTS:
- 1. COMPRESSOR: HERMETIC, TWO STAGE SCROLL, MOUNTED ON VIBRATION ISOLATORS: WITH INTERNAL OVERCURRENT AND HIGH-TEMPERATURE PROTECTION, INTERNAL PRESSURE RELIEF, AND CRANKCASE HEATER.
- 2. REFRIGERATION SPECIALTIES:
- a. REFRIGERANT: R-410A.
- b. EXPANSION VALVE WITH REPLACEABLE THERMOSTATIC ELEMENT.
- c. REFRIGERANT FILTER/DRYER. d. MANUAL-RESET HIGH-PRESSURE SAFETY SWITCH.
- e. AUTOMATIC-RESET LOW-PRESSURE SAFETY SWITCH.
- f. MINIMUM OFF-TIME RELAY. g. AUTOMATIC-RESET COMPRESSOR MOTOR THERMAL OVERLOAD.
- h. BRASS SERVICE VALVES INSTALLED IN COMPRESSOR SUCTION AND LIQUID LINES. i. LOW-AMBIENT KIT HIGH-PRESSURE SENSOR.
- F. GAS HEATING SECTION: PROVIDE NATURAL GAS HEATING SECTION COMPLYING WITH ANSI Z21.47 AND NFPA 54.

j. EQUIPMENT SHALL BE RATED FOR 105°F AMBIENT.

- 1. BURNERS: STAINLESS STEEL. 2. IGNITION: ELECTRONICALLY CONTROLLED ELECTRIC SPARK OR
- HOT-SURFACE IGNITER WITH FLAME SENSOR. 3. HEAT EXCHANGER: STAINLESS STEEL 4. POWER VENT: INTEGRAL, MOTORIZED CENTRIFUGAL FAN
- INTERLOCKED WITH GAS VALVE. G. PROVIDE FOR SINGLE CONNECTION OF POWER TO UNIT WITH UNIT-MOUNTED DISCONNECT SWITCH ACCESSIBLE FROM OUTSIDE UNIT AND CONTROL-CIRCUIT TRANSFORMER WITH BUILT-IN
- OVERCURRENT PROTECTION. H. FILTER VELOCITY: 350 FPM MAXIMUM (MERV 13).
- I. BASIC UNIT CONTROLS: 1. CONTROL-VOLTAGE TRANSFORMER. 2. PROGRAMMABLE WALL-MOUNTED THERMOSTAT WITH THE
 - FOLLOWING FEATURES: a. HEAT-COOL-OFF SWITCH
 - b. FAN ON-AUTO SWITCH. c. FAN-SPEED SWITCH.
 - d. AUTOMATIC CHANGEOVER.
 - e. ADJUSTABLE DEADBAND (MINIMUM 5°F). f. DEGREE F INDICATION.
- g. EXPOSED SET POINT. h. EXPOSED INDICATION.

230548 VIBRATION ISOLATION.

- K. ACCEPTABLE MANUFACTURERS: TRANE, CARRIER, YORK, MCQUAY. L. ENERGY EFFICIENCY: PROVIDE HIGH EFFICIENCY UNITS EXCEEDING MINIMUM ENERGY EFFICIENCY RATINGS IN ACCORDANCE WITH INTERNATIONAL ENERGY CONSERVATION CODE.
- 1. COMPRESSORS: MANUFACTURER'S STANDARD, BUT NOT LESS 「HAN FIVE (5) YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
- 2. GAS FURNACE HEAT EXCHANGERS: MANUFACTURER'S STANDARD, BUT NOT LESS THAN TEN (10) YEARS FROM DATE OF SUBSTANTIAL COMPLETION. 3. PARTS: MANUFACTURER'S STANDARD, BUT NOT LESS THAN ONE

M. ROOF CURB: PROVIDE ROOF CURB IN ACCORDANCE WITH SECTION

(1) YEAR FROM DATE OF SUBSTANTIAL COMPLETION.

A. AIR SYSTEM BALANCE

COMMISSIONING PLAN

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.

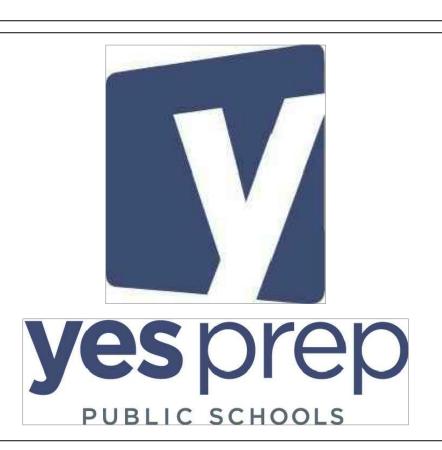
ENERGY CODE COMPLIANCE REQUIREMENTS

- 2. ADJUST ALL BLOWER DRIVES TO OBTAIN PROPER TOTAL AMOUNTS OF AIR, INCLUDING EXHAUST AND OUTSIDE AIR SUPPLY.
- 3. CALIBRATE, SET, AND ADJUST ALL AUTOMATIC TEMPERATURE CONTROLS. 4. PROVIDE A WRITTEN REPORT TO THE OWNER IN ACCORDANCE WITH AABC, NEBB, OR ASHRAF 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 OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.
- . ECONOMIZERS 1. AIR ECONOMIZERS SHALL BE FUNCTIONALLY TESTED TO DOCUMENT THAT THEY OPERATE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- 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 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

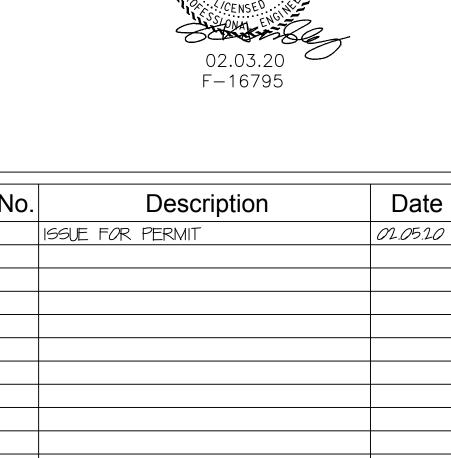
- A. WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE THE FOLLOWING DOCUMENTS SHALL BE PROVIDED TO THE OWNER:
- 1. MANUALS: OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED AND INCLUDE THE FOLLOWING: a. SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING 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
- SUGGESTED SET-POINTS.

e. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING





91827



YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

13703 ALDINE WESTFIELD HOUSTON, TEXAS 77039

MECHANICAL SPECIFICATIONS

Project Number DEC. 5, 2019 SEH Drawn By Checked By

M301

Scale

DIVISION 26 - ELECTRICAL

- 260000 ELECTRICAL BASIC REQUIREMENTS
- A. MINIMUM STANDARDS FOR ALL WORK SHALL BE THE 2017 NATIONAL ELECTRICAL CODE, 2015 INTERNATIONAL ENERGY CONSERVATION CODE, AND 2018 INTERNATIONAL BUILDING CODE WITH HARRIS COUNTY
- 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)
- 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
- D. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED
- 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.
- 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.
- J. ALL MATERIAL SHALL BE NEW, UNDAMAGED, AND UNBLEMISHED AND UL LISTED EXACT AS NOTED.
- 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.
- L. 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

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 SIMILAR. 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.
- F. CONNECTORS AND SPLICES: FACTORY-FABRICATED CONNECTORS, SPLICES AND LUGS OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR APPLICATION AND SERVICE INDICATED. LISTED AND LABELED AS DEFINED IN NFPA (NEC) 70, BY A QUALIFIED TESTING 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 SECTION.
- 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
- 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
- E. BARE COPPER CONDUCTORS: 1. SOLID CONDUCTORS: ASTM B3.

AND 1/16" THICK.

- 2. STRANDED CONDUCTORS: ASTM B8. 3. TINNED CONDUCTORS: ASTM B33.
- 4. BONDING CABLE: 28 KCMIL, 14 STRANDS OF NO. 17 AWG CONDUCTOR, 1-1/4" IN DIAMETER.
- 5. BONDING CONDUCTOR: NO. 4 OR NO. 6 AWG, STRANDED
- 6. BONDING JUMPER: COPPER TAPE, BRAIDED CONDUCTORS TERMINATED WITH COPPER FERRULES; 1-5/8" WIDE AND 1/16"
- 7. TINNED BONDING JUMPER: TINNED-COPPER TAPE, BRAIDED CONDUCTORS TERMINATED WITH COPPER FERRULES; 1-5/8" WIDE
- E. CONNECTORS: LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING LABORATORY AND IN COMPLIANCE WITH THE FOLLOWING: 1. 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: 1. 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. 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 INSTRUCTIONS.

260529 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- 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 MALLEABLE IRON. 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 WHERE USED. 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 WHERE USED. 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. 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 PLATES.

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
- MOTOR-DRIVEN EQUIPMENT): LFMC. 1.5. BOXES AND ENCLOSURES, ABOVEGROUND: NEMA 250, TYPE 3R. INDOORS:

TRANSFORMERS AND HYDRAULIC, PNEUMATIC, SOLENOID, OR

- 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 SEALANT. E. KEEP RACEWAYS AT LEAST 6" AWAY FROM PARALLEL RUNS OF HOT-WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER
- 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 DEFINED IN NFPA (NEC) 70. K. NONMETALLIC FLOOR BOXES: NONADJUSTABLE, ROUND, LISTED AND
- LABELED AS DEFINED IN NFPA (NEC) 70. L. SMALL SHEET METAL PULL AND JUNCTION BOXES: COMPLY WITH NEMA
- M. CAST-METAL, ACCESS, PULL, AND JUNCTION BOXES: COMPLY WITH NEMA FB1 AND UL 1773, GALVANIZED, CAST IRON WITH GASKETED
- N. 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.
- O. 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. 2. 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 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

260553 IDENTIFICATION FOR ELECTRICAL SYSTEMS

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

ENDS AND INTEGRAL WATERSTOP U.O.N.

- B. ADHESIVE-ATTACHED LABELING MATERIALS, INCLUDING LABEL STOCKS, LAMINATING ADHESIVES, AND INKS USED BY LABEL PRINTERS, SHALL
- COMPLY WITH UL 969. 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. 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. 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. WARNING LABELS FOR INDOOR CABINETS, BOXES, AND ENCLOSURES FOR POWER AND LIGHTING: SELF-ADHESIVE WARNING LABELS. 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 CONNECT. O. EQUIPMENT IDENTIFICATION LABEL: ON EACH UNIT OF EQUIPMENT, INSTALL A UNIQUE DESIGNATION LABEL THAT IS CONSISTENT WITH WIRING DIAGRAMS, SCHEDULES, AND OPERATION AND MAINTENANCE

260923 LIGHTING CONTROL DEVICES

262813 FUSES

- A. OCCUPANCY SENSOR SIMILAR TO LEVITON OSC5/10/20-MOW CEILING MOUNT, POWER PACK OPP20-D2 AND 56081-2 MANUAL WALL SWITCH. B. LIGHTING CONTROL PANEL SIMILAR TO WATTSTOPPER PEANUT. ALLOW MINIMUM OF TWO FUTURE CIRCUITS. 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%.

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

WITH CAPABILITY TO ACCEPT TWO PA

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

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. 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
- 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
- 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 SETTINGS.

d.e. THE LIGHTS ARE NOT INCORRECTLY TURNED ON BY MOVEMENT IN ADJACENT

c. VERIFY THE CORRECT TIME AND DATE IN THE TIME SWITCH. d. VERIFY THAT ANY BATTERY BACK-UP IS INSTALLED AND ENERGIZED

WHEN MANUALLY ACTIVATED.

- 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
- 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.
- 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

SUGGESTED SET-POINTS.

B. COMMISSIONING REPORT

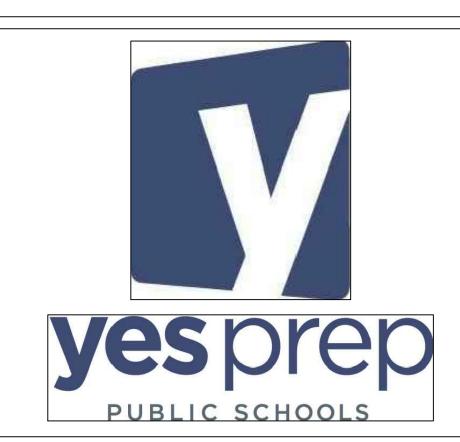
A. WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE THE FOLLOWING DOCUMENTS SHALL BE PROVIDED TO THE OWNER: 1. MANUALS: OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED AND INCLUDE

c. A SCHEDULE FOR INSPECTING AND RECALIBRATING ALL LIGHTING CONTROLS.

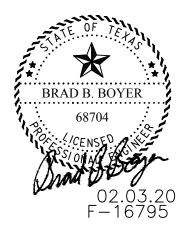
d. NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY.

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.

e. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING







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YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

13703 ALDINE WESTFIELD HOUSTON, TEXAS 77039

ELECTRICAL NOTES

19096 **Project Number** DEC. 5, 2019 SEH Drawn By SEH/BBB Checked By

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Scale

EXISTING ELECTRICAL SERVICE

EXISTING ELECTRICAL ROOM WITH KITCHEN DISCONNECT AND DISTRIBUTION PANEL

/ EXISTING GYM DISCONNECT / NEW DISCONNECT

	$\langle X \rangle$	EQUIPMENT	
TAG	EQUIPMENT	PLUG TYPE	MOUNTING HEIGHT
1	RETHERM OVEN	NEMA 5-20P	TWIST LOCK ABOVE CEILING
2	REFRIGERATOR	NEMA 14-20R	TWIST LOCK ABOVE CEILING
3	MILK COOLER	NEMA 5-15P	FLUSH FLOOR BOX
4	STEAM TABLE	NEMA 6-20P	FLUSH FLOOR BOX
5	FREEZER		
	•		·

1. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL REQUIREMENTS. 2. STANDARD PLUG UNLESS OTHERWISE NOTED. CONFIRM WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

3. COORDINATE MOUNTING HEIGHT WITH EQUIPMENT.

REMOVE ELECTRICAL ASSOCIATED WITH DEMOLISHED CAFETERIA HVAC EQUIPMENT.

EXISTING ELECTRICAL ROOM WITH KITCHEN PANELS (KP-1 AND KP-2)

POWER GENERAL NOTES

- 1. FIELD VERIFY ALL EXISTING CONDITIONS. 2. ALL RECEPTACLES WITHIN 6FT OF SINKS SHALL BE GFI. 3. COORDINATE EXACT LOCATION OF ALL KITCHEN EQUIPMENT WITH KITCHEN CONSULTANT DRAWINGS.
- 4. ALL RECEPTACLES SHALL BE 20 AMP UNLESS NOTED OTHERWISE. PLUG AS INDICATED IN SCHEDULE OR AS PROVIDED BY MANUFACTURER. 5. ALL SINGLE PHASE RECEPTACLES 120V/50A OR LESS AND THREE PHASE RECEPTACLES 120V/100A OR LESS
- AT FOOD SERVICE/KITCHEN AREAS SHALL BE PROTECTED WITH GFI TYPE BREAKERS. 6. ALL EQUIPMENT SHALL BE LISTED FOR ITS INTENDED
- 8. CONFIRM ALL DATA LOCATIONS WITH OWNER. 9. RECEPTACLE FOR SERVICING EQUIPMENT SHALL BE LOCATED ON THE SAME LEVEL AND WITHIN 25FT OF HEATING, AIR CONDITIONING, AND REFRIGERATION

7. ALL EXTERIOR DEVICES SHALL BE WEATHERPROOF.

EQUIPMENT. 10. FEED WITH 3#6 AND #6 GND FROM NEW 100A DISCONNECT ADJACENT TO AND TAPPED FROM GYM DISCONNECT. REFER TO ONELINE.

POWER KEY NOTES

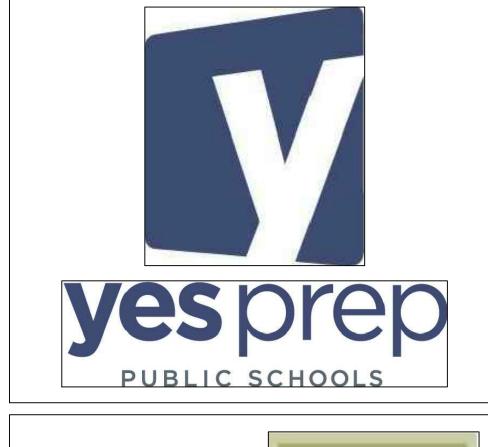
- 1. FLUSH FLOOR BOX. 2. PROVIDE 6X6 WIREWAY ABOVE CEILING WITH TWIST LOCK RECEPTACLE. REFER TO DETAIL.
- 3. REUSE EXISTING CIRCUIT. RELOCATE TO NEW LOCATION OF EXISTING EQUIPMENT.

LIGHTING GENERAL NOTES

- 1. FIELD VERIFY ALL EXISTING CONDITIONS. 2. CONNECT ALL EXIT AND EMERGENCY LIGHTS TO
- NEAREST LIGHTING CIRCUITS. 3. COORDINATE LOCATIONS OF ALL LIGHT SWITCHES WITH
- 4. PROVIDE EMERGENCY LIGHTING TO PROVIDE MINIMUM 1 FC ALONG ALL EGRESS PATHS. 5. LOWER CASE LETTER CORRESPONDS TO SWITCH.

LIGHTING KEY NOTES

- 1. OCCUPANCY SENSOR CEILING MOUNT WITH WALL
- 2. MANUAL WALL SWITCH CONNECTED TO LIGHTING CONTROL PANEL. LIGHT REDUCTION CONTROLS WITH MULTIPLE SWITCHES TO REDUCE CONNECTED LOAD BY
- AT LEAST 50%. 3. COORDINATE EXACT LOCATION OF LIGHT SWITCH WITH
- 4. EXISTING EMERGENCY LIGHT. FIELD VERIFY. 5. EXISTING EXIT SIGN. REMOVE AND REINSTALL IN NEW
- CEILING. 6. RELOCATED EMERGENCY LIGHT AND EXIT SIGN COMBO.







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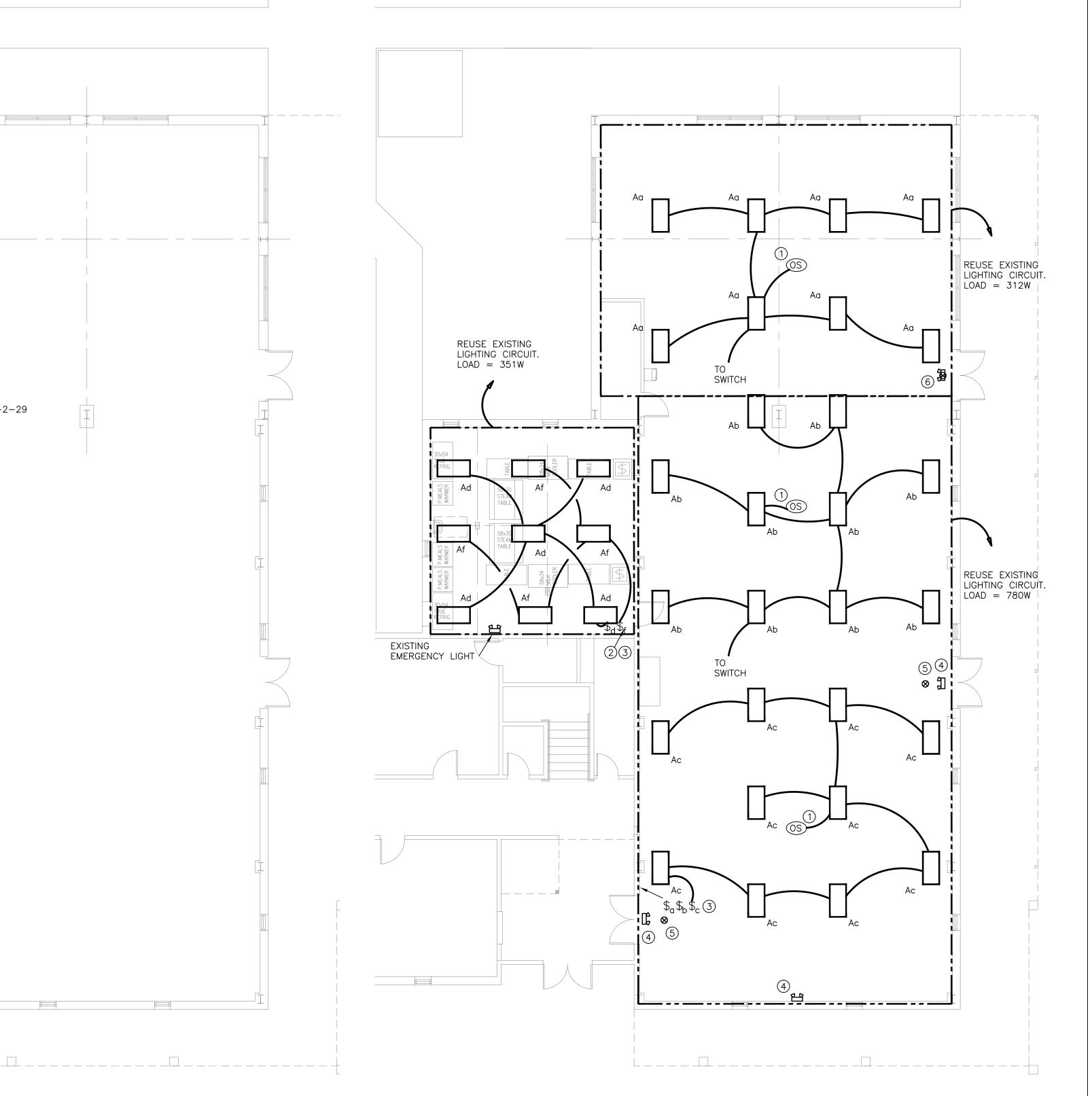
NORTH CENTRAL CAMPUS CAFETERIA **EXPANSION**

13703 ALDINE WESTFIELD HOUSTON, TEXAS 77039

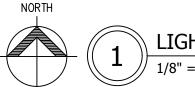
ELECTRICAL PLAN

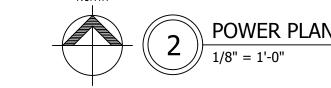
Project Number	19096
Date	DEC. 5, 2019
Drawn By	SEH
Checked By	SEH/BBB

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		3 Ph	HASE COF	PPER F	FEEDER SCHEDULE		
NUMBER	CONDUCTORS	COND	W/O NEUTRAL	NUMBER	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"	20mv	3#3/0, 1#6 GND	3"	3"
31	4#350 KCMIL, 1#3 GND	3"	3"	30mv	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

N = NO NEUTRAL CONDUCTOR
 G = NO EQUIPMENT GROUNDING CONDUCTOR
 5KV MEDIUM VOLTAGE CABLE CALCULATED IN SCHEDULE 40 PVC. ALL OTHERS IN RMC.

۷.	SKV MEDIUM	VOLTAGE CABLE	CALCULATED IN	SCHEDULE 4	O PVC. ALL I	OTH
3.	ALL CONDUIT	CALCULATIONS	BASED ON THHN	COPPER CO	NDUCTORS.	
4.	AMPACITIES E	BASED ON 75°C	TEMPERATURE RA	ATING OF CON	NDUCTORS.	

TYPE	MANUFACTURER	MODEL	VOLTS	LAMP	DESCRIPTION	NOTES					
Α	LITHONIA EPANL-2X4-4000LMHE-80 120 39 2X4 LED ALL										

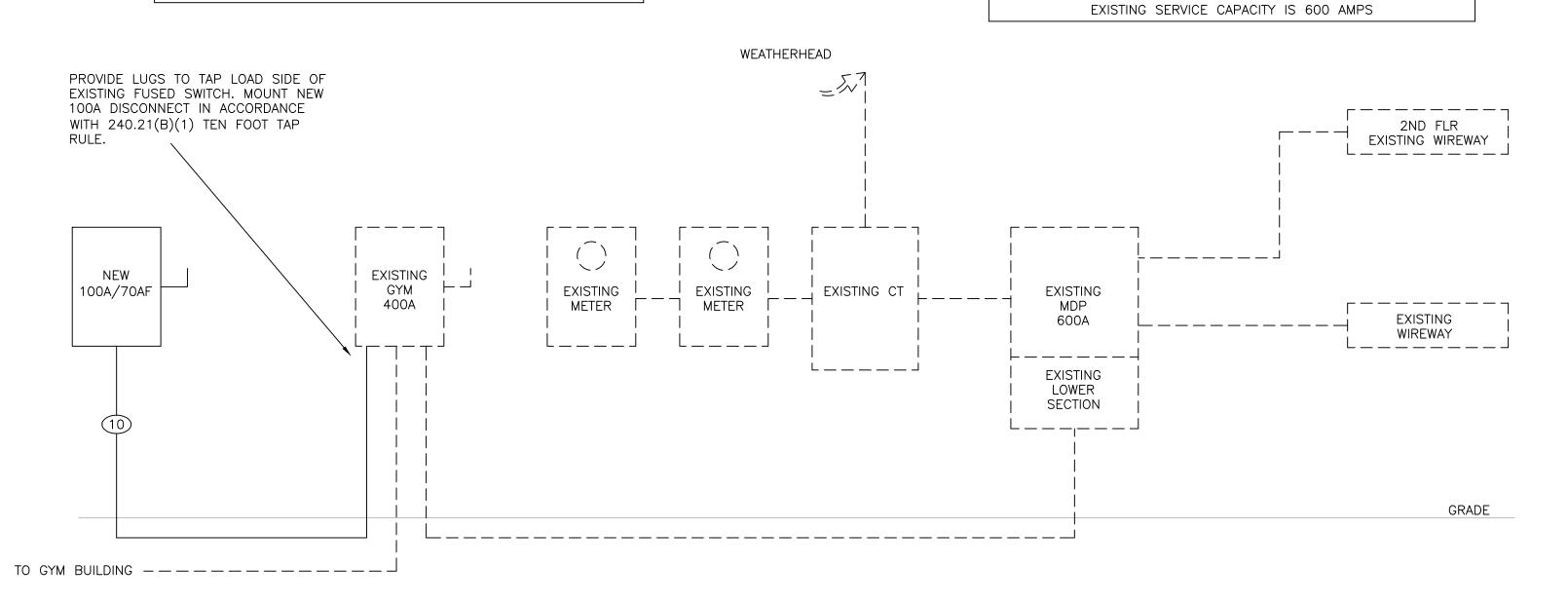
100A MB	EXISTING PANEL KP-1									NOTES					
VOLTS 120/208 PHASE 3 WIRE 4				VIQ I	IIIC	7	Ά	INCI	- NP	- 1	EXISTING KAIC RATING BALANCE ALL LOADS				
					N.	— n		4							
				NEMA 1								3. LABEL ALL CIRCUITS			
CIRCUIT		WATT				CIR	СП	-			WATT		CIRCUIT		
DESCRIPTION	*	LOAD	WIRE	BRKR		NUN	/IBEF	₹	BRKR	WIRE	LOAD	*	DESCRIPTION		
EXISTING				30/1	1			2	30/2				EXISTING		
EXISTING				30/1	3			4							
EXISTING				40/2	5			6	40/2				EXISTING		
					7			8							
EXISTING				30/2	9			10	20/1				EXISTING		
					11			12	20/1				EXISTING		
EXISTING				30/1	13			14	20/1				EXISTING		
EXISTING				20/1	15			16	20/1				EXISTING		
	СО	NNECTE	.D	DEMANE)	•			,				•		
NON-CONTINUOUS	*1	0	100%	0											
CONTINUOUS	*2	0	125%	0											
KITCHEN EQUIPMENT	*3	0	65%	0											
TOTAL				0	VA										
AT 208 V, 3 PHASE =		0	AMPS		1 - / `										

125A MLO				XIST	INIC	· D) A F	VIEI	NOTES					
VOLTS 120/208		VIOI	ING	, ,	'AI	A C L	- NP	-2	1. EXISTING KAIC RATING					
PHASE 3 WIRE 4				N.I.I		лл	4			2. BALANCE ALL LOADS				
		NEMA 1									3. LABEL ALL CIRCUITS			
CIRCUIT DESCRIPTION	*	WATT LOAD	WIRE	BRKR			CUIT (BER		BRKR	WIRE	WATT LOAD	*	CIRCUIT DESCRIPTION	
EXISTING				30/2	1			2	20/1				EXISTING	
					3			4	20/1				EXISTING	
EXISTING				20/1	5			6	20/1				EXISTING	
EXISTING				20/1	7			8	20/1				EXISTING	
EXISTING				20/1	9			10	20/1				EXISTING	
EXISTING				20/1	11			12	20/1				EXISTING	
EXISTING				20/1	13			14	20/1				EXISTING	
EXISTING				20/1	15			16	20/1				EXISTING	
EXISTING				20/1	17			18	20/1				EXISTING	
EXISTING				20/1	19			20	20/1				EXISTING	
EXISTING				20/1	21			22	20/1				EXISTING	
EXISTING				20/2	23			24	20/1				EXISTING	
					25			26	20/2				EXISTING	
EXISTING				20/1	27			28						
NEW EWC		400	#12	20/1	29			30	20/1				EXISTING	
NON-CONTINUOL CONTINUOU KITCHEN EQUIPMEN	JS *1 S *2	NNECTE 0 0 0	100% 125%	DEMAND 0 0										
TOTA AT 208 V, 3 PHASE		0	AMPS	0	VA									

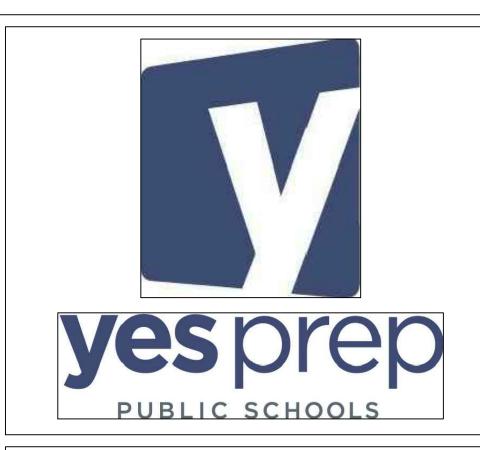
Fault Current Summary												
		Available										
		Fault										
Location	Voltage	Current	AIC Rating									
CNP XFMR	480	21300	-									
MDP	480	20605	Existing									
New 100A disconnect	480	20605	100,000									

ELECTRICAL LOAD ANALYSIS					
LOAD			VA		
EXISTING PEAK LOAD	209A X 1.25	=	2061250		
NEW LOAD AT 100%	HVAC	=	47008		
	25% LARGEST MOTOR	=	2789		
	EWC (DRINKING FTN)	=	400		
TOTAL ADDED = 50197					
NET TOTAL = 311446					
AT 480V, 3Ø = 375 AMPS					

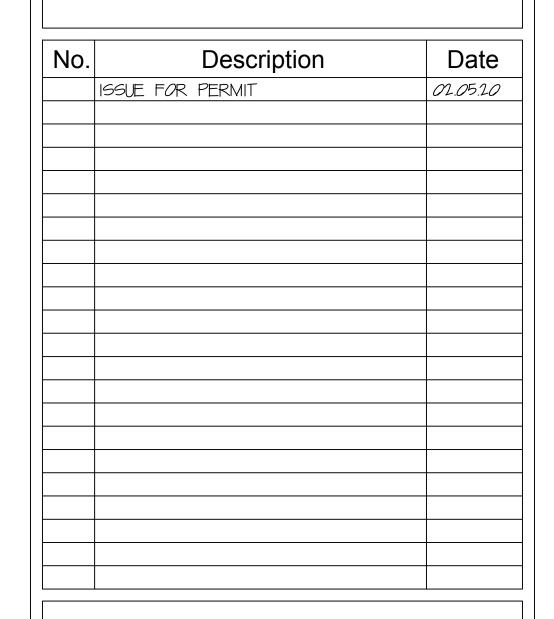
NOTE: CONTRACTOR TO VERIFY EXISTING CONDITIONS AND NOTIFY OWNER OF ANY DISCREPANCIES.











YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

13703 ALDINE WESTFIELD HOUSTON, TEXAS 77039

ELECTRICAL SCHEDULES

Project Number	19096
Date	DEC. 5, 2019
Drawn By	SEH
Checked By	SEH/BBB

E201

PLUMBING FIXTURE SCHEDULE						
FIXTURE	DESCRIPTION	WASTE	VENT	COLD WATER	HOT WATER	MANUFACTURER AND MODEL
EWC-1	ELECTRIC WATER COOLER, TAS/ADA	2"	2"	3/4"		ELKAY EZS8WSSK, 115V, STAINLESS STEEL
NOTES						

<u>NOTES</u>

1. CONNECT TO WASTE, WATER, 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 FIXTURE CARRIER SUPPORTS FOR WALL HUNG FIXTURES SIMILAR TO MIFAB, ZURN, OR JR SMITH. COORDINATE SUPPORT WIDTH WITH CHASE SPACE.

4. PROVIDE MODEL SPECIFIED OR APPROVED EQUAL. FLOW RATES MUST MEET REQUIREMENTS AS SPECIFIED.

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 OR CPVC PIPE AND FITTINGS			
DOMESTIC WATER BELOW GRADE	TYPE "K" COPPER TUBING - NO JOINTS			
NATURAL GAS ABOVE GRADE, INSIDE BUILDING	STEEL PIPE AND FITTINGS			
NATURAL GAS BELOW GRADE	STEEL PIPE AND FITTINGS			
NOTES				

<u>NOTES</u>

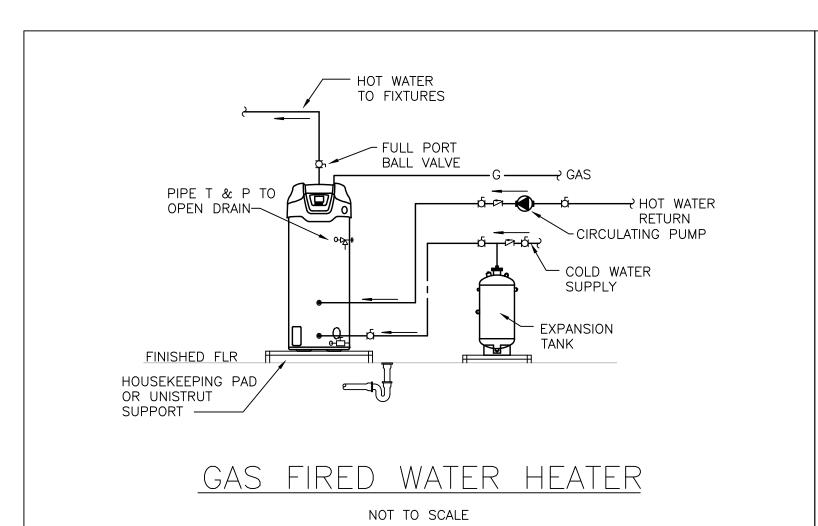
PVC NOT TO BE USED IN RETURN AIR PLENUM.
 REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND OPTIONS.

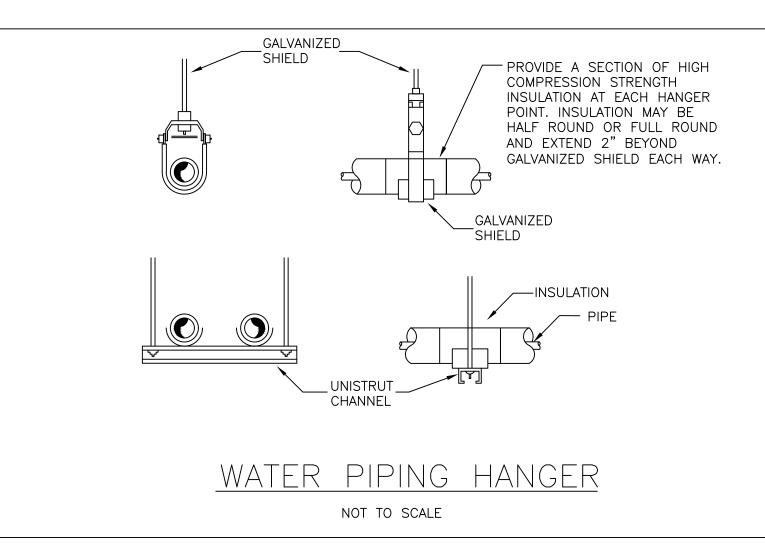
3. REFER TO ARCHITECT FOR MOUNTING HEIGHTS.

PIPING INSULATION SCHEDULE					
SYSTEM	PIPE SIZE	MATERIAL			
DOMESTIC COLD WATER (EXTERIOR WALLS AND EXPOSED/UNCONDITIONED SPACE)	ALL	MINERAL FIBER, PREFORMED, TYPE I, 1" THICK			
DOMESTIC HOT WATER 140°F OR LESS	LESS THAN 1-1/2"	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			

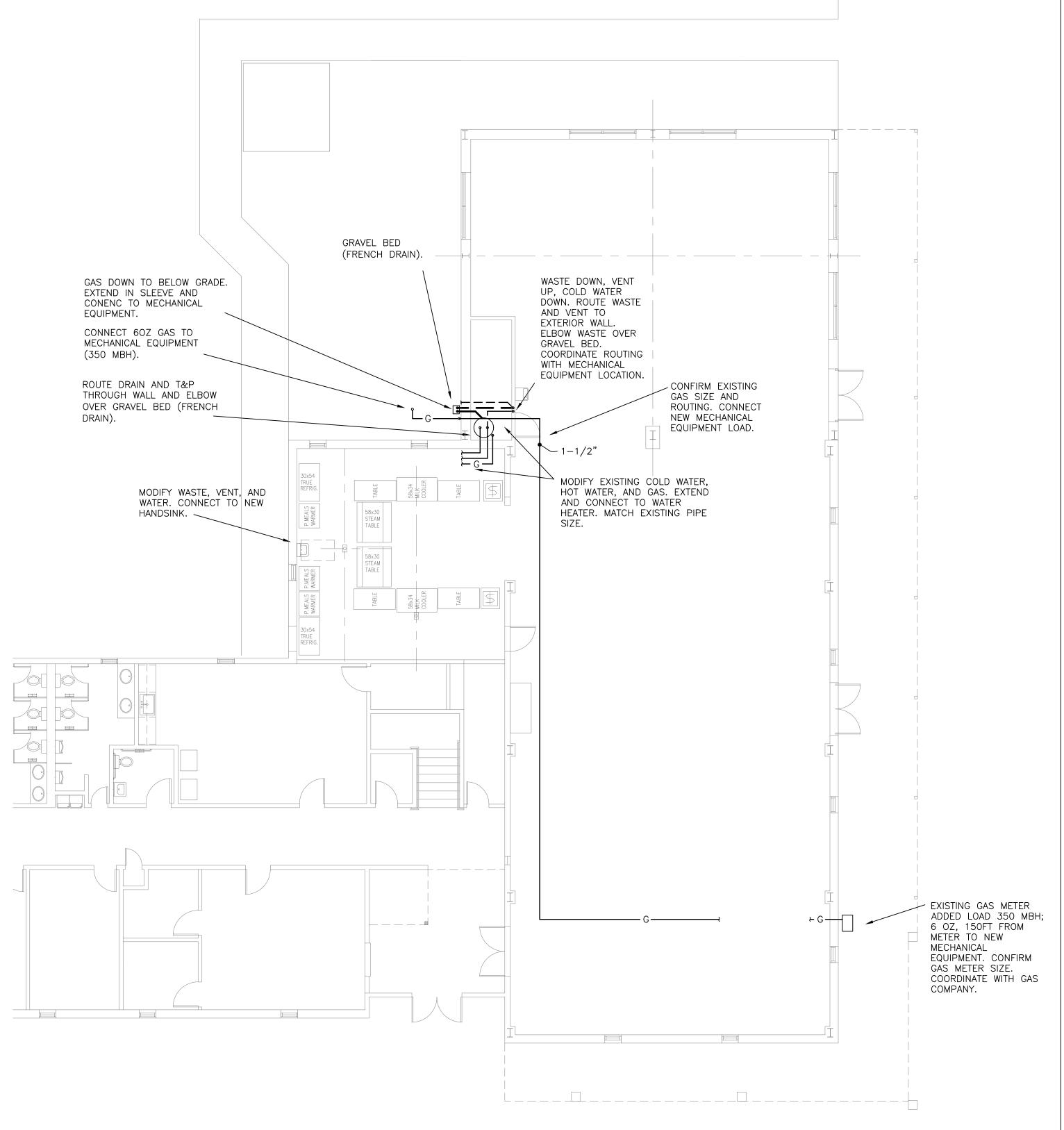
<u>NOTES</u>

PROVIDE ALUMINUM JACKET ON EXPOSED INSULATED PIPING. REFER TO SPECIFICATIONS.
 REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.





GAS WATER HEATER SCHEDULE								
EQUIPMENT NO.	LOCATION	INPUT MBTUH	THERMAL EFFICIENCY	STORAGE (GAL)	RECOVERY (GPH) @ 90°F	ELECTRICAL V/ø/Hz	MANUFACTURER AND MODEL	TOTAL WEIGHT W/WATER (LBS)
GFWH-1	CLOSET	40	0.65 UEF	40	40	120/1/60	RHEEM XG40T12DM40U0	500

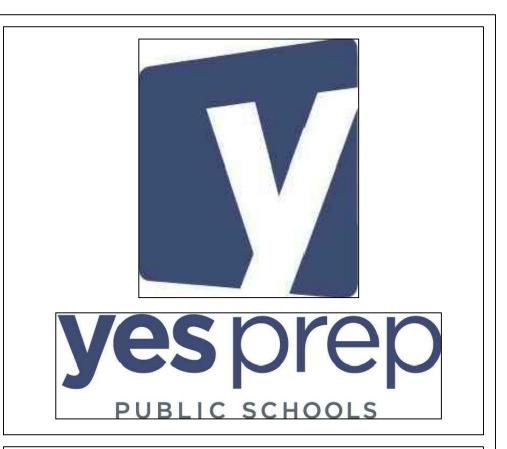


PLUMBING GENERAL NOTES

OTHERWISE.

1. FIELD VERIFY ALL EXISTING CONDITIONS.

2. ALL PLUMBING EXISTING TO REMAIN UNLESS NOTED





No.	Description	Date
	ISSUE FOR PERMIT	02.05.20

YES PREP SCHOOL

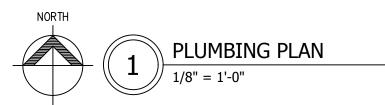
NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

13703 ALDINE WESTFIELD HOUSTON, TEXAS 77039

PLUMBING PLAN

Project Number	19096
Date	DEC. 5, 2019
Drawn By	SEH
Checked By	SEH

P101



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220000 PLUMBING BASIC REQUIREMENTS
         INTERNATIONAL ENERGY CONSERVATION CODE.
           . APPLICABLE SECTIONS OF NFPA
           3. TEXAS ACCESSIBILITY STANDARDS (TAS)
         FOR FAILURE TO MAKE SURE EXAMINATIONS.
        SLABS-ON-GRADE.
             ZINC COATED, PLAIN ENDS.
220719 PLUMBING PIPING INSULATION
             STAGGERED.
             MANUFACTURER.
             PERCENT OF ITS NOMINAL THICKNESS.
          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 PVC PROTECTION SLEEVE ONE NOMINAL PIPE SIZE LARGER THAN DESIGN
             DIAMETER FOR BELOW-GRADE INSTALLATIONS.
         2. INSTALL PIPING LEVEL WITHOUT PITCH AND PLUMB.
         3. INSTALL PIPING CONCEALED FROM VIEW AND PROTECTED FROM PHYSICAL CONTACT BY
             BUILDING OCCUPANTS UNLESS OTHERWISE INDICATED AND EXCEPT IN EQUIPMENT ROOMS
             AND SERVICE AREAS.
         4. 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.
         5. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING
             PANEL REMOVAL AND COORDINATE WITH OTHER SERVICES OCCUPYING THE SPACE.
         6. INSTALL PIPING TO PERMIT VALVE SERVICING.
         7. INSTALL PIPING FREE OF SAGS AND BENDS.
         8. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.
         9. PROVIDE SHUT-OFF VALVE AT EACH MAJOR BRANCH LINE.
         10. EACH WATER SUPPLIED FIXTURE AND PIECE OF EQUIPMENT SHALL BE PROVIDED WITH
            ITS OWN INDIVIDUAL AND ACCESSIBLE SHUT-OFF/STOP VALVE.
         11. INSTALL DIELECTRIC FITTINGS IN PIPING AT CONNECTIONS OF DISSIMILAR METAL PIPING
             AND TUBING.
      C. HANGER AND SUPPORT INSTALLATION

    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.
         6. INSTALL VINYL-COATED HANGERS FOR CPVC PIPING WITH THE FOLLOWING MAXIMUM
             HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS:
            a. NPS 1 AND SMALLER: 36 INCHES WITH 3/8-INCH ROD
            b. NPS 1-1/4 TO NPS 2: 48 INCHES WITH 3/8-INCH ROD
```

c. NPS 2-1/2: 48 INCHES WITH 1/2-INCH ROD

CORRECTIONS AND ARRANGE FOR REINSPECTION.

AIR BOUND AND THAT PIPING IS FULL OF WATER.

D. PIPING INSPECTIONS

E. PIPING TESTS

SMALLER AND 72 INCHES FOR NPS 1-1/4 AND LARGER.

3. PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AHJ.

AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED.

TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.

6. PREPARE REPORTS FOR TESTS AND FOR CORRECTIVE ACTION REQUIRED.

THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.

F. CLEAN AND DISINFECT POTABLE DOMESTIC WATER PIPING.

9. INSTALL SUPPORTS FOR VERTICAL CPVC PIPING EVERY 60 INCHES FOR NPS 1 AND

1. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN

2. IF AHJ FIND THAT PIPING WILL NOT PASS TEST OR INSPECTIONS, MAKE REQUIRED

1. FILL DOMESTIC WATER PIPING. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT

2. TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT

3. LEAVE NEW, ALTERED, EXTENDED, OR REPLACED DOMESTIC WATER PIPING UNCOVERED

4. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS.

5. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS, RETEST PIPING OR PORTION

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

ISOLATE TEST SOURCE AND ALLOW IT TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN

INSPECTED AND APPROVED BY AUTHORITY HAVING JURISDICTION (AHJ).

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DIVISION 22 - PLUMBING
      A. MINIMUM STANDARDS FOR ALL WORK SHALL BE HARRIS COUNTY AMENDMENTS TO 2018
         INTERNATIONAL BUILDING CODE, 2018 INTERNATIONAL PLUMBING CODE, AND 2015
      B. THE PLUMBING SYSTEMS SHALL INCLUDE DOMESTIC COLD WATER, DOMESTIC HOT WATER,
         SANITARY WASTE AND VENT, AND NATURAL GAS. EXTEND ALL UTILITIES AND CONNECT TO
      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.
            AMERICANS WITH DISABILITIES ACT (ADA)
      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
      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
         UPON COMPLETION OF WORK. TOUCH UP WITH PAINT WHERE REQUIRED.
220517 SLEEVES AND SLEEVE SEAL SYSTEMS FOR PLUMBING PIPING
      A. INSTALL SLEEVE-SEAL SYSTEMS IN SLEEVES FOR ALL PENETRATIONS IN EXTERIOR WALLS AND
      B. 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,
         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.
      C. WALL AND FLOOR SLEEVE—SEAL SYSTEMS SHALL COMPLY WITH THE FOLLOWING:
         1. SEALING ELEMENTS SHALL BE EPDM-RUBBER INTERLOCKING LINKS SHAPED TO FIT
         2. ACCEPTABLE MANUFACTURERS: ADVANCE PRODUCTS & SYSTEMS, CALPICO, METRAFLEX
             COMPANY, PIPELINE SEAL AND INSULATOR, PROCO PRODUCTS.
      A. MINERAL FIBER, PREFORMED, TYPE AND THICKNESS PER SCHEDULE.
         1. CLEAN AND DRY SURFACES TO RECEIVE INSULATION.
         2. INSTALL INSULATION WITH LONGITUDINAL AT TOP AND BOTTOM OF HORIZONTAL RUNS.
         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
         7. FINISH INSTALLATION WITH SYSTEMS AT OPERATING CONDITIONS. REPAIR JOINT
             SEPARATIONS AND CRACKING DUE TO THERMAL MOVEMENT.
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3. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL. 4. LOCATE VALVES FOR EASY ACCESS. 5. INSTALL PIPING FREE OF SAGS AND BENDS. INSTALL FITTINGS FOR CHANGE IN DIRECTION AND BRANCH CONNECTIONS. 7. INSTALL DRIPS AT POINTS WHERE CONDENSATE MAY COLLECT, INCLUDING SERVICE-METER OUTLETS. LOCATE WHERE ACCESSIBLE TO PERMIT CLEANING AND EMPTYING. DO NOT INSTALL WHERE CONDENSATE IS SUBJECT TO FREEZING. 8. EXTEND RELIEF VENT CONNECTIONS FOR SERVICE REGULATORS, LINE REGULATORS, AND OVERPRESSURE PROTECTION DEVICES TO OUTDOORS AND TERMINATE WITH WEATHERPROOF VENT CAP. 9. CONCEALED LOCATION INSTALLATIONS: EXCEPT AS SPECIFIED BELOW, INSTALL CONCEALED NATURAL GAS PIPING AND PIPING INSTALLED UNDER THE BUILDING IN CONTAINMENT CONDUIT CONSTRUCTED OF STEEL PIPE WITH WELDED JOINTS. INSTALL A VENT PIPE FROM CONTAINMENT CONDUIT TO OUTDOORS AND TERMINATE WITH WEATHERPROOF VENT CAP. a. ABOVE ACCESSIBLE CEILINGS: NATURAL GAS PIPING, FITTINGS, VALVES, AND REGULATORS MAY BE INSTALLED IN ACCESSIBLE SPACES WITHOUT CONTAINMENT b. IN WALLS OR PARTITIONS: PROTECT TUBING INSTALLED INSIDE PARTITIONS OR HOLLOW WALLS FROM PHYSICAL DAMAGE USING STRIKER BARRIERS AT RIGID SUPPORTS. EXCEPTION: TUBING PASSING THROUGH PARTITIONS OR WALLS DOES NOT REQUIRE STRIKER BARRIERS. c. PROHIBITED LOCATIONS i. DO NOT INSTALL NATURAL GAS PIPING IN OR THROUGH CIRCULATING AIR DUCTS, CLOTHES OR TRASH CHUTES, CHIMNEYS OR GAS VENTS (FLUES), VENTILATING DUCTS, OR DUMBWAITER OR ELEVATOR SHAFTS. ii. DO NOT INSTALL NATURAL GAS PIPING IN SOLID WALLS OR PARTITIONS. 10. CONNECT BRANCH PIPING FROM TOP OR SIDE OF HORIZONTAL PIPING. D. INSTALL HANGERS FOR HORIZONTAL STEEL PIPING WITH THE FOLLOWING MAXIMUM SPACING AND MINIMUM ROD DIAMETERS: a. NPS 1 AND SMALLER: 96 INCHES WITH 3/8-INCH ROD b. NPS 1-1/4: 108 INCHES WITH 3/8-INCH ROD c. NPS 1-1/2 TO NPS 2: 108 INCHES WITH 3/8-INCH ROD d. NPS 2-1/2 TO NPS 3-1/2: 10 FEET WITH 1/2-INCH RO e. NPS 4 AND LARGER: 10 FEET WITH 5/8-INCH ROD E. CONNECTIONS 1. INSTALL PIPING ADJACENT TO APPLIANCES TO ALLOW SERVICE AND MAINTENANCE OF APPLIANCES. INSTALL VALVE WITHIN 72 INCHES OF EACH GAS-FIRED APPLIANCE AND EQUIPMENT.

1. INSTALL UNDERGROUND, NATURAL GAS PIPING BURIED AT LEAST 36 INCHES BELOW

3. INSTALL PRESSURE GAGE UPSTREAM AND DOWNSTREAM FOR EACH SERVICE REGULATOR.

5. INSTALL GAS PROTECTION SLEEVE SIMILAR TO JM EAGLE PVC GAS PROTECTION SLEEVE

1. INSTALL PIPING IN CONCEALED LOCATIONS UNLESS OTHERWISE INDICATED AND EXCEPT IN

SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS

2. INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND

ONE NOMINAL PIPE SIZE LARGER THAN DESIGN DIAMETER FOR BELOW-GRADE

2. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.

4. GAS METER TO BE PROVIDED BY THE UTILITY COMPANY

ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE.

EQUIPMENT ROOMS AND SERVICE AREAS.

221216 NATURAL GAS PIPING

A. PIPING MATERIAL PER SCHEDULE. B. OUTDOOR PIPING INSTALLATION

FINISHED GRADE.

INSTALLATIONS.

C. INDOOR PIPING INSTALLATION

2. CONNECT PIPING TO APPLIANCES USING MANUAL GAS SHUT-OFF VALVES AND UNIONS. INSTALL UNION BETWEEN VALVE AND APPLIANCES OR EQUIPMENT. 3. SEDIMENT TRAPS: INSTALL TEE FITTING WITH CAPPED NIPPLE IN BOTTOM OF FORM DRIP, AS CLOSE AS PRACTICAL TO INLET OF EACH APPLIANCE. F. PREPARE TEST AND INSPECTION REPORTS. 221316 SANITARY WASTE AND VENT SYSTEM A. PIPING MATERIAL PER SCHEDULE. 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 SPACING AND MINIMUM ROD DIAMETERS: a. NPS 1-1/2 AND NPS 2: 60 INCHES WITH 3/8-INCH ROD b. NPS 4: 60 INCHES WITH 5/8-INCH ROD 2. INSTALL SUPPORTS FOR VERTICAL CAST IRON PIPING EVER 15 FT. 3. INSTALL HANGERS FOR PVC PIPING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS: a. NPS 1-1/2 AND NPS 2: 48 INCHES WITH 3/8-INCH ROD b. NPS 4: 48 INCHES WITH 5/8-INCH ROD 4. INSTALL SUPPORTS FOR VERTICAL PVC PIPING EVERY 48 INCHES 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 4. EXPOSED PVC PIPING: PROTECT PLUMBING VENTS EXPOSED TO SUNLIGHT WITH TWO COATS OF WATER-BASED LATEX PAINT. 1. SIZE SAME AS DRAINAGE PIPING UP TO 4". USE 4" FOR LARGER DRAINAGE PIPING UNLESS LARGER CLEANOUT IS INDICATED.

223300 DOMESTIC WATER HEATERS A. PROVIDE WATER HEATER IN ACCORDANCE WITH SCHEDULE ON DRAWINGS.

B. INSTALLATION 1. INSTALL PER MANUFACTURER'S RECOMMENDATION. 2. PROVIDE WITH INTEGRAL HEAT TRAPS.

3. PROVIDE THERMOSTATIC MIXING VALVE TO LIMIT WATER TEMPERATURE. 4. PROVIDE EXPANSION TANK.

5. DRAIN PAN: CORROSION-RESISTANT METAL WITH RAISED EDGE.

6. INSTALL SHUT-OFF VALVES ON DOMESTIC COLD AND HOT WATER.

7. FILL WATER HEATER WITH WATER. 8. CHARGE EXPANSION TANKS WITH AIR.

9. WHERE INSTALLING PIPING ADJACENT TO WATER HEATER, ALLOW SPACE FOR SERVICE AND MAINTENANCE OF WATER HEATER. ARRANGE PIPING FOR EASY REMOVAL OF WATER HEATER. C. TESTS AND INSPECTIONS

1. AFTER INSTALLATION, CHARGE SYSTEM AND TEST FOR LEAKS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.

2. AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER

3. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT. D. PREPARE TEST AND INSPECTION REPORTS.

224000 PLUMBING FIXTURES

MAINTENANCE.

A. INSTALL LEVEL AND PLUMB. B. PROVIDE FIXTURE CARRIER SUPPORT FOR WALL-HUNG FIXTURES. C. WHERE INSTALLING PIPING ADJACENT TO FIXTURES, ALLOW SPACE FOR SERVICE AND

D. ADJUSTING

 OPERATE AND ADJUST FIXTURES AND CONTROLS. G. CLEANING AND PROTECTION

COMMISSIONING REPORT

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.

ENERGY CODE COMPLIANCE REQUIREMENTS

COMMISSIONING PLAN A. 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. B. CONTROLS 1. WATER HEATING 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 OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

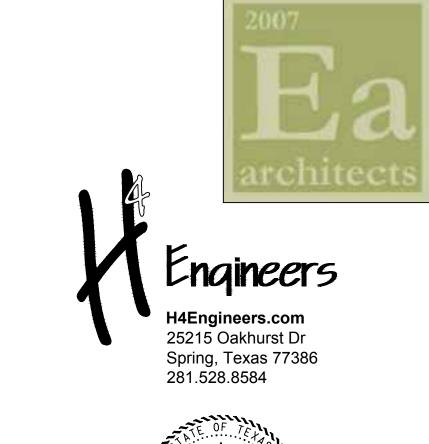
1. PLUMBING CONTRACTOR SHALL PROVIDE A REPORT OF THE ABOVE COMMISSIONING TEST PROCEDURES AND RESULTS AND PROVIDE TO GENERAL CONTRACTOR TO COMPILE WITH MECHANICAL AND ELECTRICAL REPORTS. 2. REPORT SHALL IDENTIFY ANY DEFICIENCIES THAT HAVE NOT YET BEEN CORRECTED. DEFERRED TESTS THAT CANNOT BE PERFORMED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

PUBLIC SCHOOLS





No.	Description	Date
	ISSUE FOR PERMIT	02.05.20

YES PREP SCHOOL

NORTH CENTRAL CAMPUS CAFETERIA EXPANSION

13703 ALDINE WESTFIELD HOUSTON, TEXAS 77039

PLUMBING SPECIFICATIONS

Project Number	19096
Date	DEC. 5, 2019
Drawn By	SEH
Checked By	SEH

P201

AS NOTED Scale

221319 SANITARY WASTE PIPING SPECIALTIES

DRAINS FLUSH WITH FINISHED FLOOR.

A. INSTALL CLEANOUTS IN ABOVE GROUND PIPING AND BUILDING DRAIN PIPING ACCORDING TO THE FOLLOWING UNLESS OTHERWISE NOTED:

2. LOCATE AT EACH CHANGE IN DIRECTION OF PIPING GREATER THAN 45 DEGREES.

3. LOCATE AT MINIMUM OF 90 FEET INTERVALS.

B. FOR FLOOR CLEANOUTS IN PIPING BELOW FLOORS, INSTALL CLEANOUT DECK PLATES WITH TOP FLUSH WITH FINISHED FLOOR.

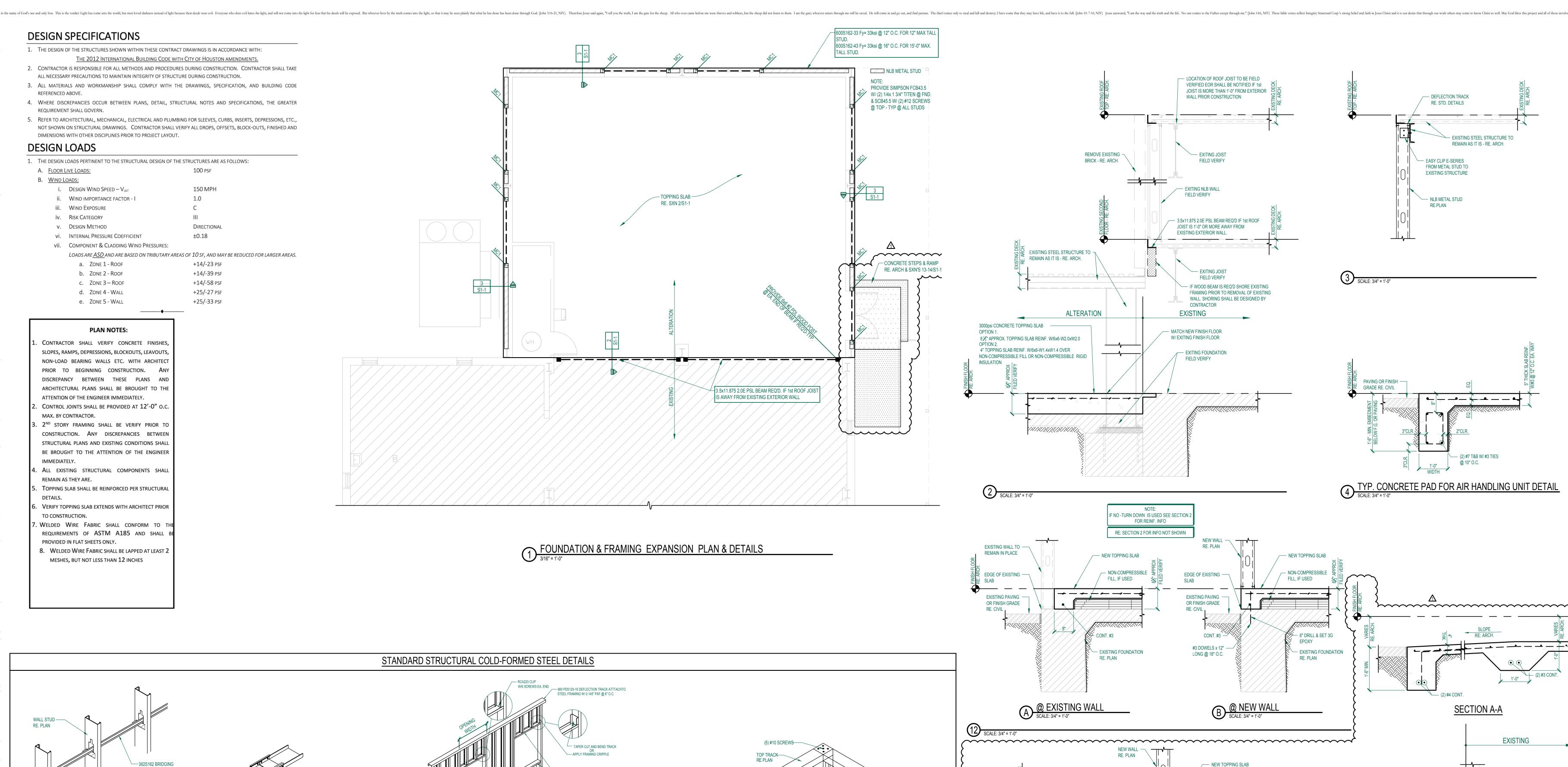
C. FOR CLEANOUTS LOCATED IN CONCEALED PIPING, INSTALL CLEANOUT WALL ACCESS COVERS WITH FRAME AND COVER FLUSH WITH FINISHED WALL. D. INSTALL FLOOR DRAINS AT LOW POINTS OF SURFACE AREAS TO BE DRAINED. SET GRATES OF

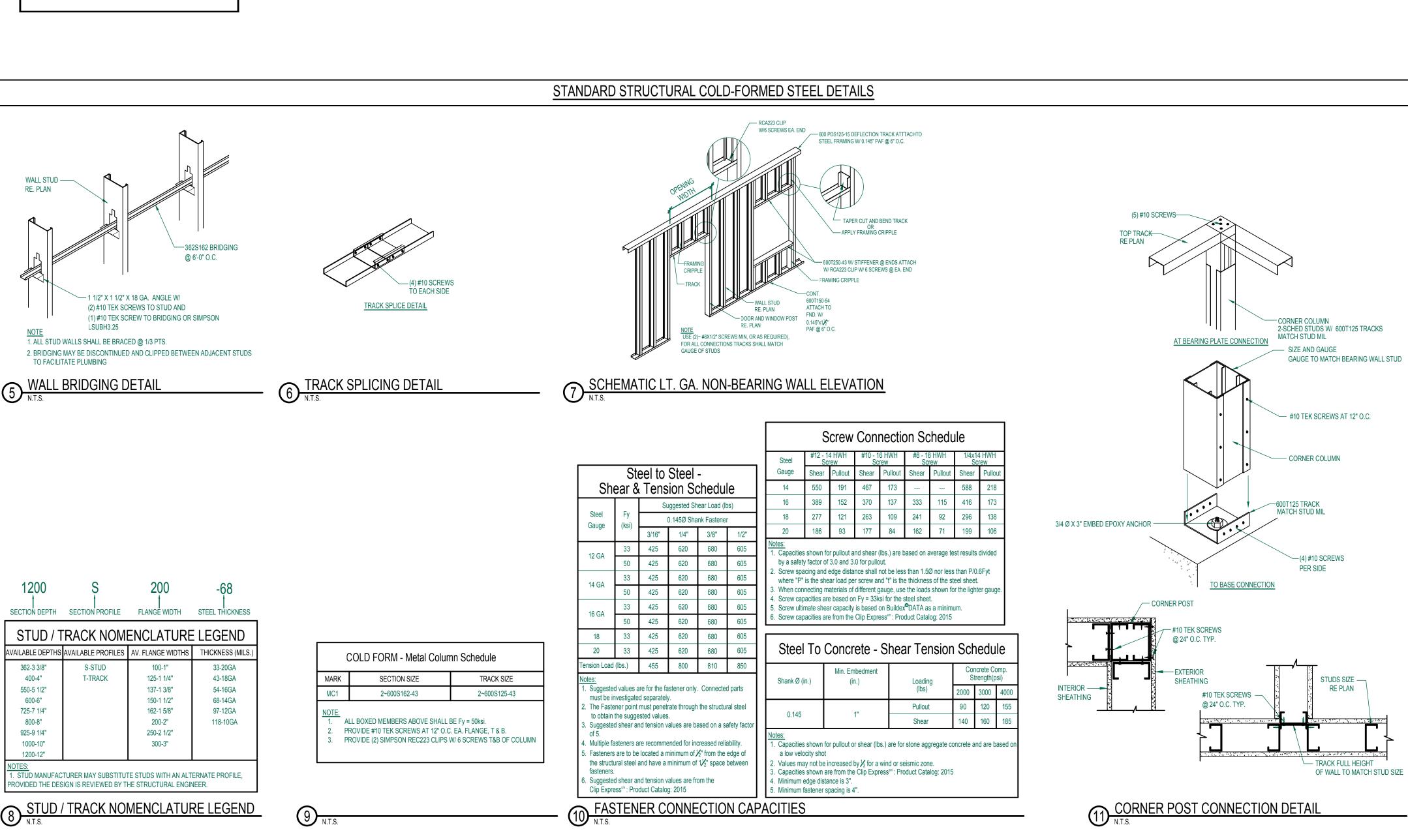
1. POSITION FLOOR DRAINS FOR EASY ACCESS AND MAINTENANCE. 2. SET FLOOR DRAINS BELOW ELEVATION OF SURROUNDING FINISHED FLOOR TO ALLOW FLOOR DRAINAGE.

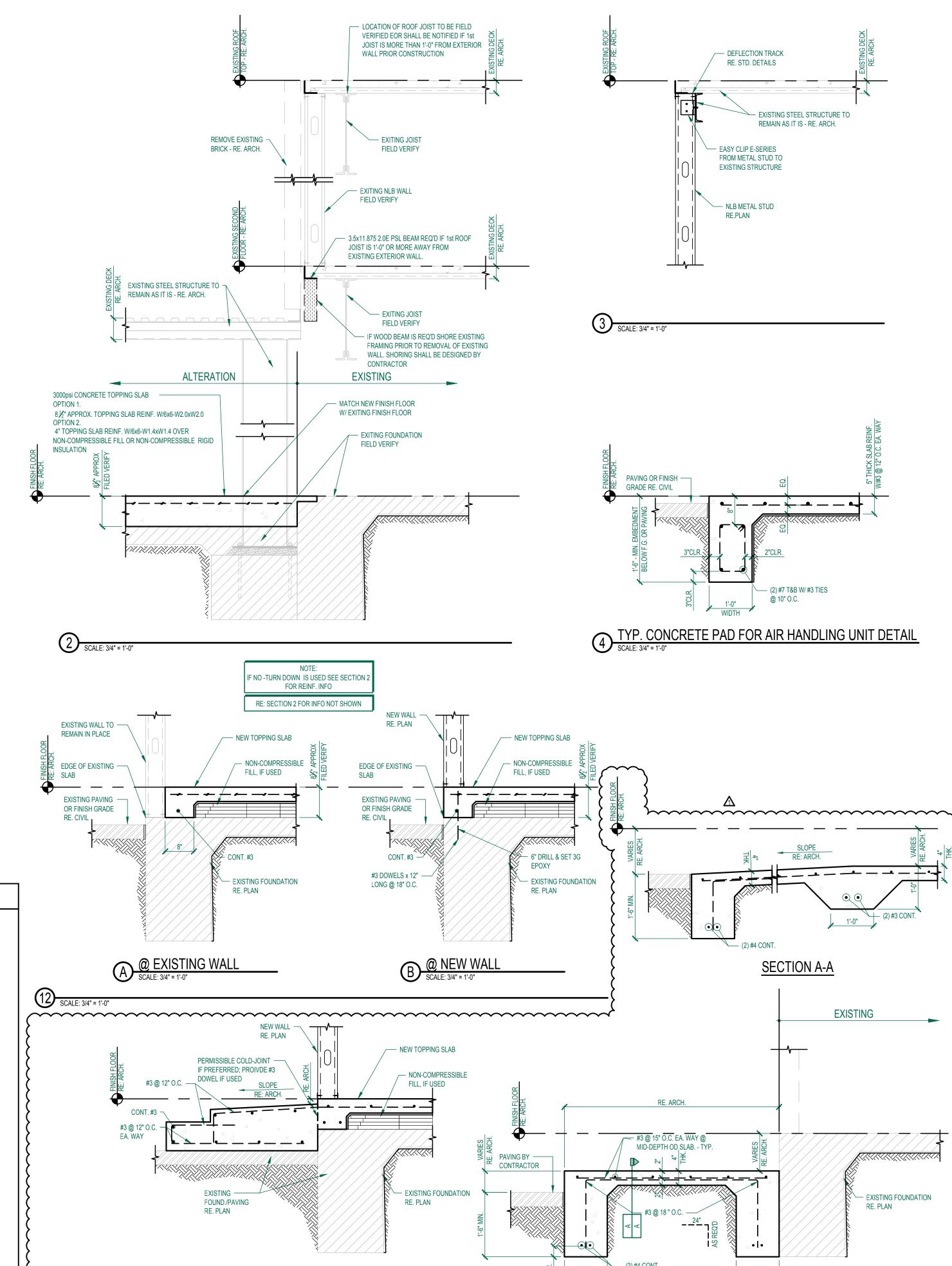
3. INSTALL FLOOR DRAIN FLASHING COLLAR OR FLANGE SO NO LEAKAGE OCCURS BETWEEN DRAIN AND ADJOINING FLOORING. MAINTAIN INTEGRITY OF WATERPROOF MEMBRANES 4. INSTALL INDIVIDUAL TRAPS FOR FLOOR DRAINS CONNECTED TO SANITARY BUILDING DRAIN,

UNLESS OTHERWISE INDICATED. E. PROTECTION 1. PROTECT DRAINS DURING REMAINDER OF CONSTRUCTION PERIOD TO AVOID CLOGGING

WITH DIRT OR DEBRIS AND PREVENT DAMAGE FROM TRAFFIC OR CONSTRUCTION WORK. 2. PLACE PLUGS IN ENDS OF UNCOMPLETED PIPING AT END OF DAY OR WHEN WORK







TYP. CONCRETE PAD FOR AIR HANDLING UNIT DETAIL

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12777 JONES RD., STE 388 HOUSTON, TX 77070 TX FIRM #: F-5860

CONSTRUCTION@ NTEGRITYSTRUCTURAL.COM

ISSUE DATE CAD / ENG PERMIT/PRICING **COORDINATION SET**

PROJECT NUMBER

DRAWING SCALE

SHOWN ON PLAN

PROJECT NAME & LOCATION NORTH CENTRAL **CAMPUS CAFETERIA EXPANSION**

13703 ALDINE WESTFIELD HOUSTON, TX 77039

FOUNDATION & EXPANSION PLAN & DETAILS