

**REQUEST FOR PROPOSALS
FOR
GENERAL CONTRACTOR
COMPETITIVE SEALED PROPOSALS**

**FOR
LAMAR STATE COLLEGE-PORT ARTHUR
PORT ARTHUR, TEXAS**

**RUBY FULLER EDUCATION
BUILDING**

RFP No.:

758-20-04013

Submission Date:

June 25, 2020 – 2:00 p.m. (C.D.T.)

(see Schedule in Section 2.4)

Prepared By:

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SECTION 1 – GENERAL INFORMATION AND REQUIREMENTS

- 1.1 **GENERAL INFORMATION:** The Texas State University System (“Owner”) on behalf of **Lamar State College-Port Arthur**, (“Component”) is soliciting Competitive Sealed Proposals (“Proposals”) for selection of a General Contractor firm for the **Ruby Fuller Education Building project** (“Project”), on the **Lamar State College-Port Arthur**, Port Arthur, Texas campus. This solicitation sets forth the terms, conditions, and requirements for prospective General Contractor entities to be considered for the work. (Prospective General Contractor entities are hereinafter referred to as “Respondents”.) **The Owner requires that the Qualifications and Execution of Offer, and Pricing and Delivery Proposal be submitted at the same time, but in two (2) separate, sealed packages. The HUB Subcontracting Plan shall be submitted in a separate sealed package.**
- 1.1.1 This Request for Competitive Sealed Proposals (“RFP”) is the only step for selecting a General Contractor for the Project as provided by *Texas Education Code* Section 51.783. The RFP provides the information necessary to prepare and submit Competitive Sealed Proposals for consideration and ranking by the Owner.
- 1.1.2 The Owner will select the Proposal that offers the “best value” for the Component institution based on the published selection criteria and on its ranking evaluation. The Owner may discuss with the highest ranked Respondent options for a scope or time modification and any price change associated with the modification including solicitation of a best and final offer. If the Owner is unable to reach a contract with the selected Respondent, the Owner may formally end negotiations with that Respondent in writing and proceed to the next “best value” Respondent in the order of the selection ranking until a contract is reached or all Proposals are rejected. **The Owner reserves the right to make a best value determination and award a contract without further discussions or negotiations. Should the contractor fail, neglect, or refuse to begin performance of the contract after receiving the award, the bid security will be forfeited to Owner. Performance shall be considered begun upon acknowledgement of the contract award, the furnishing of all required security bonds and insurance coverage, and execution of the Contract.**
- 1.2 **PUBLIC INFORMATION:** All information, documentation, and other materials submitted in response to this solicitation are considered non-confidential and/or non-proprietary and are subject to public disclosure under the Texas Public Information Act (*Texas Government Code*, Chapter 552.001, *et seq.*) after the solicitation is completed. The Owner complies with all statutes, court decisions, and opinions of the Texas Attorney General with respect to disclosure of RFP information. Additionally, pursuant to the provisions of *Texas Government Code* Section 2261.253, the contract resulting from this solicitation will be posted on the Owner’s website.

1.3 **TYPE OF CONTRACT:** Any contract resulting from this solicitation will be in the form of the Owner's Standard General Contractor Agreement, a copy of which can be viewed on the Texas State University System website at: <https://www.tsus.edu/offices/finance/capital-projects.html>

1.3.1 The work will be awarded under as a Lump-Sum contract to the Respondent offering the "best value" to the Owner.

1.4 **CLARIFICATIONS AND INTERPRETATIONS:** Discrepancies, omissions or doubts as to the meaning of RFP documents shall be communicated in writing to the Owner for interpretation. Any responses to inquiries, clarifications or interpretations of this RFP that materially affect or change its requirements will be formally issued by the Owner as a written addendum. All such addenda issued by the Owner before the Proposals are due are considered to be part of the RFP. Respondents shall acknowledge receipt of each addendum in its Proposal. Respondents shall consider only those clarifications and interpretations that the Owner issues by addenda. Interpretations or clarifications in any other form, including oral statements, will not be binding on the Owner and should not be relied upon in preparing the Proposal. It is the responsibility of all Respondents to check the status of formal addenda five (5) days before the submission deadline (see Section 2.4 for submission date).

1.4.1 ADDENDA AND AWARD INFORMATION, WILL BE ISSUED BY THE OWNER FOR THIS RFP VIA THE ELECTRONIC BUSINESS DAILY WEBSITE AT THE FOLLOWING LINK: <http://www.txsmartbuy.com/sp> REFERENCE THE "BOARD OF REGENTS/TEXAS STATE UNIVERSITY SYSTEM-758" AND THE RFP NUMBER PROVIDED IN THIS RFP.

1.5 **SUBMISSION OF PROPOSALS:**

1.5.1 The Respondent's Qualifications/Execution of Offer, and Pricing Delivery Proposal must be received **at the address specified in Section 1.5.2** prior to the deadline. Please note that overnight deliveries such as FedEx and UPS arrive at a central campus location but are not usually delivered to the specified location until after the time deadline. Respondents are advised to use other methods of delivery or, if using an overnight delivery service, to send the responses a day earlier than usual. The Owner will not consider any response to this solicitation that is not received at the address specified by the deadline, regardless of whether it has been received by the Component.

1.5.2 **PROPOSAL DEADLINE, AND LOCATION:** The Owner will receive Proposals at the time and location described below. **The Proposal must be packaged in two (2) separate sealed packages: 1) the Qualifications with signed Execution of Offer; and, 2) the Pricing and Delivery Proposal, addressed to the Point-of-Contact identified in Section 1.6. Clearly mark the exterior of all envelopes to identify the documents contained therein. INCLUDE THE NAME AND EMAIL ADDRESS OF THE RESPONDENT'S CONTACT PERSON ON ALL ENVELOPES.**

June 25, 2020 – 2:00 p.m. (C.D.T.)

Maria D. Garcia, Director of Purchasing and Contracts
Lamar State College-Port Arthur
Business Office
1501 Procter Street
Port Arthur, Texas 77640

- 1.5.3 HUB SUBCONTRACTING PLAN DEADLINE AND LOCATION: The Respondent shall submit a Historically Underutilized Businesses (“HUB”) Subcontracting Plan at the time and location described below. **The HUB Subcontracting Plan (“HSP”) shall be submitted in a sealed envelope, addressed to the Point-of-Contact identified in Section 1.6. Clearly mark the exterior of the envelope to identify the documents contained therein. INCLUDE THE NAME AND EMAIL ADDRESS OF THE RESPONDENT’S CONTACT PERSON.**

June 26, 2020 – 2:00 p.m. (C.D.T)

Maria D. Garcia, Director of Purchasing and Contracts
Lamar State College-Port Arthur
Business Office
1501 Procter Street
Port Arthur, Texas 77640

- 1.5.4 The Pricing and Delivery Proposal packages will be opened publicly, and the names of Respondents and all prices stated in each Proposal will be read aloud pursuant to Section 51.783(f) of the *Texas Education Code*. These readings will be conducted at The Texas State University System Administration office conference room.

July 7, 2020 – 2:00 p.m. (C.D.T.)

The Texas State University System
O. Henry Hall
601 Colorado Street
Austin, Texas 78701

- 1.5.5 Submit **one (1)** original hard copy and **eight (8)** identical copies of the Qualifications with Execution of Offer. An original signature must be included on the “Respondent’s Execution of Offer” document submitted with each copy. Submit two (2) electronic copies of the Qualifications with signed Execution of Offer, in Adobe PDF format by flash drive or CD. **Do not include the Pricing and Delivery Proposal information with the electronic Qualifications/Execution of Offer.**
- 1.5.6 Submit **one (1)** original hard copy and one (1) identical copy of the Pricing and Delivery Proposal. An original signature must be included on the “Respondent’s Pricing and Delivery Proposal” document submitted with each copy. **Do not submit electronic copies of the Pricing and Delivery Proposal.** Submit one (1) **original** and (1) **copy** of the HSP as separate attachments to the Proposals as described in Section 1.13. Submit **two (2)** electronic copies of the HSP in Adobe PDF format by flash drive or CD. **Do not include the Pricing and Delivery Proposal information with the electronic HSP files.**
- 1.5.7 Proposals or HSPs received after the stated official submittal deadline will be returned to the Respondent unopened. The Point-of-Contact identified in Section 1.6 will identify the official time clock at the RFP submittal location identified above.
- 1.5.8 The Owner will not acknowledge or consider Proposals or HSPs that are delivered by telephone, facsimile (fax), or electronic mail (e-mail).
- 1.5.9 Properly submitted Proposals and HSPs will not be returned to the Respondents.

- 1.6 POINT-OF-CONTACT: The Owner designates the following person as its representative and Point-of-Contact for this RFP. Respondents shall restrict all contact with the Owner and direct all questions regarding this RFP, including questions regarding terms and conditions, in writing, to the Point-of-Contact person, **via email only**.

Maria D. Garcia, Director of Purchasing and Contracts
Lamar State College-Port Arthur
Business Office
1501 Procter Street
Port Arthur, Texas 77640
Email: garciamd@lamarpa.edu

- 1.7 EVALUATION OF PROPOSALS: The evaluation of the Proposals shall be based on the requirements described in this RFP. **Forty Percent (40%)** of the evaluation will be based on the Respondent's Pricing and Delivery Proposal. The remaining evaluation will be based on the Respondent's Qualifications. All properly submitted Proposals will be reviewed, evaluated, and ranked by the Owner.

- 1.8 OWNER'S RESERVATION OF RIGHTS: The Owner may evaluate the Proposals based on the anticipated completion of all or any portion of the Project. The Owner reserves the right to divide the Project into multiple parts, to reject any and all Proposals to the current solicitation and reissue a completely new solicitation involving the same Project, or to simply reject any and all Proposals and temporarily or permanently abandon the Project. Owner makes no representations, written or oral, that it will enter into any form of agreement for any project with any Respondent to this RFP and no such representation is intended or should be construed by the issuance of this RFP. The Owner reserves the right to waive the failure of any response to comply with requirements set forth in this RFP where the failure is not, in the Owner's opinion, substantial in nature.

- 1.9 ACCEPTANCE OF EVALUATION METHODOLOGY: By submitting a Proposal in response to this RFP, the Respondent accepts the evaluation process and acknowledges and accepts that determination of the "best value" Respondent will require subjective judgments by the Owner. The results of the most qualified determination will be combined with the Pricing and Delivery evaluation results to determine the best value proposition for the Owner. Determinations by the Selection Committee will be subjected to routine administrative review by the Owner's executive officers but, once a selection is announced, it will not be subjected to further review.

1.9.1 The Owner reserves the right to consider any Proposal "non-responsive" if the Base Proposal Cost is determined to be unreasonable or irresponsible in relation to the other submitted Proposals and/or the Owner's estimate of the construction cost.

- 1.10 NO REIMBURSEMENT FOR COSTS: Respondent acknowledges and accepts that any costs incurred from the Respondent's participation in this RFP process shall be at the sole risk and responsibility of the Respondent.

- 1.11 MANDATORY PRE-PROPOSAL CONFERENCE: A mandatory pre-proposal conference will be held at the time and location described below.

June 8, 2020 – 10:00 a.m. (C.D.T.)

Lamar State College-Port Arthur
Ruby Fuller Building
300 Stillwell Plaza

Port Arthur, Texas 77640

A walk-through tour of the interior building is included as a part of the conference agenda. Interested parties must sign-up for the walk-through time slots (see 1.11.2) following the Pre-Proposal Conference.

Due to COVID-19, please refer to the latest information provided by the Texas Department of State Health Services for recommendations and best-practices for mitigation. Lamar State College - Port Arthur is making the following provisions for the Pre-Proposal Conference based on those recommendations:

- 1.11.1 Attendees are requested to park along the Ruby Fuller Building and all members of their party must furnish and properly wear their own personal protective equipment (“PPE”). This includes a facemask which covers the mouth and nose as well as protective gloves. These safety items are required in order to participate. During the tour attendees must maintain 6-foot distance from one another.
- 1.11.2 Walk-throughs of the building interior will be provided in groups of six (6), at thirty (30) minute intervals on the following days:
 - June 8, 2020 – 11:00 a.m. to 5:00 p.m.
 - June 9, 2020 – 8:00 a.m. to 12:00 p.m.
- 1.12 **ELIGIBLE RESPONDENTS:** Only individual firms or lawfully formed business organizations may apply (This does not preclude a Respondent from using consultants.) The Owner will contract only with the individual firm or formal organization that submits a Proposal.
- 1.13 **HISTORICALLY UNDERUTILIZED BUSINESSES SUBMITTAL REQUIREMENTS:** It is the policy of the Owner and each of its Component institutions, to promote and encourage contracting and subcontracting opportunities for Historically Underutilized Businesses (“HUB”) in all contracts. Accordingly, specific plans and representations by Respondents that appear to facilitate the State’s commitment to supporting HUB enterprises will be favorably considered in the selection process. **Failure to submit a required HUB Subcontracting Plan (“HSP”) will result in rejection of the Proposals.** The HSP information may be downloaded from the State of Texas Comptroller’s website at the following URL link: <https://comptroller.texas.gov/purchasing/vendor/hub/forms.php>
- 1.14 **CERTAIN PROPOSALS AND CONTRACTS PROHIBITED:** Under Section 2155.004, *Texas Government Code*, a state agency may not accept a Proposal or award a contract that includes proposed financial participation by a person who received compensation from the agency to participate in preparing the specifications or request for proposals on which the Proposal or contract is based. All vendors must certify their eligibility by acknowledging the following statement, "Under Section 2155.004, Government Code, the vendor certifies that the individual or business entity named in this bid or contract is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate." If a state agency determines that an individual or business entity holding a state contract was ineligible to have the contract accepted or awarded as described above, the state agency may immediately terminate the contract without further obligation to the vendor. This section does not create a cause of action to contest a proposal or award of a state contract.

- 1.15 SALES AND USE TAXES: Section 151.311, *Texas Tax Code*, permits the purchase free of state sales and use taxes of tangible personal property to be incorporated into realty in the performance of a contract for an improvement to realty for certain exempt entities that include the Owner. The section further permits the purchase tax-free of tangible personal property (other than machinery or equipment and its accessories and repair and replacement parts) for use in the performance of such a contract if the property is "necessary and essential for the performance of the contract" and "completely consumed at the job site." In addition, the section permits the purchase tax-free of a tangible service for use in the performance of such a contract if the service is performed at the job site and if "the contract expressly requires the specific service to be provided or purchased by the person performing the contract" or "the service is integral to the performance of the contract."
- 1.16 CERTIFICATION OF FRANCHISE TAX STATUS: Respondents are advised that the successful Respondent will be required to submit certification of franchise tax status as required by State Law (*Texas Tax Code* Chapter 171). The contractor agrees that each subcontractor and supplier under contract will also provide a certification of franchise tax status.
- 1.17 REQUIRED NOTICES OF WORKERS' COMPENSATION INSURANCE COVERAGE: The Texas Workers' Compensation Commission has adopted Texas Administrative Code Title 28, Part 2, Chapter 110, Subchapter B, Rule 110.110, relating to REPORTING REQUIREMENTS FOR BUILDING OR CONSTRUCTION PROJECTS FOR GOVERNMENTAL ENTITIES. The rule implements Section 406.096, *Texas Labor Code*, which requires workers' compensation insurance coverage for all persons providing services on a building or construction project for a governmental entity. The requirements of the rule are set forth in the Uniform General and Supplementary General Conditions for The Texas State University System Building Construction Contracts.
- 1.18 INSURANCE REQUIREMENTS: Bonds and insurance requirements are provided in Article 5 of the Uniform General Conditions and in the Owner's Standard Contractor Contract as denoted in Article 1.3 of this RFP.
- 1.19 PREVAILING MINIMUM WAGE RATE DETERMINATION: Respondents are advised that the Texas Prevailing Wage Law will be administered. The penalty for violation of prevailing wage rates has been increased from Ten Dollars (\$10.00) per underpaid worker per day or portion thereof to Sixty Dollars (\$60.00). The Prevailing Wage Rate for Jefferson County, Texas; Construction Type: Building, can be found on the following website: <https://beta.sam.gov/> Refer to General Decision Number TX 20190256 dated to match the posting date of this RFP.
- 1.20 DELINQUENCY IN PAYING CHILD SUPPORT: Under Section 231.006, *Texas Family Code*, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.
- 1.21 NONDISCRIMINATION: In their execution of this agreement, all Respondents, consultants, their respective employees, and others acting by or through them shall comply with all federal and state policies and laws prohibiting discrimination, harassment, and sexual misconduct. Any breach of this covenant may result in termination of this agreement.
- 1.22 REQUIRED POSTING OF CONTRACTS: The parties acknowledge that, pursuant to the provisions of *Texas Government Code* Section 2261.253, this agreement will be posted on the Owner's website.

- 1.23 NON-BOYCOTT VERIFICATION: Pursuant to Section 2270.002 of the *Texas Government Code*, Respondent certifies that either (i) it meets an exemption criteria under Section 2270.002; or (ii) it does not boycott Israel and will not boycott Israel during the term of the contract resulting from this solicitation. Respondent shall state any facts that make it exempt from the boycott certification in its Response.
- 1.24 CYBERSECURITY TRAINING PROGRAM: Pursuant to Section 2054.5192, *Texas Government Code*, Respondent and its subcontractors, officers, and employees, who are provided credentials granting access to Component's computer system also known as Component's information system, must complete a cybersecurity training program certified under Section 2054.519, *Texas Government Code* as selected by the Component. The cybersecurity training program must be completed during the term and any renewal period of this Agreement. Contractor shall verify in writing completion of the program to the Component within the first thirty (30) calendar days of the term and any renewal period of this Agreement. Failure to comply with the requirement of this section are grounds for termination for cause of the Agreement.

SECTION 2 – EXECUTIVE SUMMARY

- 2.1 HISTORICAL BACKGROUND: John W. Gates of New York City, one of the founders of Texaco, established Port Arthur Business College in 1909, to train people for the petrochemical industry, then in its infancy. The college became Port Arthur Collegiate Institute in 1911, when the school was presented to the Board of Education of the Methodist Episcopal Church North, a forerunner of the present United Methodist Temple. The church operated the growing campus until 1918, when it was turned over to a non-profit Texas corporation. This corporation had no capital stock and was overseen by a self-perpetuating board of trustees. The name of the school was changed back to Port Arthur Business College and finally, in 1932, to Port Arthur College.

On July 31, 1974, another milestone in the school's history was reached. W. Sam Monroe, then President of Port Arthur College and a Lamar University regent, presented his fellow members of the Lamar board a resolution seeking merger of Port Arthur College into Lamar University. The 21 trustees of the school agreed that the merger would be in the best interests of both institutions and their constituencies.

The 64th Legislature of the State of Texas authorized the merger and appropriated \$600,000 for creation of the Lamar University Center at Port Arthur. On Aug. 21, 1975, the trustees presented the deed for Port Arthur College to the Lamar University Board of Regents. Classes began on the Port Arthur campus on Aug. 28, 1975. Since the merger in 1975, enrollment increased from 151 students to a peak of more than 3,000 and the curriculum has been expanded to more than 50 areas of study.

House Bill 1297 was signed into law in June 1999, changing the name of the institution to Lamar State College-Port Arthur. Lamar State College - Port Arthur is a member of The Texas State University System and an equal opportunity/affirmative action educational institution.

- 2.2 MISSION STATEMENT: Lamar State College-Port Arthur provides learning experiences that prepares students to continue their education or enter the workforce.
- 2.3 PROJECT DESCRIPTION, SCOPE AND BUDGET: The scope of the project is defined by the Contract Documents and consists of the Ruby Fuller Education Building Renovation and Expansion. The project includes the renovation of the existing turn of the century Ruby Fuller building and

replacing the Annex Education Building with a new two-story addition. The building is considered historical and is recorded as a Texas Historical Landmark.

The existing sanctuary will be renovated to become a state-of-the-art educational facility totaling approximately 5,137 square feet. The existing education annex is approximately 5,575 sq. ft. and will be demolished to accommodate the new 4,700 sq. ft. two-story meeting hall/education building. Total renovated space and the new addition will be approximately 9,837 square feet. Restoration of the existing brick, windows, and roof will be required to preserve the original building.

The Total Construction Cost Limitation for the Project is **Five Million Two Hundred Thirty-Two Thousand Five Hundred Dollars (\$5,232,500)**.

2.4 PROJECT PLANNING SCHEDULE: Key Project planning schedule milestones are:

2.4.1	Owner publishes RFP	06/01/2020
2.4.2	Mandatory Pre-Proposal Conference	06/08/2020
2.4.3	Walk-Through June 8, 2020 – 11:00 a.m. – 5:00 p.m.	06/08/2020
2.4.4	Walk-Through June 9, 2020 – 8:00 a.m. to 12:00 p.m.	06/09/2020
2.4.5	RFP Submittal of Questions Deadline (12:00 p.m.)	06/12/2020
2.4.6	Deadline for submittal of Proposals (2:00 p.m.)	06/25/2020
2.4.7	Respondents name read aloud at Lamar State College-Port Arthur	06/25/2020
2.4.8	Deadline for submittal of HSP (2:00 p.m.)	06/26/2020
2.4.9	Respondents pricing Proposal read aloud at Owner’s Office (2:00 p.m.)	07/07/2020
2.4.10	Interview shortlisted firms (if required)	07/13/2020
2.4.11	Owner selects General Contractor	07/14/2020
2.4.12	Execute General Contractor Agreement	07/24/2020
2.4.13	Construction Scheduled Start.....	07/31/2020
2.4.14	Target construction Substantial Completion.....	06/15/2021
2.4.15	Target construction Final Completion	07/15/2021

The above schedule of events represents a basic timeline for the Project. A final Project timeline will be developed with the Owner at a later time. The Owner can be expected to work with the highest ranking Respondent to validate and improve on this initial schedule.

SECTION 3 – REQUIREMENTS FOR COMPETITIVE SEALED PROPOSALS

Respondents shall carefully read the information contained in the following criteria and submit a complete statement of qualifications (“Qualifications”) inclusive of all questions in Section 3.1 through 3.7. Respondent shall read, sign and submit the information contained in Section 3.8. The entire Competitive Sealed Proposal shall be formatted as directed in Section 4. Incomplete Proposals will be considered non-responsive and subject to rejection.

3.1 CRITERION ONE: RESPONDENT’S ABILITY TO PROVIDE CONSTRUCTION SERVICES

3.1.1 Provide the following information on your firm for the past **five** (5) fiscal years:

3.1.1.1 Volume:

3.1.1.1.1 Annual number, value and percent change of contracts in Texas per year

3.1.1.1.2 Annual number, value and percent change of contracts nationally per year

3.1.1.2 Revenues: Annual revenue totals and percent change per year

- 3.1.1.3 Bonding:
 - 3.1.1.3.1 Total bonding capacity
 - 3.1.1.3.2 Available bonding capacity and current backlog
- 3.1.2 State whether Respondent's firm is currently for sale or involved in any transaction to expand or to become acquired by another business entity. If so, please explain the impact both in organization and company direction.
- 3.1.3 Provide details of any past or pending litigation, or claims filed, against Respondent that may affect its performance under an agreement with the Owner.
- 3.1.4 State whether Respondent is currently in default on any loan agreement or financing agreement with any bank, financial institution, or other entity. If so, specify date(s), details, circumstances, and prospects for resolution.
- 3.1.5 State whether Respondent has ever failed to complete any work which it was awarded.
- 3.1.6 Declare if any relationship exists by relative, business associate, capital funding agreement, or any other such kinship between Respondent's firm and any Owner employee, officer or Regent. If so, please explain.

3.2 CRITERION TWO: QUALIFICATIONS OF CONSTRUCTION TEAM

- 3.2.1 Provide resumes of the Respondent's team that will be directly involved in the Project, including their experience with similar projects, the number of years with the firm, and the city of residence of each such person. Include as applicable Project Managers, Superintendents, Assistant Project Managers and Superintendents, Expeditors, Project Scheduler, Quality Control Inspectors, Safety Coordinator / Assistant, Carpenter Foreman, and Labor Foreman.
- 3.2.2 For each team member identified above, provide his/her current status, and when each team member will be available to provide construction services for this Project.
- 3.2.3 Describe, in graphic and written form, the proposed project assignments and lines of authority and communication for each team member to be directly involved in the Project. Indicate the estimated percent of time these team members will be involved in the construction services.

3.3 CRITERION THREE: RESPONDENT'S PAST PERFORMANCE ON REPRESENTATIVE PROJECTS

- 3.3.1 Identify and describe the proposed construction team's past experience for providing construction services that are MOST RELATED TO THIS PROJECT within the last five (5) years, including a minimum of (2) projects that demonstrate successful renovation of historic structures. The Administration of Lamar State College-Port Arthur is committed to a renovation that maintains the architectural style, character and massing of the original church as called for in the Project Documents. List the projects in order of priority, with the most relevant project listed first. Provide the following information for each project listed:
 - 3.3.1.1 Project name, location, contract delivery method, and description
 - 3.3.1.2 Color images (photographic or machine reproductions)
 - 3.3.1.3 Original and final construction cost

- 3.3.1.4 Final project size in gross square feet
- 3.3.1.5 Type of construction (new, renovation, or expansion)
- 3.3.1.6 Dates of the actual Notice to Proceed, original Substantial Completion, actual Substantial Completion, and Final Payment dates for construction services
- 3.3.1.7 Name of Project Manager (individual responsible to the owner for the overall success of the project)
- 3.3.1.8 Name of Project Superintendent (individual responsible for coordinating the day to day work)
- 3.3.1.9 Names of Mechanical, Plumbing and Electrical Subcontractors
- 3.3.1.10 The owner’s representative who served as the day-to-day liaison during construction, including telephone number and email address
- 3.3.1.11 Architect/Engineer’s name and representative who served as the day-to-day liaison during construction, including telephone number and email address
- 3.3.1.12 Length of business relationship with the owner

References shall be considered relevant based on specific project participation and experience with the Respondent. The Owner may contact references during any part of this process. The Owner reserves the right to contact any other references at any time during the RFP process.

3.4 CRITERION FOUR: RESPONDENT’S PAST PERFORMANCE ON OWNER, STATE-FUNDED, OR MAJOR INSTITUTIONS OF HIGHER EDUCATION PROJECTS

- 3.4.1 Identify and describe the proposed construction team’s past experience for providing construction services on Owner projects and/or any other state-funded projects, or projects for “major” institutions of higher education that are MOST RELATED TO THIS PROJECT within the last five (5) years. Provide not less than three (3) but not more than five (5) examples. Project team personnel who are listed in Article 3.2.1 are preferred for the projects listed in 3.4. List the projects in order of priority, with the most relevant project listed first.
- 3.4.2 If Respondent has not previously provided construction services for the Owner, then identify and describe Respondent’s past performance on construction projects for “major” institutions of higher education (or similar) within the last five (5) years. Projects may repeat with Section 3.3 above.
- 3.4.3 In either case above, provide the following information for each project listed:
 - 3.4.3.1 Project name, location, contract delivery method, and description
 - 3.4.3.2 Color images (photographic or machine reproductions)
 - 3.4.3.3 Original and final construction cost
 - 3.4.3.4 Categorize the change order(s) value in terms of Owner Added Scope, Error and Omission (both Architect/Engineer and Contractor) or Unforeseen
 - 3.4.3.5 Final project size in gross square feet
 - 3.4.3.6 Type of construction (new, renovation, or expansion)
 - 3.4.3.7 Dates of the actual Notice to Proceed, original Substantial Completion, actual Substantial Completion, and Final Payment dates for Construction Services
 - 3.4.3.8 Name of Project Manager (individual responsible to the owner for the overall success of the project)
 - 3.4.3.9 Name of Project Superintendent (individual responsible for coordinating the day to day work)

3.5 CRITERION FIVE: RESPONDENT'S PROJECT PLANNING AND SCHEDULING FOR THIS PROJECT

- 3.5.1 Provide a Critical Path Method milestone schedule for this Project using the Project Planning Schedule in Section 2.4 and identify specific critical process, phases, milestones, approvals, and procurements anticipated. Clearly identify the ten percent (10%) total project float required during the construction phase.
- 3.5.2 Describe what Respondents perceives are the critical construction issues for this Project.
- 3.5.3 Describe Respondent's approach to assuring timely completion of this Project, including methods for schedule recovery, if necessary. From any three (3) of the projects listed in response to Section 3.3 or 3.4 of this RFP, provide examples of how these techniques were used, including specific scheduling challenges/requirements and actual solutions.

3.6 CRITERION SIX: RESPONDENT'S QUALITY CONTROL AND COMMISSIONING PROGRAM FOR THIS PROJECT

- 3.6.1 Describe Respondent's quality control program. Explain the methods used to ensure quality control during the construction phase of a project. Provide specific examples of how these techniques or procedures were used from any of the projects listed in response to Section 3.3 or 3.4 of this RFP.
- 3.6.2 Describe how Respondent's quality control team will measure the quality of construction and commissioning performed by trade subcontractors on this Project, and how Respondent will address non-conforming work.
- 3.6.3 Provide Respondent's Experience Modification Rate (EMR) for the past five (5) years.
- 3.6.4 Provide any certifications such as, but not limited to, ISO 9001-2000.
- 3.6.5 Provide any safety awards given to Respondent by recognized industry associations in the past five (5) years.
- 3.6.6 Describe all commissioning processes that Respondent will provide as basic services for the Project.

3.7 CRITERION SEVEN: RESPONDENT'S PROJECT SAFETY PROGRAM FOR THIS PROJECT

- 3.7.1 Describe Respondent's job site safety program for this Project and specific safety policies in which employees must be in compliance.
- 3.7.2 Identify any deaths that have occurred on a project site controlled by Respondent, or any subcontractor(s) (at any contractual level), that had a death on Respondent's project site. If so, describe how Respondent has revised its program.

3.8 CRITERION EIGHT: EXECUTION OF OFFER
RFP No. 758-20-04013, CSP General Contractor for Ruby Fuller Education Building at Lamar State College-Port Arthur, Port Arthur, Texas.

NOTE TO RESPONDENTS: **SUBMIT ENTIRE SECTION 3.8 WITH RESPONSE**

THIS EXECUTION OF OFFER MUST BE COMPLETED, SIGNED, AND RETURNED WITH THE RESPONDENT'S SEALED PRICING AND DELIVERY PROPOSAL. **FAILURE TO COMPLETE, SIGN AND RETURN THIS EXECUTION OF OFFER WITH THE QUALIFICATIONS PROPOSAL WILL RESULT IN REJECTION OF THE PROPOSAL.**

SIGNING A FALSE STATEMENT MAY VOID THE SUBMITTED PROPOSAL OR ANY AGREEMENTS OR OTHER CONTRACTUAL ARRANGEMENTS, WHICH MAY RESULT FROM THE SUBMISSION OF RESPONDENT'S PROPOSAL, AND THE RESPONDENT MAY BE REMOVED FROM ALL PROPOSER LISTS. A FALSE CERTIFICATION SHALL BE DEEMED A MATERIAL BREACH OF CONTRACT AND, AT OWNER'S OPTION, MAY RESULT IN TERMINATION OF ANY RESULTING CONTRACT OR PURCHASE ORDER.

- 3.8.1 By signature hereon, Respondent acknowledges and agrees that (1) this RFP is a solicitation for Proposals and is not a contract or an offer to contract; (2) the submission of Proposals by Respondent in response to this RFP will not create a contract between the Owner and Respondent; (3) the Owner has made no representation or warranty, written or oral, that one or more contracts with the Owner will be awarded under this RFP; and (4) Respondent shall bear, as its sole risk and responsibility, any cost which arises from Respondent's preparation of a response to this RFP.
- 3.8.2 By signature hereon, Respondent offers and agrees to furnish to the Owner the products and/or services more particularly described in its Proposal, and to comply with all terms, conditions and requirements set forth in the RFP documents and contained herein.
- 3.8.3 By signature hereon, Respondent affirms that they has not given, nor intend to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor or service to a public servant in connection with the submitted Proposal.
- 3.8.4 By signature hereon, Respondent that is a "taxable entity" under Section 171.0002 of the *Texas Tax Code* and certifies that it is not currently delinquent in the payment of any Franchise Taxes due under Chapter 171, *Texas Tax Code*.
- 3.8.5 By signature hereon, the Respondent certifies that neither the Respondent nor anyone acting on behalf of the Respondent has violated the antitrust laws of this state, codified in Section 15.01, et. seq., *Texas Business and Commerce Code*, or the Federal antitrust laws. Respondent further certifies that it has not communicated directly or indirectly the Proposal submitted to any competitor or any other person engaged in a similar line of business.
- 3.8.6 By signature hereon, Respondent represents and warrants that:
 - 3.8.6.1 Respondent is a reputable company regularly engaged in providing products and/or services necessary to meet the terms, conditions and requirements of the RFP;

- 3.8.6.2 Respondent has the necessary experience, knowledge, abilities, skills, and resources to satisfactorily perform the terms, conditions and requirements of the RFP;
 - 3.8.6.3 Respondent is aware of, is fully informed about, and is in full compliance with all applicable federal, state and local laws, rules, regulations and ordinances;
 - 3.8.6.4 Respondent understands the requirements and specifications set forth in this RFP and the terms and conditions set forth in the Contract under which Respondent will be required to operate;
 - 3.8.6.5 Respondent, if selected by the Owner, will maintain insurance as required by the contract; and,
 - 3.8.6.6 All statements, information and representations prepared and submitted in response to this RFP are current, complete, true and accurate. Respondent acknowledges that the Owner will rely on such statements, information and representations in selecting the successful Respondent. If selected by the Owner as the successful Respondent, Respondent will notify the Owner immediately of any material change in any matters with regard to which Respondent has made a statement or representation or provided information.
- 3.8.7 By signature hereon, Respondent certifies that the individual signing this document and the documents made part of the RFP is authorized to sign such documents on behalf of the company and to bind the company under any agreements or other contractual arrangements, which may result from the submission of Respondent's Proposals.
- 3.8.8 By signature hereon, Respondent certifies that if a Texas address is shown as the address of the Respondent, Respondent qualifies as a Texas bidder as defined in *Texas Government Code* Section 2252.001(4).
- 3.8.9 By signature hereon, Respondent certifies as follows:
- 3.8.9.1 "Under Section 231.006, Texas Family Code, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate."
 - 3.8.9.2 "Under Section 2155.004, Texas Government Code, the vendor or applicant certifies that the individual or business entity named in this bid or contract is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate."
 - 3.8.9.3 Under Section 2254.004, Texas Government Code, the vendor or applicant certifies that each individual or business entity which is an engineer or architect proposed by Respondent as a member of its team was selected based on "demonstrated competence and qualifications only."
- 3.8.10 By signature hereon, Respondent certifies that no relationship, whether by relative, business associate, capital funding agreement or by any other such kinship exist between Respondent and an employee of Owner or any Component, or Respondent has not been an employee of any Owner Component within the immediate twelve (12) months prior to Respondent's RFP response. All such disclosures will be subject to administrative review and approval prior to the Owner entering into any contract with Respondent.

- 3.8.11 By signature hereon, Respondent affirms that no compensation has been received for participation in the preparation of the specifications for this RFP (reference Section 2155.004 *Texas Government Code*).
- 3.8.12 Respondent represents and warrants that all articles and services quoted in response to this RFP meet or exceed the safety standards established and promulgated under the Federal Occupational Safety and Health Law (Public Law 91-596) and its regulations in effect or proposed as of the date of this solicitation.
- 3.8.13 By signature hereon, Respondent signifies its compliance with all federal laws and regulations pertaining to Equal Employment Opportunities and Affirmative Action.
- 3.8.14 By signature hereon, Respondent agrees to defend, indemnify, and hold harmless the State of Texas, all of its officers, agents and employees from and against all claims, actions, suits, demands, proceedings, costs, damages, and liabilities, arising out of, connected with, or resulting from any acts or omissions of Respondent or any agent, employee, subcontractor, or supplier of Respondent in the execution or performance of any agreements or other contractual arrangements which may result from the submission of Respondent's Proposal.
- 3.8.15 By signature hereon, Respondent agrees to complete a Cybersecurity Training Program. Pursuant to Section 2054.5192, *Texas Government Code*. Respondent and its subcontractors, officers, and employees, who are provided credentials granting access to Component's computer system also know as Component's information system, must complete a cybersecurity training program certified under Section 2054.519, *Texas Government Code* as selected by the Component. The cybersecurity training program must be completed during the term and any renewal period of the Agreement. Contractor shall verify in writing completion of the program to the Component within the first thirty (30) calendar days of the term and any renewal period of this Agreement. Failure to comply with the requirements of this section are grounds for termination for cause of the Agreement.
- 3.8.16 By signature hereon, Respondent agrees that any payments that may become due under any agreements or other contractual arrangements, which may result from the submission of Respondent's Proposal, will be applied towards any debt including, but not limited to, delinquent taxes and child support that is owed to the State of Texas.
- 3.8.17 By signature hereon, Respondent certifies that no member of the Board of Regents of The Texas State University System, or the Executive Officers of the Owner or its Component institutions, has a financial interest, directly or indirectly, in the transaction that is the subject of the contract, and that no member of the Board of Regents has a "substantial interest" (as that term is defined in Section 51.923 of the *Texas Education Code*) in the Respondent.

(Continues on the following page)

3.8.18 Respondent must complete, sign, and return this Execution of Offer as part of their Qualifications Proposal submittal response. The Respondent’s company official(s) who are authorized to commit to such a Proposal must sign submittals. Failure to sign and return this form will subject the Proposal to disqualification.

Respondent’s Name: _____

Respondent’s State of Texas Tax Account No.: _____
(This 11 digit number is mandatory)

If a Corporation:

Respondent’s State of Incorporation: _____

Respondent’s Charter No: _____

Identify each person who owns at least 10% of the Respondent’s business entity by name:

(Name)

(Name)

(Name)

(Name)

Submitted and Certified By:

(Respondent’s Name)

(Title)

(Street Address)

(Telephone Number)

(City, State, Zip Code)

(Fax Number)

(Authorized Signature)

(Date)

(Email Address) required for RFP Notification

SECTION 4 – FORMAT OF PROPOSALS

4.1 GENERAL INSTRUCTIONS

- 4.1.1 Proposals shall be prepared **SIMPLY AND ECONOMICALLY**, providing a straightforward, **CONCISE** description of Respondent's ability to meet the requirements of this RFP. Emphasis shall be on the **QUALITY**, completeness, clarity of content, responsiveness to the requirements, and an understanding of Owner's needs.
- 4.1.2 Proposals shall be a **MAXIMUM OF FIFTY (50) PRINTED PAGES SINGLE-SIDED OR TWENTY-FIVE (25) DOUBLE-SIDED**. The cover, table of contents, divider sheets, HSP (Section 1.13), Execution of Offer and Pricing and Delivery Proposal do not count as printed pages.
 - 4.1.2.1 Proposals shall be submitted as three (3) separate sealed documents: 1) Qualifications/Execution of Offer, 2) Pricing and Delivery Proposal, and 3) HSP. The HSP shall be submitted separately on the date, time and location in Article 1.5.3.
- 4.1.3 Respondents shall carefully read the information contained in this RFP and submit a complete response to all requirements and questions as directed. Incomplete Proposals will be considered non-responsive and subject to rejection.
- 4.1.4 Proposals and any other information submitted by Respondents in response to this RFP shall become the property of the Owner.
- 4.1.5 Proposals that are qualified with conditional clauses, alterations, items not called for in the RFP documents, or irregularities of any kind are subject to rejection by the Owner, at its option.
- 4.1.6 The Owner makes no representations of any kind that an award will be made as a result of this RFP. The Owner reserves the right to accept or reject any or all Proposals, waive any formalities or minor technical inconsistencies, or delete any item/requirements from this RFP when deemed to be in Owner's best interest.
- 4.1.7 Qualifications shall consist of answers to questions identified in Section 3 of the RFP. It is not necessary to repeat the question in the Qualifications; however, it is essential to reference the question number with the corresponding answer.
- 4.1.8 Failure to comply with all requirements contained in this RFP may result in the rejection of the Proposals.

4.2 PAGE SIZE, BINDING, DIVIDERS, AND TABS:

- 4.2.1 Proposals shall be printed on letter-size (8-1/2" x 11") paper and assembled with spiral-type bindings or staples. **DO NOT USE METAL-RING HARD COVER BINDERS.**
- 4.2.2 Additional attachments shall **NOT** be included with the Proposals.
- 4.2.3 Separate and identify each criterion response to Section 3 of this RFP by use of a divider sheet with an integral tab for ready reference.

4.3 TABLE OF CONTENTS:

4.3.1 Submittals shall include a “Table of Contents” and give page numbers for each part of the Qualifications.

4.4 PAGINATION:

4.4.1 Number all pages of the submittal sequentially using Arabic numerals (1, 2, 3, etc.); the Respondent is not required to number the pages of the HSP.

SECTION 5 - DRAWINGS AND SPECIFICATIONS

5.1 DEFINITION: “Bidding Documents” include the bidding requirements and the proposed contract documents. The “Bidding Requirements” consist of the advertisement, the RFP, the Qualifications/Execution of Offer, the Respondent’s Pricing and Delivery Proposal Form, and other sample contract forms. The proposed “Contract Documents” consist of the Form of Agreement between the Owner and Contractor (Section 1.3), Performance and Payment Bonds, Uniform General and Supplementary Conditions for Building Construction Contracts, Special Conditions, Prevailing Wage Rate Determination, HSP, other forms and documents identified in the agreement, drawings, specifications, and all addenda issued prior to receipt of Proposals, and change orders issued after execution of the contract.

5.2 DOCUMENTS ON FILE: The bidding documents can be accessed at the following link: <https://www.tsus.edu/offices/finance/LSCPA-Ruby-Fuller-Education-Building-Bid-Documents>

Complete sets of drawings and specifications are also on file at the following location and Respondents and subcontractors may examine them there:

Sigma Engineers, Inc.
4099 Calder Avenue
Beaumont, Texas 77706
409-898-1001
mail@sigmaengineers.com

5.3 UNIFORM GENERAL CONDITIONS: Uniform General Conditions (“UGC”) for the Texas State University System Building Construction Contracts can be found on the TSUS website at: <https://www.tsus.edu/offices/finance/capital-projects.html>

SECTION 6 – REQUIREMENTS FOR RESPONDENT’S PRICING AND DELIVERY PROPOSAL

6.1 PROPOSAL AND BID SECURITY

6.1.1 Complete the “Respondent’s Pricing and Delivery Proposal”.

6.1.2 The Base Proposal shall be accompanied by a bid security in the form of a bid bond, certified and/or cashier’s check (on a solvent bank in the State of Texas) drawn to the order of The Texas State University System, Attention: Vice Chancellor of Finance and Chief Financial Officer, 601 Colorado Street, Austin, Texas 78701, in the sum of not less than five percent

(5%) of the total amount of the bid, including all alternates. No other forms of security will be accepted.

- 6.1.3 Should the Respondent fail, neglect, or refuse to begin performance of the contract after receiving the award, said security will be forfeited to Owner. Performance shall be considered begun upon acknowledgement of the contract award and the furnishing of all required security bonds and insurance coverage.
- 6.1.4 Bid security furnished by the successful Respondent will be returned when a Notice to Proceed is issued. Bid security furnished by unsuccessful Respondents will be returned when a contract award is made.
- 6.1.5 If the Owner has not made an award within ninety (90) calendar days after Proposals are received, Respondents may withdraw their Proposals without prejudice; however, Respondents have the option to extend the time in which their Proposals will be honored after this ninety (90) day period.

(Continues on the following page)

RESPONDENT'S PRICING AND DELIVERY PROPOSAL

RFP No.: 758-20-04013

**Project Name: RFP for Competitive Sealed Proposals for
Ruby Fuller Education Building at Lamar State College-Port Arthur**

From: Respondent's Name: _____
Mailing Address: _____
City, State, Zip Code: _____
Phone Number: _____

To: Brian McCall, Ph.D.
Chancellor
The Texas State University System
Austin, Texas

Having carefully examined the Uniform General Conditions for Construction Contracts ("UGC"), the sealed Plans and Specifications and any addenda thereto, as prepared by **Sigma Engineers, Inc.**, 4099 Calder Avenue, Beaumont, Texas 77706, the Project Architect/Engineer on this Project, as well as the premises and all the conditions affecting the work, the undersigned proposes to furnish all labor, materials, and equipment necessary to achieve Substantial Completion of the work in accordance with the Contract Documents for the following sum (Amount shall be shown in both written and figure form. In case of discrepancy between the written amount and the figure, the written amount will govern):

1.1 **BASE PROPOSAL COST:**

_____ DOLLARS

(\$ _____)

1.2 **ALTERNATE PROPOSALS:** The Owner reserves the right to accept or reject any Alternate Proposals in the order of its choice. The following amounts may be added to, or deducted from, the Base Proposal Cost identified above.

1.2.1 **Alternate No. 1** – Exterior Elevations (reference Drawing A3.2.ALT)

_____ DOLLARS

(\$ _____)

1.2.2 **Alternate No. 2** – Architectural asphalt shingles over 30# felt paper in lieu of synthetic slate.

_____ DOLLARS

(\$ _____)

1.3 CONSTRUCTION MILESTONE SCHEDULE: The undersigned agrees, if awarded the contract, to achieve Substantial Completion of the Work as defined in the UGC, the plans and specifications and addenda thereto.

- 1.3.1 Execute General Contractor Agreement07/24/2020
- 1.3.2 Construction Scheduled Start Date07/31/2020
- 1.3.3 Target Construction Substantial Completion date06/15/2021
- 1.3.4 Target Construction Final Completion date.....07/15/2021

The above schedule of events represents a basic timeline for the Project. A final Project timeline will be developed with the Owner at a later time. The Owner can be expected to work with the highest-ranking Respondent to validate and improve on this initial schedule.

1.4 RFP ADDENDA: Receipt is hereby acknowledged of the following addenda issued for this RFP – initial where applicable.

No. 1 ____ No. 2 ____ No. 3 ____ No. 4 ____ No. 5 ____

1.5 LIQUIDATED DAMAGES: The undersigned agrees that, from the compensation otherwise to be paid, the Owner may withhold the sum of **Seven Hundred Fifty Dollars (\$750)** for each calendar day after the Substantial Completion Date that the work remains incomplete, which sum is agreed upon as the amount of liquidated damages which the Owner will sustain per diem by the failure of the Undersigned to complete the work at the time stipulated in the Agreement. This sum constitutes a reasonable estimate of Owner’s actual damages and is not intended as a penalty.

1.6 BID/PROPOSAL BONDS: The undersigned shall include a Certified Check or Bid/Proposal Bond Payable to the Board of Regents, The Texas State University System, in an amount not less than five percent (5%) of the largest possible total proposed cost, including consideration of all additive alternates. The Certified Check or Bid/Proposal Bond accompanying this Proposal is left in escrow with the Vice Chancellor and Chief Financial Officer of The Texas State University System, and the amount is the measure of liquidated damages which the Owner will sustain by the failure of the undersigned to execute and deliver the above named Agreement, and that if the undersigned defaults in executing the Agreement or furnishing the Performance and Payment Bonds or insurance certificates within ten (10) calendar days of transmittal of the Agreement, then the check shall become the property of the Owner, or the Bid/Proposal Bond shall become subject to forfeiture to the Owner.

1.6.1 The Bid/Proposal Bond Form is attached to this solicitation as Attachment 1. The Bid/Proposal Bond submitted with this Proposal shall be an original signed and sealed document. No copies are permitted. Any other Bid/Proposal Bond document or form will not be accepted.

1.6.2 The Surety shall be a corporation or firm duly authorized to transact surety business in the State of Texas or as listed in the current notice of the Department of Treasury list of companies holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies.

1.6.3 The Certified Check submitted with this Proposal shall be an original document. No copies are permitted.

1.7 PAYMENT AND PERFORMANCE BONDS: The undersigned agrees to execute the Payment and Performance Bonds within ten (10) calendar days, in the amount of one hundred percent (100%) of

the contract amount, after notification that the Respondent has been identified by the Owner as the Respondent with the “best value” Proposal.

- 1.8 AWARD OF CONTRACT AND COMMENCEMENT OF WORK: The Owner reserves the right to accept or reject any and all Proposals and to waive Proposal irregularities. Proposals shall remain valid and shall not be withdrawn for a period of ninety (90) days from the date of opening thereof. The undersigned agrees to execute the Contract within ten (10) calendar days after notification that the undersigned has been identified by the Owner as the Respondent with the “best value” Proposal, and to commence work on or before the commencement date stated by the Owner in a Notice to Proceed; such commencement date shall be ten (10) or more calendar days after the date of the Notice to Proceed. In addition, the undersigned agrees to execute and deliver to the Owner a Certification of Franchise Tax Payment and further agrees to obtain from each subcontractor and supplier and hold for redelivery to the Owner, if requested, a certification of franchise tax status of such subcontractor or supplier.

(Continues on the following page)

1.9 The Respondent must complete, sign and return this Pricing and Delivery Proposal as part of their submittal response. The Respondent’s company official(s) who are authorized to commit to such a submittal must sign submittals. Failure to sign and return this form will subject the submittal to disqualification.

Respondent’s Name: _____

Respondent’s State of Texas Tax Account No.: _____
(This 11 digit number is mandatory)

If a Corporation:

Respondent’s State of Incorporation: _____

Respondent’s Charter No: _____

Identify each person who owns at least 25% of the Respondent’s business entity by name:

(Name)

(Name)

(Name)

(Name)

Submitted and Certified By:

(Respondent’s Name)

(Title)

(Street Address)

(Telephone Number)

(City, State, Zip Code)

(Fax Number)

(Authorized Signature)

(Date)

(Email Address) required for RFP Notification

(Date)

Attachment 1

BID/PROPOSAL BOND

Surety Bond No. _____

STATE OF TEXAS §

COUNTY OF _____ §

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, and _____, as Surety, are hereby held and firmly bound unto The Board of Regents of The Texas State University System as Obligee in the sum of not less than Five Percent (5%) of _____ (\$ _____), the greatest possible total proposed cost, as a guarantee, the payment of which will be truly made, the said Principal and the said Surety bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

Whereas the Principal has submitted a bid or proposal for: Ruby Fuller Education Building at Lamar State College-Port Arthur, Port Arthur Texas, Project No. 758-20-04013, (the "Project").

NOW THEREFORE, if the Obligee shall award the Contract to the Principal and the Principal shall enter into the Contract in writing with the Obligee in accordance with the terms of such bid or proposal, and furnish such bonds and other instruments as may be specified in the Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, then this bond shall be null and void. If in the event of failure of the Principal to execute such Contract and furnish such bonds and other instruments required by the Contract Documents within ten (10) calendar days after the date of transmittal of the Contract Documents to the Principal for execution, this bond shall remain in full force and effect and become the property of the Obligee, without recourse of the Principal and/or the Surety, not as a penalty, but as liquidated damages.

Signed this _____ day of _____ in the year _____, the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

Principal

By: _____

*By: _____
(Surety)

(Typed Name and Title)

(Attorney-in-Fact)

(SURETY SEAL)

* Attach Power of Attorney for Surety's Attorney-in-Fact with "live seal".

DISCLOSURE OF GUARANTY FUND NONPARTICIPATION

In the event the Surety is unable to fulfill its contractual obligation under this bond, the Obligee is not protected by an insurance guaranty fund or other solvency protection arrangement.

Addendum No. 1

Issued June 18, 2020

REQUEST FOR PROPOSALS FOR GENERAL CONTRACTOR COMPETITIVE SEALED PROPOSALS

**FOR
LAMAR STATE COLLEGE-PORT ARTHUR
PORT ARTHUR, TEXAS**

RUBY FULLER EDUCATION BUILDING

RFP No.:

758-20-04013

Revised Submission Date:

July 16, 2020 – 2:00 p.m. (C.D.T.)

Notice To All Respondents:

The following is Addendum No. 1 to the Request for Proposals (RFP)
ESBD Posting No. 758-20-04013 was posted on June 1, 2020

Prepared By:

Peter Maass, Director of Capital Projects Administration
The Texas State University System
601 Colorado Street
Austin, TX 78701 - 512-463-1808
Peter.Maass@tsus.edu

I. GENERAL:

- A. The optional Mandatory Pre-Proposal Conference was held on June 8, 2020, at the Ruby Fuller Building location. The Attendance Sign-In Sheets are included as part of this Addendum along with the questions and answers presented in response to this solicitation.

II. REVISIONS:

- A. The RFP Submission date shall change from June 25, 2020, 2:00 p.m. to **July 16, 2020, 2:00 p.m.** to allow Respondents additional review time and the opportunity to pose questions from the pending Addendum No. 2.
- B. Section 2.4 PROJECT PLANNING SCHEDULE: Revisions and additions to the schedule are as follows:

2.4.1	Owner publishes RFP.....	06/01/2020
2.4.2	Mandatory Pre-Proposal Conference.....	06/08/2020
2.4.3	Walk-Through June 8, 2020 – 11:00 a.m. – 5:00 p.m.	06/08/2020
2.4.4	Walk-Through June 9, 2020 – 8:00 a.m. to 12:00 p.m.	06/09/2020
2.4.5	RFP Submittal of Questions Deadline (12:00 p.m.)	06/12/2020
2.4.6	<i>Issue Addendum No. 2 (specifications and drawings).....</i>	<i>06/22/2020</i>
2.4.7	<i>Deadline for receipt of additional questions</i>	<i>07/01/2020</i>
2.4.8	Deadline for submittal of Proposals (2:00 p.m.)	06/25/2020 07/16/2020
2.4.9	Respondents name read aloud at Lamar State College-Port Arthur	06/25/2020 07/16/2020
2.4.10	Deadline for submittal of HSP (2:00 p.m.)	06/26/2020 07/17/2020
2.4.11	Respondents pricing Proposal read aloud at Owner’s Office (2p.m.)	07/07/2020 07/24/2020
2.4.12	Interview shortlisted firms (if required).....	07/13/2020 07/29/2020
2.4.13	Owner selects General Contractor	07/14/2020 07/30/2020
2.4.14	Execute General Contractor Agreement.....	07/24/2020 08/7/2020
2.4.14	Construction Scheduled Start	07/31/2020 08/10/2020
2.4.15	Target construction Substantial Completion	06/04/2021
2.4.16	Target construction Final Completion.....	07/05/2021

Attachments:

- (1) Pre-Submittal Conference Attendance Sign-In Sheets

- **END OF ADDENDUM NO. 1** -



RUBY FULLER EDUCATION BUILDING RENOVATION / EXPANSION

Sign-In
Sheet

PRE-BID MEETING SIGN-IN SHEET

Meeting Date: June 8, 2020

Meeting Time: 10:00 AM

Location: 300 Stillwell Plaza, Port Arthur Texas 77640

Attendees: (Please Print)

	NAME	COMPANY	ADDRESS	TELEPHONE & EMAIL
1	Gerardo Alejandro	AAR INC	6640 Signat. Houston, Tx 77041	713-466-6800
2	Michael Mitchell	Vaughn	152 Carrie St Houston, TX 77047	713-589-7402
3	NEIL SKINNER	VAUGHN CONST	157 CORRIE ST HOUSTON	281-909-6782 NSKINNER@VAUGHNCONSTRUCTION.COM
4	DAVID DUKHON	Tolunay-Wong, Inc	713 Napoleon Ave Sulphur, LA 70663	(337) 540-8746 ddukhon@twinc.com
5	KEN GRIECO	STRUCTURA	10757 CUTNER HOUSTON	512 466 5314 kengrieco@structura.com
6	DAN BLACKSHER	BRYSSTAR	8385 Chen Rd BMT	dan@brystar.com
7	MIO Badir	Unify (controls)	5550 Eastex Fwy. Suite N BMT	mouradb@unifyes.com
8	Steve Brammer	Steve Brammer ENT. LLC	3850 QUEENSBOW BMT 77706	409 658 8955 SB-ENT2-SteveBrammer.com
9	BETAN BROWN	ODINNELL/KNEIFER	1900 W. Loop S. Houston TX 77027	BBROWN@ODINNELLKNEIFER.COM
10	JOSE CARDENAS	CMOST	225 HWY 365 - PORT ARTHUR, TX	409-736-9010 JCARDENAS@CMOSTTX.COM
11	Vince Jabbia	NFT Construction	1376 Laurel Ave, Bmt, 77701	vjabbia@nandconstruction.com



RUBY FULLER EDUCATION BUILDING RENOVATION / EXPANSION

Sign-In
Sheet

PRE-BID MEETING SIGN-IN SHEET

Meeting Date: June 8, 2020

Meeting Time: 10:00 AM

Location: 300 Stillwell Plaza, Port Arthur Texas 77640

Attendees: (Please Print)

	NAME	COMPANY	ADDRESS	TELEPHONE & EMAIL
1	Mike Whitman	TDC Star Class	3110 Hwy 12 Victoria TX 77662	409-284-4796 tristar409@yahoo.com
2	Scott Eppes	ALCODE Plumbing	1285 W. Caldon Dr Beaumont	409-840-6063 Scott.eppes@gmail.com
3	Don Frazier	Daniels	2898 W Cedar	781-9740 dfrazier@danielsinc.com
4	Richard Wolny			409 838 3006 daniels@danielsinc.com
5	Janet Daniels	DBCI		jdaniels@danielsinc.com
6	Brian Shipp	SETEY	1660 South ^{23rd} Beaumont	shipp@seteyconstruction.com
7	Daniel Hess	McInnis Const.	675 S 4th St, Silsbee, TX	409-385-5767 daniel@mcinnisprojects.com
8	Joseph Hancock	Gulf Coast Electric	2005 Pecan St BMT	409 833 2828 joseph@gulfcoastelect.com
9	Troy Whisenant	Big Thicket Plumbing	Kountze TX	409 790 2297 troy@bigthicketplumbing.com
10	SINA NGAM	SIGMA ENG	4099 CALDON AVE	mail@sigmaengineers.com
11	GABRIEL CAJIGAS	HILL INTL.	201-697-5041	gabrielcajigas@hillintl.com



RUBY FULLER EDUCATION BUILDING RENOVATION / EXPANSION

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PRE-BID MEETING SIGN-IN SHEET

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Meeting Time: 10:00 AM

Location: 300 Stillwell Plaza, Port Arthur Texas 77640

Attendees: (Please Print)

	NAME	COMPANY	ADDRESS	TELEPHONE & EMAIL
1	Marcus Sawyer	Hill Int.		281-714 5825- msawyer@hill.com
2	Brenda Baker	Hartmann Building	9610 Walden Road	659-8225 bbakerehbs@td.net
3	J.D. Burns	Electrical Specialties, Inc.	1550 Langham Bmt.	409-659-1504 jdb@esibmt.com
4	Terrence J. Young	Braun Intertec	4770 Washington Blvd	(409) 239-8597 teyoung@braunintertec.com
5	Reed Richard	LSCPA		(409) 984-6250 richardrj@lamarpa.edu
6	Corey Raiso ^{Pauls}	LSCPA ^{SIGMA}	4099 CALDER BMT	MAIL @ SIGMA EVG SCS 409-9298-1001
7	Aaron Hale	Bartlett Cook		713-501-1887 ahale@bartlettcook.com
8	BRITANN BROWN	HB NEILD	5950 WALDEN RD	409.842.2272 THOMASNEILD@HBNEILD.COM
9.				
10.				
11.				

Addendum No. 2

Issued June 22, 2020

REQUEST FOR PROPOSALS FOR GENERAL CONTRACTOR COMPETITIVE SEALED PROPOSALS

FOR LAMAR STATE COLLEGE-PORT ARTHUR PORT ARTHUR, TEXAS

RUBY FULLER EDUCATION BUILDING

RFP No.:

758-20-04013

The Revised Submission Date was posted in Addendum No. 1.

Notice To All Respondents:

The following is Addendum No. 2 to the Request for Proposals (RFP)
Addendum No. 1 was posted on June 18, 2020
ESBD Posting No. 758-20-04013 was posted on June 1, 2020

Prepared By:

Peter Maass, Director of Capital Projects Administration
The Texas State University System
601 Colorado Street
Austin, TX 78701 - 512-463-1808
Peter.Maass@tsus.edu

I. **QUESTIONS:** Below are the Questions that were presented along with Answers to each in relation to this RFQ as of June 12, 2020:

A. GENERAL

1. **Question:** RFP Pg. 6 Item 1.7. Evaluation of proposals states “Forty 40% to be based on the respondent’s pricing and delivery proposal.” Our question, can you provide an evaluation percentage breakdown on the remaining 60% of respondent’s qualifications?
Answer: No.
2. **Question:** After surveying the building today, we would like to propose to not do a complete demo of the existing building to save money for the school. I would like permission to reuse existing rail, car sling, and cab. We would propose to replace the controller, all wiring, all new buttons, in ground jack, new cab interior, doors and entrances. Will this be acceptable?
Answer: No. The Respondent’s Proposal shall follow the scope of work as defined in the Contract Documents.
3. **Question:** Based on the size of the existing machine room we would like to clarify that there is enough room according to code to put the new equipment in that room?
Answer: Correct, the existing elevator machine room has enough space for the new equipment.
4. **Question:** Do all restroom walls receive tile?
Answer: All the restroom shall receive tile.
5. **Question:** What type of transitions at doorways were different floor types and height meet?
Answer: The Contractor shall use a metal floor transition strip that meets ADA/TAS requirements.
6. **Question:** First floor VCT and adhesive and or mastic type?
Answer: The VCT floor shall receive adhesive.
7. **Question:** After inspection of the existing brick and mortar that is scheduled to be demoed and reused, we have concern regarding the integrity of the brick and the removal of the existing mortar due to the age of the structure. Please advise if there are any alternative routes that can be taken in the instance that the contractor is unable to salvage enough brick to furnish the new construction?
Answer: The brick for the new addition shall be a modular Acme brick, color Charcoal Gray Blend: DTP103 item #126236. Disregard all notes regarding the reference of salvaging the existing brick.

8. **Question:** Is there an existing survey that can be provided?
Answer: No. Existing and new grade elevations are shown on drawing C2.
9. **Question:** There are no Knox Box(s) shown or specified. Please clarify.
Answer: The Contractor shall provide a Knox Box per the City of Port Arthur requirements.
10. **Question:** The drawings call to salvage the existing brick off the Annex building to reuse in the new addition. I assume that Acme brick has exhausted all efforts to find a match since this is a very costly item.
Answer: See reply to Number A.7.
11. **Question:** Please clarify the owner will pay for all Testing Lab costs.
Answer: All testing will be paid by Owner as established in the Agreement.
12. **Question:** Please clarify the Elevator scope of work. Does the existing elevator get completely removed and replaced with a new elevator and equipment? The specifications indicate a new elevator but there are no details or sections called out on the drawings.
Answer: The existing elevator shall be removed and replaced with a new Hydraulic Passenger Elevator. Contractor shall provide a complete system. The existing foundation shall remain. The elevator shall comply with ADA/TAS requirements and have standard finishes. Reference Drawing A1.1 Revision 1.
13. **Question:** Please clarify the A/V, Intercom, Camera and Data systems are OFOI. And clarify that no backboards are required in IT Area 127 since none are shown on the drawings.
Answer: The A/V, Intercom, Camera and Data systems will be furnished by the Owner. The backboard will be provided by the Owner's IT representative.
14. **Question:** There will be extensive plaster wall damage where the 2nd floor balcony is being removed in Room 229 and not noted on the drawings to specifically repair these areas. Also, it would be helpful if the existing drawings to Ruby Fuller were made available so we can determine the extent of the repairs and/or how the balcony is connected to the outside wall for demolition and shoring purposes.
Answer: The Contractor shall repair the existing walls that are affected per the demolition of the existing 2nd floor and balcony. Finishes shall match existing. The original drawings of the existing building will be made available to the successful Respondent.
15. **Question:** Is there a pit ladder required at the elevator pit.
Answer: No pit ladder is required.
16. **Question:** Are the existing Annex Building drawings available for review so we can see how the foundation was constructed? Is it pier and beam, footing

and grade beams, etc. If it's pier and beam, please clarify the existing piers get completely removed or only removed at least 4' below grade.

Answer: The existing annex building has a slab on grade foundation. The foundation and footings shall be removed in their entirety. The size and location of the footings are unknown.

17. **Question:** Can you provide more details or sections through the Monumental Stair at the new addition?

Answer: Reference Detail 3 on Sheet S2.2 for the stair structure and detail 5/A6.1 for architectural details

18. **Question:** Is there any new wood framing required at Stairs 230? These stairs are very "creaky" when you walk on them and did not see anything specifically called out to repair or replace them.

Answer: The existing Stair 230 shall receive new finishes the existing wood stair shall remain.

19. **Question:** Please clarify if the Organ is being removed and salvaged by the Owner.

Answer: The existing organ shall be removed by the Contractor. The organ pipes shall be salvaged for the owner.

20. **Question:** Alternate #2 calls for 30# felt to be used as an underlayment for the Asphalt shingles. Would an Ice/Water shield be more appropriate?

Answer: The underlayment for the asphalt shingles shall be 30# felt as per the Texas Department of Insurance (TDI) windstorm code. According to the TDI product evaluations and testing, ice and water shield is not an approved underlayment for asphalt shingles.

B. PROJECT MANUAL

1. **Question:** Division 3- Concrete, pg. 1 states, contractor employs and pays for testing? Note: typically, owner (TSUS) covers all testing & cost separately?

Answer: See reply to Number A.11.

2. **Question:** 074000 Single ply roofing is in manual but not listed in the table of contents?

Answer: Disregard all reference to Single Ply Roofing. Contractor shall provide 2 Ply Modified Bitumen Membrane Roofing in lieu of Single Ply.

3. **Question:** Section 078400 Firestopping, pg. 3, quality control states, engage independent testing laboratory (refer to item A above). For testing?

Answer: See reply to Number A.11.

4. **Question:** Section 087100 Builders hardware refers to "hardware allowance. Please verify?

Answer: Disregard references to "allowances".

5. **Question:** Section 096810 Tile carpeting refers to section 01020 for “allowances.” Please verify?
Answer: See reply to Number B.4.
6. **Question:** Section 101400 Specialty signs, metal letters & plaque also refers to “Graphics Allowance.” Please verify?
Answer: See reply to Number B.4.
7. **Question:** Section 142000 Hydraulic elevators pg. 10 item “J” refers to “interface to third party building management systems.” Please clarify this in conjunction with section 230923 direct digital control systems?
Answer: Elevator controls shall be connected to the fire alarm system. Provide separate connection for future building management system.
8. **Question:** Section 23 05 93- System testing, adjusting & balancing pg. 1 shows to be part of “General Contractors scope of work” there again based on past (TSUS) Projects the owner has handled this as a separate matter, please confirm.
Answer: See reply to Number A.11.
9. **Question:** Section 31 25 13 Earthwork pg. 4 refers to compaction test. This also applies to item “A” testing question as well?
Answer: See reply to Number A.11.
10. **Question:** Section 31 25 14 Portland cement concrete pavement same as it relates to testing?
Answer: See reply to Number A.11.
11. **Question:** Section 31 38 80 Drilled footings Pg. 1 under Quality assurance, is item “A” required to this project also item “D” refers to testing laboratory?
Answer: See reply to Number A.11.
12. **Question:** See specification section 087100 (Builders Hardware) Part 2.01 which calls for a hardware allowance, but no dollar amount is given under the allowance section. Do we need to figure a hardware allowance or will the architect or engineer be providing a dollar amount in an addendum?
Answer: See reply to Number B.4.
13. **Question:** Can we use Ardex WA epoxy grout equal to Custom?
Answer: The Contractor can use an approved equivalent product.
14. **Question:** Are there any Allowances for the project? Specification 09 68 10 – Tile Carpeting refers you to Section 01020 – Allowances for the Carpet Allowance but this specification is not part of the specifications. Please clarify.
Answer: See reply to Number B.4.

15. **Question:** The signage specification 10 14 00 calls for a building plaque but there is not one shown on the drawings. Please clarify.
Answer: Building plaque has been omitted. Disregard specification.
16. **Question:** Refer the specification 10 26 00 – Wall Protection. The specifications call for wall protection and only corner guards are called out by Note 5 on drawing A2.0. Please clarify that only corner guards are required at new drywall partitions.
Answer: Contractor shall provide corner guards at all existing and new drywall partitions.
17. **Question:** Refer to specification 10 26 13 – Protective Covers. Is this specification provided to only address the existing canopy repairs at the demolition area?
Answer: Disregard Section 102613 Protective Covers.
18. **Question:** Specification 07 40 00 – Single Ply Roofing appears in the specifications but not in the Table of Contents. Please confirm this specification is not used.
Answer: See reply to Number B.2.

C. ARCHITECTURAL DRAWINGS

1. **Question:** Sheet A1.4 Legend shows “Chandler per Allowance” Please provide?
Answer: See reply to Number B.4.
2. **Question:** Sheet A2.0 General note 9 refers to storefront door hardware shall be provided by contractor does it mean G.C. of storefront sub?
Answer: Through the Agreement the Owner will engage the services of a General Contractor to provide all of the materials, equipment, tools and labor as necessary and reasonably inferable to complete the work of the Project. The General Contractor shall be responsible for all construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the work, including all subcontractors.
3. **Question:** Sheet A2.1 Door types “E & F” refers to “Aluminum frame model TA-28” finish shall be elite series, is there a spec on this?
Answer: Sheet A2.1 specifies Timely Prefinished Steel Door Frames model TA-28 finish elite series. Contractor shall provide this product or approved equivalent product.
4. **Question:** Sheet A2.3 shows “provide stair nosings Typical” and porcelain stair treads, risers, and landing. Is there a spec on these?
Answer: Stair nosing shall be Schluter System Stair Nosing Color: TREP-FL-FL-110EB Stainless Steel Brushed or approved equivalent product.

5. **Question:** Sheet A3.1 Note 12 Base bid shows to be “synthetic slate roofing” we need spec on this?
Answer: See attached Slate Roofing Specification 07 32 00.
6. **Question:** Sheet A3.2 Shows cast stone and EIFS. Please provide specs on these?
Answer: See attached Cast Stone Specification 047300. See enclosed Exterior Insulation and Finish System Specification Section 07 24 00.
7. **Question:** Sheet A3.2 We need size of “Aluminum signage letters” @ detail 2 and as it relates to specification section 101400?
Answer: Aluminum signage letters shall be 12” tall.
8. **Question:** Sheet A4.1 detail 4 etc. shows $\frac{3}{4}$ “thick granite. Is there a spec on this?
Answer: Disregard all references to Granite. Contractor shall provide Wilsonart Quartz Ascent Q4029, or approved equivalent product, in lieu of Granite.
9. **Question:** Sheets A4.1, A4.2, A4.4 & A4.6 details shows single ply roofing previously addressed item 2B in this letter?
Answer: See reply to Number B.2.
10. **Question:** Sheet A5.3 details shows Quartz countertops & splash. Is there a spec on these?
Answer: The Quartz Countertops & Splash are specified on the drawings.
11. **Question:** Sheet A6.1 detail 1 shows prefabricated stair by pacific stair corporation which may differ per section 05500. Please advise with spec if necessary?
Answer: See attached Prefabricated Stair Specification Section 05 51 00.
12. **Question:** Sheet A6.3 detail 1 shows fixed aluminum ladder by precision ladders? Is there a spec on this?
Answer: See attached Metal Stair and Ladder Specification Section 05 51 00.
13. **Question:** Sheet A7.1 Alternate No. 2 shows the architectural asphalt shingles to have 50 year no dollar limit warranty. Is this realistic? Need spec.
Answer: See attached Asphalt Shingles Specification Section 07 31 00.
14. **Question:** Drawing A3.6 is referenced on drawing A1.2 but is not shown on the drawing schedule nor is it included in the drawing packet. Please advise.
Answer: Drawing A3.6 was omitted, disregard all references to drawing A3.6.
15. **Question:** Refer to detail 6/A4.2. There is Tyvek Commercial Wrap scheduled over the exterior grade plywood at the high portion of the wall but there is no mention of Tyvek over the DensGlass sheathing behind the EIFS. Also, the

specification 07 27 20 is Fluid Applied Waterproofing. Please check and clarify the extent and type of waterproofing required at all areas of the new addition.

Answer: Exterior grade plywood shall receive Tyvek Commercial Wrap or approved equivalent product. Tyvek Commercial Wrap is not required at EIFS.

16. **Question:** Please provide a detail of the new elevator sump pit as called out on 5/P-2.
Answer: See detail attached Detail P2a of Elevator Sump Pump.
17. **Question:** Door 38A is called out as a Timely Frame on the Door Schedule but also called out Type K which is an aluminum frame. Please check and revise.
Answer: Door 38A shall be per the door elevation on sheet A2.1 Type K.
18. **Question:** Door 31 & 32 are scheduled as Type G and called out for a new door in the existing frame; however, the Remarks column in the Door Schedule calls out “new door and new frame in existing wall”. Please clarify that only new doors are to be installed in the existing frames so as not to disturb the stain glass transom windows.
Answer: Door 31 & 32 shall be per the door elevation on sheet A2.1 Type G.
19. **Question:** Refer to 1/A4.4 & 2/A4.2. There are granite sills scheduled at the Light Cove and was just wondering why granite is being used this high up on the wall and cannot be seen from the floor. Please clarify.
Answer: See reply to Number C.8.
20. **Question:** Refer to 2/A4.2. I don’t see where the LED light fixture in the Light Cove is scheduled on the Lighting drawings E-2.1. And the Lighting Plan on E-2.1 shows a fixture or outline of a fixture over the Monumental stair that doesn’t match the reflected ceiling plan. Please clarify.
Answer: Cove lighting is required. See enclosed E2.1a for details. Cove lighting shall be Type M fixture to lighting fixture schedule: Moda Light ELV Moda Cove Light #MCI-SO-SI-S4H4-4000K; LED 277V, or approved equivalent. Contractor shall determine quantity and length (4 ft and 1 ft) of fixtures based on the full length of lighting cove perimeter and provide jumper cables where needed.
21. **Question:** Refer to drawing A1.4. There is a “Chandler Per Allowance” called out in the Legend and refers you to the ceiling plan for location. However, the Lighting Plan on E-2.1 schedules these as D fixtures. Please clarify.
Answer: See reply to Number B.4.
22. **Question:** Refer to drawing A1.1. The Legend calls out for all metal studs but they should be wood studs on the first floor to support the floor joists and decking of the 2nd floor per the structural drawings. The line quality on my drawings is not very clear so it’s hard to determine wood studs from metal studs. Please clarify the stud types at all locations of the 1st and 2nd floors.
Answer: The Contractor shall use wood studs per sheet S2.1 for the bearing walls and the 2nd floor framing.

23. **Question:** Refer to drawing A7.1. There is metal deck called out at the Ruby Fuller roof areas where the new modified bitumen roof is scheduled. Please check and revise.
Answer: The new modified bitumen roof on both towers will be installed on exiting wood deck.
24. **Question:** Refer to drawing A3.2 ALT. There are cast stone medallions called out at the brick pilasters. There are no sections or details shown on the drawings. Please clarify.
Answer: Cast Stone Medallions shall be min. 2" thick. Contractor shall provide joints at 24" O.C. min. Cast Stone Medallions shall be recessed into brick pilasters min. 3/8". See enclosed revision to sheet A8.2 detail 21 for details.
25. **Question:** Refer to detail 1&2/S2.2. The sections call out the F.F. of the new addition to be 100'-6 1/2" and matching the existing foundation. However, on drawing C2 the F.F. elevation of the Fuller Building is called out at 99.06. Also, 1/A3.5 shows the cross section at the building and the raised floor to be 1'-5". Please check and clarify.
Answer: The finished floor elevation in the existing building varies. The finished floor elevation of the new addition will match the elevation of the existing building at the interface on the East side as shown on the drawings.
26. **Question:** Refer to 2/A4.2. Please clarify what the step condition is on the face of the Light Cove. It appears to be accent detail of 5/8" drywall.
Answer: The light cove sill shall be Wilsonart Quartz Ascent Q4029 in lieu of Granite and transition to 5/8" gypsum board.
27. **Question:** Please provide an elevation showing the accent wall colors scheduled in Room 231 per the Remarks column.
Answer: See enclosed revision to Sheet A2.6, Elevation 6.
28. **Question:** Refer to drawing A3.1. There is a Note that says the existing windows and stain glass windows will be refurbished. Please clarify the extent of this work.
Answer: The existing stain glass windows shall be protected during the construction. A new protective glazing screen shall be installed on the exterior of the stain glass window. The stain glass joints appear to be in good condition and no soldering will be required unless damage occurs during the construction.
29. **Question:** Refer to drawing A3.1. Please clarify Note 3 that calls out for stainless heli ties in the stair guard rails.
Answer: The Contractor shall install Stainless Steel Helical Stitch Ties at cracks of the existing exterior stair guard walls.

30. **Question:** Refer to drawing A3.1. Please provide the product data for the cementitious product called out by Note 7.
Answer: The Contractor shall patch spalled surface at the front entrance steps with a polymer modified concrete resurfacing material such as Five Star MP Epoxy Patch or approved equivalent.
31. **Question:** Refer to drawing A3.1 Please provide details and specifications for the storm window frames and glass called out by Note 10.
Answer: The storm windows shall be protective glazing screens and shall be anodized aluminum with insulated glass. The glazing system shall be self-contained with their own framework and not screwed directly to the existing frame. Mullions shall be held to the minimum dimensions in accordance with Texas Department of Insurance and Texas Windstorm requirements. The interior mullions shall be spaced in line with the existing stain glass mullions.
32. **Question:** Refer to the HVAC Platform Plan on drawing S2.5. There appears to be a plywood landing platform (decking) around the hatch to access the AHU's but it's not continuous the full area of the platform. It seems like the entire platform should be decked for access to the units. Am I looking at this correctly?
Answer: Provide decking for entire platform.

D. CIVIL DRAWINGS

1. **Question:** Sheet C1.1 Legend shows “crape myrtle- red rocket”, but none are shown. Please advise?
Answer: Provide landscaping per sheet C1.1. There are 4 Crape Myrtle – Red Rockets to be located at the west elevation of the building.
2. **Question:** Sheet C1.3 details shows steel gates. Is there a spec on these?
Answer: See attached Fences and Gates Specification Section 32 31 00.
3. **Question:** Sheet C1.3 details shows steel gates. Is there a spec on these?
Answer: See attached Fences and Gates Specification Section 32 31 00.
4. **Question:** Please clarify the limits of the silt fence required around the project.
Answer: The Contractor shall provide a silt fence around the perimeter of the construction site per SWPPP and City of Port Arthur guidelines. The Contractor shall be responsible for installation and maintenance of the SWPPP system as well as any permits of fees.
5. **Question:** Please clarify the contractor staging and parking areas.
Answer: Once contractor is selected an approve a site logistics plan will be approved.
6. **Question:** There is no Fire Lane striping shown at the new driveway and parking areas. Please clarify.
Answer: Fire lane striping is not required.

7. **Question:** There are no Landscaping specifications. Please clarify that only Sod and Crepe Myrtles are required per drawing C1.1 and no irrigation system.
Answer: Landscaping shall be per drawing C1.1. No irrigation system is required.
8. **Question:** Refer to Note 7 on drawing C1.0. Please clarify the limits of the damaged portion of existing drive, parking and sidewalk to be repaired.
Answer: The Owner and Contractor shall document existing conditions of the site prior to the commencement of work. The Contractor is responsible for protecting existing drives, parking and sidewalks that are shown to remain. Any damage to the existing drive, parking and sidewalk caused by the performance of the work shall be repaired by the Contractor at their sole cost.
9. **Question:** Please clarify that both mechanical yards get crushed rock per 3/C1.3. The north mechanical yard is shaded to appear it is concrete on drawing C1.1 and A2.3.
Answer: The Contractor shall provide crushed rock at both mechanical courtyards. Provide a concrete pad at all condensing units. Concrete Pad shall be per detail 6 on sheet C1.2 and extend a minimum of 3" pass the outer edge of the condensing unit.
10. **Question:** Please provide a site utility plan showing the existing utilities and tie-in points. Drawing P-1 shows continuation of the Fire Line, Gas and Water but there is no way to determine the extent of the lines. Also, the 4" empty conduit called out by Note 8 on E-1 does not show it's tie-in point.
Answer: See Sheet C1.1 Revision 1 for continuation of the sanitary sewer, fire water and domestic water line to utility mains as well as the location of the existing natural gas meter. Also, per Note 8 on Drawing E-1, the 4" conduit tie-in location shall be coordinated with the Owner.

E. MECHANICAL, ELECTRICAL, PLUMBING (MEP) DRAWINGS

1. **Question:** Will Sq. D Company be approved as a manufacturer?
Answer: Yes, if equipment is equivalent to the electrical gear specified and scheduled on the drawings.
2. **Question:** Will the fixture over the upstairs coffee bar be a type "L"?
Answer: Yes, wire to circuit P2-29 with moon ring fixtures.
3. **Question:** Note on sheet E2.1 at Meeting Hall indicates all fixtures to be type "C", there are some "CE" indicated on the drawing. Please clarify.
Answer: Fixture are to be "C" and "CE" as shown on the drawings. The "CE" fixtures are schedule to have battery packs.

4. **Question:** There are no light fixture or control specifications will there be any issued?
Answer: There are no lighting controls specification required. The lighting fixtures are only scheduled on the drawings, Sheet E-2.1, no Project Manual Specifications.
5. **Question:** The Firm Alarm is in the Electrical Specifications. Will this change to Stand-alone specifications?
Answer: Provide fire alarm system as specified in Section 26 31 00 Fire Alarm and Smoke Detection System.

F. ADDITIONAL MEP NOTES

1. Provide thermostat for AHU-5. Locate on the west wall of Conference Room 101 on column at 8/E.2.
2. Keyed note 7 on sheet M-1 applies at the 16” diameter gas flue on exterior wall of Mechanical Room 103.
3. Per Sheet M-2 Add general note U to read: Contractor shall provide ¼” scale shop drawings for review and approval before fabricating ductwork.
4. See Attachment M4a “Coil Piping 3-way “detail for reheat coils.
5. Provide duct detectors in AHU-5 in Mechanical 103.
6. The transformer referred to in Keynote 7 is located in the Mechanical Courtyard on the east side of the building.
7. At Keynote 8 on Sheet E-1, (4” empty conduit) change routing of conduit. Route 4” conduit to the south side of the building to the existing telecom vault near Lakeshore Drive, see Civil Sheet C1.1. Rise-up 4” conduit in corner of Storage 123 and run over head to I.T. Area 127. Provide pull string.
8. On Detail Platform the feeder from fixture HE shall connect to circuit DP2-27 with other light in this area. See sheet E-2.1. Also, at each AHU shown dashed provide duct detectors in supply and return air ducts.
9. Per Sheet E-2, add Keynote 2 to the light switch exiting building from Corridor 105.
10. In panel DP1 provide 1P/20 breaker in circuit 29 for 20-amp feeder for exterior lights.
11. In Men’s Restroom 234 and Women’s Restroom 233 the type S-1 plumbing fixtures shall be changed to type L-1 for lavatories.

Attachments:

- (01) Specification Section 04 73 00 - Cast Stone
- (02) Specification Section 05 51 00 - Metal Stairs and Ladders
- (03) Specification Section 05 51 00 - Prefabricated Steel Stair Systems
- (04) Specification Section 07 24 00 - Exterior Insulation and Finish System
- (05) Specification Section 07 31 00 - Asphalt Shingles
- (06) Specification Section 07 32 00 - Synthetic Slate Roofing
- (07) Specification Section 08 52 00 - Aluminum Frames for Stained Glass Window Covers
- (08) Specification Section 14 20 00 - Hydraulic Elevators Rev. 1
- (09) Specification Section 32 31 23 - Fences and Gates
- (10) Drawing C1.1 - Site Plan
- (11) Drawing A1.1 - First Floor Plan Rev. 1
- (12) Drawing A1.2 - Second Floor Plan Rev. 1
- (13) Drawing A2.0 - Room & Window Schedule
- (14) Drawing A2.6 - Interior Finish Elevations
- (15) Drawing A6.1 - Interior Elevations
- (16) Drawing A8.2 - Cast Stone Medallion Detail
- (17) Drawing S2.5 - HVAC Platform
- (18) Drawing M4a - Coil Piping 3-Way Valve
- (19) Drawing E2.1a - Cove Lighting
- (20) Drawing P2a - Elevator Sump Pump

- END OF ADDENDUM NO. 2 -

SECTION 04 73 00 – 1 – CAST STONE

PART 1 GENERAL

1. RELATED DOCUMENTS

Drawings, Technical Specifications, TSUS construction specifications Division 1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing building codes & city, state and county.

1.2 SECTION INCLUDES

- A. Mortared manufactured stone veneer and trim.
- B. Mortared manufactured brick veneer and trim.
- C. Mortarless manufactured stone veneer and trim. (ClipStone)

1.3 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 04 20 00 - Unit Masonry.
- C. Section 05 40 00 - Cold-Formed Metal Framing.
- D. Section 06 10 00 - Rough Carpentry.
- E. Section 06 16 36 - Wood Panel Product Sheathing.
- F. Section 07 10 00 - Dampproofing and Waterproofing.
- G. Section 07 60 00 - Flashing and Sheet Metal.
- H. Section 07 90 00 - Joint Protection.
- I. Section 10 30 00 - Fireplaces and Stoves.

1.4 REFERENCES

- A. American National Standards Institute (ANSI): ANSI A118.4 Specification for Latex-Portland Cement Mortar.
- B. ASTM International (ASTM):
 - 1. ASTM A641 - Standard Specification for Zinc-Coated. (Galvanized) Carbon Steel Wire.
 - 2. ASTM C 39 - Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 3. ASTM C 67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
 - 4. ASTM C 140 - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
 - 5. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
 - 6. ASTM C 150 - Standard Specification for Portland Cement.
 - 7. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.

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8. ASTM C 270 - Standard Specification for Mortar for Unit Masonry.
 9. ASTM C 348 - Standard test Method for Flexural Strength of Hydraulic-Cement Mortars.
 10. ASTM C 482 - Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement.
 11. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 12. ASTM C 778 - Standard Specification for Standard Sand.
 13. ASTM C 847 - Standard Specification for Metal Lath.
 14. ASTM C 932 - Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering.
 15. ASTM C 979 - Standard Specification for Pigments for Integrally Colored Concrete.
 16. ASTM C 1032 - Standard Specification for Woven Wire Plaster Base.
 17. ASTM C 1059 - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete.
 18. ASTM C 1262 Standard Test Method for Evaluating the Freeze Thaw Durability of Manufactured Concrete Masonry Units and Related Concrete Units.
 19. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 20. ASTM F 1667 - Standard Specification for Driven Fasteners, Nails, Spikes and Staples.
 21. ASTM D1761 - Mechanical Fasteners
 22. ASTM D 3498- Construction Adhesive
- C. Building Code Compliance: The International Association of Plumbing and Mechanical Officials (IAPMO).
- D. International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM):
1. RILEM Test No. II.4 - Water Absorption Under Low Pressure (Pipe Method).
- E. US Green Building Council's (USBGC) Leadership in Energy and Environmental Design (LEED).
- F. Masonry Veneer Manufacturers Association (MVMA).
- G. Underwriter's Laboratory (UL) 723 - Standard for Safety for Surface Burning Characteristics of Building Materials.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.
 4. Cleaning instructions and maintenance data.
- C. Shop Drawings: Indicate layout, show profiles and product components, including but not limited to anchorage, accessories, finish colors, patterns, textures, edge conditions and relationships with adjacent construction or surfaces.
- D. Qualification Data: Safety and quality documentation for manufacturer and installer.

- E. Test Reports: Certified test reports indicating compliance with specified performance requirements and conformance with specified physical properties.
- F. Evaluation Reports: For metal lath with paper backing in lieu of weather resistive barrier.
- G. Certificates: IAPMO - ER-386.
- H. Certificates: IAPMO - ER-383.
- I. LEED Submittals: Manufacturer's certification for regional materials and recycled content.
- J. Pre-Installation Conference: Minutes of pre-installation conference.
- K. Warranty Documentation: Product and installation warranties.
- L. Verification Samples: For each product specified, two sample boards, representing colors, patterns, textures, finishes and mortar to be installed.

1.6 QUALITY ASSURANCE

- A. IAMPO Certification: Environmental Stonework' current IAMPO report - ER-383/386, including AC- 51 testing data.
- B. Single Source Responsibility: Obtain primary manufactured stone/brick veneer and trim from a single manufacturer to the greatest extent possible. Provide secondary materials only of type and from source recommended by manufacturer of primary materials.
- C. Manufacturer Qualifications: IAMPO certification and in good standing with the MVMA.
 - 1. Shall have a minimum of 30 years experience in producing manufactured stone veneer.
 - 2. Shall provide documentation that they have completed at least 10 projects of similar size and complexity if requested.
 - 3. Provides field service representative.
- D. Installer Qualifications:
 - 1. Shall have a minimum of 5 years experience installing manufactured stone veneer.
 - 2. Has documented installation procedures and field quality control program.
 - 3. Provides OSHA 10/30 Hour trained project management.
 - 4. Capable of providing extensive jobsite safety programs including scaffold safety, fall protection and personal protective equipment.
- E. Product Compatibility Documentation: Manufacturers of products and systems certify in writing that products are compatible.

1.7 SEQUENCING AND SCHEDULING

- A. Conference: Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.
- B. Pre-Installation Conference: Convene not less than 30 days prior to work. Attendees to include Contractor, Architect, manufacturer's representative.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards; in manufacturer's unopened packaging with identification labels intact until ready for installation. Protect from damage.

1.10 WARRANTY

- A. Manufacturer's standard limited warranty for materials and workmanship.
 - 1. Warranty Period for Installation: 1 year.
 - 2. Warranty Period for Manufactured Product: 50 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Environmental StoneWorks
- B. Architectural Cast Stone.

2.2 MANUFACTURED STONE/BRICK VENEER AND TRIM

- A. Product: Manufactured stone and brick as manufactured by Environmental Stoneworks.
- B. Manufactured Stone and Brick Veneer Properties:
 - 1. Stone Thickness: 1-1/8 inches (28.5 mm) to 2-1/2 inches (63.5 mm).
 - 2. Thin Brick Size: 5/8 inches (16 mm) to 1 inch (25.4 mm) thick; 2-1/2 inches (63.5 mm) wide by 8 inch (203 mm) length.
 - 3. Weight: Maximum of 15 lbs/ft² (73 kg/m²).
 - 4. Density: As determined by ASTM C 567.
 - 5. Compressive Strength: Minimum of 1,800 PSI (12.4 Mpa) when tested in accordance with ATSM C 192.
 - 6. Water Absorption: Less than 18 percent when tested in accordance with ASTM C140 or UBC standard 15-5.
 - 7. Freeze-Thaw: Less than 3 percent mass loss when tested in accordance with ASTM C 67.
 - 8. Shear Bond Strength: Minimum of 50 PSI (0.345 MPa) when conducted in accordance with ASTM C 482.
 - 9. Thermal Resistance: R-value greater than or equal to 0.865 when tested at a thickness of 1.0 inch (25.4 mm) in accordance with ASTM C 518.
 - 10. Smoke and Fuel Contribution: UL listed 0/0.
 - 11. Flexural Strength: Tested in accordance with ASTM C 348, Section 4.4.
 - 12. Tensile Strength: Tested in accordance with ASTM C 190, Section 4.5.
 - 13. Weather Resistance: Mix design proven by test results to be resistant to degradation by weather.
- C. Architectural Trim:
 - 1. Products: Single source from Environmental StoneWorks.

2. Wall Capstones:
 - a. Texture: As selected by Architect from manufacturer's full range.
 - b. Color: As selected by Architect from manufacturer's full range.
 - c. Size: As selected by Architect from manufacturer's full range.
 3. Pier Capstones:
 - a. Texture: Chiseled.
 - b. Color: As selected by Architect from manufacturer's full range.
 - c. Size: As selected by Architect from manufacturer's full range.
 4. Watertable/sill:
 - a. Color: As selected by Architect from manufacturer's full range.
 - b. Size: As selected from manufactured full range.
 - c. Provide sloped top surface and drip edge.
 5. Light Fixture Stones:
 - a. Color: As selected by Architect from manufacturer's full range.
 - b. Size: As necessary for light fixture indicated.
 - c. UL approved metal extension box may be provided.
 6. Receptacle Stones:
 - a. Color: As selected by Architect from manufacturer's full range.
 - b. Size: As necessary for light electrical outlet.
 - c. UL approved metal extension box may be provided.
- D. Weather Resistant Barrier: In compliance with ASTM D 226.
1. Description: 2 layers of No. 15 non-perforated asphalt-saturated organic felt paper.
 2. Description: 1 layer of No. 15 non-perforated asphalt-saturated organic felt paper and a house-wrap product supported by a current evaluation report showing equivalency to Grade D building paper.
- E. Reinforcing (Lath):
1. Materials: Corrosion resistant, minimum 2.5 lbs per square yard (1.36 kg/m²) expanded metal lath in compliance with ASTM C 847.
 2. Materials: Corrosion resistant, minimum 18 gauge woven wire mesh that complies with ASTM C 1032.
 3. Materials: Corrosion resistant, minimum 3.4 lbs per square yard (1.84 kg/m²) expanded metal lath, 3/8 inch (9.5 mm) thick, with paper backing on lath meeting the requirements of ASTM D 226.
- F. Fasteners: Galvanized steel fasteners.
1. For Wood Stud Applications:
 - a. Nails: 11 gage nails having a 7/16 inch (11 mm) head, minimum of 1-1/2 inches (38 mm) long.
 - b. Staples: 7/8 inch long (22 mm), 16 gauge staples.
 2. For Metal Stud Applications:
 - a. Screws: Corrosion resistant screws with 7/16 inch (11 mm) head and of sufficient length to penetrate metal stud a minimum of 3/8 inch (9.5 mm).
- G. Weep Screed: Corrosion resistant, minimum 0.019 inch (0.5 mm with a minimum vertical attachment of 3-1/2 inches (89 mm)).
1. Holes: Minimum diameter of 3/16 inch (4.75 mm), spaced at a maximum of 33 inches (838 mm) on center.
 2. Attachment Flange: Minimum of 3-1/2 inches (89 mm).
 3. Materials: Plastic fabrication.
 4. Materials: Vinyl fabrication.

- H. Mortar: Mixed with potable water clean and free from injurious amounts of oils, acids, alkalis, salts, organic minerals or other deleterious substances.

2.3 MORTARLESS MANUFACTURED STONE VENEER AND TRIM

- A. Product: ClipStone as manufactured by Environmental Stoneworks.
- B. Manufactured Stone Veneer Properties:
 - 1. Stone Thickness: 1-1/8 inches (28.5 mm) to 2-1/2 inches (63.5 mm).
 - 2. Stone Width: 11-1/8 inches (28.5 mm) to 3-1/2 inches (89 mm).
 - 3. Stone Length: 6 inches (152 mm) to 19 inches (483 mm).
 - 4. Weight: Maximum of 15 lbs/ft² (73 kg/m²).
 - 5. Density: As determined by ASTM C 567.
 - 6. Compressive Strength: Minimum of 1,800 PSI (12.4 Mpa) when tested in accordance with ATSM C 192.
 - 7. Water Absorption: Less than 18 percent when tested in accordance with ASTM C140 or UBC standard 15-5.
 - 8. Freeze-Thaw: Less than 3 percent mass loss when tested in accordance with ASTM C 67.
 - 9. Shear Bond Strength: Minimum of 50 PSI (0.345 MPa) when conducted in accordance with ASTM C 482.
 - 10. Thermal Resistance: R-value greater than or equal to 0.865 when tested at a thickness of 1.0 inch (25.4 mm) in accordance with ASTM C 518.
 - 11. Smoke and Fuel Contribution: UL listed 0/0.
 - 12. Flexural Strength: Tested in accordance with ASTM C 348, Section 4.4.
 - 13. Tensile Strength: Tested in accordance with ASTM C 190, Section 4.5.
 - 14. Weather Resistance: Mix design proven by test results to be resistant to degradation by weather.
- C. Architectural Trim:
 - 1. Water Table/Sill: Provide sloped top surface and drip edge. Color and size as selected from manufacturer's full range.
- D. Weather Resistant Barrier: In compliance with ASTM D 226.
 - 1. Description: 2 layers of No. 15 non-perforated asphalt-saturated organic felt paper.
 - 2. Description: 1 layer of No. 15 non-perforated asphalt-saturated organic felt paper and a house-wrap product supported by a current evaluation report showing equivalency to Grade D building paper.
- E. Fasteners: #8 stainless steel or zinc plated Phillips head screws 1-1/4 inches (32 mm) long.
- F. Starter Strip: Foundation Starter Strip shall be G60 coated hot-dipped galvanized and a minimum 0.012 inch (0.3 mm) (No. 28 gauge material) with a minimum vertical attachment of 3-1/2 inches (89 mm). Starter Strip should have weep holes with a minimum diameter of 3/16 inch (4.8 mm) spaced at a maximum of 12 inches (304 mm) on center.

PART 3 EXECUTION

3.1 PREPARATION

- A. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

- B. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Commencement of installation constitutes acceptance of conditions.

3.2 MORTARED STONE/BRICK VENEER INSTALLATION

- A. Install in accordance with manufacturer's written instructions and recommendations, including the following.
 - 1. Corners: Install pre-manufactured corner units. Field built corners are not permitted.
 - 2. Weather Resistant Barrier:
 - a. Install weather resistive barrier in accordance with weather resistive barrier manufacturer's instructions over all exterior surfaces designated to receive stone veneer.
 - b. Apply weather resistive barrier horizontally with the upper layer lapped over the lower layer at not less than 2 inches (51 mm).
 - c. Lap weather-resistive barrier not less than 6 inches (152 mm) at the vertical joints.
 - d. In the case of applications with two layers, start with two horizontal layers at the bottom of exterior wall or structure.
 - 3. Reinforcing (Lath):
 - a. Lap lath not less than 2 inches (51 mm) around vertically and horizontally.
 - b. Terminate lath a minimum of 2 inches (51 mm) on the foundation and flange of the weep screed or as directed by project specifications and or local building codes.
 - c. Install metal lath with the small cups pointing upward to better capture mortar scratch coat.
 - 4. Fasteners:
 - a. In the case of rigid sheathing, avoid excessive fasteners applied between wall framing. In the case of exterior gypsum sheathing (e.g. DensGlass), fasteners shall only be attached into wall framing unless additional fasteners are approved by the design professional.
 - b. Wood Stud Applications:
 - 1) Penetration Depth: Fasteners shall penetrate stud a minimum depth of 3/4 inch (19 mm). Refer to governing building code for information on specific fastener penetration depth.
 - 2) Spacing: Maximum of 6 inches (152 mm) vertically and 16 inches (406 mm) horizontally.
 - c. Metal Stud Applications:
 - 1) Penetration Depth: Screws shall penetrate stud a minimum depth of 3/8 inch (9.5 mm). Refer to governing building code for information on specific fastener penetration depth.
 - 5. Weep Screed: Integrate with weather resistive barrier and metal lath
 - a. Attachment Flanges: Minimum of 3-1/2 inches (89 mm) at or below the foundation plate line on exterior walls in accordance with ASTM C 926. The exterior lath shall cover and terminate on the attachment flange of the weep screed.
 - b. Do not cover weep holes during installation.
 - 6. Clearances:
 - a. Weep Screed and Stone above Finished Grade: Terminates a minimum of 4 inches (102 mm) or per local code and building practices.

- b. Weep Screed and Stone above Paved Surfaces: Terminates a minimum of 2 inches (51 mm) or as per local code.
 - c. Weep Screed And Stone above Paved Walking Surface Supported By Same Foundation Supporting The Wall: Terminates a minimum of 1/2 inch (13 mm) or as per local code.
7. Mortar: Mix with potable water clean and free from injurious amounts of oils, acids, alkalis, salts, organic minerals or other deleterious substances.

3.3 MORTARLESS STONE VENEER INSTALLATION

- A. Install in accordance with manufacturer's written instructions and recommendations, including the following.
- 1. Fasteners shall penetrate the OSB a minimum of 3/4 inch (19 mm). There shall be a minimum of 2 (two) screws per stone, for units over 16 inches (406 mm).
 - 2. Starter Strip: Integrate with weather resistive barrier.
 - a. Attachment Flanges: Minimum of 3-1/2 inches (89 mm) at or below the foundation plate line on exterior walls in accordance with ASTM C 926.
 - b. Do not cover weep holes during installation.
 - 3. Clearances:
 - a. Starter Strip and Stone above Finished Grade: Terminates a minimum of 4 inches (102 mm) or per local code and building practices.
 - b. Starter Strip and Stone above Paved Surfaces: Terminates a minimum of 2 inches (51 mm) or as per local code.
 - c. Starter Strip And Stone above Paved Walking Surface Supported By Same Foundation Supporting The Wall: Terminates a minimum of 1/2 inch (13 mm) or as per local code.

3.4 CLEANING AND PROTECTION

- A. Cleaning: Clean stone veneer in accordance with manufacturer's written instructions and recommendations.
- B. Protection:
- 1. Protect in-progress and finished work from rain for 48 hours following installation.
 - 2. Protect finished work from damage until the date of Substantial Completion. Repair damaged components.

END OF SECTION

SECTION 05 51 00 – METAL STAIRS AND LADDERS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

Drawings, Technical specifications, TSUS construction specifications Division1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing codes and city, state and county.

1.1 SECTION INCLUDES

- A. Aluminum fixed vertical ladders.

1.2 RELATED SECTIONS

- A. Section 05 12 13 - Architecturally-Exposed Structural Steel Framing.
- B. Section 05 55 00 - Metal Stair Treads and Nosings.
- C. Section 06 10 00 - Rough Carpentry.
- D. Section 05 12 13 - Architecturally-Exposed Structural Steel Framing.
- E. Section 07 42 00 - Wall Panels.
- F. Section 08 31 13 - Access Doors and Frames.
- G. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

- A. ANSI A14.3: Ladders - Fixed - Safety Requirements.
- B. ANSI A14.9: Safety Requirements for Ceiling Mounted Disappearing Climbing Systems.
- C. OSHA 1910.23: Ladders.
- D. OSHA 1910.25: Stairways.
- E. OSHA 1910.28: Duty to have fall protection and falling object protection.
- F. OSHA 1910.29: Fall protection systems and falling object protection-criteria and practices.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings for Stairs:
 - 1. Plan and section of stair installation.

2. Indicate rough opening dimensions for ceiling and/or roof openings.
- D. Shop Drawings for Ladders:
1. Plan and section of ladder installation.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 year experience installing similar products.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Finish areas designated by Architect.
 2. Do not proceed with remaining work until workmanship is approved by Architect.
 3. Rebuild mock-up area as required to produce acceptable work.

1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Store products in manufacturer's unopened packaging until ready for installation. Store stairway until installation inside under cover. If stored outside, under a tarp or suitable cover.
- C. Handle materials to avoid damage.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions including temperature, humidity, and ventilation within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.10 WARRANTY

- A. Limited Warranty: Provide manufacturer's standard limited five year warranty against defective material and workmanship, covering parts only, no labor or freight. Defective parts, if deemed so by the manufacturer, will be replaced at no charge, freight excluded, upon inspection at manufacturer's plant which warrants same.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Precision Ladders, LLC.
- B. Global Industrial.
- C. Gilmore – Kramer Company
- D. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 ALUMINUM ALTERNATING TREAD STAIRS

- A. Aluminum Alternating Tread Stair and Components: Ladder, mounting brackets and handrails on both sides.
 - 1. Model: Model AT Aluminum Alternating Stair Ladder as per manufacturer.
 - 2. Capacity: Unit shall support a 1000 lb (227 Kg) total load without failure,
 - 3. Performance Standard: Units shall be designed and manufactured to meet or exceed OSHA 1910.25.
 - 4. Stair Side Stringers: 3 inch by 2 inch by 1/8 inch (76 mm by 51 mm by 3 mm) extruded 6005-T5 aluminum tubing.
 - a. Pitch: 56 degrees.
 - b. Pitch: 68 degrees.
 - 5. Stair Center Stringer: 10 inch by 1/4 inch (254 mm by 6 mm) extruded 6005-T5 aluminum flat bar. Neoprene trim adhered to front edge of center stringer to protect climber.
 - 6. Stair Treads: 1 inch aluminum bar grating,
 - a. Hatch Access Models: 9-13/16 inch (249 mm) deep by 9-7/8 inch (250 mm) wide.
 - b. Walk-Thru Models: 9-13/16 inch (249 mm) deep by 11-7/8 inch (302 mm) wide.
 - 7. Stair Mounting Brackets: 6 x 1/4 inch (153 x 6 mm) aluminum flat bar.
 - 8. Handrails: 1-1/4 inches (32 mm) Schedule 40, 6005-T5 aluminum pipe provided with internal aluminum fittings.
 - 9. Finish: Mill finish.
 - 10. Finish: Powder coated.
 - 11. Finish: Clear anodized.

2.3 ALUMINUM FIXED VERTICAL LADDERS

- A. Aluminum Fixed Vertical Ladder and Components: Ladder, cage, rest platforms, floor mounting brackets, security doors, walk-thru, and side rails.
 - 1. Aluminum Fixed Vertical Ladder as per manufacturer.
 - 2. Capacity: Unit shall support a 1500 lb (680 Kg) loading without failure, and individual treads shall withstand a 3,000 lb (1361 Kg) loading without failure.
 - 3. Performance Standard: Units shall be designed and manufactured to meet or exceed ANSI A14.3 and OSHA 1910.23, 1910.28, & 1910.29.
- B. Components:
 - 1. Ladder Stringer: 2-1/2 inch by 1-1/16 inch by 1/8 inch (64 mm by 27 mm by 3 mm) extruded 6005-T5 aluminum channel. Pitch: 90 degrees.
 - 2. Ladder Tread: 2-1/4 inch by 3/4 inch by 1/4 inch (57 mm by 19 mm by 6 mm) extruded 6005-T5 aluminum with deeply serrated top surface.
 - 3. Ladder Mounting Bracket: 8-1/2 inch by 2 inch by 3 inch by 1/4 inch thick (216 mm by 51 mm by 76 mm by 6 mm) aluminum angle.
 - 4. Walk-Thru:

- a. Hand Rails: 1-1/4 inch (32 mm) aluminum square tube with rounded edges.
- b. Mounting Brackets: 4 inch by 4 inch by 1/4 inch (102 mm by 102 mm by 6 mm) aluminum.
- c. Side Rails: 42 inch (1067 mm) side rail extension for through ladder exits.
5. Safety Cage: Vertical and Horizontal Bars: 1/4 inch by 2 inch (6 mm by 51 mm) 6005-T5 aluminum flat bar.
6. Rest Platform:
 - a. Material: Bar grating.
 - b. Platform Size: 30 inches by 48 inches (762 mm by 1219 mm) standard.
 - c. Toe Boards. 6005 T-5 aluminum.
 - d. Handrails: 1-1/4 inches (32 mm) aluminum square tube 42 inches (1067 mm) high.
7. Security Door: 0.125 inch (3 mm) 3003-H14 aluminum panel 84 inches (2134 mm) tall with padlock provision.
8. Security Gate: Hinged gate at bottom of cage with padlock provision.
9. Fall Arrest System: Complete system with rail, sleeves, and harness to limit any fall to 6 inches (152 mm) maximum. Removeable Post for Hatch Access Ladders with Fall Arrest System. Harness by others.
10. Floor Brackets: Floor bracket at foot of each stringer, 3 by 2 by 1/4 inch (76 by 51 by 6 mm).
11. Finish: Mill finish (standard).
12. Finish: Powder coat.
13. Finish: Clear anodized.

2.4 FABRICATION

- A. Completely fabricate ladder ready for installation before shipment to the site.
- B. Completely fabricate handrail components ready for field assembly to ladder before shipment to site.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Examine materials upon arrival at site. Notify the carrier and manufacturer of any damage.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved submittals. Install in proper relationship with adjacent construction.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 05 51 00 – PRE-FABRICATED STEEL STAIR SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

Drawings, Technical specifications, TSUS construction specifications Division1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing codes and city, state and county.

1.2 SECTION INCLUDES

- A. Prefabricated design-build steel stairs and landings including the following:
 - 1. Standard stair and rail assemblies.
 - 2. Steel framed stairs with steel treads.
 - 3. Steel framed landings.
 - 4. Stair railings.
 - 5. Wall rails.

1.3 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 05 12 13 - Architecturally-Exposed Structural Steel Framing.
- C. Section 05 50 00 - Metal Fabrications.
- D. Section 09 90 00 - Painting and Coating.
- E. Section 09 21 16.33 - Gypsum Board Area Separation Wall Assemblies.

1.4 REFERENCES

- A. ADAAG - Americans with Disabilities Act.
- B. American Institute of Steel Construction (AISC): AISC Manual of Practice.
- C. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- D. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- E. ASTM International (ASTM):
 - 1. ASTM A6/A6M - Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes and Sheet Piling.
 - 2. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
 - 3. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - 4. ASTM A153/A153M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - 5. ASTM A307 - Standard Specification for Common Steel Bolts.
 - 6. ASTM A325/A325M - Standard Specification for Structural Bolts, Steel, Heat Treated.
 - 7. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and

8. Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 8. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
 9. ASTM A513 - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing.
 10. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
 11. ASTM A786 Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy and Alloy Steel Floor Plates.
 12. ASTM A1008 Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened and Bake harden able.
 13. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot Rolled, Carbon Structural, High-Strength Low Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
 14. ASTM A1044/A1044M - Standard Specification for Steel Stud Assemblies for Shear Reinforcement of Concrete.
 15. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings.
- F. American Welding Society (AWS):
1. AWS A2.4 - Standard Welding Symbols for Welding, Brazing, and Nondestructive Examination.
 2. AWS D1.1/D 1.1M - Structural Welding Code - Steel.
 3. AWS D1.3 - Structural Welding Code - Sheet Steel.
- G. Federal Specification RR-G-1602D - Grating, Metal, Other than Bar Type (Floor, Except for Naval Vessels).
- H. ICC International Building Code: Chapter 10: Means of Egress.
- I. International Code Council - International Building Code (IBC).
- J. National Association of Architectural Metal Manufacturers (NAAMM):
1. SSPC-SP3 Power Tool Cleaning.
 2. SSPC-SP2 Hand Tool Cleaning.
- K. National Ornamental and Miscellaneous Metals Association: Weld Finish Type(s).
- L. Steel Structures Painting Council (SSPC):
1. Paint 15 - Steel Joist Shop Primer.
 2. SP 2 - Hand Tool Cleaning.
- M. UL 1994 Luminous Egress Path Marking Systems.
- N. New York City Reference Standard for Photoluminescent Exit Path Markings:
1. RS6-1
 2. RS6-1A

1.5 DESIGN REQUIREMENTS

- A. Stair systems are designed and fabricated to support a uniform live load of 100 lb/sf (4.8 kN/sq.m) and a concentrated load of 300 lbf (1.33 kN) with a deflection of stringer or landing framing not to exceed L/240 or 1/4 inch (6 mm) whichever is less.

- B. Handrail and guardrail systems are designed and fabricated to the following specifications:
 - 1. Uniform load of 50 lbf/ft. (0.73 kN/m) applied in any direction.
 - 2. Concentrated load of 200 lbf (0.89 kN) Applied in any direction.
 - 3. Uniform and concentrated loads are not assumed to act concurrently.
- C. Infills of guards are designed to withstand a load of 50 lbf/ft. (0.73 kN/m) applied horizontally on an area of one square foot. Infill loads and other loads are not assumed to act concurrently.
- D. Seismic Performance Stair Systems: Stair systems shall be designed, tested and fabricated to resist seismic events in compliance with ASCE 7-02, Section 9.5.2.8, and IBC Section 1617.3 allowable story drift.
- E. Accessibility: Requirements: Comply with ADAAG and ANSI A117.1 in accordance with authority having jurisdiction.

1.6 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product data: Submit specified products as follows:
 - 1. Manufacturer's product data.
 - 2. Manufacturer's installation instructions.
- C. Shop Drawings: Indicate information on shop drawings as follows:
 - 1. Stair plans, elevations, details, methods of installation and anchoring.
 - a. Show members, sizes and thickness, anchorage locations and accessory items.
 - b. Furnish setting diagrams for anchorage installation as required.
 - c. Include calculations stamped by a structural engineer registered in the jurisdiction where the project the project is located.
- D. Samples: Submit as follows:
 - 1. Two samples of factory tread system 3 inches wide. "IF" tread specified is a manufacturer's System and not otherwise a common "Field Poured Concrete Pan or Common Checker / Smooth plate.
 - 2. If Photoluminescent Nosing is specified submit integral sample of complete nosing and tread system (3" wide) regardless of tread type.
- E. Submit manufacturer's Storage and Installation Instructions.
- F. Submit documentation verifying that components and materials specified in this section are from a single source manufacture approved by this specification.
- G. Qualification Statements: Submit Certificate that manufacturer is a Certified Fabricator with the American Institute of Steel Construction (AISC).

1.7 QUALITY ASSURANCE

- A. Manufacturer to have experience in the design, engineering and fabrication of products specified.
 - 1. American Institute of Steel Construction (AISC) Certified Fabricator, having a minimum of 10 years' experience manufacturing components similar to or exceeding requirements specified in scope of project.
 - 2. Having sufficient capacity to produce and deliver required materials without

- causing delay in work.
- 3. Installer: Acceptable and approved by Stair Manufacturer.

- B. Welding: Embedded weld connections to be welded by certified welders, and inspected by an independent testing laboratory.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Acceptance Requirements:
 - 1. Deliver material in accordance projects schedule and in accordance with manufacturer's instructions.
 - 2. Deliver materials in full truckload quantities in manufacturer's pre-bundled and banded lots with identification labels intact and in sizes to suit project hoisting equipment.
- B. Storage and Handling Requirements:
 - 1. Store materials on skids or appropriate planks so material is not in direct contact with the ground and at least 4" above grade. Ensure rain or snow runoff freely flows under material making no contact with product(s).
 - 2. Protect material from adverse conditions. If not stored under roof, tarp accordingly to keep material dry. Inspect material regularly to ensure water is not pooling in stair tread or landing pans, frames, railing, hardware or packaging, etc.
- C. Packaging Waste Management:
 - 1. Separate waste materials for refuse and recycling.
 - 2. Remove packaging materials from site and dispose of at appropriate facilities.
 - 3. Collect and separate for disposal paper, plastic, polystyrene, cardboard packing material in appropriate onsite bins for recycling.
 - 4. Fold metal and plastic banding; flatten and place in designated area for recycling.

1.9 PROJECT SITE CONDITIONS

- A. Field Measurements: Field verify floor to floor and horizontal dimensions of spaces where stairs will be installed prior to fabrication of stairs under this section.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Pacific Stair Corporation.
- B. American Stair Corporation, INC.

2.2 STANDARD STAIR AND RAIL ASSEMBLIES

- A. Standard Stair and Rail System:
 - 1. Manufacturer's standard prefabricated, pre-engineered straight run stair and landing system, consisting of hot rolled steel sheet risers, treads, landings and structural plate, channel or angle frames, stringers or connection devices with fasteners/supports and railings.
 - a. Stringers:
 - 1. Steel plate or channel with side mounted and/or top mounted railing frame attachment as detailed on drawings and/or in accordance with manufactures system recommendations.

2. Minimum thickness or weight as determined by structural design calculations, structural grade steel plate or channel.
2. Risers: Closed riser, minimum 14 gage (1.9mm) hot rolled mild steel sheet, sloped maximum 1-1/2 inches (38.1mm) and conforming to Americans with Disabilities Act (ADA) nosing requirements.
3. Treads: Manufacturer's standard tread system, 14 gage (1.9mm) minimum hot rolled mild steel sheet or as determined by structural design calculations. All welds on the underside of tread assemblies to be exposed for proper inspection during the service life and/or after seismic, fire, flood, or potentially damaging event. Provide treads as indicated and noted on drawings for each stair scheduled.
4. Landings: A combination of structural plate, channel and angles for the frame with 1-1/2 inches B-36 Composite Floor Decking x 20 gage and 10 gage (minimum) bent sheet lateral pour stops. Decking to be attached to frame by plug welding or other mechanical means provided recommended and engineered by the stair manufacturer.
 - a. Flight and landing assemblies fabricated by the stair manufacturer shall be connected by splined "Twist-Off" tension control bolts, grade to be A325 & A490 as engineered and specified by the stair manufacturer.
 - b. All pre-tensioning methods are to be conformant to the AISC Steel Construction Manual, Chapter 16; Section #3 Bolted Parts. Subsection 3.2.1 "pre-tensioned joints and related sections noted thereafter".
5. Additional Fastener and Supports: Sized by the manufacturer to meet structural design criteria. If hanger rod connections are applicable to any of the landing connections, they shall be threaded rod type, size and grade as determined by stair manufacturer's structural design calculations.
6. Railings: Design style as shown on drawings for each stair, selected from manufacturer's standard pre-fabricated, pre-engineered rail styles.
7. Stringer Rail Mounting:
 - a. Structural Plate Stringer: Railings to be Side Mounted. Rail Frame: In-Line or Side assembly, see drawings.
 - b. Structural Channel: Railing to be Top Mounted to channel flange or Side Mounted with railing post knife-blade steel plate connection extender to be received inside the channel flanges below the top flange. Rail Frame: In-Line or Side Assembly.
8. Materials:
 - a. Steel Shapes and Plates: To ASTM A36.
 - b. Steel Pipe: To ASTM A53 Type E or S, Grade B.
 - c. Steel Tubing:
 1. Structural Use: To ASTM A500, Grade B or C.
 2. Non-Structural Use: To ASTM A513, hot rolled or coiled rolled (mill option).
 - d. Steel Sheet:
 1. Structural Use: To ASTM A1011 (hot rolled), Checker Plate ASTM A786.
 2. Non-Structural Use: To ASTM A786, ASTM A1008.
 - e. Fasteners: As recommended by manufacturer.
 - f. Welding Rods: In accordance with AWS code and AWS filler metal specifications.
9. Fabrication:
 - a. Use same material finish as parts being joined. Use stainless steel between dissimilar metals and non-corrosive fasteners at exterior connections or joints.
 - b. Provide fasteners of sufficient strength to support connected members

- and loads, and to develop full strength of parts fastened or connected.
- c. Construct stair and rails with all components necessary for support and anchorage, and for a complete installation.
10. Finishes:
- a. Rails, flights, landings and other stair components: Remove oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint or other foreign matter from steel surface in accordance with SSPC-SP2 and/or SSPC-SP3.
 - b. Shop Primer: Immediately after fabrication and cleaning, spray apply primer to dry film thickness recommended by the primer manufacturer, but not less than 2.0 mil thickness. Apply one coat High Solids Red Oxide Anticorrosive Primer meeting SSPC-15 Paint.
 - c. Post Delivery: Primer coating offers minimal protection against rust and corrosion during transport and while stored at project site. Proper handling and care before during and after installation shall be taken to maintain effectiveness of primer coating prior to receiving final coats of finish paint.
- B. Stair assemblies shall include the following; metal framing, hangers, struts, railings, clips, brackets, bearing plates and other components necessary to support and anchor stairs and platforms to the supporting structure.
1. Components will be joined by welding unless otherwise indicated.
 2. Connections will be used to maintain the structural value of joined pieces.
 3. Stairs will be assembled to the greatest possible extent.
 4. Cutting, drilling and punching to be done cleanly and accurately. Burrs and rough edges to be removed.
 5. Exposed connections shall be made with hairline joints, flush and smooth. Locate joints where least conspicuous.
- C. Embedded Weld Connections:
1. Steel angle: Standard sizes, 3 inches by 2 inches by 1/4 inch (76 mm by 51 mm by 6 mm) , 4 inches by 4 inches by 1/4 inch (102 mm by 102 mm by 6 mm).
 2. Steel plate: Standard sizes, 4 inches by 10 inches by 1/4 inch (102 mm by 254 mm by 6 mm), 12 inches by 12 inches by 1/4 inch (305 mm by 305 mm by 6 mm).
 3. Headed weld studs: .500 inch diameter, by 4 inches (13 mm diameter by 102 mm).
 4. Attachment of studs to angle or plate: Specialized arc welding equipment.
 5. Embeds: All embeds are 100% Tested and Certified by independent third party inspection.
- D. Fasteners For Standard Applications:
1. Concrete Anchor: Hilti Kwik Bolt TZ; 5/8 inch (16 mm) diameter by 6 inch (152 mm).
 2. CMU Anchor: Hilti Kwik Bolt KB3; 5/8 inch (16 mm) diameter by 6 inch (152 mm).
 3. Tension Control Bolts: 5/8 inch (16 mm) diameter by 1-1/2 inch (38 mm), in accordance with ASTM A325.
 4. Steel Bolts for Posts: 5/8 inch (16 mm) diameter by 4-1/2 inch (114 mm), in accordance with ASTM A307.

2.3 STEEL FRAMED STAIRS WITH STEEL TREADS

- A. Risers are closed.

- B. Anchorage to stringers: Treads and Risers shall be welded to stringers to eliminate buckling.
- C. 500 Series Smooth Plate Stair System:
 - 1. Standard Stringers:
 - a. Plate 1/4x10.
 - b. Plate 1/4x12.
 - c. Plate 3/8x10.
 - d. Plate 3/8x12.
 - e. MC10x8.4.
 - f. MC12x10.6.
 - g. C12x20.7.
 - 2. Standard Treads:
 - a. 11 Gauge.
 - b. 12 Gauge.
 - c. 14 Gauge.
 - 3. Standard Finishes:
 - a. Grey Primer.
 - b. Red Primer.

2.4 STEEL FRAMED LANDINGS

- A. 500 Series Smooth Plate Landings:
 - 1. Thickness: 14 ga. standard minimum thickness (.075 inch) (2 mm) or as determined by structural design and/or calculations.

2.5 STAIR RAILINGS

- A. SERIES 800 - GLASS (Inset Panels):
 - 1. Stair Rail: 1.5 inches (38 mm) by .120 inch (3 mm) wall tube steel top cap, bottom cap and posts.
 - 2. Guardrail: 1.5 inches (38 mm) by .120 inch (3 mm) wall tube steel top cap and posts.
 - 3. Hand Grab: Continuous 1-1/2 inches (38 mm) O.D. Stainless Steel Tubing, offset by 1-1/2 inches (38 mm) with Stainless Steel Brackets.
 - 4. Infill: 3/8 inch (9.5 mm) tempered glass panels with Stainless Steel hardware.
 - 5. Spacing: Minimum of 1.5 inches (38 mm).
 - 6. Mounting of rails: To side of plate stringer, top of channel stringer or embed by welding.

2.6 WALL RAILS

- A. Wall Rail: 1.25 inches I.D. pipe with pressed steel wall rail bracket with giving proper distance between face of wall and inside face of wall rail assembly.
- B. Hand Grabs: 1.25 inches I.D. pipe Code Conforming 34 inches to 38 inches above plane of nosings and wrapped continuously past space between flights with pre-formed bend(s) which shall be field fitted with weld prep to equal NOMMA #1.
- C. Mandrel bent 1-1/4 inches (32 mm) pipe (1.66 inches (42 mm) O.D.), with minimum 12 inches (305 mm) level-offs returning to wall.
- D. Offset 1-1/2 inches (38 mm) wall brackets evenly spaced with three mounting holes.

2.7 SHOP CLEANING AND FINISHING

- A. Rails and Stair Components: Remove all sharp edges and burrs. Clean surface of rust, scale, grease and all foreign material prior to finishing in accordance with "SP 2 - Hand Tool Cleaning."
- B. Shop Primer: Immediately after shop fabrication and cleaning, spray apply primer to a minimum dry film thickness as recommended by primer manufacture, but not less than 1.0 mils DFT. Do not prime surfaces in direct contact with concrete or where field welding shall occur.
- C. Prime Paint: Rodda Low HAP Shopcoat Primer: VOC Compliant Red Oxide #33954.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates and adjacent construction have been properly constructed. Verify structural framing, enclosures, weld plates, blocking, and size and location of pockets.
- B. If unsatisfactory conditions are encountered, notify Architect in writing. Do not proceed until unsatisfactory conditions have been corrected.
- C. Notify Manufacturer of any detail, design or tolerance deviations as noted or drawn on stair shop drawing.

3.2 STAIR INSTALLATION

- A. Install stair components in accordance with manufacturer's recommendations, approved submittals, and in proper relationship with adjacent construction.
- B. Install stair components plumb, level and accurately, free from distortion or defects.
- C. Provide hardware, hangers, fasteners and struts required to connect stairs to parent structure.
- D. Provide temporary bracing to maintain alignment until installation has been completed and connections are deemed permanent.
- E. Field welding shall be done in accordance with AWS D1.1.
- F. Field welding and bolting shall match shop work. Use concealed fasteners wherever possible.
- G. Joints shall be butted tight flush, with hairline joints. Welds shall be ground smooth and flush.
- H. Touch up paint after welding and grinding.

3.3 RAIL INSTALLATION

- A. Railing to be installed plumb, and straight.
- B. Welded connections shall be used for permanent connections. All splices to be ground smooth, free from grinder marks and irregularities.
- C. Railing shall be welded to stair stringers per plans and specifications. Welds shall be clean and have good conformance to acceptable standards.

3.4 ERECTION TOLERANCES

- A. Maximum Variation from Plumb: 1/4 inch (6 mm) per story.
- B. Maximum Offset from True Alignment: 1/4 inch (6 mm).
- C. Maximum Out of Position: 1/4 inch (6 mm).

3.5 ADJUSTING AND CLEANING

- A. Touch-up field welds and abraded areas by application of same coating used for shop primer.
- B. Repair or replace damaged components.
- C. After stairs are completely installed, remove all construction debris and rubbish from area. Clean surface of exposed rail and stairs. Leave stair system ready for finish painting.

END OF SECTION

SECTION 07 24 00 – EXTERIOR INSULATION & FINISH SYSTEM

PART 1 GENERAL

1. RELATED DOCUMENTS

Drawings, Technical Specifications, TSUS construction specifications Division 1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing building codes & city, state and county.

1.2 SECTION INCLUDES

- A. Air and moisture barrier.
- B. Air and moisture barrier with continuous mineral wool insulation. (StoTherm ci Mineral 5600M)

1.3 RELATED SECTIONS

- A. Section 06 16 36 - Wood Panel Product Sheathing.
- B. Section 07 27 19 - Plastic Sheet Air Barriers .
- C. Section 07 27 00 - Air Barriers.
- D. Section 07 50 00 - Membrane Roofing.
- E. Section 07 60 00 - Flashing and Sheet Metal.
- F. Section 07 90 00 - Joint Protection.
- G. Section 08 11 00 - Metal Doors and Frames.
- H. Section 08 40 00 - Entrances, Storefronts, and Curtain Walls.
- I. Section 08 50 00 - Windows.

1.4 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM B117 - Test Method for Salt Spray (Fog) Testing.
 - 2. ASTM C297 - Test Method for Tensile Strength of Flat Sandwich Constructions in Flat wise Plane.
 - 3. ASTM C578 - Specification for Preformed, Cellular Polystyrene Thermal Insulation.
 - 4. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
 - 5. ASTM C1177 - Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - 6. ASTM C1382 - Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints.
 - 7. ASTM D968 - Test Method for Abrasion Resistance of Organic Coatings by Falling Abrasive.
 - 8. ASTM D1784 - Specification for Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
 - 9. ASTM D2247 - Practice for Testing Water Resistance of Coatings in 100

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- percent Relative Humidity.
10. ASTM D3273 - Test for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
 11. ASTM E72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.
 12. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 13. ASTM E96 - Test Method for Water Vapor Transmission of Materials.
 14. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
 15. ASTM E330 - Test Method for Structural Performance of Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 16. ASTM E331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 17. ASTM E1233 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Difference.
 18. ASTM E2098 - Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for Use in Class PB Exterior Insulation and Finish System after Exposure to a Sodium Hydroxide Solution.
 19. ASTM E2134 - Test Method for Evaluating the Tensile-Adhesion Performance of an Exterior Insulation and Finish System (EIFS).
 20. ASTM E2178 - Test Method for Air Permeance of Building Materials.
 21. ASTM E2273 - Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish System (EIFS) Clad Wall Assemblies.
 22. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
 23. ASTM E2485 - Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings.
 24. ASTM E2486 - Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS).
 25. ASTM E2568 - Standard Specification for PB Exterior Insulation and Finish Systems.
 26. ASTM E2570 - Test Method for Water-Resistive (WRB) Coatings used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage.
 27. ASTM G153 - Recommended Practice for Operating Light-and Water-Exposure Apparatus (Carbon-Arc Type) for Exposure of Nonmetallic Materials.
 28. ASTM G154 - Recommended Practice for Operating Light-and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials.
- B. Building Code Standards:
1. AC 235 - Acceptance Criteria for EIFS Clad Drainage Wall Assemblies (November, 2009).
- C. National Fire Protection Association (NFPA) Standards:
1. NFPA 268 - 2017 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source.
 2. NFPA 285 - 2012 Standard Fire Test Method for Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies containing Combustible Components.
- D. Other Referenced Documents:
1. American Association of Textile Chemists and Colorists AATCC-127 Water Resistance: Hydrostatic Pressure Test.
 2. APA Engineered Wood Association E 30, Engineered Wood Construction Division 7 – Thermal & Moisture Protection Section 07 24 00 – Exterior Insulation & Finish System

- Guide.
3. ICC-ES ESR-1233, StoGuard with Gold Coat, StoGuard with EmeraldCoat, and StoGuard VaporSeal Water-Resistive Barriers and StoEnergy Guard.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data:
 1. Manufacturer's data sheets on each product to be used.
 2. Manufacturer's code compliance report or test summary.
 3. Manufacturer's standard warranty.
 4. Applicator's industry training credentials.
 5. Preparation instructions and recommendations.
 6. Storage and handling requirements and recommendations.
 7. Typical installation methods.
 8. Sealant manufacturer's certificate of compliance with ASTM C 1382.
 9. Prepare and submit project specific details when required by contract documents.
- C. Verification Samples: Two representative units of each type, size, pattern and color.
- D. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.

1.6 QUALITY ASSURANCE

- A. Manufacturer Requirements:
 1. Member in good standing of the EIFS Industry Members Association (EIMA).
 2. Air and moisture barrier and EIFS manufacturer for a minimum of thirty years.
 3. Manufacturing facilities ISO 9001:2008 Certified Quality System and ISO 14001:2004 Certified Environmental Management System.
- B. Contractor Requirements:
 1. Engaged in application of similar systems for a minimum of 3 years.
 2. Knowledgeable in proper use and handling of Sto materials.
 3. Employ skilled mechanics who are experienced and knowledgeable in air and moisture barrier and EIFS application, and familiar with requirements of specified work.
 4. Successful completion of minimum of 3 projects of similar size and complexity to the specified project.
 5. Provide proper equipment, manpower and supervision on job site to install system per Sto's published specifications, details, project plans, and specifications.
- C. Insulation Board Manufacturer Requirements:
 1. Owens Corning Thermafiber Mineral Wool CI-C SC18 insulation board in conformance with ASTM C612, Type IV requirements, nominal 7.0 lb/ft³ density (112 kg/m³), 2ft x 4ft width x length (0.6 x 1.2 m), 2 inches (51 mm), 3 inches (76 mm) or 4 inches (102 mm) thick, and R4.0 per inch (RSI - 0.705).
- D. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
- E. Mock-Up: Construct a full-scale mock-up, with actual materials, of typical air and moisture barrier and EIFS, window and wall assembly in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as

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acceptable to Architect and provide temporary foundations and support.

1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
 2. Test air and water infiltration and structural performance per ASTM E283, ASTM E331 and ASTM E330, respectively, through independent laboratory.
 3. Mock-up shall comply with requirements of project specifications.
 4. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
 5. Where mock-up is tested at job site maintain approved mock-up at site as reference standard.
 6. If tested off-site accurately record construction detailing and sequencing of approved mock-up for replication during construction.
 7. Retain mock-up during construction as a standard for comparison with completed work.
 8. Do not alter or remove mock-up until work is completed or removal is authorized.
- F. Inspections:
1. Provide independent third party inspection where required by code or contract documents.
 2. Conduct inspections in accordance with code requirements and contract documents.

1.7 COORDINATION AND SCHEDULING

- A. Work in this section requires close coordination with related sections and trades. Sequence work to provide protection of construction materials from weather deterioration.
- B. Convene a conference approximately two weeks before scheduled commencement of Work. Attendees to include Architect, Contractor and trades involved. Agenda to include schedule, responsibilities, critical path items and approvals.
- C. Provide site grading such that the EIFS terminates above grade a minimum of 6 inches (150 mm) or as required by code.
- D. Coordinate installation of foundation waterproofing, roofing membrane, windows, doors and other wall penetrations to provide a continuously connected air and moisture barrier.
- E. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall.
- F. Install window and door head flashing immediately after windows and doors are installed.
- G. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
- H. Install splices or tie-ins from air and moisture barrier over back leg of flashings, starter tracks, and similar details to form a shingle lap that directs incidental water to the exterior.
- I. Install copings and sealant immediately after installation of the EIFS when coatings are dry, and such that, where sealant is applied against the EIFS surface, it is applied against the base coat or primed base coat surface.

- J. Schedule work such that air and moisture barrier is exposed to weather no longer than 180 days.
- K. Attach penetrations through the EIFS to structural support and provide water tight seal at penetrations.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store mineral wool and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Deliver materials in their original sealed containers bearing manufacturer's name and identification of product.
- C. Protect coatings (pail products) from freezing and temperatures in excess of 90 degrees F (32 degrees C). Store away from direct sunlight.
- D. Protect Portland cement based materials (bag products) from moisture and humidity. Store under cover off the ground in a dry location.
- E. Protect from damage due to weather, excessive temperature, and construction operations.

1.9 PROJECT AND SITE CONDITIONS

- A. Maintain ambient and surface temperatures above 40 degrees F (4 degrees C) during application and drying period, minimum 24 hours after application of air and moisture barrier and EIFS products.
- B. Provide supplementary heat for installation in temperatures less than 40 degrees F (4 degrees C).
- C. Provide protection of surrounding areas and adjacent surfaces from application of products.

1.10 WARRANTY

- A. Provide manufacturer's standard warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Sto Corporation
- B. Dryvit US
- C. Parex

2.2 AIR AND MOISTURE BARRIER

- A. As manufactured and supplied by the EIFS Manufacturer.
- B. Joint Treatment, Rough Opening Protection of Frame Walls, and Detail Components:
 - 1. One component STPE rapid drying gun-applied treatment.
 - a. For Sheathing joints, seams, cracks, penetrations and other transitions in above grade wall construction.

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2. Ready mixed coating. Ready mixed, brush, roller or spray applied.
 - a. For sheathing when used with Fabric.
 - b. A detail component with Fabric to splice over back flange of starter track, flashing, and similar ship lap details.
- C. Waterproof Coating: Ready mixed waterproof coating.
 1. For concrete, concrete masonry, wood-based and glass mat gypsum sheathing.
- D. Transition Detail Components:
 1. Flexible air barrier.
 - a. For continuity at static transitions such as sheathing to foundation, dissimilar materials (CMU to frame wall), wall to balcony floor slab or ceiling, and shingle lap transitions to flashing.
 - b. Dynamic Joints: Floor line deflection joints, masonry control joints, and through wall joints in masonry or frame construction.
 2. One component STPE rapid drying gun-applied treatment:
 - a. For sheathing joints, rough openings, seams, cracks, penetrations and other static transitions in above grade wall construction.
 - 1) Shingle laps to flashing; wall to balcony floor slab or ceiling.
 - 2) Through wall penetrations; pipes, electrical boxes, and scupper penetrations.

2.3 AIR AND MOISTURE BARRIER WITH CONTINUOUS MINERAL WOOL INSULATION

- A. Mineral as manufactured and supplied by the EIFS Manufacturer.
- B. Joint Treatment, Rough Opening Protection of Frame Walls, and Detail Components:
 1. One component STPE rapid drying gun-applied treatment.
 - a. For Sheathing joints, seams, cracks, penetrations and other transitions in above grade wall construction.
 2. Ready mixed coating. Ready mixed, brush, roller or spray applied.
 - a. For sheathing when used with Fabric.
 - b. A detail component with Fabric to splice over back flange of starter track, flashing, and similar ship lap details.
- C. Air and Moisture Barrier Coating: For concrete, concrete masonry, wood-based and glass mat gypsum sheathing.
- D. Static or Dynamic Transition Detail Components:
 1. StoGuard Transition Membrane: Flexible air barrier.
 - a. For continuity at static transitions such as sheathing to foundation, dissimilar materials (CMU to frame wall), wall to balcony floor slab or ceiling, and shingle lap transitions to flashing.
 - b. Dynamic Joints: Floor line deflection joints, masonry control joints, and through wall joints in masonry or frame construction.
- E. Adhesive: BTS Plus: Factory blended one-component polymer-modified Portland cement based high build adhesive.
- F. Insulation Board: Owens Corning Thermafiber Mineral Wool CI-C SC18, conforming with ASTM C612,
 1. Type IV Requirements:
 - a. Density: 7.0 lb per cu ft (112 kg per cu m).
 - b. Dimensions (WxL): 2 x 4 ft (0.6 x 1.2 m).

Division 7 – Thermal & Moisture Protection
Section 07 24 00 – Exterior Insulation & Finish System

- 1) Thickness: 2 inches (51 mm).
 - 2) Thickness: 3 inches (76 mm).
 - 3) Thickness: 4 inches (102 mm).
- c. R-Value: 4.0 per inch (RSI - 0.705).
- G. Thermal Dowel and Fasteners: Thermo Dowel, 2-3/8 inch (60 mm) diameter with 1/4 inch (6 mm) corrosion resistant star head type screw fastener for wood frame, steel frame, or masonry wall construction.
- H. Base Coat:
1. Factory blended one component polymer modified Portland cement based high build base coat. Also used as a leveler for concrete and masonry surfaces
 2. Waterproof Base Coat:
 - a. Fiber reinforced acrylic based waterproof base coat mixed with Portland cement.
 - b. Watertight Coat. Pre-packaged two component fiber reinforced acrylic based waterproof base coat.
- I. Reinforcing Meshes:
1. Glass fiber fabric with alkaline resistant coating for compatibility with EIFS materials.
 2. Medium Impact Resistance: 25 to 49 in-lb (2.83 to 5.54 J). Symmetrical, interlaced open-weave.
 - a. Mesh 4.5 oz: 4.5 oz per sq yd (153 grams per sq m).
 3. High Impact Resistance: 90 to 150 in-lbs (10.2 to 17 J). Symmetrical, interlaced open-weave.
 - a. Mesh 6 oz: 6.0 oz per sq yd (203 grams per sq m).
 4. Ultra-High Impact Resistance: Greater than 150 in-lbs (17 J). Ultra-high impact, interwoven, open weave.
 - a. Intermediate Mesh: 11.0 oz per sq yd (373 grams per sq m).
 5. Specialty Meshes: Flexible, symmetrical, interlaced.
 - a. Detail Mesh: 4.2 oz per sq yd (143 grams per sq m).
- J. Primer:
1. Acrylic based, tintable, with sand for roller application.
 2. Acrylic based tintable, smooth.
- K. Finish Coat: Stolit Series textured finishes and Sto Specialty textured finishes.
1. Acrylic based, integrally colored textured finish.
 2. Acrylic-based, integrally colored textured finish for superior fade resistance.
 3. Integrally colored textured finish with Lotus-Effect technology.
 4. Acrylic based, textured finish with variegated aggregate for superior abrasion resistance.
 5. Acrylic based, textured finish providing the look of cut or polished granite.
 6. Acrylic based, textured finish providing a modern look with the added luster of reflective materials.
 7. Acrylic based, textured finish in a range of color combinations designed to look and feel like natural stone.
- L. Job Mix Ingredients: Potable water.
- M. Accessories:
1. Mesh Corner Bead Standard: One component PVC (polyvinyl chloride) with integral reinforcing mesh for outside corner reinforcement.
 2. Drip Edge Profile: One component PVC (polyvinyl chloride) with integral

reinforcing mesh creating a drip edge and plaster return.

2.4 JOB MIXED INGREDIENTS

- A. Water: Clean and potable.
- B. Portland Cement: Type I, Type II, or Type I-II in conformance with ASTM C 150.

2.5 ACCESSORIES

- A. Starter Track: Rigid polyvinyl chloride plastic track Part No. STDE as furnished by Plastic Components, Inc., 9051 NW 97th Terrace, Miami, FL 33178.
- B. Mesh Corner Bead Standard: One component polyvinyl chloride accessory with integral reinforcing mesh for outside corner reinforcement.
- C. Drip Edge Profile: One component polyvinyl chloride accessory with integral reinforcing mesh that creates a drip edge and plaster return.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect concrete and masonry substrates prior to start of application.
 - 1. No Contamination: Algae, chalkiness, dirt, dust, efflorescence, form oil, fungus, grease, laitance, mildew or other foreign substances.
 - 2. Surface absorption and chalkiness.
 - 3. Cracks: Measure crack width and record location of cracks.
 - 4. Damage and deterioration such as voids, honeycombs and spalls.
 - 5. Moisture Content and Moisture Damage: Use moisture meter to determine if surface is dry enough to receive products and record any areas of moisture damage.
 - 6. Compliance with Specification Tolerances: Record areas out of tolerance greater than 1/4 inch (6 mm) in 96 inch (2438 mm) deviation in plane.
- B. Inspect sheathing application for compliance with applicable requirement and installation in conformance with specification and manufacturer requirements.
 - 1. Glass mat faced gypsum sheathing per ASTM C 1177.
 - 2. Exterior grade and exposure 1 wood based sheathing per APA Engineered Wood Association E 30.
 - 3. Cementitious Sheathing: Consult manufacturer.
 - 4. Attachment into structural supports with adjoining sheets abutted, gapped if wood-based sheathing, and fasteners at required spacing to resist design wind pressures as determined by design professional.
 - 5. Fasteners seated flush with sheathing surface and not over-driven.
- C. Report deviations from requirements of project specifications or other conditions that might adversely affect the Air and Moisture Barrier and the EIFS installation to the General Contractor. Do not start work until deviations are corrected.

3.2 SURFACE PREPARATION

- A. Remove surface contaminants on concrete, concrete masonry, gypsum sheathing, or coated gypsum sheathing surfaces.
- B. Repair cracks, spalls or damage in concrete and concrete masonry surfaces and level concrete and masonry surfaces to comply with required tolerances.

- C. Apply conditioner by spray or roller to chalking or excessively absorptive surfaces or pressure wash to remove surface chalkiness.
- D. Remove fasteners that are not anchored into supporting construction and seal holes with air barrier material.
- E. Seal over-driven fasteners with air barrier material and install additional fasteners as needed to comply with fastener spacing requirement.
- F. Fill large gaps between sheathing or voids around pipe, conduit, scupper, and similar penetrations with spray foam and shave flush with surface.
- G. Replace weather-damaged sheathing and repair or replace damaged or cracked sheathing.

3.3 MIXING

- A. Mix with a clean, rust-free high speed mixer to a uniform consistency.
- B. Mix with a clean, rust-free high speed mixer to a uniform consistency.
- C. Mix in accordance with manufacturer's recommendations.
- D. BTS Plus:
 - 1. Mix Ratio with Water: 5 to 6.5 quarts (4.7 to 6.2 L) of water per 47 lb (21.3 kg) bag of Sto BTS Plus.
 - a. Pour water into a clean mixing pail. Add BTS Plus and mix to a uniform consistency and allow to set for approximately 5 minutes.
 - b. Adjust mix if necessary with additional BTS Plus or water and remix to a uniform trowel consistency.
 - c. Avoid retempering. Keep mix ratio consistent. Do not exceed maximum water amount in mix ratio.
- E. Waterproof base coat.
 - 1. Mix Ratio with Portland Cement: 1:1 by weight.
 - a. Pour Flexyl into a clean mixing pail. Add portland cement, mix to a uniform consistency and allow to set for approximately five minutes.
 - b. Adjust mix if necessary with additional Flexyl and remix to a uniform trowel consistency.
 - c. Avoid retempering. Keep mix ratio consistent.
- F. Watertight Coat:
 - 1. Pour liquid component into a clean mixing pail.
 - 2. Add dry component, mix to a uniform consistency and allow to set for approximately five minutes.
 - 3. Adjust mix if necessary and remix to a uniform trowel consistency.
 - 4. Avoid retempering. Keep mix ratio consistent.
- G. Primer: Mix with a clean, rust-free high speed mixer to a uniform consistency.
- H. Mix with a clean, rust-free high speed mixer to a uniform consistency. Small amounts of water may be added to adjust workability. Limit addition of water to amount needed to achieve the finish texture.
- I. Mix with clean, rust-free high speed mixer to a uniform consistency. Small amounts of water may be added to adjust workability. Limit addition of water to amount needed to achieve the finish texture.

- J. Mix with clean, rust-free high speed mixer to a uniform consistency. Small amounts of water may be added to adjust workability. Limit addition of water to amount needed to achieve the finish texture.
- K. Mix only as much material as can readily be used.
- L. Do not use anti-freeze compounds or other additives.

3.4 INSTALLATION

- A. Install in accordance with EIFS Guide, Install Guide, approved submittals, and in proper relationship with adjacent construction.

3.5 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.6 CLEANING AND PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed materials from dust, dirt, precipitation, freezing and continuous high humidity until they are fully dry.
- C. Clean and maintain the EIFS for a fresh appearance and to prevent water entry into and behind the system. Repair cracks, impact damage, spalls or delamination promptly.
- D. Maintain adjacent components of construction such as sealants, windows, doors, and flashing, to prevent water entry into or behind the EIFS and anywhere into the wall assembly.
- E. Refer to EIS Repair and Maintenance Guide, Program, for detailed information on restoration; cleaning, repairs, recoating, resurfacing and refinishing, or re-cladding

END OF SECTION

SECTION 07 31 00 – ASPHALT SHINGLES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

1. Drawings, Technical specifications, TSUS construction specifications Division1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing codes and city, state and county.

1.2 SECTION INCLUDES

- A. Removal of existing roofing.
- B. Ventilated roof insulation panels.
- C. Asphalt roofing shingles.
- D. Leak barrier and moisture shedding roof deck protection.
- E. Underlayment.
- F. Metal flashing associated with shingle roofing.
- G. Attic ventilation and ventilation accessories.

1.3 RELATED SECTIONS

- A. Section 06 10 00 - Rough Carpentry.
- B. Section 07 62 00 - Sheet Metal Flashing and Trim.
- C. Section 08 63 19 - Vaulted Metal-Framed Skylights.

1.4 REFERENCES

- A. AC438-1011-R1 - New Acceptance Criteria for Alternative Asphalt Roofing Shingles
- B. American Society of Civil Engineers (ASCE): ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- C. Asphalt Roofing Manufacturers Association (ARMA).
- D. ASTM International (ASTM):
 1. ASTM D 3018 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
 2. ASTM D 3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
 3. ASTM D 3462 - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules.
 4. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 5. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 6. ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction.

7. ASTM C 1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
 8. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
 9. ASTM E 903 - Standard Test Method for Solar Absorption, Reflectance and Transmission of Materials Using Integrating Spheres.
- E. California Title 24 Energy Efficient Standards.
- F. Cool Roof Rating Council (CRRC).
- G. ENERGYSTAR.
- H. National Roofing Contractors Association (NRCA).
- I. Sheet Metal and Air Conditioning Contractors National Association, 1nc. (SMACNA) - Architectural Sheet Metal Manual.
- J. U.S. Green Building Council (USGBC): Leadership in Energy and Environmental Design (LEED).
- K. Underwriters Laboratory (UL)
1. UL 790 - Tests for Fire Resistance of Roof Covering Materials.
 2. UL 997 - Wind Resistance of Prepared Roof Covering Materials.

1.5 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

1.6 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, showing compliance with requirements.
- C. Installation Instructions: Manufacturer's installation instructions, showing required preparation and installation procedures.
- D. LEED Submittals: Submit documentation indicating solar reflective index, and location for regional materials credit as applicable.

1.7 LEED CERTIFICATION

- A. Provide a roofing system that will achieve or aid in the qualification of points satisfying LEED requirements.
1. Sustainable Site Credit 7.2 - Heat Island Effect - Roof.
 2. Materials & Resource Credit 5 - Local and Regional Materials

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide all primary roofing products, including shingles, underlayment, leak barrier, and ventilation, by a single manufacturer.
- B. Installer Qualifications: Installer must be approved by manufacturer for installation of

all roofing products to be installed under this section.

- C. USGBC LEED: Provide products meeting solar reflective index required to achieve LEED Credit for Roof Heat Island Effect.

1.9 REGULATORY REQUIREMENTS

- A. Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.
- B. Provide a roofing system achieving an ENERGYSTAR rating.
- C. Install all roofing products in accordance with all federal, state and local building codes.
- D. All work shall be performed in a manner consistent with current OSHA guidelines.

1.10 PRE-INSTALLATION MEETINGS

- A. Convene a pre-installation meeting a minimum two weeks prior to starting work of this section.
 - 1. Contractor shall schedule and arrange meeting and meeting place and notify attendees.
 - 2. Mandatory Attendees: Roofing installer and manufacturer's steep slope technical representative (not sales agent).
 - 3. Optional Attendees: Owner's representative, Architect's representative, prime Contractor's representative.
 - 4. Review all pertinent requirements for achieving the warranty specified below and set schedule for final warranty inspection.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened labeled packaging until ready for installation.
- B. Store products in a covered, ventilated area, at temperature not more than 110 degrees F (43 degrees C); do not store near steam pipes, radiators, or in sunlight.
- C. Store bundles on flat surface to maximum height recommended by manufacturer; store rolls on end.
- D. Store and dispose of solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.12 WEATHER CONDITIONS

- A. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with roofing shingle manufacturer's recommendations.

1.13 WARRANTY

- A. Provide manufacturer's standard limited warranty:
 - 1. Provide to the Owner a Shingle & Accessory Ltd. Warranty.
 - 2. Provide to the Owner a WeatherStopper Golden Pledge Ltd Warranty.
 - 3. Provide to the Owner a WeatherStopper Silver Pledge Ltd Warranty.
 - 4. Provide to the Owner a Weather Stopper System Plus Ltd Warranty.

5. Provide to the Owner a All American Pledge Guarantee.
6. Provide to the Owner a Cornell ThermaCal Nail Base Roof Insulation Ltd. Warranty.
 - a. Warranty Duration: 15 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: GAF, Residential Roofing Products.

2.2 SHINGLES

- A. Shingles:
 1. UL 2218, Class 4, granule surfaced self-sealing asphalt shingle with a strong fiberglass reinforced Micro Weave core and StainGuard protection, which prevents pronounced discoloration from blue-green algae through formulation/unique blends of granules.
 2. Architectural laminate styling provides a wood shake appearance with a 5/8in. exposure.
 3. UL 790 Class A rated with UL 997 Wind Resistance Label; ASTM D 7158, Class H; ASTM D 3161, Type 1; ASTM D 3018, Type 1; Passes UL 2218, Class 4 Impact Test; ASTM D 3462; AC438 compliant; Dade County Approved, Florida Building Code Approved, Texas Dept of Insurance Approved, ICC Report Approval.

2.3 HIP AND RIDGE SHINGLES

- A. High profile self-sealing hip and ridge cap shingle matching the color of selected roof shingle. Each bundle covers approx. 20 lineal feet (6.10m). Timbertex Premium Ridge Cap Shingles.
- B. Distinctive self-sealing hip and ridge cap shingle complementing the color of selected roof shingle. Each bundle covers approx. 31 lineal feet (9.45m) with an 8 inch (203mm) exposure. Ridglass 10in. Ridge Cap Shingles.
- C. Distinctive self-sealing hip and ridge cap shingle complementing the color of selected roof shingle. Each bundle covers approx. 31 lineal feet (9.45m) with an 8 inch (203mm) exposure Ridglass 8in. Ridge Cap Shingles.
- D. Distinctive self-sealing hip and ridge cap shingle complementing the color of selected roof shingle. Each bundle covers approx. 25 lineal feet (7.62mm) with a 6 2/3 inch (169mm) exposure. Seal-A-Ridge Ridge Cap Shingles.
- E. Distinctive hip and ridge cap shingle complementing the color of selected roof shingle. Each bundle covers approx. 33.3 lineal feet (10.15m) with a 5 5/8 inch (147mm) exposure. Z Ridge Shingles.
- F. Distinctive impact resistant self-sealing hip and ridge cap shingle complementing the color of selected roof shingle. Each bundle covers approx. 25 lineal feet (7.62m) with a 6 2/3 inch (169mm) exposure. Seal-A-Ridge ArmorShield Ridge Cap Shingles.
- G. Ridge cap shingle field fabricated from the same color and type of field shingle. Each bundle covers approx. 33 lineal feet (10.15m).

2.4 STARTER STRIPS

- A. Self sealing starter shingle designed for all roof shingles. Each bundle covers approx. 120 lineal feet (36.58m). ProStart Starter Strip.
- B. Self sealing starter shingle designed for premium roof shingles. Each bundle covers approx. 100 lineal feet (30.48m) for English and metric shingles or 50 lineal feet (15.24m) for oversized shingles. WeatherBlocker Eave/Rake Starter Strip
- C. Pre-cut, color coordinated starter strip shingle designed as a second starter course for shingles with large cut-outs. Each bundle covers approx.. 60 lineal feet (18.29 m) StarterMatch Starter Strip.

2.5 LEAK BARRIER

- A. Self-adhering, self-sealing, bituminous leak barrier surfaced with fine, skid-resistant granules. Approved by UL, Dade County, ICC, State of Florida and Texas Department of Insurance. Each roll contains approx. 150 sq ft (13.9 sq.m.), 36 inches X 50 feet (0.9m x 20.3m) or 200 sq ft (18.6 sq.m.), 36 inches X 66.7 feet (0.9m x 20.3m). WeatherWatch Leak Barrier.

2.6 UNDERLAYMENT

- A. #30 Roofing Underlayment: Water repellent breather type cellulose fiber building paper. Meets or exceeds the requirements of ASTM D 4869 Type II.

2.7 ROOFING CEMENT

- A. Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586, Type I or II.

2.8 ROOF ACCESSORIES

- A. Paint: Exterior acrylic rust resistant aerosol roof accessory paint. Each 6 oz can is available in boxes of 6 and in color to compliment the roof. Shingle-Match Roof Accessory Paint.
- B. Compression Collars: UV stable solid molded PVC compression collar, Kynar PVDF coated 24 gauge galvanized flange, Ultimate Pipe Flashing by Lifetime Tool.

2.9 ATTIC VENTILATION

- A. Ridge Vents:
 - 1. Flexible rigid plastic ridge ventilator designed to allow the passage of hot air from attics, while resisting snow infiltration. For use in conjunction with eave/soffit ventilation products. Provides 12.5 sq inches NFVA per lineal foot (26460 sq.mm/m). Each package contains 20 lineal feet (6.10m) of vent. Cobra Ridge Runner Ridge Vent.
 - 2. Flexible ridge ventilator designed to allow the passage of hot air from attics. For use in conjunction with eave/ soffit intake ventilation products. Provides 16.9 inches (1430 mm/m) NFVA (Hand Nail) and 14.1 inches (1193 mm/m) NFVA (Nail Gun) per lineal foot. Cobra Exhaust Vent.
 - 3. Rigid plastic ridge ventilator designed to allow the passage of hot air out of attics. For use in conjunction with eave/ soffit intake ventilation products. Provides 18.0 sq inches (38102 sq.mm/m) in NFVA per lineal foot. Each package contains 40 lineal feet (12.19m) of vent. Cobra Rigid Vent 3 Ridge Vent (includes 3" (76mm) galvanized ring shank nails).
 - 4. Rigid plastic ridge ventilator designed to allow the passage of hot air from

attics while prohibiting snow infiltration. For use in conjunction with eave/ soffit intake ventilation products. Provides 18.0 sq inches (19051 sq.mm/m) NFVA per lineal foot. Each package contains 40 lineal feet (12.19m) of vent. Cobra Snow Country or Cobra Snow Country Advanced Ridge Vent (includes 3" (76mm) galvanized ring shank nails).

- B. Hip Vents:
1. Rigid plastic hip ventilator designed to allow the passage of hot air out of attics through the hips. For use in conjunction with eave/ soffit intake ventilation products. Provides 9.0 sq inches (11613 sq.mm/m) in NFVA per lineal foot. Each package contains 40 lineal feet (12.19m) of vent, Cobra Hip Vent Exhaust Vent (includes 1-3/4" (44.5 mm) coil nails).
- C. Fascia and Soffit/Under Eave Vents:
1. Flexible rigid plastic ridge ventilator designed to allow the passage of hot air out of attics at the roof top along the eaves. For use in conjunction with ridge ventilation products. Provides 9.0 sq inches (11613 sq.mm/m) in NFVA per lineal foot. Each package contains 40 lineal feet (12.19m) of vent, Cobra IntakePro Rooftop Intake Vent (includes 1-3/4" (44.5 mm) coil nails).
 2. Flexible ridge ventilator designed to allow the passage of air into thru the fascia. 1"x3" (25 mm x 76mm) provides a NFVA of 11 square inches per foot and 1 1/2" x3" (38 mm x 76 mm) provides a NFVA of 16 square inches per foot. Cobra Fascia Vent.
 3. Surface mounted closeable soffit vent with integral screen to help prevent wildfire embers from being drawn into the attic. 16.5" x 9" (419 mm x 229 mm) paintable finish providing 56 sq. in. (36,131 sq mm) of NFA, MasterFlow EmberShield Closeable Soffit Vent
 4. Surface mounted, screened aluminum, corrosion resistant soffit vent. MasterFlow EAC Soffit Vent.
 5. Surface mounted, high impact resin, oval snap-in designed soffit vent. MasterFlow EAP Soffit Vent.
 6. Continuous aluminum 8ft section soffit vent. MasterFlow LSV8 Series Soffit Vent.

2.10 NAILS

- A. Nails: Standard round wire, zinc-coated steel or aluminum; 10 to 12 gauge, smooth, barbed or deformed shank, with heads 3/8 inch (9mm) to 7/16 inch (11mm) in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19mm) or through plywood or oriented strand board by at least 1/8 inch (3.18mm).

2.11 METAL FLASHING

- A. Galvanized Steel: 24 gauge hot-dip galvanized steel sheet, complying with ASTM A 653/A 653M, G90/Z275.
- B. Copper: 16-oz/sq ft (0.56mm) copper sheet, complying with ASTM B 370.
- C. Aluminum: 0.032-inch (0.8mm) aluminum sheet, complying with ASTM B 209.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until roof deck has been properly prepared.

- B. If roof deck preparation is the responsibility of another installer, notify Architect or building owner of unsatisfactory preparation before proceeding.

3.2 REMOVAL OF EXISTING ROOFING

- A. Remove all existing roofing down to the roof deck.
- B. Verify that deck is dry, sound, clean and smooth, free of depressions, waves and projections.
- C. Cover with sheet metal all holes over 1 inch (25 mm) diameter, cracks over 1/2 inch (12 mm) in width, loose knots and excessively resinous areas.
- D. Replace damaged deck with new materials.
- E. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.

3.3 PREPARATION OF SUBSTRATE

- A. Clean deck surfaces thoroughly prior to installation of leak barrier and roof deck protection.
- B. At areas to receive leak barrier, fill knot holes and cracks with latex filler.
- C. Chimneys: Install crickets on the upslope side of any chimney located in the north, on a roof steeper than 6:12, or wider than 24 inches (610 mm).

3.4 INSTALLATION OF UNDERLAYMENT

- A. Install using methods recommended by manufacturer in accordance with local building code. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
- B. Eaves:
 - 1. Place eave edge metal flashing tight with fascia boards; lap joints 2 inches (50 mm) and seal with plastic cement; nail at top of flange.
 - 2. On roofs with slope between 2:12 and 4:12, and on all roofs in the north, install leak barrier up the slope from eave edge to 36 inches from the edge or at least 24 inches (610 mm) beyond the interior face of the warm exterior wall, whichever is greater; lap ends 6 inches (150 mm) and bond.
- C. Valleys:
 - 1. Install leak barrier at least 36 inches wide centered on valley; lap ends 6 inches (150 mm) and seal.
 - 2. Where valleys are indicated to be "open valleys", install metal flashing over leak barrier before roof deck protection is installed; **DO NOT NAIL THROUGH** metal flashing; secure by nailing at 18 inches (457 mm) on center just beyond edge of flashing so that nail heads hold down edge.
- D. Hips and Ridges:
 - 1. Install leak barrier along entire lengths. If ridge vents are to be installed, position the leak barrier so that the ridge slots will not be covered.
- E. Roof Deck:
 - 1. Install one layer of roof deck protection over entire area not protected by eave or valley membrane; run sheets horizontally lapped so water sheds; nail in

- place.
 2. On roofs sloped at more than 4 in 12, lap horizontal edges at least 2 inches (50 mm) and at least 2 inches (50 mm) over eave protection membrane.
 3. On roofs sloped between 2 in 12 and 4 in 12, lap horizontal edges at least 19 inches (480 mm) and at least 19 inches (485 mm) over eave protection membrane.
 4. Lap ends at least 4 inches (100 mm); stagger end laps of each layer at least 36 inches (915 mm).
 5. Lap roof deck protection over valley protection at least 6 inches (152 mm).
- F. Penetrations:
1. At vent pipes, install a 24 inch (610 mm) square piece of leak barrier lapping over roof deck protection; seal tightly to pipe.
 2. At vertical walls, install leak barrier extending at least 6 inches (150 mm) up the wall and 12 inches (305 mm) on to the roof surface lapping over roof deck protection.
 3. At skylights and roof hatches, install leak barrier up the sides of the frame and 12 inches (305 mm) on to the roof surface on all sides, lapping over roof deck protection.
 4. At chimneys, install leak barrier around entire chimney extending at least 6 inches (152 mm) up the wall and 12 inches (305 mm) on to the roof surface lapping over roof deck protection.
 5. At rake edges, install metal edge flashing over leak barrier and roof deck protection; set tight to rake boards; lap joints at least 2 inches (50 mm) and seal with plastic cement; secure with nails.
 6. At hips and ridges, install leak barrier along entire lengths. If ridge vents are to be installed, position the leak barrier so that the ridge slots are not covered.

3.5 INSTALLATION OF SHINGLES

- A. Install in accordance with manufacturer's instructions and requirements of local building code.
1. Avoid breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4 degrees C).
 2. Handle carefully in hot weather to avoid damaging shingle edges.
 3. Secure with 4 to 6 nails per shingle; use number of nails required by manufacturer or by code, whichever is greater. Nails must be long enough to penetrate through plywood or OSB, or 3/4 inch (19 mm) into dimensional lumber.
- B. Install hip and ridge shingles as required by the manufacturer. At ridges, install hip and ridge shingles over ridge or ridge vent material.
- C. Make valleys using "open valley" technique:
1. Snap diverging chalk lines on metal flashing, starting at 3 inches (75 mm) each side of top of valley, spreading at 1/8 inch per foot (9 mm per meter) to eave.
 2. Run shingles to chalk line.
 3. Trim last shingle in each course to match chalk line; do not trim shingles to less than 12 inches (305 mm) width.
 4. Apply 2 inches (50 mm) wide strip of plastic cement under ends of shingles, sealing to metal flashing.
- D. Make valleys using "closed cut valley" technique:

1. Run the first, and only the first, course of shingles from the higher roof slope across the valley at least 12 inches (305 mm).
 2. Run all courses of shingles from the lower roof slope across the valley at least 12 inches (305 mm) and nail not closer than 6 inches (150 mm) to center of valley.
 3. Run shingles from the upper roof slope into valley and trim 2 inches (50 mm) from center of valley.
- E. Make valleys using "woven valley" technique.
1. Run shingles from both roof slopes at least 12 inches (305 mm) across center of valley, lapping alternate sides in a woven pattern.
 2. Nail not closer than 6 inches (150 mm) to center of valley.
- F. All penetrations are to be flashed according to ARMA and NRCA application instructions and construction details.
- G. For skylights, consult the manufacturer of the skylight or roof hatch for specific installation recommendations. Skylights and roof hatches shall be installed with pre-fabricated metal flashings specifically designed for the application of the unit.

3.6 INSTALLATION OF VENTILATION

- A. Code Requirements: Ventilation shall meet or exceed current FHA, HUD and local code requirements.
- B. Ridge Vents:
1. Cut continuous vent slot through sheathing, stopping 6 inches (150 mm) from each end of ridge.
 2. On roofs without ridge board, make slot 2 inches (50 mm) wide, centered on ridge.
 3. On roofs with ridge board, make two slots 1-3/4 inches (89 mm) wide, one on each side.
 4. Install ridge vent material full length of ridge, including uncut areas.
 5. Butt ends of lengths of ridge vent material and join using plastic cement.
 6. Install eave vents in sufficient quantity to equal or exceed the ridge vent area, calculated as specified by manufacturer.
 7. Install ridge shingles over ridge vent material; use nails of specified length; do not drive nails home, leaving 3/4 inch (19 mm) slot open between ridge and roof shingles.
- C. Hip Vents and Rooftop Vents:
1. Install according to manufacturer's instructions.
 2. Install vents in sufficient quantity to equal or exceed the exhaust vent area, calculated as specified by manufacturer.

3.7 PROTECTION

- A. Stage work progress so that traffic is minimized over completed roofing.
- B. Protect installed products until completion of project

END OF SECTION

SECTION 07 31 39

SYNTHETIC SLATE SHINGLES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings, Technical Specifications, TSUS construction Division 1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing building codes & city, state, and county.

1.1 SUMMARY

- A. Section Includes:
 - 1. Remove all of existing roofing
 - 2. Synthetic slate shingles, underlayment, flashings, fasteners, and accessories.
- B. Related Requirements:
 - 1. Division 01 - General Requirements: Administrative, procedural, and temporary work requirements.
 - 2. Section 07 62 00 - Sheet Metal Flashing
 - 3. Section 07 92 00 - Joint Sealers.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM) (www.astm.org):
 - 1. D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 - 2. D3161/D3161M - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
 - 3. D3462/D3462M - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules.
 - 4. E108 - Standard Test Methods for Fire Tests of Roof Coverings.
 - 5. G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- B. California Department of Forestry and Fire Prevention (Cal-Fire) (www.fire.ca.gov) - Listing Service.
- C. Florida Building Code (FBC) (www.floridabuilding.com) Testing Application Standard (TAS) 125 - Test for Uplift Resistance on Roof Assemblies.
- D. Miami Dade County, FL. (www.miamidade.gov)
- E. National Research Council Canada, Canadian Construction Materials Centre (NRCC CCMC) (www.nrc-cnrc.gc.ca) - Evaluation Report 14094-R.
- F. Texas Department of Insurance. (www.tdi.texas.gov)
- G. Underwriters Laboratories (UL) (www.ul.com):
 - 1. 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings.
 - 2. 2218 - Standard for Impact Resistance of Prepared Roof Covering Materials.
- H. International Code Council (ICC) (www.iccsafe.org) - ES Acceptance Criteria AC07 Section 4.9.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Pre-Installation Conference:
 - 1. Convene at Project site 2 weeks prior to beginning work of this Section.
 - 2. Attendance: Architect, Contractor, Owner Representative, installer, and related trades.
 - 3. Review and discuss:

- a. Installation procedures and manufacturer's recommendations.
- b. Safety procedures.
- c. Coordination with installation of other work.
- d. Availability of materials.
- e. Preparation and approval of substrate and penetrations through roof.
- f. Other items related to successful execution of work.

1.4 SUBMITTALS

- A. Action Submittals:
 - 1. Shop Drawings: Show shingle layout, method of attachment, flashings, trim, conditions at eaves, intersections with adjacent materials, and other installation details.
 - 2. Product Data: Manufacturer's data sheets on each product including:
 - a. Shingles, underlayment, flashings, fasteners, and accessories:
 - 1) Indicate composition, properties, and dimensions.
 - 2) Show compliance with specified requirements.
 - b. Preparation instructions and recommendations.
 - c. Storage and handling requirements and recommendations.
 - d. Installation methods.
 - 3. Samples:
 - a. Selection Samples: Two sets of color chips representing manufacturer's full range of available colors and surface textures.
 - b. Verification Samples: After selection, submit two samples representing actual product, color, and texture.
- B. Maintenance Material Submittals: Provide 2 square feet of extra shingles.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacture of synthetic shingles.
- B. Installer Qualifications: Minimum 5 years' experience in work of this Section.
- C. Mockup:
 - 1. Provide mockup of shingles, underlayment, and related flashings.
 - 2. Size: Minimum 8 x 8 feet.
 - 3. Locate where directed.
 - 4. Approved mockup may remain as part of the Work.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Ship shingles in bundles:
 - 1. Collate in sequence of widths and colors as required for selected color blend.
 - 2. Assemble bundles so that sorting at job site is not required.
- B. Deliver shingles to site in manufacturer's unopened, labeled bundles.
 - 1. Verify quantities and condition upon delivery.
 - 2. Remove damaged products from site.
- C. Store products in protected environment, off ground, protected moisture, traffic, and construction activities.
- D. Store shingles flat. Do not store on site for prolonged period.
- E. Store products at temperature between 40 and 120 degrees F (4 degrees C and 49 degrees C).
- F. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of authorities having jurisdiction.

1.7 SITE CONDITIONS

- A. Environmental Requirements:
 - 1. Observe manufacturer's temperature, humidity, and moisture limits.
 - 2. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTIES

- A. Furnish manufacturer's 50 years warranty against breakage and deterioration resulting in leaks under normal weather and use conditions.
- B. Furnish installer's 2 years total roof system warranty against water penetration, including underlayment, flashings, trim, and other roof components.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: DaVinci Roofscapes, LLC
- B. Ecostar
- C. Brava
- D. Approved Equal

2.2 MATERIALS

- A. Performance Requirements:
 - 1. Roof system: Manufactured synthetic shingles attached to structural substrate to form weather tight roof envelope with no measurable water penetration.
 - 2. Method of attachments designed to adequately resist wind uplift for roof configuration and Project location.
 - 3. Meet minimum uplift resistance of 186 PSF with 2:1 safety factor in accordance with TAS 125.
- B. Synthetic Slate Shingles:
 - 1. Description: Lightweight, synthetic slate shingles with appearance, color, texture, and thickness of quarried shakes.
 - 2. Product: Multi-Width Slate by DaVinci Roofscapes, LLC.
 - 3. Material: Engineered polymer formulated from 100 percent virgin plastic resins; recycled materials not acceptable.
 - 4. Performance characteristics:
 - a. Fire resistance, installed over one ply ASTM D226/D226, No. 30 asphalt saturated felt: Class A, tested to ASTM E 108.
 - b. Class A rated by Cal-Fire.
 - c. Water absorption: 0.18 percent by weight, tested to ASTM D471.
 - d. Impact resistance: Class 4, tested to UL 2218.
 - e. Nail pull through resistance: 138 foot-pounds at 72 degree F (187 joules at 22 degrees C) and 166 foot-pounds at 32 degrees F (225 joules at 0 degrees C), tested to ASTM D3462/D3462M.
 - f. Freeze-thaw resistance: No crazing, cracking, delamination of coating, or other deleterious surface changes after one-month exposure with temperature cycled from minus 40 to plus 180 degrees F (0 degrees to 82 degrees C) in 22 hours, tested to ICC ES Acceptance Criteria AC07 Section 4.9.
 - g. Accelerated weathering: Little change after 2,500 hours exposure to ultraviolet radiation, elevated temperature, moisture, and thermal shock.
 - h. Fungus resistance: No algae growth when inoculated with blue green algae in warm, damp environment for 4 to 6 weeks, tested to ASTM G21.
 - i. Approved by NRCC CCMC.

5. Installed weight:
 - a. 6-inch (152 mm) exposure: 342 pounds per 100 square feet (16.5 kg/sq. m).
 - b. 7-inch (178 mm) exposure: 293 pounds per 100 square feet (14.3 kg/sq. m).
 - c. 7-1/2 inch (191 mm) exposure: 273 pounds per 100 square feet (13.3 kg/sq. m).
 6. Profile:
 - a. Rectangular shape with exposed-to-view upper surface and edges textured to resemble natural slate.
 - b. Underside formed with reinforcing ribs.
 7. Size:
 - a. Thickness: Varies from 1/8 inch (3 mm) at top to 1/2 inch (13 mm) at bottom.
 - b. Length: 18 inches (457 mm).
 - c. Widths: Variable widths from 6, 7, 9, 10, and 12 inches (152, 178, 229, 254, and 305 mm) to create appearance of random sized natural slate.
 - d. 4 inch (102 mm) wide shingles for roofing turrets and domes.
 8. Starter shingle: 12 inches (305 mm) long x 12 inches (305 mm) wide.
 9. Markings: Form shingles with markings on upper surface to indicate nailing locations and provide alignment guide lines for different exposure lengths.
 10. Color:
 - a. Provide shingles in multiple colors comparable to natural slate.
 - b. Provide ultraviolet protection consisting of internal stabilizer.
 11. Shingle pattern:
 - a. Provide shingles factory blended in multiple colors and widths.
 - b. Blend: Canyon, Castle Gray, Slate Black, Slate Gray, Smokey Gray
- C. Synthetic Slate Shingles:
1. Description: Lightweight, synthetic slate shingles with appearance, color, texture, and thickness of natural quarried slate.
 2. Product: Single Width Slate by DaVinci Roofscapes, LLC.
 3. Material: Engineered polymer formulated from 100 percent virgin plastic resins; recycled materials not acceptable.
 4. Performance characteristics:
 - a. Approvals:
 - 1) ICC-ES ESR-2119.
 - 2) Texas Department of Insurance.
 - 3) Miami Dade County, FL.
 - 4) Class A rated by Cal-Fire.
 - b. Fire resistance rating: Class A, tested to ASTM E108.
 - c. Impact resistance rating: Class 4, tested to UL 2218.
 - d. Wind resistance rating: 110 MPH, tested to ASTM D3161/D3161M.
 - e. Approved by NRCC CCMC.
 5. Profile:
 - a. Rectangular shape with exposed-to-view upper surface and edges textured to resemble quarried slate.
 - b. Underside formed with reinforcing ribs.
 6. Size:
 - a. Thickness: 1/2 inch (13 mm) at butt end, 1/8 inch (6 mm) at top.
 - b. Length: 18 inches (457 mm).
 - c. Width: 12 inches (305 mm).
 7. Starter shingle: 12 inches (305 mm) long x 12 inches (305 mm) wide.
 8. Markings: Form shingles with markings on upper surface to indicate nailing locations and provide alignment guidelines for different exposure lengths.
 9. Color:
 - a. Multiple colors comparable to quarried slate.
 - b. Provide internal ultraviolet stabilizers.
 10. Shingle pattern:
 - a. Provide shingles factory blended in multiple colors and widths:
 - b. Blend: Canyon, Castle Gray, Slate Black, Slate Gray, Smokey Gray

2.3 ACCESSORIES

- A. Underlayment: ASTM D226/D226M, Type II, No. 30 non-perforated saturated asphalt felt.
- B. Underlayment: ASTM D3909, coated cap sheet.
- C. Waterproof Sheet Membrane: Cold applied, self-adhering waterproof membrane composed of polyethylene film coated one side with rubberized asphalt adhesive.
 - 1. Thickness: 40 mils (1 mm).
 - 2. Low temperature flexibility: Unaffected at minus 32 degrees F (minus 36 degrees C).
 - 3. Minimum tensile strength: 250 PSI (1724 kPa).
 - 4. Minimum elongation: 250 percent.
 - 5. Permeance: Maximum 0.05 perms.
- D. Flashing:
 - 1. Fabricate from sheet to profiles and dimensions indicated on Drawings and approved Shop Drawings, in accordance with Section 07 62 00.
 - 2. Material: 16-ounce copper.
 - 3. Linear components: Form in longest possible lengths, 8 feet (2.5 m) minimum.
 - 4. Counterflashings: Extend minimum 4 inches (102 mm) up vertical surfaces and minimum 4 inches (102 mm) under shingles.
 - 5. Valley flashings: Minimum 24 inches (610 mm) wide, extending minimum 10 inches (254 mm) from valley center line.
 - 6. Eave flashings: Fabricate with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
- E. Fasteners:
 - 1. 3/8 inch (9.5 mm) flat head nails, 1-1/2 inches (38 mm) long.
 - 2. Material: Stainless steel.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect roof framing and substrate.
 - 1. Verify that roof is complete, rigid, and braced, and that deck members are securely fastened.
 - 2. Ensure that proper ventilation has been provided for roof space.
 - 3. Verify that roof deck is clean, dry, and ready to receive shingles.
 - 4. Remove dirt, loose fasteners, and protrusions from roof surface.

3.2 INSTALLATION - GENERAL

- A. Install self-adhered waterproof sheet membrane on eaves. Cover waterproof sheet membrane and remaining portions of roof with approved underlayment. Install waterproof sheet membrane in valleys, along walls, and around projections terminating on top of underlayment.
- B. Underlayment:
 - 1. Stripping ply: Install full sheet of self-adhered waterproof sheet membrane in valleys, and minimum 18 inch (457 mm) width on gable ends, against walls, and around projections.
 - 2. In areas where January average daily temperature is 25 degrees F (minus 4 degrees C) or lower or where ice buildup is possible, install self-adhered waterproof sheet membrane from bottom edge extending two feet (610 mm) above exterior wall line on eaves.
 - 3. Install waterproof sheet membrane over full roof area.
 - a. Apply waterproof sheet membrane at temperatures of 40 degrees F (4 degrees C) or higher.

- b. Adhere and attach as recommended by manufacturer of waterproof sheet membrane.
 - c. Start underlayment installation at lower edge of roof. Install perpendicular to roof slope with minimum 4 inch (102 mm) side laps and minimum 6 inch (152 mm) end laps.
 - d. Extend underlayment minimum 4 inches (102 mm) up vertical wall intersections.
 - e. Do not leave underlayment membrane exposed in excess of time limit required by manufacturer. Do not puncture or tear underlayment.
- C. Underlayment/Slip Sheet: Install one ply asphalt felt over full roof area, with ends weather lapped minimum 4 inches (102 mm). Nail in place with roofing nails spaced in accordance with manufacturer's recommendations.

3.3 FLASHING INSTALLATION

- A. Install drip edge on eaves, gable ends, and metal flashings at valleys, ridges, hips, roof curbs, penetrations, and intersections with vertical surfaces, in accordance with Section 07 62 00.
- B. Weather lap joints minimum 2 inches (52 mm) and seal with sealant as specified in Section 07 92 00.
- C. Secure in place with clips, nails, or other fasteners.

3.4 SHINGLE INSTALLATION

- A. Install shingles in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Install shingles so that breaks between shingles in adjacent courses are offset of 1-1/2 inches (38 mm).
- C. Do not install shingles of same color in contact or shingles of same width side by side.
- D. Exposure: Install shingles in straight pattern with exposure specified and bottom shingle edges evenly aligned.
- E. Spacing: Provide 3/16 to 3/8 inch (4.76 to 9.5 mm) gap between shingles.
- F. Stagger shingle joints in one course minimum 1-1/2 inches (38 mm) from joints in course below.
- G. Eaves:
 - 1. Install row of starter shingles at eaves as base layer.
 - 2. Project eave shingles approximately 1 inch, as required to allow water to drain, or 1/8 inch (3 mm) past overhanging drip edge.
- H. Gables: Project shingles approximately 3/4 inch (19 mm) beyond gable rakes or 1/8 inch (3 mm) past overhanging drip edge.
- I. Ridges and Hips:
 - 1. After field shingle installation is complete, install double row of shingles over 6 inch (152 mm) wide metal flashing.
 - 2. Ridges: Use 7-inch (178 mm) wide shingles with 6-inch (152 mm) exposure. Start ridge shingles at leeward end. Face shingle laps away from prevailing wind.
 - 3. Hips: Use 7-inch (178 mm) wide shingles with 6-inch (152 mm) exposure. Start hip course at eave.
- J. Fastening: Attach each shingle to deck with two nails:
 - 1. Place nails at locations indicated on shingles.
 - 2. Ensure full penetration but do not overdrive nails.
 - 3. Do not nail at an angle.
 - 4. Ensure that nail head is flush with shingle surface.

- 5. At valleys do not nail shingles within 5 inches (127 mm) of valley center line.
- K. In areas where snow accumulation is possible, snow guards are recommended.

3.5 FIELD QUALITY CONTROL

- A. Inspect units as they are installed. Do not install cracked, broken, twisted, curled, or otherwise damaged units.
- B. As work progresses, exercise care not to scratch or mar installed shingles. Replace damaged shingles.
- C. After approximately 200 units have been installed, inspect roof from ground. Verify proper layout and appearance. Repeat inspection every 200 shingles.
- D. Visually inspect completed installation for weathertight condition.

3.6 PROTECTION

- A. Protect installed roofing until completion of Project.
- B. Do not allow traffic on completed roof.

3.7 ADJUSTING

- A. Replace damaged shingles prior to Substantial Completion.

END OF SECTION

SECTION 08 52 00 - ALUMINUM FRAMES FOR STAINED GLASS WINDOW COVERS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

Drawings, Technical Specifications, TSUS construction Division 1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing building codes & city, state, and county.

1.1 SECTION INCLUDES

- A. Exterior protective glazing to protect and preserve a separate stained-glass lite assembly.

1.2 RELATED SECTIONS

- A. Section 06 10 00 - Wood Blocking: Wood perimeter shims.
- B. Section 07 62 00 - Flashings and Sheet Metal.
- C. Section 07 92 00 - Joint Sealants: Perimeter sealant and back-up materials.

1.3 REFERENCES

- A. AAMA 2603 - Voluntary Specification for Pigmented Organic coatings on Aluminum Extrusions and Panels.
- B. AAMA 2604 - Voluntary Specification Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
- C. AAMA 2605 - Voluntary Specification for Superior Performance Organic coatings on Architectural Aluminum Extrusions and Panels.
- D. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Glazing Materials Used in Buildings.
- E. ASTM A 123/A1 23M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- F. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- G. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- H. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
- I. ASTM C1036 - Flat Glass.
- J. ASTM C1048 - Heat-Treated Flat Glass.
- K. ASTM C1172 - Laminated Architectural Flat Glass.
- L. FGMA (Flat Glass Manufacturer's Association) - Glazing Manual.
- M. FGMA (Flat Glass Manufacturer's Association) - Glazing Sealing Systems Manual.

- N. LSGA (Laminators Safety Glass Association) - Standards Manual.
- O. SGAA (Stained Glass Association of America) - Reference and Technical Manual.
- P. IGMA (Insulating Glass Manufacturers Alliance) - Quality Standard Specification.

1.4 DEFINITIONS

- A. Came: Soft metal H or U-shaped division strips between adjacent pieces of glass in leaded or stained-glass windows.

1.5 DESIGN / PERFORMANCE REQUIREMENTS

- A. Design and size components to withstand dead loads and live loads caused by positive and negative wind loads acting normal to plane of wall as calculated in accordance with the applicable code.
- B. Design vent device and vent spaces between components to prevent high humidity or high temperature from solar heat gain or condensation between glass panes.
- C. System Internal Drainage: Drain water entering joints, drain condensation occurring in glazing channels, or drain moisture occurring within assembly, by a weep drainage network from interpane spaces and glazing spaces, ventilate through aluminum frame not through glazed protective covering:
 - 1. Ventilate and drain spaces to the exterior where protective covering frames are installed over existing stained-glass frames.
 - 2. Ventilate to the interior and drain to the exterior where new frames are installed for stained-glass exterior glazing.
 - 3. Provide a thermal break in the frame profile where new frames are installed for stained-glass and protective covering.
- D. Assembly: Accommodate, without damage to components or deterioration of seals, movement between window, perimeter frame and attachments, including deflection of lintel or sill.
- E. Deflection:
 - 1. Limit member deflection to flexure limit of glass of the longer dimension, with full recovery of glazing materials or as required by regulatory code, whichever is more stringent.
 - 2. Create a glazing space from edge of glass to inside of frame surface, of a dimension greater than maximum deflection anticipated.
- F. Air and Vapor Seal: Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with the pane of glass and heel bead of glazing compound, on the warm side of the window assembly.

1.6 SUBMITTALS

- A. Submit under provisions of Section 01 31 00 6.
- B. Product Data: Manufacturer's data sheets on each stained-glass product to be used, including:
 - 1. Structural, physical and environmental characteristics, and size limitations.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods.

- C. Shop Drawings: Show dimensions of aluminum windows, elevations, details of all window sections, anchorage and installation details, hardware, and interface with other products.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- G. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for special cleaning and maintenance procedures.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing the work of this section with minimum twenty years documented experience and approved by the Architect.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.10 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.11 WARRANTY

- A. Provide a 5-year warranty to include coverage for sealed insulated glass units from seal failure, interpane dusting or misting, and replacement of same.

- B. Provide a 5-year warranty to include coverage for plastic from breakage, yellowing, or loss of light.
- C. Provide a 5-year warranty to include coverage for delamination of laminated glass and replacement of same.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Bovard Studio Inc.
- B. Old Castel.
- C. Approved equal
- D. Requests for substitutions will be considered in accordance with provisions of Section 01 31 00 7.

2.2 MATERIALS

- A. Extruded aluminum shall be 6060-T5 alloy and temper with a minimum ultimate tensile strength of 22,000 psi. Comply with ASTM B 221.
- B. Sheet Aluminum: ASTM B 209; 5005 alloy, H15 or H34 temper.
- C. Fasteners: Aluminum, stainless steel or other materials warranted by the manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors and other components of the window units.

2.3 ALUMINUM STAINED GLASS WINDOW FRAMES

- A. 1430 Series Frames:
 - 1. Frame Profile: "L" shaped extruded aluminum: minimum thickness 1.6 mm (1/16 inch)
 - a. Glazing: Profiled for ¼ inch (6mm) single glazed exterior covering pane of:
 - 1) Polycarbonate resin plastic.
 - b. Non-thermally broken.
 - c. Glazing Stops: Snap-in type, flush design.
 - 2. Visible Frame Width: 30 mm (1-3/16 inches).
 - 3. Frame Depth: 37 mm (1-7/16 inches).
 - 4. Mullions:
 - a. Tubular "T" profile extruded aluminum: minimum thickness 1.6 mm (1/16 inch).
 - b. 44 mm (1-3/4 inch) profile.
 - c. Double snap-in glass stops, flush design.
 - 5. Air Space Ventilation: Bovard Studio Precision Flow device or approved equal.

2.4 GLASS AND GLAZING

- A. Plastic Sheet Materials:
 - 1. Polycarbonate Sheet: Plastic compound, UV stabilized with 10 year non-yellowing warranty.
 - a. Minimum Thickness:
 - 1) 1/4 inches (6 mm).

- b. Color:
 - 1) Clear.

2.5 GLAZING COMPOUNDS AND ACCESSORIES

- A. Butyl Sealant: ASTM C 920, single component; Shore A hardness of 10 to 20, Black color; non-skinning, non-curing.
- B. Acrylic Sealant: ASTM C 920, single component, solvent curing, cured Shore A hardness of 15 to 25; non-bleeding; color as selected by the Architect.
- C. Polyurethane Sealant: ASTM C 920, Single-component, chemical curing, non-staining, non-bleeding, non-sagging type, Shore A Hardness Range 20 to 35; color as selected by the Architect.
- D. Polyurethane Sealant: ASTM C 920, Multi-component, chemical curing, non-staining, non-bleeding, non-sagging type, Shore A Hardness Range 20 to 35; color as selected by the Architect.
- E. Silicone Sealant: ASTM C920, single component; capable of water immersion without loss of properties; non-bleeding, non-staining; cured Shore A hardness of 15-25; color as selected by the Architect.
- F. Setting Blocks: Neoprene, EPDM or Silicone, 80 to 90 Shore A durometer hardness.
- G. Spacer Shims: Neoprene or Silicone, 50 to 60 Shore A durometer hardness.
- H. Glazing:
 - 1. Sealant: Applied with integral resilient tube spacing device.
 - 2. Butyl Setting Tape: 2-1/8 inch by 3/8 inch (54 mm by 9.5 mm) with integral spacer.
 - 3. Backer Rod: Closed cell.
 - 4. Tape: Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides.
 - 5. Splines: Resilient polyvinyl chloride or silicone extruded shape; color as selected by the Architect.

2.6 FABRICATION

- A. Fabricate components with minimum and consistent clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of frame and perimeter seal.
- B. Provide suitable anchors and prepare components to receive anchor devices.
- C. Arrange fasteners and attachments to ensure concealment from view.
- D. Prepare components with internal reinforcement for operating hardware.
- E. Provide internal reinforcement as required to maintain rigidity.
- F. Permit internal drainage weep holes and channels to migrate moisture movement. Provide internal drainage of glazing spaces to exterior through weep holes.

2.7 FINISHES

- A. Shop finish aluminum window components as follows"
 - 1. Mill finish.
 - 2. Polyester organic finish electrostatically applied over pretreated aluminum. Finish shall be a one coat, one bake paint system with a 1 mil minimum overall dry film thickness and shall conform to AAMA 2603-02.
 - a. Color: As selected by the owner from manufacturers standard colors.
 - 3. High performance organic finish electrostatically applied over pretreated aluminum. Finish shall be based on 50 percent fluoropolymer resin and be applied as a two coat, two bake paint system with a 1.2 mil minimum thickness and shall conform to AAMA 2604-98. (Some colors may require a clear protective topcoat to protect the pigmented coating.
 - a. Color: As selected by Architect from manufacturers custom colors.
 - 4. High performance organic finish electrostatically applied over pretreated aluminum. Finish shall be based on 70 percent fluoropolymer resin and be applied as a two coat, two bake paint system with a 1.2 mil minimum thickness and shall conform to AAMA 2605-98. (Some colors may require a clear protective topcoat to protect the pigmented coating.
 - a. Color: As selected by Architect from manufacturers custom colors.
 - 5. Architectural Class II Anodic (204-R1) AA M12-C22-A31 Thickness to be .4 mil and shall conform to AAMA 611-98.
 - a. Color: Clear Anodized (Standard)
 - 6. Architectural Class I Anodic (215-R1) AA M12-C22-A41 Thickness to be .7 mil and shall conform to AAMA 611-98.
 - a. Color: Clear Anodized.
 - 7. Architectural Class I Anodic with electrostatically deposited color AA-M12-C22-A44. Thickness to be .7 mil and shall conform to AAMA 611-98.
 - a. Color: As selected by the owner from manufacturers standard colors.
- B. Concealed Steel Items: Galvanized to ASTM A 123/A1 23M to 610 g/sq m (2.0 oz/sq ft).
- C. Apply one coat of bituminous paint to concealed aluminum and steel surfaces in contact with treated wood, cementitious, or dissimilar materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that openings for glazing are correctly sized, within tolerance and clean.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install window frames, glass and glazing in accordance with frame and glass manufacturer's instructions.

- B. Install window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- D. Install flashings at heads and sills in accordance with Section 07 62 00.
- E. Coordinate with wood window frames specified in Section 08 41 13.
- F. Anchor and reinforce to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads
- G. Install perimeter air seal between window frame and adjacent construction in accordance with manufacturer's requirements.
- H. Apply sealants to assure a weather tight installation at all joints and intersections and at opening perimeters in accordance with Section 07 92 00. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

3.4 ERECTION TOLERANCES

- A. Maximum Variation from Level or Plumb: 1/16 inch (1.5 mm) every 3 feet, non-cumulative or 1/8 inch per 10 feet (3 mm/3 m) whichever is less.

3.5 CLEANING

- A. After installation, remove all sealants, caulking, and other materials from all surfaces, including adjacent work.
- B. Thoroughly clean window frames, casings, and glass using materials and methods recommended by the window and glass manufacturer that do not cause defacement of work.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 08 52 00

SECTION 14 20 00 – HYDRAULIC ELEVATORS REV. 1

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings, Technical Specifications, TSUS construction specifications Division 1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing building codes & city, state and county.

1.2 SUMMARY

- A. Section Includes: Hydraulic elevators as required by building criteria:
 - 1. Passenger Elevators, Car to match the size of existing opening & hoist-way.

- B. Products Installed and Furnished Under This Section:
 - 1. Building announcement speakers provisions
 - 2. Emergency Voice/Alarm Communication System Provisions
 - 3. In car CCTV camera provisions
 - 4. Elevator related security devices, control unit, mounting brackets, wiring materials, logic circuits, security system interface terminals, boxes and relays.
 - 5. Car interior finishes, see Room Finish Schedule
 - 6. Car flooring, see Room Finish Schedule
 - 7. Monitoring system interface

- C. Related Requirements:
 - 1. Demolition of existing and all required new structural system to install and operate new elevator, electrical & plumbing.

- D. Division 03 Section “Cast-in-Place Concrete” for setting sleeves, inserts, and anchoring devices in concrete.

- E. Division 05 metals, Section 05 12 00 structural steel.

1.3 REFERENCES

- A. Definitions: Terms used are defined in the latest edition of the Safety Code for Elevators and Escalators, ASME A17.1.

- B. American National Standard Institute (ANSI):
 - 1. A117.1 - Accessible and Usable Buildings and Facilities

- C. American Society of Mechanical Engineers:
 - 1. ASME A17.1 - Safety Code for Elevators and Escalators.
 - 2. ASME A17.2, ASME A17.5, ASME A17.6, ASME A17.7 -

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Inspector's Manual for Electric Elevators.

- D. ASTM International:
 - 1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
 - 2. ASTM A240
- E. National Fire Protection Association (NFPA)
 - 1. NFPA 101 – Life Safety Code
- F. US Department of Justice
 - 1. 2010 ADA Standards for Accessible Design.

1.4 SUBMITTALS

- A. Product Data: Include capacities, sizes, performances, operation, control, signal systems operations, safety features, finishes, and similar information. Include product data for car enclosures and hoist way entrances. Include product data for signal fixtures, lights, graphics, Braille plates, and details of mounting provisions.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, and large-scale details indicating openings at each landing, machine room or equipment space layout, coordination with building structure, relationships with other construction, and locations of equipment.
 - 2. Include large-scale layout of car operating panel, pushbuttons, destination hall registration stations, signal fixtures, fire command center panel, and standby power operation control panel.
 - 3. Indicate maximum dynamic and static loads imposed on building structure at points of support, seismic loads, and maximum and average power demands.
 - 4. Power Confirmation Information: Include motor horsepower, code letter, starting current, full-load running current, and demand factor. Provide maximum and average power consumption.
- C. Samples for Initial Selection: For finishes involving surface treatment, paint or color selection.
- D. Samples for Verification: For exposed car, hoist way door and frame, and signal equipment finishes:
 - 1. Samples of sheet materials: 3" (75 mm) square.
 - 2. Running trim members: 4" (100 mm) lengths.

1.5 CLOSEOUT SUBMITTALS

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- A. Operation and Maintenance Data:
 - 1. For elevators to include in emergency, operation, and maintenance manuals.
 - 2. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel.
- B. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

1.6 QUALITY ASSURANCE

- A. Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following codes, laws, and/or authorities, including revisions and changes in effect:
 - 1. ASME A17.1
 - 2. ASME A17.2
 - 3. ASME A17.5
 - 4. NFPA 70
 - 5. Texas Accessibility Standards, TAS
 - 6. 2010 ADA Standards for Accessible Design, ANSI A117.1
 - 7. Local Fire Authority
 - 8. Requirements of most stringent provision of local authority having jurisdiction.
 - 9. NFPA101

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver material in Contractor's original unopened protective packaging.
- B. Store material in original protective packaging. Prevent soiling, physical damage, and moisture damage.
- C. Protect equipment and exposed finishes from damage and stains during transportation and construction.

1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair, restore, or replace elevator work that fails in materials or workmanship within specified warranty period.
- B. Failures include, but are not limited to: operation or control system failure including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; similar unusual, unexpected, and unsatisfactory conditions.

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- C. Warranty Period: One year from date of Substantial Completion.

1.9 MAINTENANCE

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall provide twelve months full maintenance by skilled employees of elevator Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
 - 1. Perform maintenance during normal working hours.
 - 2. Perform emergency callback service during normal working hours Include 24-hour-per- day, 7-day-per-week emergency callback service with response time of thirty minutes or less.
 - 1. Construction contract will include initial maintenance service beginning at Substantial Completion. Owner/General Contractor cannot deduct.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Approved Components:
 - 1. Hoist way Entrance: Columbia, H&B, Tyler, or another approved supplier.
 - 2. Fixtures vandal-resistant LED.
 - 3. 3rd Party control systems: MCE, or GAL.
- B. Environmental Conditions Hoist Way Equipment
 - 1. Water-resistant NEMA 4 fixtures and wiring methods in any areas below 15' – 0" above sea level.

2.2 ELEVATORS

- A. Elevator System, General: Manufacturer's standard elevator systems. Unless otherwise indicated, manufacturer's standard components shall be used, as included in standard elevator systems and as required for complete system.
- B. Passenger Elevators
Description:
Elevator
Identification:
Elevator #1
Ruby Fuller
Building
 - 1. Capacity: 2,500 lbs.
 - 2. Class of Loading: Class A
 - 3. Contract Speed: As Required fpm

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4. Machine: Hydraulic Pump
5. Machine Location: Adjacent at bottom landing
6. Operational or Supervisory Control, Collective microprocessor-based: Selective collective, Duplex selective collective, or Group automatic control
7. Stops: Front
8. Openings: Front
9. Minimum Clear Inside Car: max size to fit existing hoist-way
10. Minimum Clear to underside of canopy: max size to fit existing hoist-way
11. Entrance Size: match existing
12. Entrance Type: match existing

2.3 MATERIALS

- A. Steel:
 1. Sheet Steel (Furniture Steel for Exposed Work): Stretcher-leveled, old-rolled, commercial quality carbon steel, complying with ASTM A366, matte finish.
 2. Sheet Steel (for Unexposed Work): Hot-rolled, commercial quality carbon steel, pickled and oiled, complying with ASTM A568/A568M-03.
 3. Structural Steel Shapes and Plates: ASTM A36.
- B. Stainless Steel: Type 316 or 430 complying with ASTM A240, with standard tempers and hardness required for fabrication, strength, and durability. Apply mechanical finish on fabricated work in the locations shown or specified, Federal Standard and NAAMM nomenclature, with texture and reflectivity required to match Architect's sample.
- C. Protect with adhesive paper covering.
 1. No. 4 Satin: Directional polish finish. Graining directions as shown or, if not shown, in vertical dimension.
 2. Textured: .050 inches mean pattern depth with bright directional polish (No. 4 satin finish).
 - a. 5WL as manufactured by Rigidized Metals.
 - b. Windsor pattern 5-SM as manufactured by Rimex Metals.
- D. Aluminum: Extrusions per ASTM B221; sheet and plate per ASTM B209.
- E. Plastic Laminate: ASTM E84 Class A and NEMA LD3.1, Fire-Rated Grade (GP- 50), Type 7, 0.050" ±.005" thick, color and texture as follows:
 1. Exposed Surfaces: Color and texture selected by Architect.
 2. Concealed Surfaces: Contractor's standard color and finish.

2.4 CAR AND GROUP PERFORMANCE

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- A. Car Speed: $\pm 10\%$ of contract speed under any loading condition.
- B. Car Capacity: Safely lower, stop and hold 125% of rated load.
- C. Car Stopping Zone: $\pm 1/4$ " under any loading condition.
- D. Door Times: Seconds from start to fully open or fully closed:
 - 1. Cars TBD: Door open: TBD seconds. Door close: TBD seconds. as required by Building needs
- E. Car Floor-to-Floor Performance Time: Seconds from start of doors closing until doors are 3/4 open (1/2 open for side opening doors) and car level and stopped at next successive floor under any loading condition or travel direction (TBD typical floor height):
 - 1. Cars TBD: TBD seconds. as required by Building needs
- F. Pressure: Fluid system components shall be designed and factory tested for 500 p.s.i. Maximum operating pressure shall be 400 p.s.i.
- G. Car Ride Quality:
 - 1. Acceleration and Deceleration: Smooth constant and not less than 1.5 feet/second² with an initial ramp between 0.5 and 0.75 second.
 - 2. Sustained Jerk: Not more than 6 feet/second³.
 - 3. Horizontal and vertical acceleration within car during all riding and door operating conditions. Not more than 15 mg peak to peak (adjacent peaks) in the 1-10 Hz range.
 - 4. Measurement Standards: Measure and evaluate ride quality consistent with ISO 18738, using low pass cutoff frequency of 10 Hz and A95 peak-to-peak average calculations.
- H. Noise and Vibration Control
 - 1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 55 dBA inside car under any condition including door operation and car ventilation exhaust blower on its highest speed. Limit noise level in the machine room relating to elevator equipment and its operation to no more than 80 dBA. All dBA readings to be taken 3'-0" off the floor and 3'-0" from the equipment using the "A" weighted scale.
 - 2. Vibration Control: All elevator equipment provided under this contract, including power unit, controller, oil supply lines, and their support shall be mechanically isolated from the building structure and electrically isolated from the building power supply and to each other to minimize the possibility of

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objectionable noise and vibrations being transmitted to occupied areas of the building.

2.5 OPERATION

- A. Automatic Pushbutton Microprocessor-Based, Freight Only:
 - 1. Operate car without attendant from pushbuttons in car and at each landing. When car is idle, automatically start car and dispatch it to appropriate floor when call is registered by pressing car or hall pushbutton.
 - 2. Illuminate, "in use" lights in each hall pushbutton station when car is responding to registered car or hall call. Prevent registration of another call until trip is complete including time for passenger transfer and registration of car call if car is responding to a hall call. Extinguish "in use" light to indicate system is available to respond to next hall call.
- B. Collective Microprocessor-Based, Passenger and Service:
 - 1. Operate car without attendant from pushbuttons in car and located at each floor. When car is available, automatically start car and dispatch it to floor corresponding to registered car or hall call. Once car starts, respond to registered calls in direction of travel and in the order the floors are reached.
 - 2. Do not reverse car direction until all car calls have been answered, or until all hall calls ahead of car and corresponding to the direction of car travel have been answered.
 - 3. Slow car and stop automatically at floors corresponding to registered calls, in the order in which they are approached in either direction of travel. As slowdown is initiated for a hall call, automatically cancel hall call. Cancel car calls in the same manner. Hold car at arrival floor an adjustable time interval to allow passenger transfer.
 - 4. Answer calls corresponding to direction in which car is traveling unless call in the opposite direction is highest (or lowest) call registered.
 - 5. Illuminate appropriate pushbutton to indicate call registration. Extinguish light when call is answered.
- C. Other Items:
 - 1. Low Oil Control: In the event oil level is insufficient for travel to the top floor, provide controls to return elevator to the main level and park until oil is added.
 - 2. Load Weighing: Provide means for weighing car passenger load. Control system to provide dispatching at main floor in advance of normal intervals when car fills to capacity. Provide hall call by-pass when the car is filled to preset percentage of rated capacity and traveling in down direction. Field adjustment range: 10% to 100%.

3. Anti-Nuisance Feature: If car loading relative to weight in car is not commensurate with number of registered car calls, or activation of door protection device is not commensurate with number of registered car calls, cancel car calls.
 4. Independent Service: Provide controls for operation of each car from its pushbuttons only. Close doors by constant pressure on desired destination floor button or door close button. Open doors automatically upon arrival at selected floor.
- D. Car-to-Lobby Feature: Provide the means in the main hall pushbutton station for automatic return to the Main floor. Return car nonstop after answering pre-registered car calls, and park with doors open for an adjustable time period of 60-90 seconds. Upon expiration of time period, car shall automatically revert to normal operation and close its doors until assigned as next car or until the car is placed on manual control via in-car attendant or out-of-service switch.
- E. Firefighters' Service: Provide equipment and operation in accordance with code requirements.
- F. Automatic Car Stopping Zone: Stop car within 1/4" above or below the landing sill. Maintain stopping zone regardless of load in car, direction of travel, distance between landings.
- G. Remote Monitoring and Information: Each controller shall provide the following output information, including data logging, fault logs operational events, performance information including car speed, floor to floor times, and door times. The system shall be real time, capable of driving remote color.
- H. LCD monitors that continually display the status of each car and call. Provide each group with a complete, interactive elevator monitoring system.
1. The system shall concurrently display all units in a group and separate units on one screen in a graphical format and record the following information for each monitored unit:
 - a. Individual car status – expandable menus:
 - 1) Direction of travel
 - 2) Independent service
 - 3) Hall button failure
 - 4) Inspection service
 - 5) Firefighters' service
 - 6) Hospital emergency service
 - 7) Position of elevator
 - 8) Door status (open, opening, closing, closed)
 - 9) Door dwell time

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- 10) Load by-pass
 - 11) Standby power operation/sequence
 - 12) Power on/off
 - 13) Door detector
 - 14) Safety circuit
 - 15) Door zone
 - 16) Stop switch
 - 17) Alarm button
 - 18) Registered car calls
 - 19) Out of level
 - 20) Machine room space temperature exceeds 95 degrees
 - 21) Stop counter (number of starts)
 - 22) Car speed
 - 23) Door open times
 - 24) Door close time
 - 25) Start to stop motion time
 - 26) Emergency two-way communication device
 - 27) Air conditioner/heater
 - 28) Floor lockouts (car or hall)
 - 29) Lobby recall
 - 30) VIP service
 - 31) Firefighters' service
 - 32) Up/down peak
- b. Service Driven Outages:
 - 1) Independent service
 - 2) Car out of service
 - 3) Lobby return, cleaning
 - c. Maintenance Activity "Indicators":
 - 1) Top of car inspection
 - 2) Hoist way access
 - 3) Phase I and II
 - 4) Independent service
 - 5) Out of service
2. Faults monitored with visual and audible alarm, triggered by combinations of any of the above status points:
 - a. Safety circuit
 - b. Alarm bell
 - c. Stop switch
 - d. Emergency two-way communication device
 - e. Door reversal device
 - f. At least six user defined faults or events, i.e. water in pit, high machine room space/ cab temperature
 - g. Transmit email when any monitored faults occur.
 3. If out of service 30 minutes, initiate email to designated address. If fault continues more than eight hours, send email hourly until car returned to service.

I. Reporting Requirements: System shall provide reports in color

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graphical format both on-screen and in printed form capability to conveniently switch from one report type to another and from one bank to another using minimal mouse clicks and key strokes. Reports shall be displayed after minimal waiting time. Data for all reports shall be continuously recorded and stored. Reports shall be displayed by simply selecting a date and time range, bank of equipment, and report type. Date and time range selections shall carry forward from one report selection to the next. Reporting functions shall be sub-divided into the following categories:

1. Traffic Reports:
 - a. Number of hall calls per floor (hall call distribution on a per floor basis)
 - b. Number of hall calls per hour (24-hour time-line)
 - c. Hall call waiting times per floor (hall call waiting time distribution on a per floor basis)
 - d. Hall call waiting times per hour (24-hour time-line)
 - e. Distributed hall call response graph (24-hour time-line)
 - f. Detailed hall call response graph (% calls / n seconds)
 - g. Longest wait times including floor number, wait time, date, time, and direction
 2. Fault Reports:
 - a. Ten most recent faults (most recent faults listed per bank and per car)
 - b. Fault log – displays the entire fault log for a given time period
 - c. Faults per car (fault distribution on a per car basis)
 - d. Faults per floor (fault distribution on a per floor basis)
 - e. Faults per day/week/month (fault distribution on a per unit or group basis)
 3. Car Use Statistics:
 - a. Car use by hour (24-hour time-line of car calls, car starts, door cycles, delayed car, load by pass)
 - b. Car use statistics (same as above, shown for an entire bank)
 4. Playback capability: Provide means to playback last fault events:
 - a. Provide means to store two years of data, prior to present.
 - b. Provide means to search data and display 50 faults in sequence of occurrence.
 - c. Provide means to transfer to permanent medium, CD, or approved equal.
 - d. Provide means to print out playback data.
- J. Interface to Third Party Building Management Systems: The elevator system shall be capable of interfacing and exchanging data with the Owner's selected third-party elevator management system and maintainable controls. Provide MCE control system delivered to site which is fully compatible with IDS LiftNet and LiftNet protocol.
- K. Motion Control: Microprocessor-based AC type with unit valve suitable for operation specified and capable of providing smooth, comfortable car acceleration and retardation. Limit the difference

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in car speed between full load and no load to not more than $\pm 10\%$ of the contract speed in either direction of travel.

- L. Selective Leveling: Provide means to limit elevator car speed when traveling between adjacent floors.
- M. Passenger and Service, Door Operation: Automatically open doors when car arrives at main floor. At expiration of normal dwell time, close doors. Reopen doors when car is designated for loading. Provide front or rear selective door operation, if required.
- N. Standby Lighting and Alarm: Car mounted battery unit with solid-state charger to operate alarm bell and car emergency lighting. Battery to be rechargeable with minimum five-year life expectancy. Include required transformer. Provide constant pressure test button in service compartment of car operating panel. Provide lighting integral with portion of normal car lighting system.
- O. Battery Lowering Feature: Upon loss of normal power, provide controls to automatically lower the car to the nearest lower landing. Upon arrival at the lowest landing, the elevator doors shall open automatically and remain open until regular door time has expired. The elevator shall then become deactivated. The standby power source shall be provided via 12-volt D.C. battery units installed in machine room, including solid-state charger and testing means mounted in a common metal container. Battery to be rechargeable lead acid or nickel cadmium with a ten- year life expectancy. Upon restoration of normal power, the elevator shall automatically resume normal operation.
- P. Card/Proximity Reader Security System: Provide provisions inside all cars for reader unit. Mount reader unit as directed by Architect and make cross connects to card reader terminal interface and relays in machine room or equipment space. Provide glass panel to match card proximity reader size. Elevator control systems shall provide output signal of selected floor to facilitate system tracking of floor access.
- Q. Infant Abduction Operation, if applicable: Provide provisions in controller, on car, and in hall control station to interface with client's infant abduction prevention system. Configure control to hold car at floor with doors open, sound audible alarm on car, nurses' station, and security control room, and prevent registration of car destination call if infant abduction monitor is activated.

2.6 MACHINE ROOM EQUIPMENT

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- A. Arrange equipment in available spaces. Visit site and select equipment that will fit in existing available space.
- B. Pump Unit: Assembled unit consisting of positive displacement pump, induction motor, master- type control valves combining safety features, holding, direction, bypass, stopping, manual lowering functions, shut off valve, oil reservoir with protected vent opening, oil level gauge, outlet strainer, drip pan, muffler, all mounted on isolating pads. Provide oil thermal unit, oil cooling unit, and oil temperature thermostat to maintain oil at operating temperature. Design unit for 120 up starts/hour.
- C. Landing System: Solid-state, magnetic, or optical type.
- D. Controller: UL/CSA labeled.
 - 1. Compartment: Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame. Completely enclose equipment with covers. Provide means to prevent overheating.
 - 2. Relay Design: Magnet operated with contacts of design and material to insure maximum conductivity, long life, and reliable operation without overheating or excessive wear. Provide wiping action and means to prevent sticking due to fusion. Contacts carrying high inductive currents shall be provided with arc deflectors or suppressors.
 - 3. Microprocessor-Related Hardware:
 - a. Provide built-in noise suppression devices which provide a high level of noise immunity on all solid-state hardware and devices.
 - b. Provide power supplies with noise suppression devices.
 - c. Isolate inputs from external devices (such as pushbuttons) with opto-
 - d. isolation modules.
 - e. Design control circuits with one leg of power supply grounded.
 - f. Safety circuits shall not be affected by accidental grounding of any part of the system.
 - g. System shall automatically restart when power is restored.
 - h. System memory shall be retained in the event of power failure or disturbance.
 - i. Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.
 - 4. Wiring: CSA labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
 - 5. Permanently mark components (relays, fuses, PC boards, etc.) with symbols shown on wiring diagrams.
 - 6. Monitoring System Interface: Provide controller with serial data link through RJ45 Ethernet connection and install all devices necessary to monitor items outlined in Section

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2.13. Elevator contractor responsible to connect monitoring system interface to machine room monitoring compartment and LAN. Wiring from the LAN to the machine room monitoring compartment by others.

7. Provide controller or machine mounted auxiliary lockable "open" disconnect if mainline disconnect is not in sight of controller and/or machine.
- E. Muffler: Provide in discharge oil line near pump unit. Design shall dampen and absorb pulsation and noise in the flow of hydraulic fluid.
- F. Piping and Oil: Provide piping, connections and oil for the system. Buried piping shall be secondarily contained with watertight Schedule 40 PVC sleeves between elevator machine room and pit. A minimum of two sound isolation couplings shall be provided between the pump unit and oil line and the oil line and jack unit. Provide isolated pipe stands or hangers as required.
- G. Shut-Off Valve: manual valve on line adjacent to pump unit. Provide second valve in pit adjacent to jack unit.
- H. If Cylinder Head is above Pumping Unit, Pressure Switch: Provide oil pressure sensitive switch in line to automatically close and prevent loss of oil in cylinder upon loss of pressure in oil supply line.

2.7 HOISTWAY EQUIPMENT

- A. Guide Rails: Planed steel T-sections for car of suitable size and weight for the application, including brackets for attachment to building structure. Provide rail backing to meet code requirements. Provide bracketing, at top and bottom of floor beams. No additional structural points of rail attachment, other than those shown on the Contract Documents, will be provided.
- B. Buffers: Spring type with blocking and support channels.
- C. Hydraulic Jack Assembly:
 1. Cylinders: Seamless steel pipe. Design head to receive unit-type packing and provide means to collect oil at cylinder head and return automatically to oil reservoir. Provide secondary containment/cylinder protection. Provide head assembly access ladders and platforms. Provide cylinder stabilizer bracketing between guide rails as required.
 2. Plungers: Polished seamless steel tubing or pipe. If plunger length exceeds 24'-0", provide two or more sections not exceeding 16'-0" in length, or coordinate installation of longer unit at the jobsite. Join sections by internal threaded couplings. Multiple section jack units shall be factory

- polished while assembled and marked for proper future reassembly. Isolate plunger from car frames.
3. Provide dual jack holeless application. A Required.
 4. Provide single, or dual-jack roped application. Mount sheaves to top of plungers. As Required
- D. Sheaves: Machined grooves and sealed bearings. Provide mounting means to top of plungers.
- E. Jack Support and Fluid Shut-Off Valves: Provide steel pit channels to support jack assembly and transmit loads to building structure. Provide intermediate stabilizers as required. Provide manual on/off valves in oil lines adjacent to pump unit and jack units in pit.
- F. Well Hole Casing, if Required:
1. Well hole is to be provided by Elevator Contractor. No additional compensation will be allowed for unforeseen conditions of any kind or spoil removal.
 2. Install steel outer casing minimum 18" diameter. Install watertight sleeve over jack assembly for secondary containment prior to insertion into the outer casing. Extend PVC sleeve through pit floor slab to underside of jack support beams and seal with non- permeable membrane. Seal well opening at the pit floor with hydraulic quick setting cement. Provide PVC vision/access ports.
- G. Governor, if Required: Car driven, with pull-through jaws and bi-directional electrical shutdown switches. Provide required auxiliary supports for attachment to car guide rail or building structure.
- H. Governor Rope Tensioning Sheaves, if Required: Mount sheaves and support frame on pitfloor or guide rail. Provide frame with guides or pivot point to enable free vertical movement and proper tension of rope.
- I. Suspension Means, if Required:
1. 8 x 19 or 8 x 25 Seale construction, traction steel type. Fasten with staggeredlength, adjustable, spring isolated wedge type shackles.
 2. Approved governor rope.
- J. Overspeed Valves, if Required: Provide a pressure sensitive, mechanically-actuated seismic safety valve, conforming to ASME A17.1, Rule 3.19.4.7. Connect valve directly to jack assembly inlet.
- K. Terminal Stopping: Provide normal and final devices.
- L. Electrical Wiring and Wiring Connections:
1. Conductors and Connections: Copper throughout with individual wires coded and connections on identified studs or terminal

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blocks. Use no splices or similar connections in wiring except at terminal blocks, control compartments, or junction boxes. Provide 10% spare conductors throughout. Run spare wires from car connection points to individual elevator controllers in the machine room.

2. Conduit: Galvanized steel conduit, EMT, or duct. Flexible conduit length not to exceed 3'-0". Flexible heavy-duty service cord may be used between fixed car wiring and car door switches for door protective devices. Conduit from the closest hoist way of each elevator group or single elevator to the firefighters' control room.
3. Traveling Cables: Flame and moisture-resistant outer cover. Prevent traveling cable from rubbing or chafing against hoist way or equipment within hoist way.
 - a. Provide five pair of shielded wires of minimum 18 gauge for card reader.
 - b. Provide for CCTV two pair of shielded 18-gauge wire within traveling cable from car controller to car top junction box, plus 3'-0" excess loop at both ends.
 - c. Provide two pair of 18-gauge wire for CCTV power.
 - d. Provide eight pair of spare shielded communication wires in addition
 - e. to those required to connect specified items.
 - f. Tag spares in machine room. Provide cables from controller to car top.
4. Auxiliary Wiring: Provide conduit, wiring and connections for fire alarm initiating devices, emergency two-way communication system, firefighters' phone jack, paging speaker, CCTV, security system and card reader interface terminals and relays, and announcement speaker from the machine room junction box to each car controller in machine room.

M. Passenger and Service Entrance Equipment:

1. Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
2. Door Tracks: Bar or formed, cold-drawn removable steel tracks with smooth roller contact surface.
3. Door Interlocks: Operable without retiring cam. Paint interlock box flat black.
4. Door Closers: Spirator, or jamb/strut mounted counterweight type. Design and adjust to insure smooth, quiet mechanical close of doors.
5. Hoist way Door Unlocking Device: Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface.

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- 6. Hoist way Access Switches: Mount in entrance frame side jamb at top and bottom floors. Provide switch without faceplate.
- N. Floor Numbers: Stencil paint 4" high floor designations in contrasting color on inside face of hoist way doors or hoist way fascia in location visible from within car.

2.8 HOISTWAY ENTRANCES

- A. Complete entrances bearing fire labels from a nationally recognized testing laboratory approved within the governing jurisdiction.
- B. Frames: 14-gauge hollow metal at all floors. Bolted and lapped head to jamb assembly at all floors. Provide Arabic floor designation/Braille plates, centered at 60" above finished floor, on both side jambs of all entrances. Provide plates at main egress landing with "Star" designation. For designated emergency car, provide "Star of Life" designation plates at height of 78"-84" above finished floor on both side jambs at all floors. Braille indications shall be below Arabic floor designation. Provide cast floor designation/Braille plates as manufactured by SCS Elevator Products, Inc. or Vision Mark.
- C. Transom Panels, if required: Sheet, offset labeled flush labeled projecting, or flush with frame. Same construction and finish as hoist way door panels at all floors.
- D. Door Panels: 16-gauge steel, sandwich construction without binder angles. Provide leading edges of center-opening doors with rubber astragals. Provide a minimum of two gibs per panel, one at leading and one at trailing edge with gibs in the sill groove entire length of door travel. Construct door panels with interlocking, stiffening ribs.
- E. Sight Guards: 14-gauge, same material and finish as hoist way entrance door panels. Construct without sharp edges.
- F. Sills: Extruded nickel silver.
- G. Sill Supports: Structural or formed steel designed to support door sill based upon
- H. carloading classification. Mount to eliminate need for grout under the sill.
- I. Fascia, Toe Guards and Hanger Covers: Delete fascia for Elevators and provide car door interlock to prevent opening of car doors outside the unlocking zone.

- J. Struts and Headers: Provide for vertical support of entrances and related material. Provide door open bumpers on entrances equipped with vertical struts.
- K. Finish of Frames and Doors: Satin finish stainless steel.
- L. Freight, Vertical Bi-Parting Freight Door Panels: 12 gauge formed steel plates welded into frame angles. Provide with safety astragals, vision panels, and truckable sills and load transfer angles. Provide telescoping upper section or pass-type doors as required.
- M. Hoist way Access:
 - 1. Hoist way Door Unlocking Device: Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface.
 - 2. Hoist way Access Switches: Mount in entrance frame side jamb at top and bottom floors. Provide switch without faceplate.

2.9 CAR EQUIPMENT

- A. Frame: Welded or bolted, rolled or formed steel channel construction to meet load classification specified.
- B. Safety Device: Type "A," instantaneous, if required.
- C. Platform: Isolated type, constructed of steel, or steel and wood which is fireproofed on underside. Design and construct to accommodate load classification requirements. Provide Class "A" construction for passenger elevators, Class "C 1" construction for Service elevators, and Class C2 construction for freight elevator.
- D. Platform Apron: Minimum 14-gauge steel, reinforced and braced to car platform front and rear with Contractor's standard finish.
- E. Guide Shoes: Roller type with three or more spring dampened, sound-deadening rollers per shoe. Maximum roller rotation speed, 350 rpm.
 - 1. Freight Only: Solid type with renewable oilless inserts to accommodate freight loading classification.
- F. Finish Floor Covering: VCT to match adjacent floor.
- G. Sills: One-piece extrusion with extruded extension between car entrance columns to face of car front return. Extruded extension to match finish of sill.
 - 1. Elevators All Passenger and Service: Nickel silver.
- H. Door Panels: 16-gauge steel, sandwich construction without binder

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angles. Provide leading edges of center-opening doors with rubber astragals. Provide a minimum of two gibs per panel, one at leading and one at trailing edge with gibs in the sill groove entire length of door travel. Construct door panels with interlocking, stiffening ribs.

- I. Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
- J. Door Track: Bar or formed, cold-drawn removable steel track with smooth roller contact surface.
- K. Door Header: Construct of minimum 12-gauge steel, shape to provide stiffening flanges.
- L. Door Electrical Contact: Prohibit car operation unless car door is closed. Provide car door interlock to prevent opening of car doors outside the unlocking zone.
- M. Door Clutch: Heavy-duty clutch, linkage arms, drive blocks and pickup rollers or cams to provide positive, smooth, quiet door operation. Design clutch so car doors can be closed, while hoist way doors remain open.
- N. Restricted Opening Device: Provide car-door interlock to prevent opening of car doors outside unlocking zone.
- O. Passenger, Door Operator: High-speed, heavy-duty linear door operator capable of opening doors at no less than 2.5fps. Accomplish reversal in no more than 2½" of door movement. Provide solid-state door control with closed loop circuitry to constantly monitor and automatically adjust door operation based upon velocity, position, and motor current. Provide a minimum of four controller-activated motion profiles, per floor, per door, to maintain consistent, smooth, and quiet door operation at all floors, regardless of door weight or varying air pressure.
- P. Passenger Control Device:
 - 1. Infrared Reopening Device:
 - a. Integrated stainless steel, fully enclosed device with full screen

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infrared matrix or multiple beams extending vertically along leading edge of each door panel to minimum height of 7'- 0" above finished floor. Provide extension of housing and lens full height of door panels. Device shall prevent doors from closing and reverse doors at normal opening speed if beams are obstructed while doors are closing, except during nudging operation. In event of device failure, provide for automatic shutdown of car at floor level with doors open:

2. Nudging Operation: After beams of door control device are obstructed for a predetermined time interval (minimum 20.0-25.0 seconds), warning signal shall sound and doors shall attempt to close with a maximum of 2.5-foot pounds kinetic energy. Activation of the door open button shall override nudging operation and reopen doors.
 3. Interrupted Beam Time: When beams are interrupted during initial door opening, hold door open a minimum of 3.0 seconds. When beams are interrupted after the initial 3.0 second hold open time, reduce time doors remain open to an adjustable time of approximately 1.0-1.5 seconds after beams are reestablished.
 4. Differential Door Time: Provide separately adjustable timers to vary time that doors remain open after stopping in response to calls.
 - a. Car Call: Hold open time adjustable between 3.0 and 5.0 seconds.
 - b. Hall Call: Hold open time adjustable between 5.0 and 8.0 seconds. Use hall call time when car responds to coincidental calls.
- Q. Car Operating Panel:
1. Passenger: Two car operating panels without faceplates consisting of a metal box containing the vandal resistant operating fixtures, mounted behind the car swing front return panels.
 - a. Provide manually operated stop switch within Firefighters' Phase II compartment
 - b. Provide "door open" button to stop and reopen doors or

- hold doors in open position.
 - c. Provide “door close” button to activate door close cycle. Cycle shall not begin until normal door dwell time for a car or hall call has expired, except firefighters’ operation.
 - d. Locked panel including Phase II fire access switch and hidden floor buttons, call cancel button, door open, door close, switch, stop switch, light jewel, fire communication jack within locked panel, for fire officer use and use of car on independent service only.
- 2. Service: One vandal resistant car operating panel with faceplate consisting of a metal box containing operating fixtures, mounted behind the car stationary front return panel.
 - a. Provide manually operated stop switch within Firefighters’ Phase II compartment.
 - b. Provide “door open” button to stop and reopen doors or hold doors in open position.
 - c. Provide “door close” button to activate door close cycle. Cycle shall not begin until normal door dwell time for a car or hall call has expired, except firefighters’ operation.
 - d. Locked panel including Phase II fire access switch, call cancel button, door open, door close switch, stop switch, light jewel, fire communication jack within locked panel, for fire officer use and use of car on independent service only.
 - f. Provide “door open” button to stop and reopen doors or hold doors in open position.
 - g. Service Only, Extended Door Hold Open Button:
 - h. Provide button to extend normal door hold open period up to 30 seconds. Cancel extended time by registration of car call or actuation of door close button.
 - i. Provide “door close” button to activate door close cycle. Close shall not begin until normal door dwell time for a car

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- or hall call has expired, except firefighters' operation.
3. Suitably identify floor buttons, alarm button, door open button, door close button, and emergency push-to-call button with SCS Elevator Products, Inc. or equal cast tactile symbols recessed flush mounted with permanent rear mounted fastenings. Manufacturers standard tactile markings acceptable for service and freight cars. Configure plates per local building code accessibility standards including Braille. Locate top floor button at maximum height allowed above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
 4. Provide minimum 3/4" diameter raised floor pushbuttons that illuminate to indicate call registration.
 5. Provide alarm button to ring bell located on car. Illuminate button when actuated.
 6. Provide Firefighters' devices and operation. Install firefighters' telephone jack with approved mounting bezel matching adjacent controls in firefighter's compartment.
 7. Provide lockable service compartment with recessed flush door. Door material and finish shall match car return panel or car operating panel faceplate. Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:
 - a. Inspection switch.
 - b. Light switch.
 - c. Exhaust blower switch.
 - d. Independent service switch.
 - e. Constant pressure test button for battery pack emergency lighting.
 - f. 120-volt, AC, GFCI protected electrical convenience duplex outlet.
 - g. Card reader override switch.
 - h. Switch to select either floor voice annunciation, floor passing tone, or chime.
 - i. Keyed stop switch.
 8. Provide black paint filled (except as noted), engraved, or approved etched

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signage as follows with approved size and font:

- a. Phase II firefighters' operating instructions on inside face of firefighters' compartment door. Engrave filled red firefighters' operation on outside face of compartment door.
 - b. Building identification car number on main and auxiliary car operating panel.
 - c. Car capacity in pounds on main car operating panel service compartment door.
 - d. compartment door.
 - e. Loading classification and description on car operating panel service compartment door.
- R. Car Top Control Station: Mount to provide safe access and utilization while standing in an upright position on car top.
- S. Work Light and Duplex Plug Receptacle: GFCI protected outlet at top of car. Include on/off switch and lamp guard. Provide additional GFCI protected outlet on car top for installation of car CCTV.
- T. Communication System:
- 1. (Coordinate with Lamar State College Port Arthur to fit existing system)
 - 2. "Push to Call," two-way communication instrument in car integral to COP with automatic dialing, tracking, and recall features with shielded wiring to car controller in machine room. Provide dialer with automatic rollover capability with minimum two numbers.
 - a. "Push to Call" button or adjacent light jewel shall illuminate and flash when call is acknowledged. Button shall match car operating panel pushbutton design. Provide uppercase "PUSH TO CALL" "HELP ON THE WAY" engraved signage adjacent to button.
 - b. Provide "Push to Call" button tactile symbol, engraved

- signage, and Braille adjacent
to button mounted integral with
car front return panel.
3. Firefighters' communication jack in car and firefighters' panel jack bezel shall match adjacent controls.
 4. Install remote speakers provided under Item 1.1. B.1 in car behind front return panel with drilled speaker pattern, with shielded wiring to machine room junction box.
 5. Provide two-way communication between car and machine room if required.

2.10 CAR ENCLOSURE

- A. Passenger Elevator: Provide complete as specified herein and detailed on architectural drawings.
 1. Shell: Reinforced 14-gauge furniture steel formed panels with baked enamel interior finish as selected. Apply sound-deadening mastic to exterior. Provide concealed ventilation cutouts.
 2. Canopy: Reinforced 12-gauge furniture steel formed panels with lockable, contacted, hinged emergency exit. Interior finish white color reflective baked enamel.
 3. Front and Rear, if applicable, Return Panels and Integral Entrance Columns: Reinforced 14-gauge furniture steel clad with minimum 16-gauge satin finish stainless steel. Swing entire unit on substantial pivot points (minimum three) for service access to car operating panel(s). Locate pivot points to provide full swing of front return panel without interference
 4. with side wall finish or handrail. Secure in closed position with concealed three-point latch. Provide firefighters' and service compartments with recessed flush cover and cutouts for operating switches, etc.
 5. Transom: Reinforced 14-gauge furniture steel clad with minimum 16-gauge satin finish stainless steel full width of enclosure.
 6. Car Door Panels: Reinforced minimum 16-gauge furniture steel clad with

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- minimum 18-gauge satin finish stainless steel. Same construction as hoist way door panels.
7. Base: Satin finish stainless steel with concealed ventilation cutouts.
 8. Interior Wall Finish: Removable panels, faced and edged, with color core plastic laminate, color and finish as selected.
 9. Ventilation: Morrison Products, Inc. three-speed model SOE 06-01055 exhaust blower mounted to car canopy on isolated rubber grommets. Exhaust blower shall meet noise and vibration criteria.
 10. Lighting: Provide LED fixtures with wiring and hookup. Coordinate with emergency lighting requirements
 11. Suspended Ceiling: Six-section satin finish stainless steel panels with LED downlight fixture in each panel.
 12. Handrails: Minimum 1¼" diameter stainless steel tubular grab bar with backing plates and captive nuts across rear wall. Bolt rails through car walls from back and mount on 1½" deep solid round stainless steel standoff spacers no more than 18" O.C. Return handrail/guardrail ends to car walls.
 13. Garage Elevators only, Cab Air Conditioner/Heater Unit: Provide self-contained cab air conditioner/heater on car top with concealed ducts, thermostat control, and evaporator. Isolate from car top to comply with noise and vibration requirements.

2.11 HALL CONTROL STATIONS

- A. Pushbuttons: Provide one riser or two risers, if required, with flush mounted faceplates. Include pushbuttons for each direction of travel that illuminate to indicate call registration. Include approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency as part of faceplate. Pushbutton design shall match car operating panel pushbuttons. Provide vandal resistant pushbutton and light assemblies. Provide LED illumination.
- B. Phase I Fire Service fixture, including key switch, engraved

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operating instructions and illuminating jewel. Provide illuminating jewel(s) indicating standby power status.

- C. Freight, Door Control Buttons: Include vandal resistant "door open," "door close," and "stop" buttons for control of power operated vertical bi-parting doors at each landing call button fixture. Provide buttons integral with hall control station. Pushbutton design shall match car operating panel pushbuttons.

2.12 SIGNALS

- A. Hall Lantern, Elevators, all except Freights:
 - 1. Provide at each entrance to indicate travel direction of arriving car. Locate as detailed on architectural drawings.
 - 2. Illuminate up or down LED lights and sound tone once for up and twice for down direction prior to car arrival at floor. Illuminate light until the car doors start to close.
 - 3. Sound level shall be adjustable from 20-80 dBA measured at 5'-0" in front of hall control station and 3'-0" off floor.
 - 4. Provide advanced predictive hall lantern notification to comply with ADA hall call notification time. Provide adjustable car door dwell time to comply with ADA requirements relative to hall call notification time.
 - 5. Car direction lenses shall be arrow shaped with faceplates.
 - 6. Lenses shall be minimum 2½" in their smallest dimension.
 - 7. Provide vandal resistant lantern and light assemblies consisting of series of dots or lines for maximum visibility.

- B. Car Position Indicator: Alpha-numeric digital indicator containing floor designations and direction arrows a minimum of 1/2" high to indicate floor served and direction of car travel. Locate fixture in car front return panel above each car operating panel. When a car leaves or passes a floor, illuminate indication representing position of car in hoist way. Illuminate proper direction arrow to indicate direction of travel.

- C. Hall Position Indicator, Elevators all except

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Freights: Alpha- numeric digital indicator containing floor designations and direction arrows a minimum of 2½" high to indicate floor served and direction of car travel. Mount integral with hall lanterns at Main floor.

- D. Faceplate Material and Finish: Satin finish stainless steel, all fixtures. Tamper resistant fasteners for all fastenings exposed to the public.
- E. Floor Passing Tone: Provide an audible tone of no less than 20 decibels and frequency of no higher than 1500 Hz, to sound as the car passes or stops at a floor served.
- F. Voice Synthesizer: Provide electronic device with easily reprogrammable message and female voice to announce car direction, floor, emergency exiting instructions, etc.

2.13 FIRE CONTROL PANEL (IF REQUIRED)

- A. Firefighters' Control Panel: Locate in building fire control room. Fixture faceplate, stainless steel satin finish, including the following features:
 - 1. Car position and direction indicator (digital-readout or color SVGA display type). Identify each position indicator with car number and group identification.
 - 2. Indicator showing operating status of car.
 - 3. Manual car standby power selection switches and power status indicators.
 - 4. Two-position firefighters' emergency return switches and indicators with engraved instructions filled red.
 - 5. Firefighters' telephone jack.
 - 6. Fixtures and monitor shall be located as directed by Architect. Where applicable, identify all indicators and manual switches with appropriate engraving. Provide conduit and wiring to control panel. Coordinate size and location with Architect.
- B. Machine Room Display System with Battery Backup: Provide groups of elevators with a monitoring system in the machine room with

color monitor. System shall be a Windows based operating

- C. system capable of outputting to external media. As a minimum, system shall display the following functions:
 - 1. Operational Displays:
 - a. Car operating in normal/standby power.
 - b. Car position and direction of travel.
 - c. Car and Hall calls.
 - d. Operating mode.
 - e. Door status.
 - f. Delayed car.
 - g. Load weighing and by-pass.
 - h. Car to lobby feature.
 - i. Car in/out of service.
 - 2. System Performance Monitoring:
 - a. Hall call registration information: Provide memory capacity for at least the preceding five, 24-hour periods, in blocks of 5- or 15-minute segments, running hour to hour (i.e., 2:00 p.m. to 3:00 p.m.)
 - 1) Visual and printed summary of hall call registration events by floor, direction, and duration, totaled in 5- or 15-minute segments during any 60-minute block using an internal clock.
 - 2) Visual and printed summary of hall call registration duration averaged for 5- or 15-minute and hourly periods.
 - 3) Visual and printed summary of percentage of hall calls answered within 30 and 60 seconds in each 5- or 15-minute and hourly periods.
 - 4) Visual and printed summary of time periods during which individual cars are not in group operation (operating separately or out of service).
 - b. Accumulate system fault data including nature of fault, time, and day. Store and retrieval capabilities for minimum 30-day

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- period.
3. Provide printer to produce a hard copy of stored data. Provide directions and software to accomplish information retrieval.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to beginning installation of equipment examine hoist way and machine room areas. Verify no irregularities exist which affect execution of work specified.
- B. Do not proceed with installation until work in place conforms to project requirements.

3.2 INSTALLATION

- A. Install all equipment in accordance with Contractor's
- B. instructions, referenced codes, specification, and approved submittals.
- C. Install machine room equipment with clearances in accordance with referenced codes and specification.
- D. Install all equipment so it may be easily removed for maintenance and repair.
- E. Install all equipment for ease of maintenance.
- F. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
- G. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
 1. All exposed equipment and metal work installed as part of this work which does not have architectural finish.
 2. Machine room equipment, hoist way equipment including guide rails, guide rail brackets, and pit equipment.
 3. Neatly touch up damaged factory-

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Painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.

- H. Clean all architectural finishes and replace or restore any surfaces damaged during construction to like new condition.

3.3 FIELD QUALITY CONTROL

- A. Acceptance Testing: On completion of elevator installation and before permitting elevator use (either temporary or permanent), perform acceptance tests as required and recommended by ASME A17.1/CSA B44 and by governing regulations and agencies.
- B. Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times that tests are to be performed on elevators.

3.4 ADJUSTING

- A. Install hydraulic jack assembly and guide rails plumb and align vertically with tolerance of 1/16" in 100'-0". Secure guide rail joints without gaps and file any irregularities to a smooth surface.
- B. Static balance car to equalize pressure of guide shoes on guide rails.
- C. Lubricate all equipment in accordance with Contractor's instructions.
- D. Adjust motors, valves, controllers, leveling switches, limit switches, stopping switches, door operators, interlocks, and
- E. safety devices to achieve required performance levels.

3.5 CLEANUP

- A. Keep work areas orderly and free from debris during progress of project. Remove packaging materials on a daily basis.
- B. Remove all loose materials and filings resulting from work.
- C. Clean machine room equipment and floor.

- D. Clean pit equipment and floor.
- E. Clean hoist ways, car, car enclosure, entrances, operating, and signal fixtures.

3.6 TEST RESULTS:

- A. Under any load obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Consultant. Tests may be conducted under no load, balanced load, and full load conditions.
- B. Consultant may test temperature rise in motor windings limited to 50° Celsius above ambient. A full-capacity one hour running test, stopping at each floor for ten seconds in up and down directions, may be required.
- C. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate, adjust, and maintain elevators.
- D. Check operation of each elevator with Owner's personnel present before date of Substantial Completion and again not more than one month before end of warranty period. Determine that operation systems and devices are functioning properly.

3.7 PROTECTION

- A. Temporary Use: Comply with the following requirements for each elevator used for construction purposes:
 - 1. Provide car with temporary enclosure, either within finished car or in place of finished car, to protect finishes from damage.
 - 2. Provide strippable protective film on entrance and car doors and frames.
 - 3. Provide padded wood bumpers on entrance door frames covering jambs and framefaces.
 - 4. Provide other protective coverings, barriers, devices, signs, and procedures as needed to protect elevator and elevator equipment.

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5. Do not load elevators beyond their rated weight capacity.
6. Engage elevator Installer to provide full maintenance service. Include preventive maintenance, repair, or replacement of worn or defective components, lubrication, cleanup, and adjustment as necessary for proper elevator
7. operation at rated speed and capacity. Provide parts and supplies same as those used in the manufacture and installation of original equipment.
8. Engage Elevator Installer to restore damaged work, if any, so no evidence remains of correction. Return items which cannot be refinished in the field to the shop, make required repairs, and refinish entire unit, or provide new units as required.

END OF SECTION

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SECTION 32 31 23 – FENCES AND GATES

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings, Technical specifications, TSUS construction specifications Division1, TSUS uniform general conditions for construction contract, safety requirements of OSHA and prevailing codes and city, state and county.

1.2 SECTION INCLUDES

- A. Commercial steel ornamental fence system - fusion welded.

1.3 RELATED SECTIONS

- A. Section 31 20 00 - Earth Moving.
- B. Section 03 30 00 - Cast-in-Place Concrete.
- C. Section 32 31 32 - Gate Operators*.
- D. Section 28 13 53 - Security Access Detection.

1.4 REFERENCES

- A. ASTM - American Society for Testing and Materials:
 - 1. ASTM A 653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 2. ASTM B 117 - Practice for Operating Salt-Spray (Fog) Apparatus.
 - 3. ASTM D 523 - Test Method for Specular Gloss.
 - 4. ASTM D 714 - Test Method for Evaluating Degree of Blistering in Paint.
 - 5. ASTM D 822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
 - 6. ASTM D 1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
 - 7. ASTM D 2244 - Test Method for Calculations of Color Differences from Instrumentally Measured Color Coordinates.
 - 8. ASTM D 2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact). ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
 - 9. ASTM D 3359 - Test Method for Measuring Adhesion by Tape Test.
 - 10. ASTM F 2408 - Ornamental Fences Employing Galvanized Steel Tubular Pickets.
- B. ASTM - American Society for Testing and Materials:
 - 1. ASTM B 117 - Practice for Operating Salt-Spray (Fog) Apparatus.
 - 2. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
 - 3. ASTM D 523 - Test Method for Specular Gloss.
 - 4. ASTM D 822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
 - 5. ASTM D 1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
 - 6. ASTM D 2244 - Test Method for Calculations of Color Differences from Instrumentally Measured Color Coordinates.
 - 7. ASTM D 2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact). ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
 - 8. ASTM D 3359 - Test Method for Measuring Adhesion by Tape Test.
- C. AAMA - American Architectural Manufacturers Association:
 - 1. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, gates, and schedule of components.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing Products specified in this section with minimum five years documented experience.
- B. Installer Qualifications: Installers experienced with type of construction involved and materials and techniques specified.
- C. Single Source: Entire fence system, and all associated accessories, fittings, and fasteners shall be obtained from a single source.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling.
- B. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and be protected against damage, weather, vandalism, and theft.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

- A. The powder coated surface on all components (pickets, rails, and posts) is warranted for 10 years. Refer to manufacturer for complete details regarding warranty.
- B. The powder coated surface on all components (pales, rails, and posts) is warranted for 15 years. Refer to manufacturer for complete details regarding warranty.
- C. The electrocoated surface on all components (panels and posts) is warranted for 20 years. Refer to manufacturer for complete details regarding warranty.
- D. The powder coated surface on all aluminum framework (pickets, rails and posts) is warranted for a limited lifetime. Refer to manufacturer for complete details regarding warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Ameristar Fence Products.
- B. Fortress Fence Products.
- C. Iron World Manufacturing, LLC.

2.2 ORNAMENTAL FENCING

- A. Commercial Steel Ornamental Fence System - Fusion Welded: System includes posts, panels, and mounting accessories.
 - 1. Acceptable Product: Montage Plus or Montage Commercial.
 - 2. Grade: Commercial.
 - 3. Standard Style: 3 15/16 inch (101.6 mm) air space between pickets.
 - A. Classic: Pressed pointed pickets extend above top rail.
 - 1. Two Rail: Style Classic.
 - 2. Two Rail Flush Bottom Treatment: Style Classic.

3. Three Rail: Style Classic.
4. Three Rail Flush Bottom Treatment: Style Classic.
5. Four Rail: Style Classic.
4. Height:
 - A. Height: 6 feet (1829 mm).
5. Steel (ASTM A924/A924M): Steel for tubular pickets, rails and posts shall have minimum yield strength of 45,000 psi (310 MPa).
6. Galvanizing (ASTM A653/A653M): Prior to forming, hot dip galvanized with minimum zinc coating weight of 0.60 oz/ft² (184 g/m²), Coating Designation G-60.
7. Rails:
 - A. Steel channel, 1.4375 inches (36.5 mm) x 1.5 inches (38 mm).
 - B. Standard Picket Spacing: Picket holes shall be spaced at 4.675 inches (118.75 mm) o.c.
8. Pickets: 3/4 inches (19 mm) square x 17 gauge tubing for heights up to 6 feet, and 14 gauge tubing for 7 and 8 foot heights.
9. Racking/Biasability (Ability of Panels to Follow Grades): able to follow varying grade changes to a maximum of 48 inch (762 mm) rise in an 8 foot (2438 mm) run.
10. Posts:
 - A. Size: 2.5 inches by 2.5 inches by 16 gauge w/ standard post cap.
 - B. Size: 2.5 inches by 2.5 inches by 14 gauge w/ standard post cap, required for 7 foot and 8 foot heights.
 - C. Size: 3 inches by 3 inches by 12 gauge w/ standard post cap.
11. Accessories: Aluminum castings.
 - A. Finial: Quad Flair.
 - B. Finial: Triad.
 - C. Post Cap: Ball Cap.
 - D. Double Rings.
 - E. Butterfly Scroll.

2.3 FINISH

- A. PermaCoat: Thermal stratification coating process (high-temperature, in-line, multi-stage, multi-layer) including six-stage pretreatment/wash with zinc phosphate, an electrostatic spray application of epoxy base, and a separate electrostatic spray application of a polyester top coat finish.
 1. Base Coat Coating Thickness: Thermosetting epoxy powder coating with minimum thickness of 2 to 4 mils (0.0508 to 0.1016 mm).
 2. Top Coat Coating Thickness: No-mar TGIC polyester powder finish with minimum thickness of 2 to 4 mils (0.0508 to 0.1016 mm).
 3. Coating Performance Requirements: Coating meets or exceeds the following.
 - A. Adhesion (ASTM D 3359, Method B): Adhesion over 90 percent of test area (tape and knife test).
 - B. Corrosion Resistance (ASTM B 117, ASTM D 1654): Coated galvanized steel shall be capable of salt spray resistance for 3,500 hours without loss of adhesion on parts scribed per ASTM D1654 and tested in accordance with ASTM Test Method B117. Failure is considered to have occurred when there is either 1/8 inch (3.18 mm) coating loss from the scribed mark or an accumulation of medium #8 blisters.
 - C. Impact Resistance (ASTM D 2794): 60 inch pounds, minimum (impact using 0.625 inch ball).
 - D. Weathering Resistance (ASTM D 822, D 2244, D 523 - 60 Degree Method): 1,000 hours, minimum (failure mode is 60 percent loss of gloss or color variance of more than 3 delta-E color units.)
- B. E-Coat: Electrode position coating process consisting of multi-stage pretreatment/wash (with zinc phosphate), followed by duplex application of epoxy primer and acrylic topcoat; for interior and exterior of steel posts, rail and pickets.
 1. Coating Thickness: Minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils (0.058 mm).
 2. Coating Performance Requirements: Coating meets or exceeds the following:

- A. Adhesion (ASTM D 3359, Method B): Adhesion over 90 percent of test area (tape and knife test).
 - B. Corrosion Resistance (ASTM B 117, ASTM D 714, ASTM D 1654): Coated galvanized steel shall be capable of salt spray resistance for 1,500 hours without loss of adhesion on parts scribed per ASTM D1654 and tested in accordance with ASTM Test Method B117. Failure is considered to have occurred when there is either 1/8 inch (3.18 mm) coating loss from the scribed mark or an accumulation of medium #8 blisters.
 - C. Impact Resistance (ASTM D 2794): 60 inch pounds, minimum (impact using 0.625 inch ball).
 - D. Weathering Resistance (ASTM D 822, D 2244, D 523 - 60 Degree Method): 1,000 hours, minimum (failure mode is 60 percent loss of gloss or color variance of more than 3 delta-E color units.)
- C. Polyester Coating: Thermal stratification coating process (high-temperature, in-line, multi-stage, multi-layer) including six-stage pretreatment/wash with zinc phosphate and a separate electrostatic spray application of a polyester top coat finish.
- 1. Top Coat Coating Thickness: No-mar TGIC polyester powder finish with minimum thickness of 2 to 4 mils (0.0508 to 0.1016 mm).
 - 2. Coating Performance Requirements: Coating meets or exceeds the following:
 - A. Adhesion (ASTM D 3359, Method B): Adhesion over 90 percent of test area (tape and knife test).
 - B. Corrosion Resistance (ASTM B 117, ASTM D 1654): Coated galvanized steel shall be capable of salt spray resistance for 1,000 hours without loss of adhesion on parts scribed per ASTM D1654 and tested in accordance with ASTM Test Method B117. Failure is considered to have occurred when there is either 1/8 inch (3.18 mm) coating loss from the scribed mark or an accumulation of medium #8 blisters.
 - C. Impact Resistance (ASTM D 2794): 60 inch pounds, minimum (impact using 0.625 inch ball).
 - D. Weathering Resistance (ASTM D 822, D 2244, D 523 - 60 Degree Method): 1,000 hours, minimum (failure mode is 60 percent loss of gloss or color variance of more than 3 delta-E color units.)

2.4 FABRICATION

- A. ForeRunner Railing System:
 - 1. Pickets, rails and posts shall be pre-cut to specified lengths.
 - 2. ForeRunner rails shall be prepunched to accept pickets.
 - 3. Pickets shall be predrilled to accept retaining rods.
 - 4. Provide PVC grommets to seal all picket-to-rail intersections. Grommets shall be inserted into the prepunched holes in the rails and pickets shall be inserted through the grommets so that predrilled picket holes align with the internal upper raceway of the ForeRunner.
 - 5. Retaining rods shall be inserted into each ForeRunner rail so that they pass through the predrilled holes in each picket.
- B. ProFusion Welding System:
 - 1. Rails shall be pre-punched to accept pickets.
 - 2. Pickets shall be inserted into the pre-punched holes in the rails and shall be aligned to standard spacing using a specially calibrated alignment fixture.
 - 3. The aligned pickets and rails shall be joined at each picket-to-rail intersection by Ameristar's proprietary fusion welding process, (ProFusion Welding) thus completing the rigid panel assembly.
- C. Impasse Fabrication
 - 1. Pales, rails and posts shall be pre-cut to specified lengths.
 - 2. Impasse rails shall be pre-punched to accept the tamperproof security fasteners.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory

preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare the grade and remove surface irregularities, if any, which may cause interference with the installation of fencing.
- C. If preparation and condition is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use of non-manufactures parts/components are will negate manufacturer's warranty.
- C. Fence posts shall be set in accordance with the manufacturer recommended spacing.
- D. Division 2 and Division 3 Sections shall govern post base material requirements.
- E. Panels shall be attached to posts using mechanically fastened panel brackets supplied by the manufacturer.
- F. Impasse panels shall be attached to posts using mounting brackets and tamperproof security fasteners supplied by the manufacturer.
- G. When cutting rails immediately seal the exposed surfaces by:
 - 1. Removing all metal shavings from cut area.
 - 2. Apply zinc-rich primer to thoroughly cover cut edge and drilled hole; allow to dry.
 - 3. Apply 2 coats of custom finish spray paint matching fence color.
 - 4. Failure to seal exposed surfaces in accordance with manufacturer's instructions will negate manufacturer's warranty.
- H. Gate posts shall be spaced according to the manufacturers' gate drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected.
 - 1. Type and quantity of gate hinges shall be based on the application; weight, height, and number of gate cycles.
 - 2. The manufacturer's gate drawings shall identify the necessary gate hardware required for the application.
 - 3. Gate hardware shall be provided by the manufacture of the gate and shall be installed per manufacturer's recommendations

3.4 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From Indicated Position: 1 inch.
- C. Minimum distance from property line: 6 inches.

3.5 CLEANING

- A. Leave immediate work area neat at end of each work day.
- B. Clean jobsite of excess materials; scatter excess material from post hole excavations uniformly away from posts. Remove excess material if required.
- C. Clean fence with mild household detergent and clean water rinse well. Mortar should be removed from exposed posts and other fencing material using a 10% solution of muriatic acid followed immediately by several rinses with clean water.
- D. Touch up scratched surfaces using materials recommended by manufacturer. Match touchup paint color to fence finish.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

GENERAL NOTES:

- TOILET ROOM SHALL COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS AND/OR ADA. UNLESS OTHERWISE NOTED, NO ALTERATION SHALL BE UNDERTAKEN WHICH DECREASES OR HAS THE EFFECT OF DECREASING ACCESSIBILITY OR USABILITY OF THE BUILDING.
- MEANS OF EGRESS SHALL HAVE PANIC HARDWARE AND CLOSURE. EACH MEANS OF EGRESS SHALL COMPLY WITH THE LATEST INTERNATIONAL BUILDING CODE AND ADA.
- CONTRACTOR SHALL PROVIDE EXIT SIGNS. EXIT SIGNS SHALL COMPLY WITH THE LATEST INTERNATIONAL BUILDING CODE AND ADA.
- CONTRACTOR SHALL PROVIDE EMERGENCY LIGHTS AS SHOWN. EMERGENCY LIGHTS SHALL COMPLY WITH THE LATEST INTERNATIONAL BUILDING CODE AND ADA.
- TOILET ROOMS TO HAVE A CLEAR FLOOR SPACE AS SHOWN IN ENLARGED PLAN.
- ADA COMPLIANT WATER CLOSET HEIGHT SHALL BE 17" TO 19" MEASURED TO TOP OF THE TOILET SEAT. SEAT SHALL NOT BE SPRING TO RETURN TO A LIFTED POSITION AS REQUIRED BY ADA.
- LAVATORIES TO HAVE A CLEAR FLOOR SPACE OF 30"x48" IN FRONT OF THE LAVATORIES.
- ALL HOT WATER AND DRAIN PIPES EXPOSED UNDER SINKS/LAVATORIES SHALL BE INSULATED OR OTHERWISE CONFIGURED SO AS TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER THE SINKS.
- PROVIDE INSULATION BURN PROTECTION AT ALL EXPOSED LAVATORY PIPES AS REQUIRED BY ADA.
- FAUCET CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST AS REQUIRED BY ADA.
- ALL TOILET ACCESSORIES SHALL COMPLY WITH THE ADA.
- ALL ELECTRICAL CONSTRUCTION SHALL MEET THE NATIONAL ELECTRICAL CODES AND COMPLY WITH LOCAL AND STATE CODES, LAWS AND ORDINANCES.
- ALL PLUMBING CONSTRUCTION SHALL MEET THE NATIONAL PLUMBING CODES AND COMPLY WITH LOCAL AND STATE CODES, LAWS AND ORDINANCES.
- FIRE EXTINGUISHERS SHALL BE ADA COMPLIANT AND COMPLY WITH THE LATEST INTERNATIONAL BUILDING CODE AND ADA.
- FURNITURE SHOWN AS DASHED LINES SHALL BE PROVIDED BY THE OWNER.
- DOOR KNOBS SHALL BE LEVER-TYPE AND MEET HANDICAP REQUIREMENTS AND SHALL BE MOUNTED NO HIGHER THAN 48" ABOVE FINISH FLOOR.
- THRESHOLDS AT DOORWAYS SHALL NOT EXCEED 1/2" IN HEIGHT FROM FINISHED FLOOR. FLOOR LEVEL CHANGES AT ACCESSIBLE DOORWAYS SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2.
- DOORS IN FIREWALLS SHALL BE FIRE LABELED. REF. TO DOOR SCHEDULE.
- ALL INTERIOR DOORS TO BE 18" CLEAR FROM WALL TO STRIKE SIDE OF DOOR TO ACCOMMODATE ADA REQUIREMENTS. AT EXTERIOR DOORS PROVIDE 12" CLEAR FROM WALL TO STRIKE SIDE OF DOOR TO ACCOMMODATE ADA REQUIREMENTS.
- ALL EXPOSED EDGES OF GYPSUM BOARD TO HAVE METAL TRIM EDGE.
- ALL 2X4 WOOD & 3 5/8" METAL STUD WALLS SHALL HAVE R-11 BATT INSULATION. ALL 2X6 WOOD & 6" METAL STUD WALLS SHALL HAVE R-19 BATT INSULATION. ALL INTERIOR STUD SHALL BE INSULATED REGARDLESS OF STUD SIZE.

METAL STUD NOTES:

- METAL STUD GAUGE SHALL BE:
- 16 GA. FOR WALLS WITH A HEIGHT OF 24'-0"
 - 18 GA. FOR WALLS WITH A HEIGHT OF 20'-0"
 - 20 GA. FOR WALLS WITH A HEIGHT OF 8'-0"

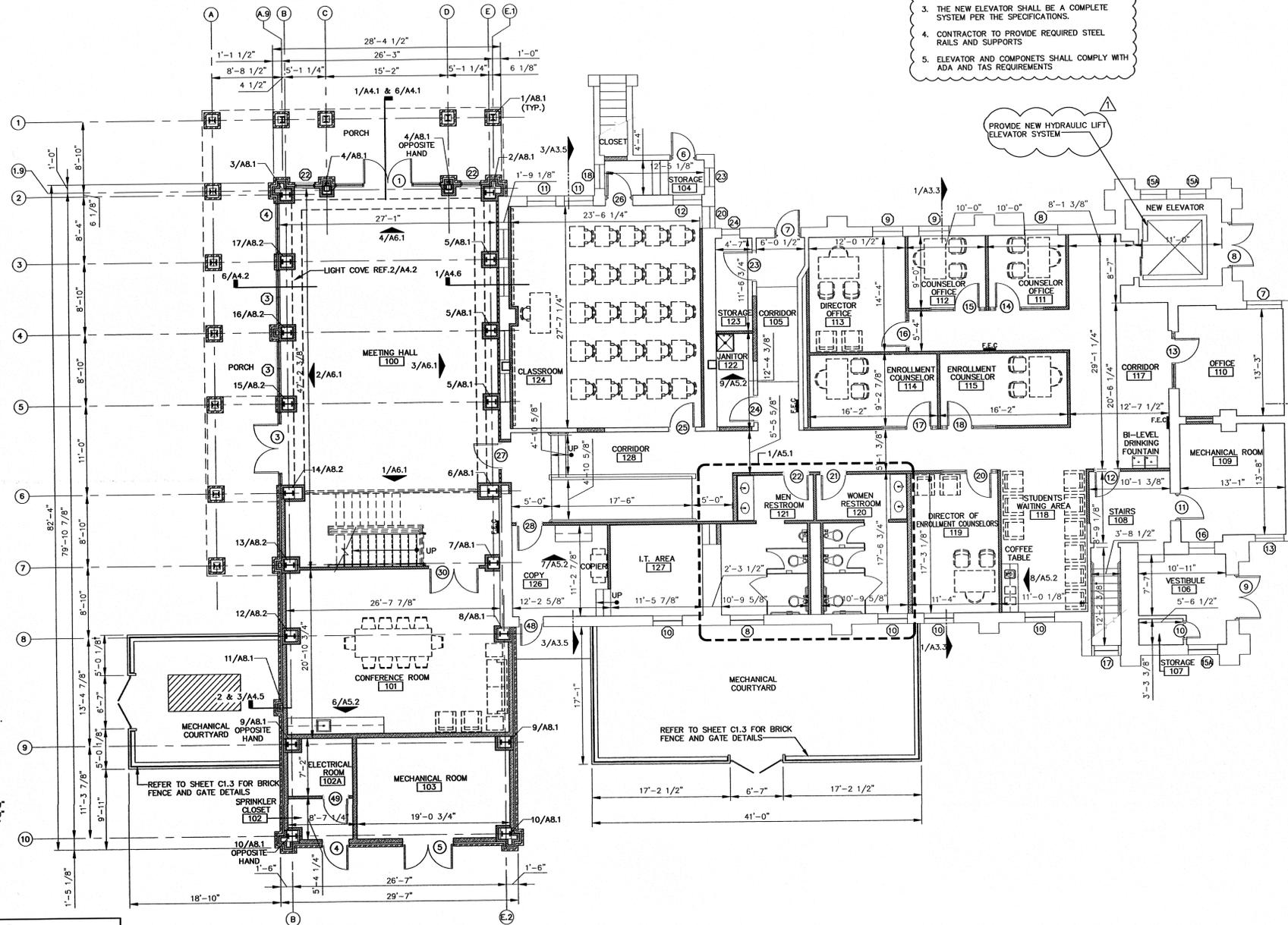
LEGEND

NEW ADDITION	EXISTING BUILDING RENOVATION

NOTE: ALL INTERIOR DIMENSIONS ON THIS SHEET ARE FROM FACE OF STUD TO FACE OF STUD.

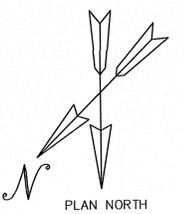
- ELEVATOR NOTES:**
- CONTRACTOR SHALL PROVIDE NEW HYDRAULIC PASSENGER ELEVATOR SYSTEM.
 - CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF THE EXISTING ELEVATOR SHAFT AND PIT PRIOR TO CONSTRUCTION.
 - THE NEW ELEVATOR SHALL BE A COMPLETE SYSTEM PER THE SPECIFICATIONS.
 - CONTRACTOR TO PROVIDE REQUIRED STEEL RAILS AND SUPPORTS.
 - ELEVATOR AND COMPONENTS SHALL COMPLY WITH ADA AND TAS REQUIREMENTS.

PROVIDE NEW HYDRAULIC LIFT ELEVATOR SYSTEM



1 FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

2 PORCH DIMENSIONS
SCALE: 3/16" = 1'-0"



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LAMAR STATE COLLEGE PORT ARTHUR
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PORT ARTHUR, TX

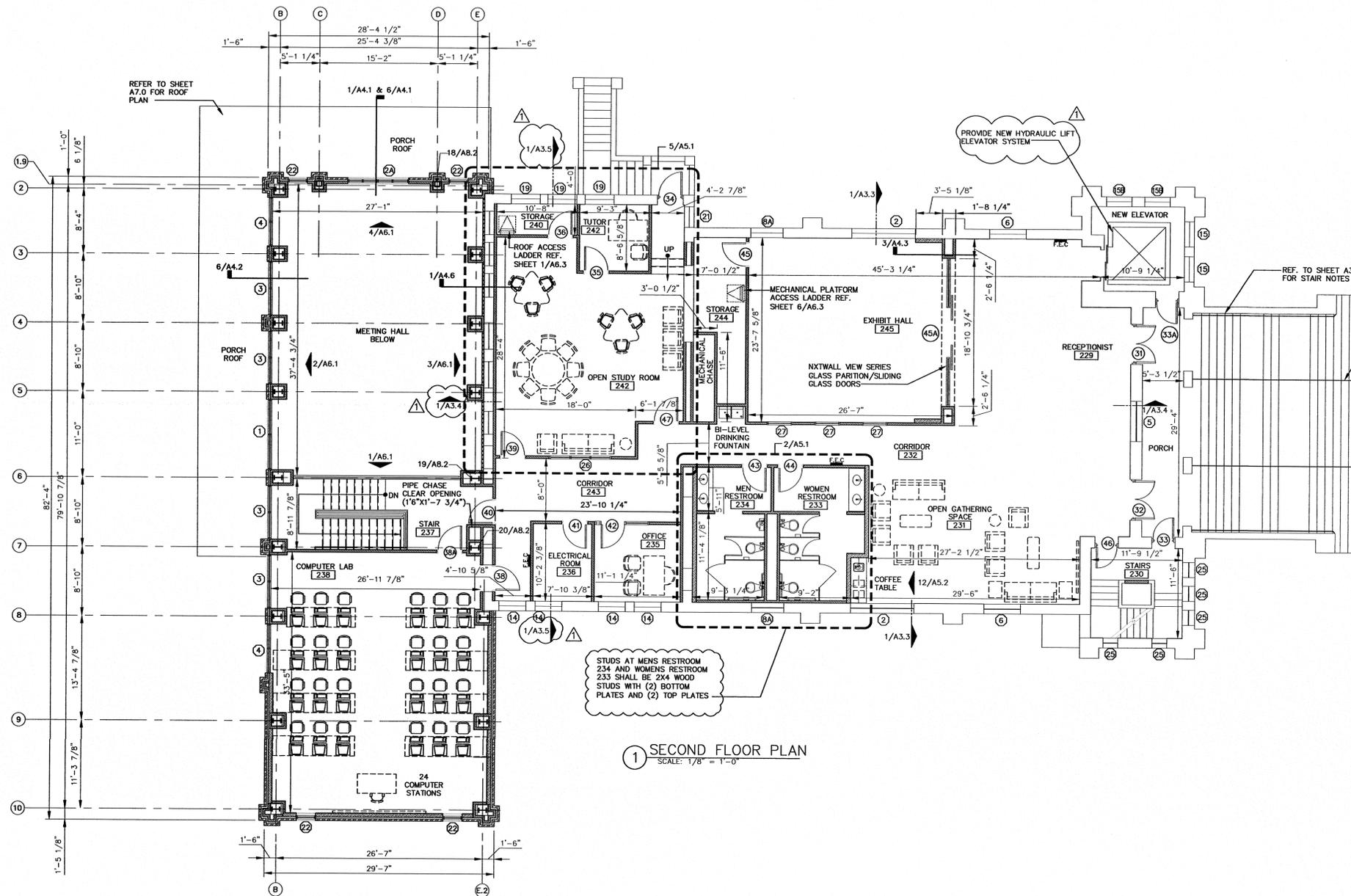
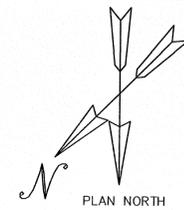


TAS #:
ISSUED FOR
BIDS & CONSTRUCTION
05/20/2020
REVISION 1
06/22/2020

AEL
DRAWN BY
CJR
CHECKED BY
SKN
APPROVED BY

SHEET NUMBER
A1.1
19-148
PROJECT NO.

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LEGEND	
	6" METAL STUD AT 16" O.C.
	3 5/8" METAL STUDS AT 16" O.C. UNLESS OTHERWISE NOTED.
	2 1/2" METAL STUD AT 16" O.C.
	3" BRICK WALL UNLESS OTHERWISE NOTED.
	F.E.C. RECESSED FIRE EXTINGUISHER CABINET
	6'-0"

NOTE: ALL INTERIOR DIMENSIONS ON THIS SHEET ARE FROM FACE OF STUD TO FACE OF STUD.

1 SECOND FLOOR PLAN
 SCALE: 1/8" = 1'-0"

LAMAR STATE COLLEGE PORT ARTHUR
RUBY FULLER EDUCATION BUILDING
 PORT ARTHUR, TX



TAS #:
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 05/20/2020
 REVISION 1
 06/22/2020

AEL
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 CJR
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SHEET NUMBER
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19-148
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ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS				CEILING	CEILING HEIGHT	REMARKS
				NORTH	SOUTH	EAST	WEST			
100	MEETING HALL	F1	B2	W2	W1	W1	W1	C3/C4	±31'-4 1/2"	
101	CONFERENCE ROOM	F3	B3	W1/W4/W5	W1	W1	W1	C3	9'-0"	SEE SHEET A2.6 FOR PATTERN DESIGN
102	SPRINKLER CLOSET	F8	P1	W1	W1	W1	W1	C5	9'-0"	
102A	ELECTRICAL ROOM	F8	P1	W1	W1	W1	W1	C5	9'-0"	
103	MECHANICAL ROOM	F8	P1	W1	W1	W1	W1	C5	9'-0"	
104	STORAGE	F6	B3	W1	W1	W1	W1	C4	±8'-0"	
105	CORRIDOR	F1	B3	W1	W1	W1	W1	C1	9'-0"	
106	VESTIBULE	F6	B3	W1	W1	W1	W1	C1	±9'-0"	
107	STORAGE	F6	B3	W1	W1	W1	W1	C1	±9'-0"	
108	STAIRS	F7	B3	W1	W1	W1	W1	C4	±9'-0"	CEILING HEIGHT VARIES
109	MECHANICAL ROOM	F6	B4	W1	W1	W1	W1	C1	9'-0"	
110	OFFICE	F3	B3	W1	W1	W1	W1	C2	9'-0"	
111	COUNSELOR OFFICE	F3	B3	W1	W1	W1	W1	C2	9'-0"	
112	COUNSELOR OFFICE	F3	B3	W1	W1	W1	W1	C2	9'-0"	
113	DIRECTOR OFFICE	F3	B3	W1	W1	W1	W1	C2	9'-0"	
114	ENROLLMENT COUNSELOR	F3	B3	W1	W1	W1	W1	C2	9'-0"	
115	ENROLLMENT COUNSELOR	F3	B3	W1	W1	W1	W1	C2	9'-0"	
116				OMITTED						
117	CORRIDOR	F1	B3	W1	W1	W1	W1	C2	9'-0"	
118	STUDENTS WAITING AREA	F1	B3	W1	W3	W1	W1/W4/W5	C6		CEILING HEIGHT VARIES. SEE SHEET A2.2 FOR PATTERN DESIGN.
119	DIRECTOR OF ENROLLMENT COUNSELOR	F3	B3	W1	W1	W1	W1	C2	9'-0"	SEE SHEET A2.6 FOR PATTERN DESIGN
120	WOMEN RESTROOM	F2	B1/B2	W1/W4/W5/W6/W7				C1	9'-0"	SEE SHEET A2.6 FOR PATTERN DESIGN
121	MEN RESTROOM	F2	B1/B2	W1/W4/W5/W6/W7				C1	9'-0"	
122	JANITOR	F6	B3	W1	W1	W1	W1	C1	9'-0"	
123	STORAGE	F6	B3	W1	W1	W1	W1	C1	9'-0"	
124	CLASSROOM	F4/F5	B3	W1	W1	W3	W1	C2	9'-0"	
125				OMITTED						
126	COPY	F3	B3	W1	W1	W1	W1	C2	9'-0"	
127	IT AREA	F6	B3	W1	W1	W1	W1	C2	9'-0"	
128	CORRIDOR	F1	B3	W1	W1	W1	W1	C2	9'-0"	
129	RECEPTIONIST	F1	B3	W1	W1	W1	W1	C6	9'-0"	
220	STAIRS	F7	B3	W1	W1	W1	W1	C4	±9'-0"	CEILING HEIGHT VARIES
231	OPEN GATHERING SPACE	F1	B3	W1/W2/W3/W4/W5				C6	±9'-0"	CEILING HEIGHT VARIES. REF 6/A2.6 FOR ACCENT PAINT LOCATION.
232	CORRIDOR	F1	B3	W2	W1	W1	W1	C2/C6	±9'-0"	CEILING HEIGHT VARIES
233	WOMEN RESTROOM	F1	B1/B2	W1/W4/W5/W6/W7				C1	9'-0"	SEE SHEET A2.6 FOR PATTERN DESIGN
234	MEN RESTROOM	F1	B1/B2	W1/W4/W5/W6/W7				C1	9'-0"	SEE SHEET A2.6 FOR PATTERN DESIGN
235	OFFICE	F3	B3	W1	W1	W1	W1	C2	9'-0"	
236	ELECTRICAL ROOM	F6	P1	W1	W1	W1	W1	C2	9'-0"	
237	STAIR	F1/SP-1						C3/C4		CEILING HEIGHT VARIES
238	CLASSROOM	F4/F5	B3	W1	W3	W1	W1	C2	9'-0"	
239				OMITTED						
240	STORAGE	F6	B3	W1	W1	W1	W1	C2	9'-0"	
241	TUTOR	F3	B3	W1	W1	W1	W1	C2	9'-0"	
242	OPEN STUDY ROOM	F3	B3	W1	W1	W1	W1	C2	9'-0"	
243	CORRIDOR	F1	B3	W1	W1	W1	W1	C2	9'-0"	
244	STORAGE	F6	B3	W1	W1	W1	W1	C2	9'-0"	
245	EXHIBIT HALL	F1	B3	W1	W2	W3	W1	C6		CEILING HEIGHT VARIES

ROOM FINISH NOTES

Floors
 F-1 Porcelain Tile - 24"x48"
 Manufacturer: Daltile
 Color: Vertuo Stria Maestro VR13
 *NOTE: Grid Installation

F-2 Porcelain Tile - 12"x24"
 Manufacturer: Daltile
 Color: Vertuo Stria Maestro VR13
 *NOTE: 1/3 Running Bond Installation

F-3 Carpet Tile - 24"x24" Modular Quarter Turn
 Manufacturer: JI Flooring
 Color: Network 1842 Database 2851
 *NOTE: Grid Installation

F-4 Carpet Tile - 12"x48" Plank
 Manufacturer: JI Flooring
 Color: Network 1842 Database 2851
 *NOTE: Grid Installation

F-5 Carpet Tile - 12"x48" Plank
 Manufacturer: JI Flooring
 Color: Network 1842 Maze 2910
 *NOTE: Grid Installation

F-6 Vinyl Composition Tile - 12"x12"
 Manufacturer: Armstrong
 Color: 51861 Soft Warm Gray
 *NOTE: Grid Installation

F-7 Rubber Treads and Risers
 Manufacturer: Roppe
 Color: 175 Slate (Raised Circular)

F-8 Smooth Troweled Concrete

Base
 B-1 Ceramic Tile - 4"x12"
 Manufacturer: Daltile
 Color: Color Wheel Collection - Linear - Matte Desert Gray X714

B-2 Porcelain Tile - 12"x24"
 Manufacturer: Daltile
 Color: Vertuo Stria Maestro VR13

B-3 Rubber Base
 Manufacturer: Roppe
 Color: 175 Slate

B-4 No Base

Walls
 W-1 Paint
 Manufacturer: Sherwin Williams
 Color: Repose Gray SW 7015

W-2 Paint
 Manufacturer: Sherwin Williams
 Color: Naval SW 6244

W-3 Paint
 Manufacturer: Sherwin Williams
 Color: Jacaranda SW 6802

W-4 Ceramic Tile - 12"x12" Mosaic Sheet, 1"x1" Tile
 Manufacturer: Daltile
 Color: Uptown Glass - Metro Gray UP08

W-5 Ceramic Tile - 4"x12"
 Manufacturer: Daltile
 Color: Color Wheel Collection - Linear - Matte Desert Gray X714
 *NOTE: 1/3 Running Bond Installation

W-6 Porcelain Tile - 12"x24"
 Manufacturer: Daltile
 Color: Vertuo Stria Maestro VR13
 *NOTE: Grid Installation

W-7 Porcelain Tile - 3"x24" Bullnose
 Manufacturer: Daltile
 Color: Vertuo Stria Maestro VR13
 *NOTE: Grid Installation

Wall Grout
 Manufacturer: Custom Building Products
 Color: #335 Winter Gray - Epoxy Grout

Floor Grout
 Manufacturer: Custom Building Products
 Color: #335 Winter Gray - Epoxy Grout

Stair Profile
 Manufacturer: Schluter System Stair Nosing
 Color: TREP-FL - Stainless Steel

- GENERAL NOTES:**
- FLOOR TRANSITIONS IN DOORWAYS TO OCCUR AT CENTERLINE OF DOOR.
 - PROVIDE APPROPRIATE ADA COMPLIANT TRANSITION STRIPS AT EACH CHANGE OF FLOOR MATERIALS.
 - USE HEAVY DUTY HINGES ON MILLWORK.
 - CONTRACTOR TO PROVIDE CAULKING AT ALL WINDOW AND DOOR FRAMES AS NEEDED.
 - CONTRACTOR SHALL PROVIDE 2"x2"x4'-0" HIGH CORNER VINYL COMMERCIAL CORNER GUARDS AT EXTERIOR CORNERS OF ALL PARTITIONS.
 - ALL DOORS SHALL MEET TAS REQUIREMENTS. REFERENCE TAS-1 SHEET FOR DETAILS. NOTIFY THE ENGINEER FOR ANY DISCREPANCIES BEFORE INSTALLATION.
 - EXISTING WALL TO REMAIN SHALL RECEIVE NEW TEXTURE AND PAINT. CONTRACTOR SHALL PATCH HOLES PRIOR TO TEXTURE AND PAINT.
 - CONTRACTOR SHALL SUBMIT PREMIUM PLASTIC LAMINATE SAMPLES FOR APPROVAL FOR ALL MILLWORK AND DOORS.
 - ALUMINUM STOREFRONT DOOR HARDWARE SHALL BE PROVIDED BY THE CONTRACTOR.

EXISTING WINDOW SCHEDULE

WINDOW NUMBER	SIZE		REMARKS
	WIDTH	HEIGHT	
1A	10'-2"	8'-0"	STAIN GLASS
2	8'-2"	15'-11"	STAIN GLASS
5	5'-2"	2'-11 1/2"	STAIN GLASS
6	4'-8 1/2"	5'-6"	STAIN GLASS
7	4'-4"	3'-6"	CLEAR GLASS
8	4'-2"	6'-2"	STAIN GLASS
8A	4'-2"	10'-0"	STAIN GLASS
8B	4'-2"	4'-8"	STAIN GLASS
8C	4'-0"	5'-2 1/2"	STAIN GLASS
9	3'-9"	6'-2"	STAIN GLASS
10	3'-8"	6'-2 3/4"	STAIN GLASS
11	3'-7"	6'-2 3/4"	CLEAR GLASS
12	3'-7"	4'-8"	CLEAR GLASS
13	3'-7"	3'-6"	CLEAR GLASS
14	3'-5 1/2"	6'-2"	CLEAR GLASS
15	3'-3"	7'-2"	STAIN GLASS
15A	3'-3"	5'-6"	STAIN GLASS
15B	2'-7"	4'-10"	STAIN GLASS
16	3'-2 1/2"	5'-2 1/2"	CLEAR GLASS
17	3'-0"	5'-6"	STAIN GLASS
18	3'-0"	4'-0"	CLEAR GLASS
19	3'-0"	6'-2 3/4"	CLEAR GLASS
20	2'-8"	4'-8"	CLEAR GLASS
21	2'-8"	3'-8"	STAIN GLASS
23	2'-4"	4'-8"	CLEAR GLASS
24	2'-3"	4'-6"	LOUVERS
25	1'-11"	4'-8"	STAIN GLASS

ALL EXISTING STAINGLASS WINDOWS SHALL RECEIVE NEW WINDOW COVERING WITH 1/4" PROTECTIVE GLASS.

NEW WINDOW SCHEDULE

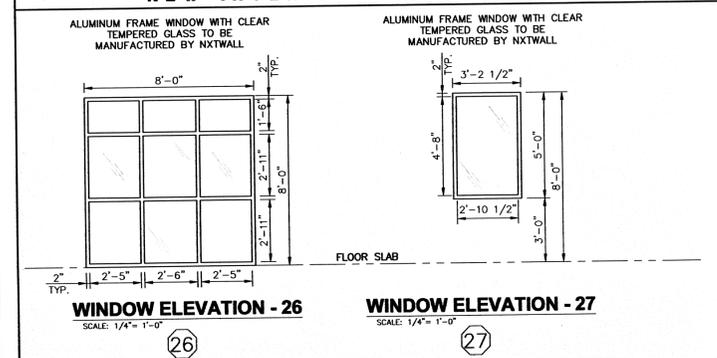
WINDOW NUMBER	DOOR DETAILS				REMARKS
	FRAME	ALUMINUM HOLLOW METAL HEAD DETAIL	JAMB DETAIL	SILL DETAIL	
1	●	6/A4.2 SIM.		6/A4.2 SIM.	
2A	●	1/A4.1		6/A4.1	
3	●	6/A4.2		6/A4.2	
4	●	9/A2.2		10/A2.2	
22	●	9/A2.2		10/A2.2	
26	●	11/A2.2 SIM.		6/A2.2 SIM.	
27	●	11/A2.2 SIM.		11/A2.2 SIM.	

WINDOW NOTES

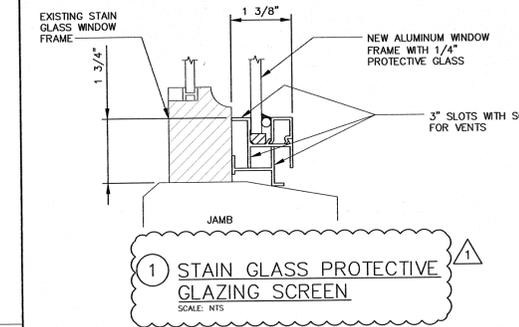
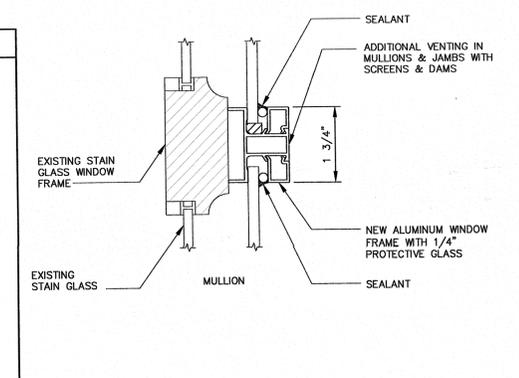
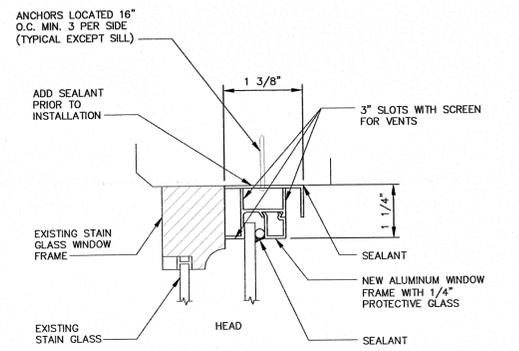
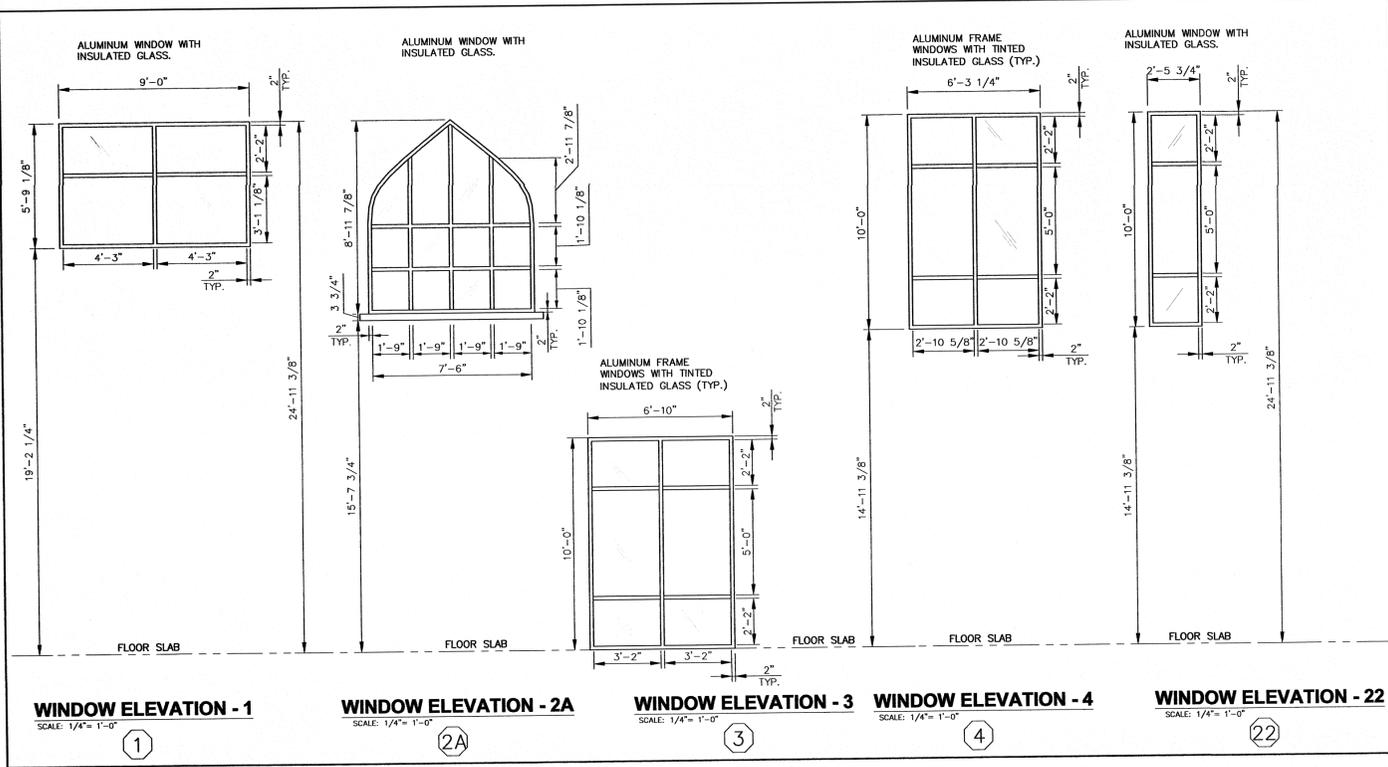
GLASS SHALL BE IMPACT RESISTANT.
 WINDOW GLAZING SHALL MEET OR EXCEED GOVERNING BUILDING, FIRE AND WINDSTORM CODE REQUIREMENTS.

NOTE: ALL EXTERIOR WINDOWS SHALL BE COMPLIANT WITH WINDSTORM AND IMPACT RESISTANT REQUIREMENTS OF TDI AND TEXAS WINDSTORM.

NEW INTERIOR WINDOW TYPES



NEW EXTERIOR WINDOW TYPES



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 PORT ARTHUR, TX



TAS #:
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 REVISION 1 06/22/2020

VRH
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 CJR
 CHECKED BY
 SKN
 APPROVED BY

SHEET NUMBER
A2.0
 19-148
 PROJECT NO.



SIGMAENGINEERS
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 Beaumont, Texas 77706
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 sigmaengineers.com

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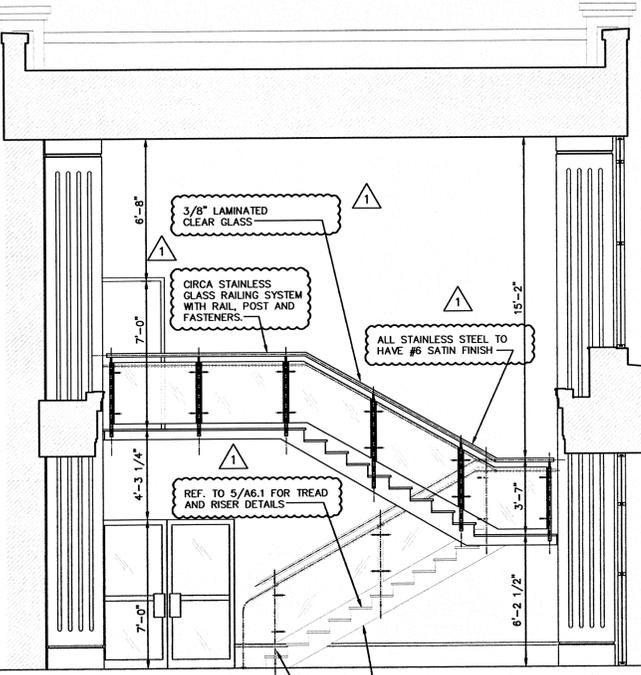
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SHEET NUMBER
A6.1

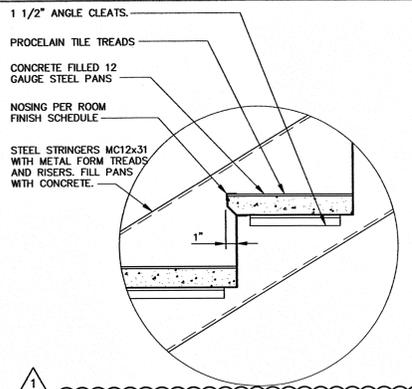
19-148
 PROJECT NO.

- NOTE:**
- STAIRS SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, OSHA AND TEXAS ACCESSIBILITY STANDARDS.
 - GUARD RAILS SHALL NOT HAVE OPENINGS THAT ALLOW PASSAGE OF A 4" DIAMETER SPHERE FROM WALK SURFACE TO GUARD HEIGHT. GUARD HEIGHT SHALL BE 42" MIN. FROM THE WALK SURFACE TO THE TOP OF THE GUARD.
 - HANDRAILS AND GUARDRAILS SYSTEM SHALL BE BY VIVA CIRCA, LLC. OR APPROVED EQUAL.
 - REFER TO DETAIL 3 ON SHEET S2.2 FOR LANDING, TREAD AND RISER STRUCTURE.

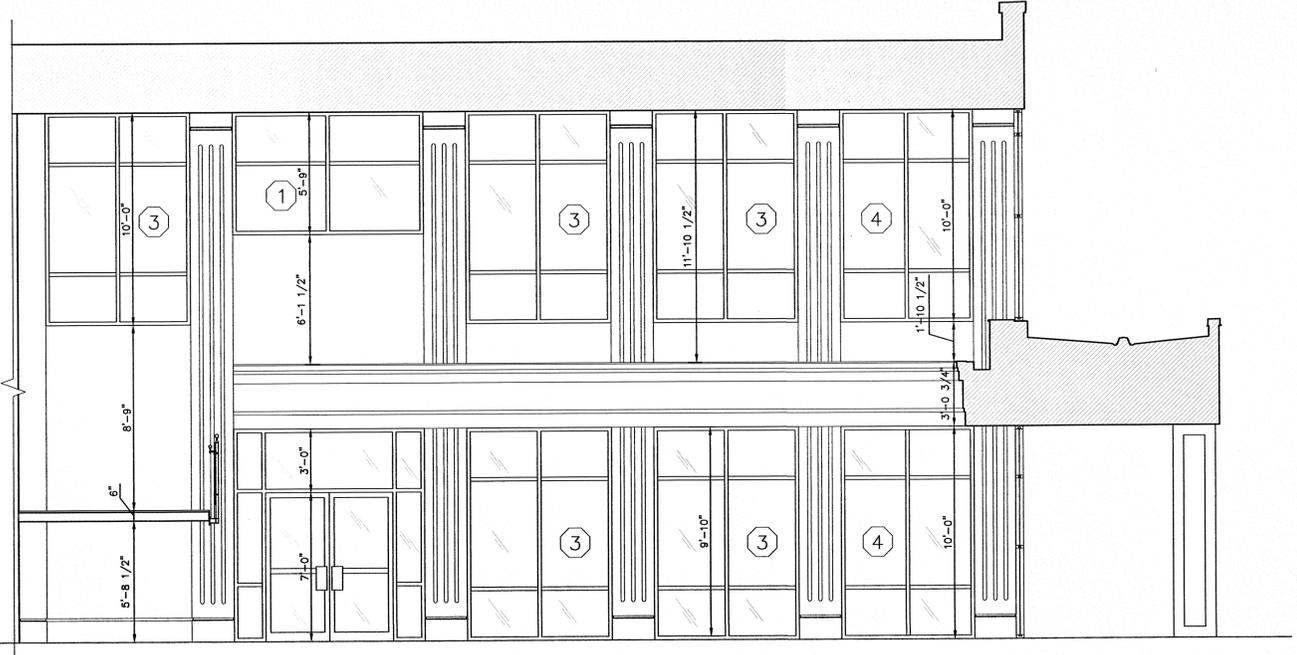


1 SECTION VIEW
 SCALE: 1/4" = 1'-0"

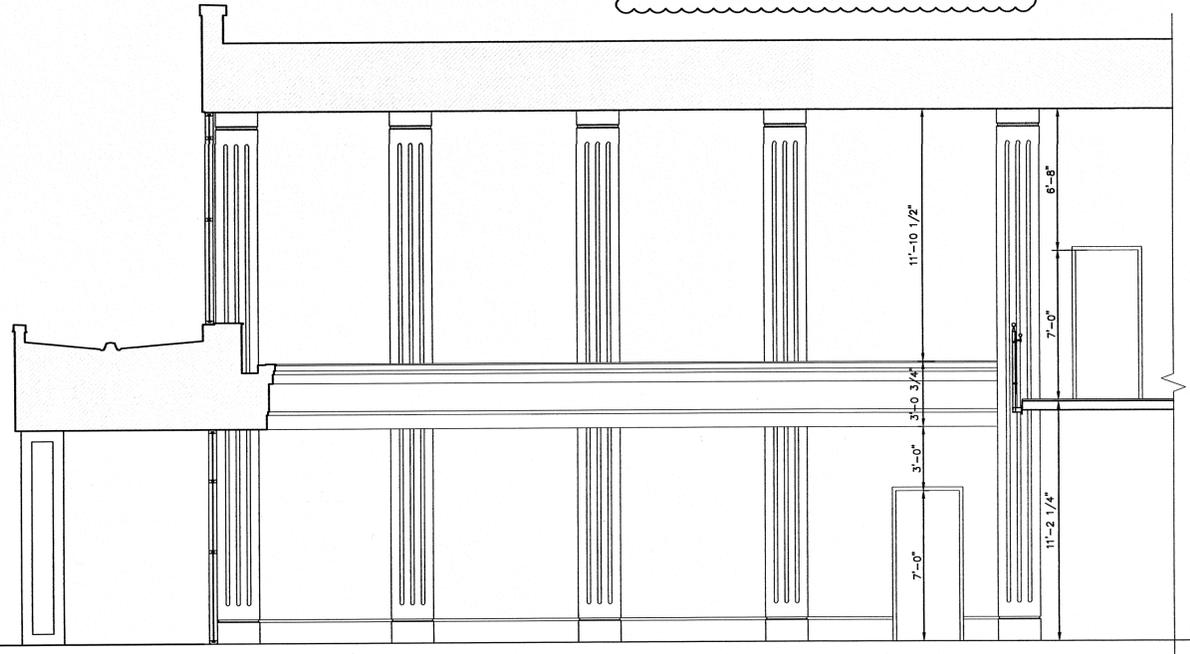
GRIND ALL WELD SMOOTH SAND AND PRIME WITH TWO COATS OF EPOXY PAINT. COLOR TO BE SELECTED BY THE OWNER.
 FASCIA MOUNTING (TYP.)



5 ENLARGED STAIR TREAD & RISER
 SCALE: NTS



2 SECTION VIEW
 SCALE: 1/4" = 1'-0"



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



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

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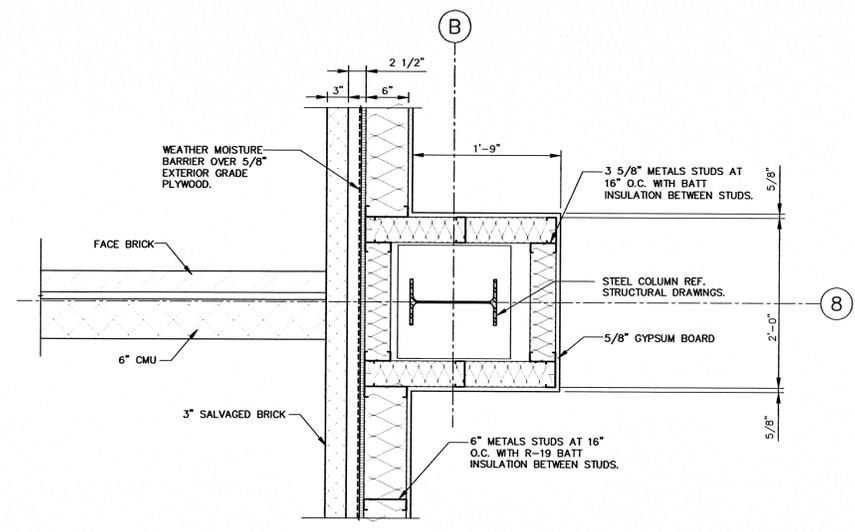
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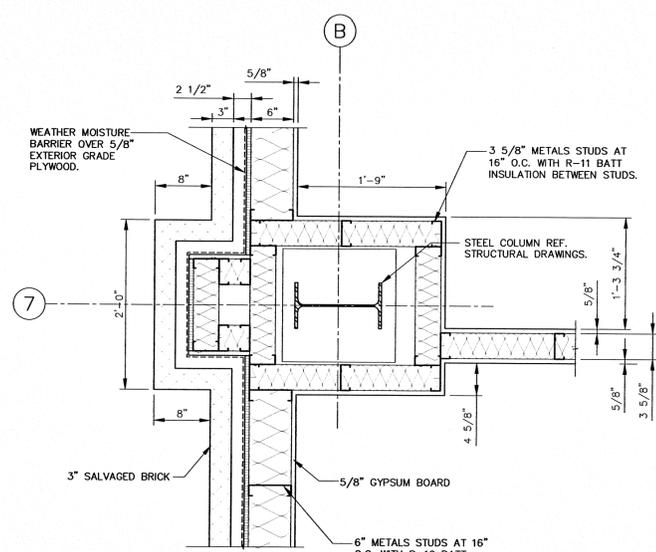
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PROJECT NO.

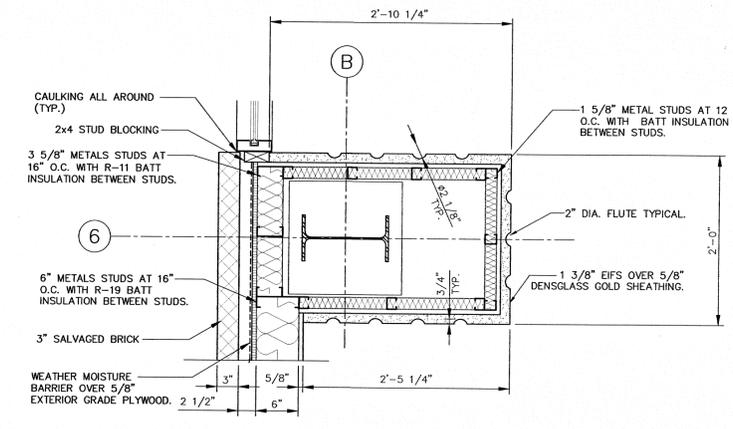
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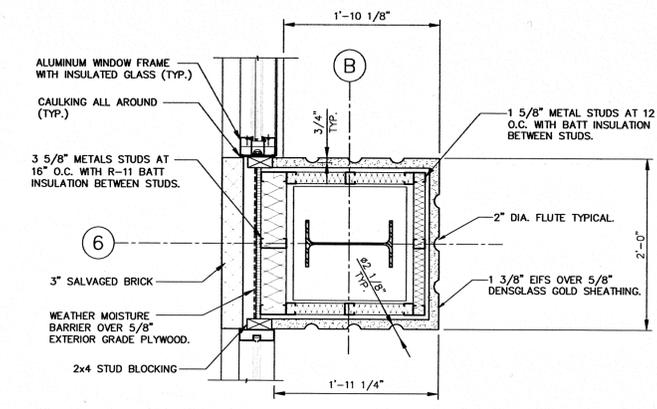
12 PLAN DETAIL
SCALE: 1" = 1'-0"



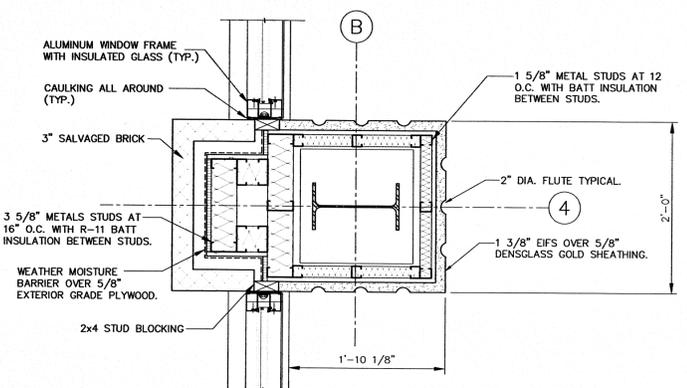
13 PLAN DETAIL
SCALE: 1" = 1'-0"



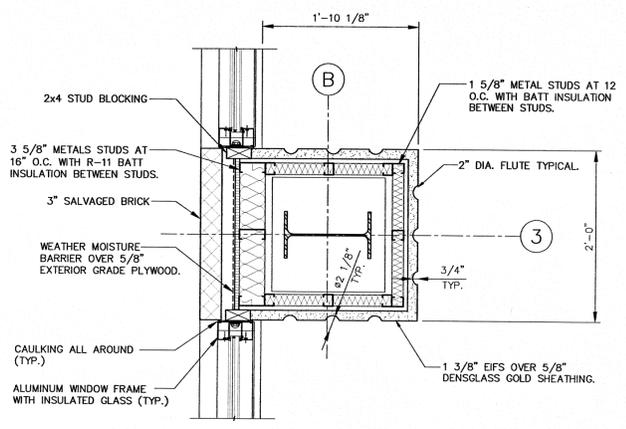
14 PLAN DETAIL
SCALE: 1" = 1'-0"



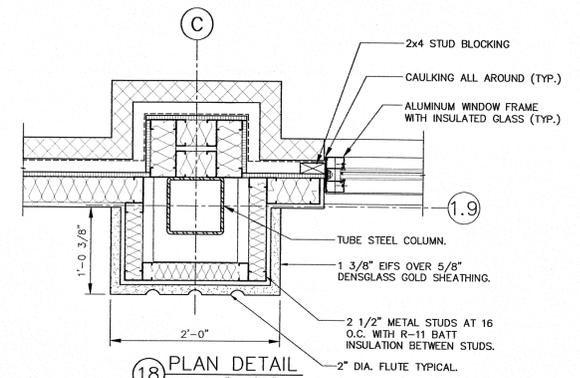
15 PLAN DETAIL
SCALE: 1" = 1'-0"



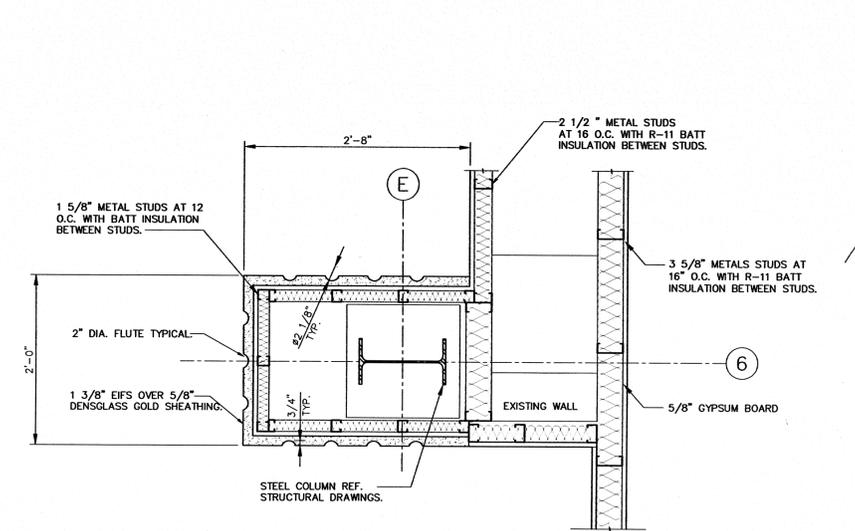
16 PLAN DETAIL
SCALE: 1" = 1'-0"



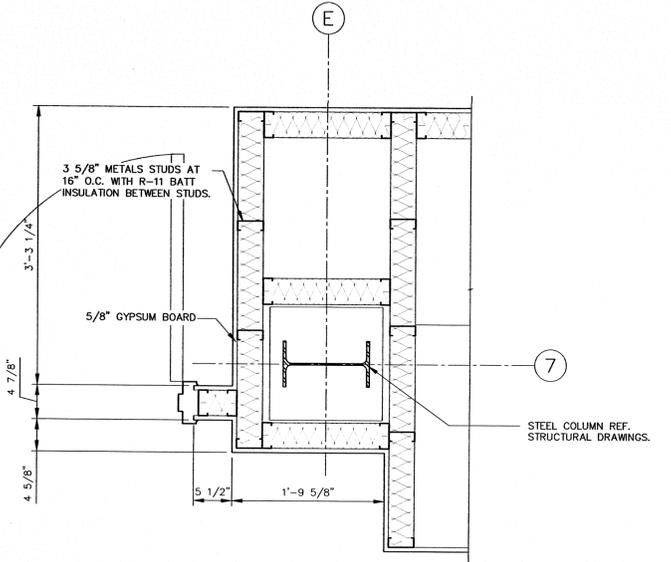
17 PLAN DETAIL
SCALE: 1" = 1'-0"



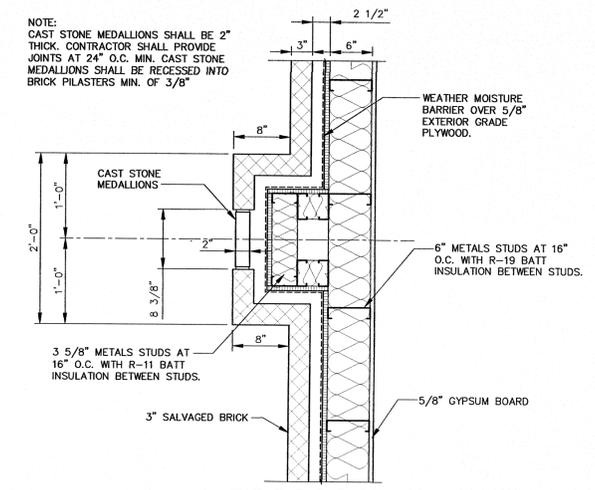
18 PLAN DETAIL
SCALE: 1" = 1'-0"



19 PLAN DETAIL
SCALE: 1" = 1'-0"

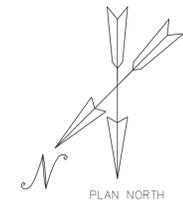


20 PLAN DETAIL
SCALE: 1" = 1'-0"

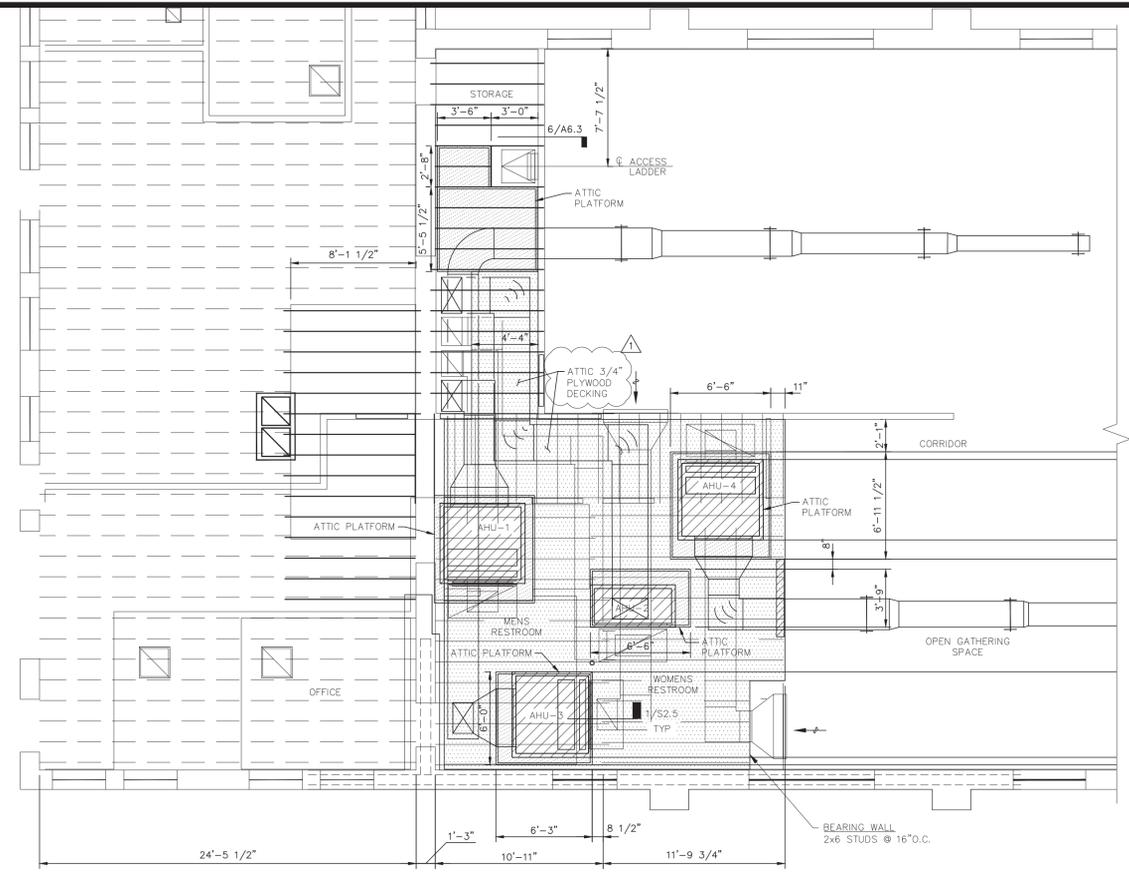


21 PLAN DETAIL
SCALE: 1" = 1'-0"

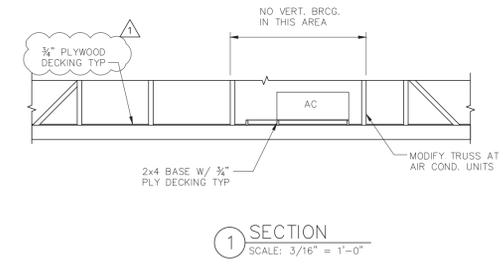
NOTE:
CAST STONE MEDALLIONS SHALL BE 2" THICK. CONTRACTOR SHALL PROVIDE JOINTS AT 24" O.C. MIN. CAST STONE MEDALLIONS SHALL BE RECESSED INTO BRICK PILASTERS MIN. OF 3/8"



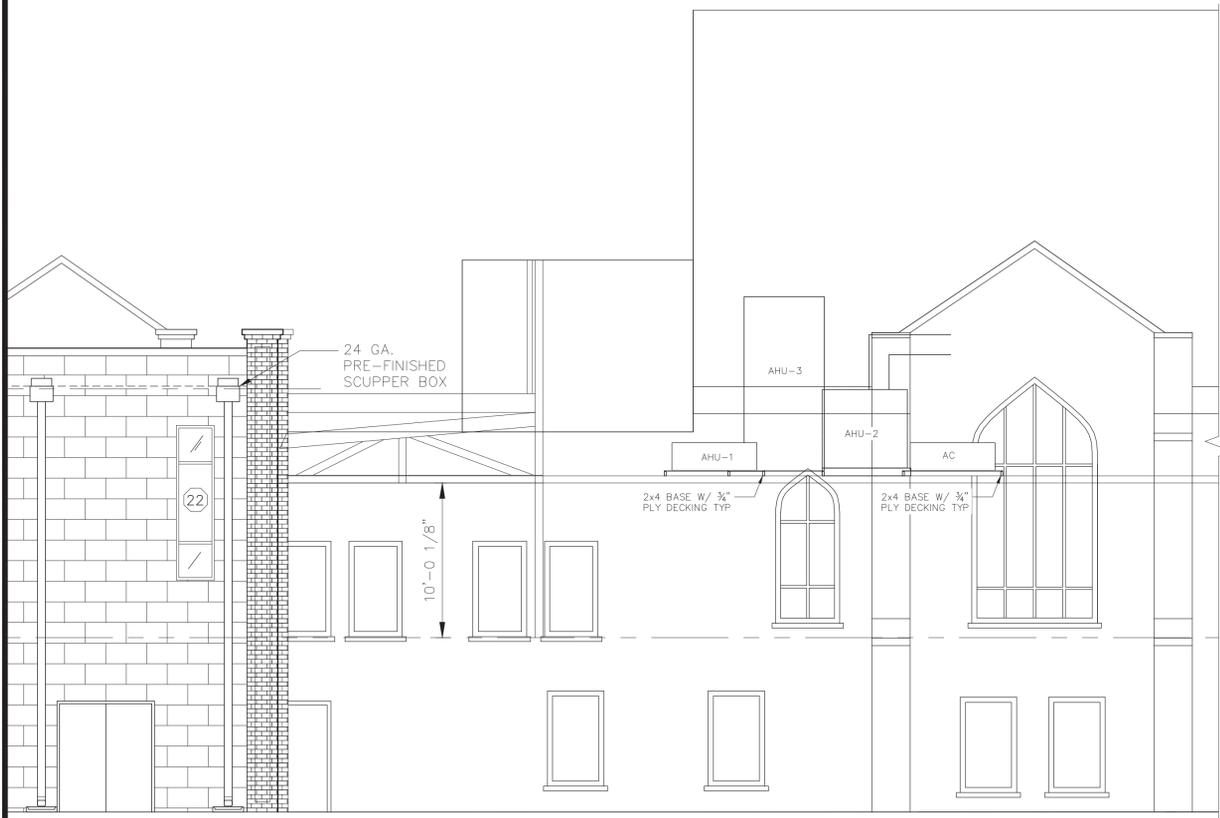
LAMAR STATE COLLEGE PORT ARTHUR
RUBY FULLER EDUCATION BUILDING
 PORT ARTHUR, TX



HVAC PLATFORM PLAN
 SCALE: 3/16" = 1'-0"



1 SECTION
 SCALE: 3/16" = 1'-0"



3 NORTH ELEVATION
 SCALE: 1/8" = 1'-0"



4 EAST ELEVATION
 SCALE: 1/8" = 1'-0"

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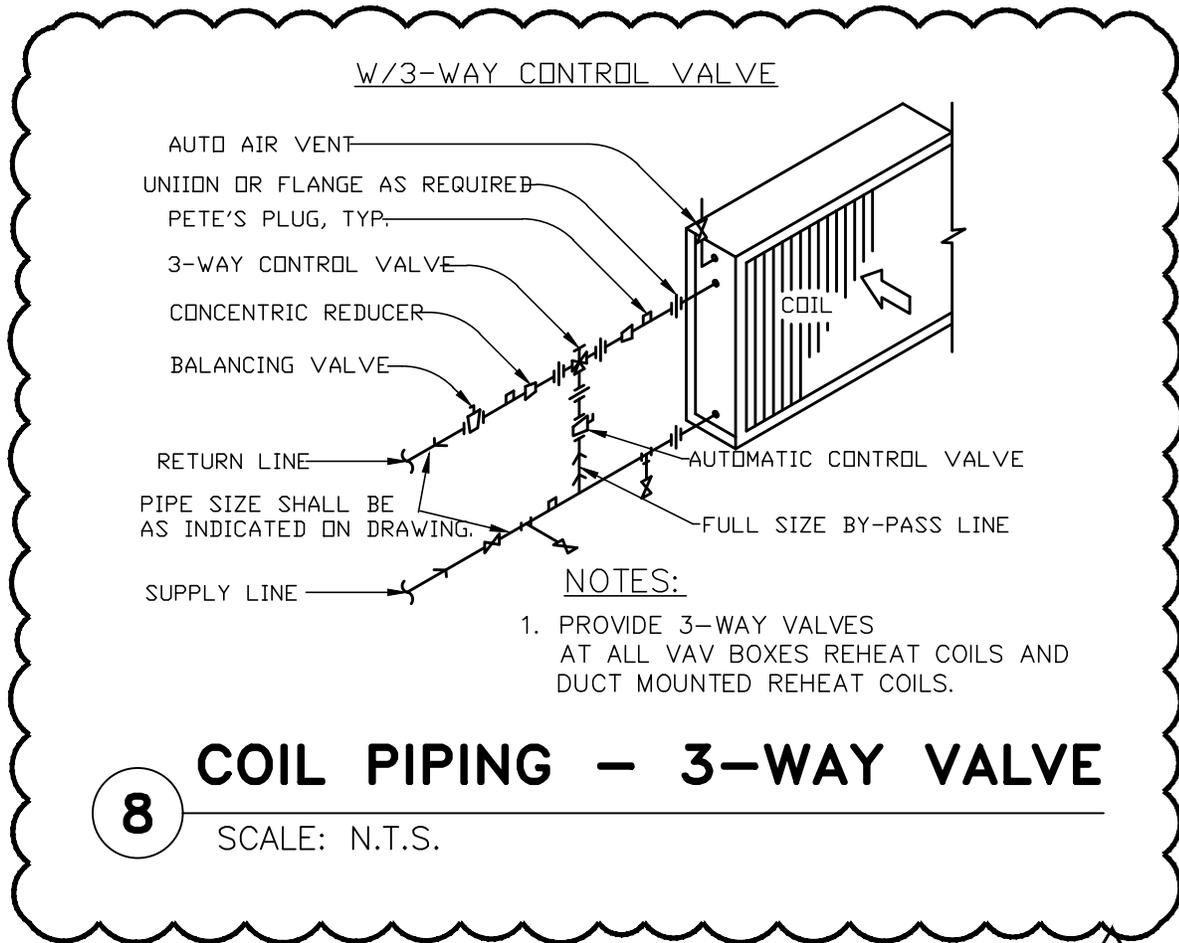
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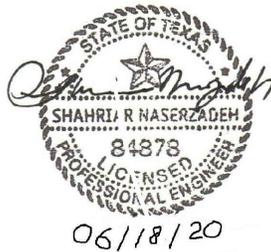
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SHEET NUMBER
S2.5

19-148
 PROJECT NO.



2

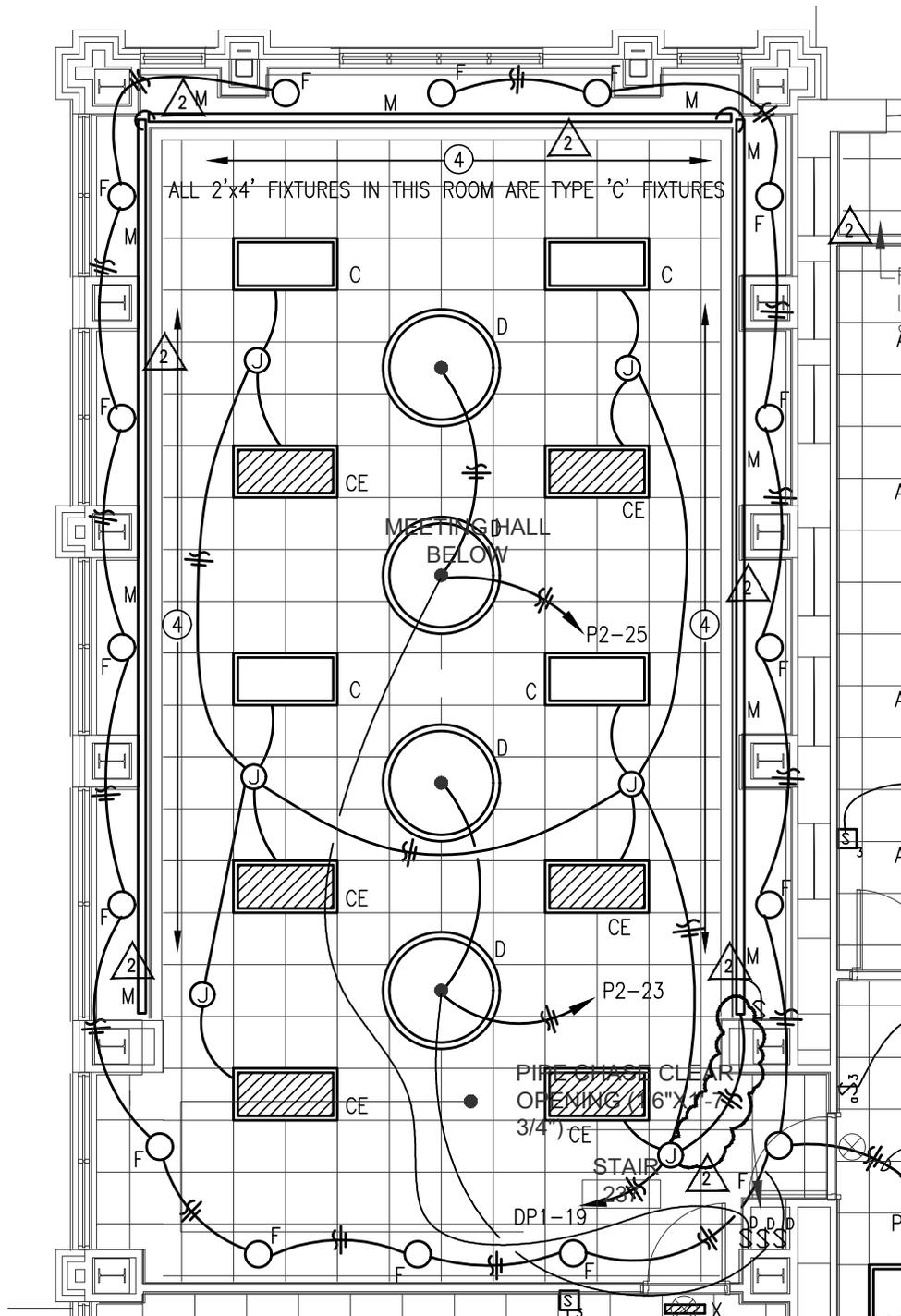


ADDENDUM #2

(ATTACHMENT #M4a)

LAMAR STATE COLLEGE
RUBY FULLER BLDG
PARTIAL TO SHEET M-4
MEC ASSOCIATES, INC.

PORT ARTHUR, TX
N.T.S.
06/18/20



PARTIAL KEYED NOTES:

- ④ PROVIDE CONTINUOUS ROW OF TYPE 'M' LIGHT FIXTURES FOR COVE LIGHTING. SEE ARCHITECTURAL SECTION 2/A4.2

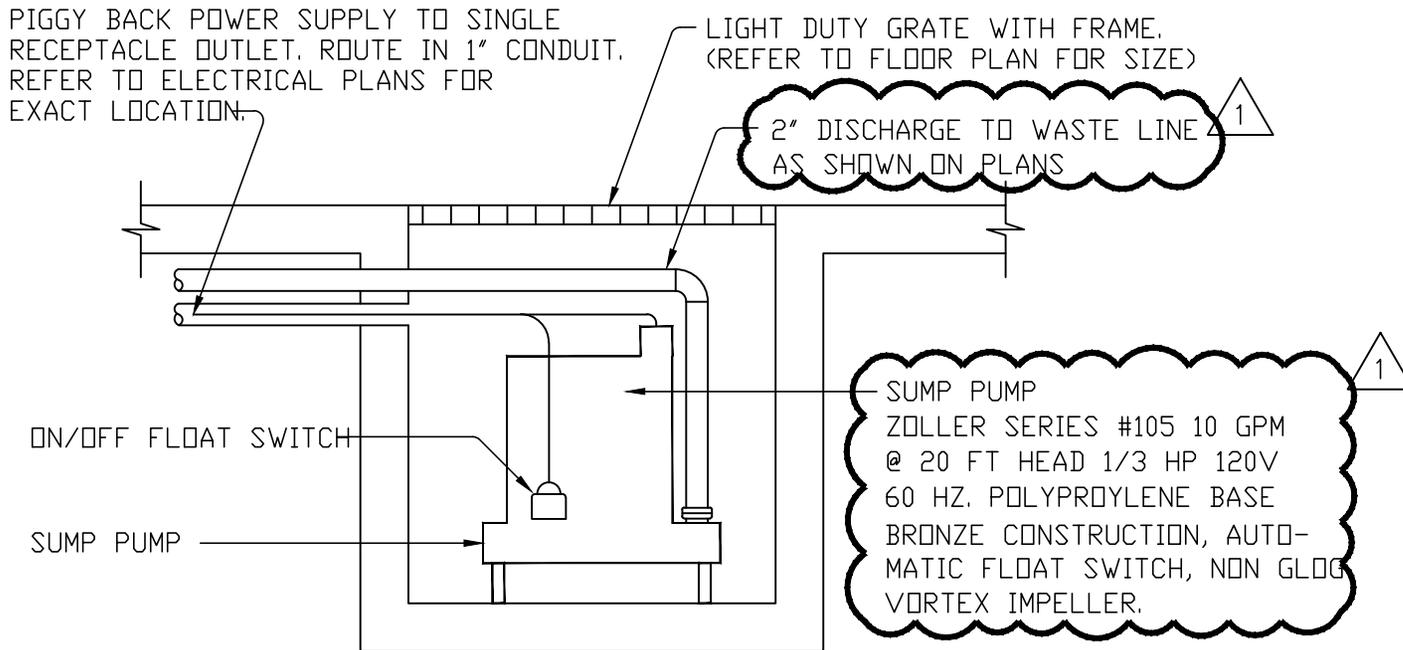


ADDENDUM #2

(ATTACHMENT #E2.1a)

LAMAR STATE COLLEGE
 RUBY FULLER BLDG
 PARTIAL TO SHEET E-2.1
 MEC ASSOCIATES, INC.

PORT ARTHUR, TX
 N.T.S.
 06/18/20



NOTE:

1. REFER TO STRUCTURAL DRAWINGS FOR BASIN DESIGN REQUIREMENTS.
2. NO PVC PIPING ALLOWED FOR PUMP DISCHARGE PIPING.

5 ELEVATOR SUMP PUMP

SCALE: N.T.S.



06/16/20

ADDENDUM #1

LAMAR STATE COLLEGE
RUBY FULLER BLDG
REFERS TO SHEET P-2
MEC ASSOCIATES, INC.

(ATTACHMENT #P2a)

PORT ARTHUR, TX
N.T.S.
06/16/20

Addendum No. 3

Issued July 9, 2020

REQUEST FOR PROPOSALS FOR GENERAL CONTRACTOR COMPETITIVE SEALED PROPOSALS

FOR LAMAR STATE COLLEGE-PORT ARTHUR PORT ARTHUR, TEXAS

RUBY FULLER EDUCATION BUILDING

RFP No.:

758-20-04013

The Revised Submission Date was posted in Addendum No. 1.

Notice To All Respondents:

The following is Addendum No. 3 to the Request for Proposals (RFP)

Addendum No. 1 was posted on June 18, 2020

Addendum No. 2 was posted on June 22, 2020

ESBD Posting No. 758-20-04013 was posted on June 1, 2020

Prepared By:

Peter Maass, Director of Capital Projects Administration
The Texas State University System
601 Colorado Street
Austin, TX 78701 - 512-463-1808
Peter.Maass@tsus.edu

I. GENERAL

- A. Below are the Questions that were presented along with Answers to each in relation to this RFQ as of July 9, 2020, 12:00 p.m.:
1. **Question:** Corridor 128 has 3 steps in an area that is calling for 24"x48" porcelain tile? What are we to use?
Answer: The 24x48 Porcelain Tile (F1) shall be cut to fit the stair treads and risers.
 2. **Question:** Where is the break from B1 and B2 in rooms 233 & 234?
Answer: The 4x12 accent tile (B1) shall be installed on the lavatory/sink wall only. The 12x24 Porcelain Tile (B2) shall be installed on all other restroom walls as base. Please refer to Elevation 1 on Sheet A2.6.
 3. **Question:** What goes on the stairs in meeting hall room 100? Is it the F-7 rubber treads and risers?
Answer: Please refer to Room Finish Schedule "Stair 237" on Sheet A2.0 for Meeting Hall Stairs. Stairs shall be 24x48 Porcelain Tile (F1) with Schluter Stair Nosing (SP-1).
 4. **Question:** On all stair landings, what flooring are we to use? Are we suppose to use rubber tile to match stair treads?
Answer: For all other stairs (except the Meeting Hall/Stair 237 and Corridor 128), use rubber tile to match F7 stair treads.
 5. **Question:** Rooms 124 and 238 - We have 2 colors and a pattern. The pattern is shown but I can not decipher which one is F4 or F 5.
 - a) The dark is?
Answer: F4
 - b) The white is?
Answer: F5

II. ADDITIONS

- A. Exhaust fans EF-1 thru 4 shall be GreenHeck, or equivalent, ceiling mounted exhaust fans for 260 CFM @.125 ESP, 120V 1Ph., manufacturer to provide ceiling grille. Extend 8" diameter exhaust to vent cap on wall.
- B. Mechanical Drawing M-1:
1. Provide thermostat for AHU-5. Locate on the west wall of Conference Room 101 on column at 8/E.2.
 2. Keyed Note 7 applies at the 16" diameter gas flue on exterior wall of Mechanical Room 103. Also, change 16" diameter flue and all horizontal flue piping to 12" diameter category 3 stainless steel piping in lieu of category 1.
- C. Mechanical Drawing M-2: Add general note U to read: Contractor shall provide 1/4" scale shop drawings for review and approval before fabricating ductwork.
- D. Mechanical Drawing M-3:
1. In Hot Water Boiler Schedule, change model number from 1504A to 1503A.

2. Add to Air Device schedule Type F louver, GreenHeck ESU-154 thin-line stationary louver, or equivalent.
- E. Mechanical Drawing M-4:**
1. See Attachment M4a (in Addendum 2) “Coil Piping 3-way” detail for reheat coils.
 2. On Detail 5 Boiler Flue Piping Diagram, make the following changes: The 16” diameter horizontal flue pipe is changed to 12” diameter pipe. The 12” diameter flue pipe vertical risers from each boiler shall be 8” diameter, extending to the 12” diameter horizontal flue. Revise Note “A” to read: All Flue piping shall be Stainless Steel vent piping suitable for category 3 gas fired boiler. In Note D the galvanized combustion air pipe shall be spiral.
- F. Electrical Drawing E-1:**
1. Provide duct detectors in AHU-5 in Mechanical 103.
 2. The transformer referred to in Key Note 7 is located in the Mechanical Courtyard on the east side of the building.
 3. At Key Note 8 (4” empty conduit), change routing of conduit. Route 4” conduit to the south side of the building to the existing telecom vault near Lakeshore Drive, see Civil Sheet C1.1. Rise-up 4” conduit in corner of Storage 123 and run over head to I.T. Area 127. Provide pull string.
- G. Electrical Drawing E-1.1:** On Detail Platform the feeder from Fixture HE shall connect to circuit DP2-27 with other light in this area. See sheet E-2.1. Also, at each AHU shown dashed, provide duct detectors in supply and return air ducts.
- H. Electrical Drawing E-2:**
1. Add Key Note 2 to the light switch exiting building from Corridor 105.
 2. In the following rooms add ceiling mounted occupancy sensors with multi-voltage power switch packs to control fluorescent fixtures. Ceiling mounted sensors shall adequately cover spaces to detect occupancy. Change wall sensors to momentary decorator switches. This affects Meeting Hall 100, Conference Room 101, Classroom 124, Women Restroom 120 and Men Restroom 121.
- I. Electrical Drawing E-2.1:**
1. See the partial plan Attachment E2.1a (in Addendum 2) for changes and additions to lighting in Meeting Hall 100.
 2. In Open Gathering 231 the light fixture there shall be a Type “L” under counter fixture not a can light. Wire fixture to circuit P2-29 with Type B fixture.
 3. Add Type M fixture to Lighting Fixture Schedule: ModaLight ELV Moda Cove Light No. MCI-SO-SI-S4H4-4000K; LED 277V, or approved equivalent. Supplier to determine quantity and length (4 ft. and 1 ft.) of fixtures based on the full length of lighting cove perimeter. Provide jumper cables where needed.
 4. In the following rooms add ceiling mounted occupancy sensors with multi-voltage power switch packs to control fluorescent fixtures. Ceiling mounted sensors shall adequately cover spaces to detect occupancy. Change wall

sensors to momentary decorator switches. This affect Women 233, Men 234, Classroom 238 and Open Study Room 242.

5. Delete reference on this sheet to “thru lighting control system”. There is no central lighting control system for interior lighting.

J. Electrical Drawing E-3: In panel DP1 provide 1P/20 breaker in circuit 29 for 20-amp feeder for exterior lights.

K. Plumbing Drawing P-1.1: In Men Restroom 234 and Women Restroom 233 the Type S-1 plumbing fixtures shall be changed to type L-1 for lavatories.

III. REVISIONS

A. Section 2.4 PROJECT PLANNING SCHEDULE: The Respondent’s pricing proposal read aloud date at Owner’s Office shall change from July 24, 2020, to **July 27, 2020**. The time is unchanged.

2.4.11 *Respondent’s pricing Proposal read aloud at*
Owner’s Office (2p.m.)~~07/07/2020 07/24/2020~~ **07/27/2020**

- END OF ADDENDUM NO. 3 -