

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

**FOR
LAMAR UNIVERSITY
BEAUMONT, TEXAS**

**WELCOME CENTER AND
SOUTH CAMPUS ENTRANCE**

RFP No.:

758-20-05030

Submission Date:

January 29, 2020 – 3:00 p.m. (C.S.T.)

(see Schedule in Section 2.4)

Prepared By:

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**REQUEST FOR PROPOSAL FOR GENERAL CONTRACTOR
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LAMAR UNIVERSITY
BEAUMONT, TEXAS
WELCOME CENTER AND SOUTH CAMPUS ENTRANCE
RFP No.: 758-20-05030**

SECTION 1 – GENERAL INFORMATION AND REQUIREMENTS

- 1.1 **GENERAL INFORMATION:** The Texas State University System (“Owner”) and **Lamar University** are soliciting Competitive Sealed Proposals (“Proposals”) for selection of a General Contractor firm for the **Welcome Center and South Campus Entrance project** (“Project”), in accordance with the terms, conditions, and requirements set forth in this Request for Competitive Sealed Proposals. (Prospective General Contractor entities are hereinafter referred to as “Respondents”).
- 1.1.1 This Request for 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 institution based on the published selection criteria and on its ranking evaluation. The Owner shall first attempt to negotiate a contract with the highest ranked Respondent. 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.
- 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 and Respondent 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 TEXAS STATE UNIVERSITY SYSTEM FOR THIS RFP VIA THE ELECTRONIC BUSINESS DAILY WEBSITE AT THE FOLLOWING LINK: <http://www.txsmartbuy.com/sp> REFERENCE THE AGENCY NAME “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 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, and 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 University.

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 Statement of Qualifications, and 2) the Pricing and Delivery Proposal/Execution of Offer. 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.**

January 29, 2020 – 3:00 p.m. (C.S.T.)

Stacy Elizondo, CTPM
Lamar University Purchasing
Otho H. Plummer Building, Room 120
4400 Martin Luther King Parkway
Beaumont, TX 77705

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. HUB plan shall be submitted in a sealed envelope. **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.**

January 30, 2020 – 3:00 p.m. (C.S.T.)

Tabitha Evans
HUB Coordinator
Lamar University, Purchasing
4400 Martin Luther King Parkway
Beaumont, TX 77705

- 1.5.4 The names of Respondents who properly submitted Proposals will be opened publicly and read aloud pursuant to Section 51.783(f) of the *Texas Education Code* after the HUB Subcontracting Plans are received and confirmed by the Owner. These readings will be conducted at Lamar University located at:

Lamar University Purchasing
Otho H. Plummer Building, Room 120
4400 Martin Luther King Parkway
Beaumont, TX 77705

- 1.5.5 The Pricing and Delivery Proposal/Execution of Offer 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* on the date indicated in the Project Planning Schedule (see Section 2.4). These readings will be conducted at The Texas State University System Administration office conference room. The System Administration office is located at:

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

- 1.5.6 Submit **one (1) original and (1) copy** of the Statement of Qualification in hard copy and **two (2)** copies on CD or flash drive in Adobe Acrobat PDF format.
- 1.5.7 Submit **two (2)** identical copies of the Pricing and Delivery Proposal/Execution of Offer. An original signature must be included on the Respondent's "Execution of Offer" document submitted with each copy.
- 1.5.8 Submit **one (1) original and (1) copy** of the HUB Subcontracting Plan **as separate attachments** to the Proposals as described in Section 1.13.
- 1.5.9 Proposals or HUB Subcontracting Plans that are received late will be returned to the Respondent unopened. The Point-of-Contact identified in Section 1.6 will identify the official time clock at the Proposal submittal location identified above.
- 1.5.10 The Owner will not acknowledge or consider Proposals or HUB Subcontracting Plans that are delivered by telephone, facsimile (fax), or electronic mail (e-mail).
- 1.5.11 Properly submitted Proposals and HUB Subcontracting Plans will not be returned to the Respondents.
- 1.5.12 Proposals, Statement of Qualifications and separate HUB Subcontracting Plan materials must be enclosed in sealed envelopes (box or container) addressed to the Point-of-Contact identified in Section 1.6; the package must clearly identify the submittal deadline, the RFP Number, and the name, return address and email address of the Respondent contact on all envelopes. See Articles 1.5.2 and 1.5.3 on submission details.

- 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, to the Point-of-Contact person. All inquiries regarding this RFP must be made in writing, **via email only**.

Ms. Kelli Morris, CTPM
Purchasing Supervisor
Lamar University, Purchasing
4400 Martin Luther King Parkway
Beaumont, TX 77705
kelli.morris@lamar.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 and re-solicit for new Proposals, or to 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 with any Respondent to this RFP for any Project 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.
- 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 **OPTIONAL PRE-PROPOSAL CONFERENCE:** An optional pre-proposal conference will be held at the time and location described below.

January 13, 2020 – 10:00 a.m. (C.S.T.)

Lamar University
Wayne A. Reaud Building, Room 120
5090 Rolfe Christopher Dr.
Beaumont, TX 77705
(Corner of Rolfe Christopher Dr. and Jim Gilligan Way)

A guided tour of the Project site will not be included as a part of the conference agenda.

- 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>
- 1.13.1 **STATEMENT OF PROBABILITY.** The Owner has determined that subcontracting opportunities are probable in connection with this procurement solicitation. Therefore, a HSP is required as a part of the Respondent's Information and Proposal.
- 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*, as amended effective October 1, 1993, 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 a new rule, 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

applies to all building or construction contracts advertised for bid on or after September 1, 1994. 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 \$10.00 per underpaid worker per day or portion thereof to \$60.00. The Prevailing Wage Rate for Jefferson County, Texas; Construction Type: Building, can be found on the following website: <https://beta.sam.gov/>
- 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 consultants, officers, and employees must complete a cybersecurity training program certified under Section 2054.519, *Texas Government Code* as selected by the Owner. The cybersecurity training program must be completed by Respondent and its consultants, officers, and employees during the term and any renewal period of this Agreement. Respondent shall verify in writing completion of the program to the Owner within the first thirty (30) calendar days of the term and any renewal period of this Agreement.
- 1.25 **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.

SECTION 2 – EXECUTIVE SUMMARY

- 2.1 **HISTORICAL BACKGROUND:** Lamar University was founded in 1923 a few blocks from the current location as South Park Junior College and enrolled 125 students in its first fall semester.

The name changed to Lamar College in 1932 in honor of Mirabeau B. Lamar, second president of the Republic of Texas and the “Father of Education” in Texas. In the early 1940s, Lamar separated from the South Park school district, which had created the college, and moved to its current location.

Lamar University (“LU”) is among the fastest growing Texas colleges and universities and is a member of The Texas State University System. LU offers more than 100 programs of study leading to bachelor’s, master’s and doctoral degrees. The 270-acre campus in Beaumont is about 90 miles east of Houston and about 25 miles west of Louisiana.

The former Human Resources building at the corner of Rolfe Christopher Drive and Jim Gilligan Way will be demolished to make way for a new campus Welcome Center. The Welcome Center will be the first stop on campus for prospective students, family members, alumni and other visitors. Along with providing information about the campus, Lamar University history, academic programs, athletics and student activities, the Center will be the starting point for campus tours and housing tours. Structured presentations, interactive displays and promotional materials will be used to help prospective students envision their future within the Lamar University community. To ensure a holistic design for the south campus, the project scope includes conceptual design of the new site features at the south campus entrance to be implemented later as funding becomes available.

The building will house office space for admissions counselors and the Center director, a workroom for student ambassadors and miscellaneous support spaces. The facility features a spacious two-story lobby with comfortable seating areas for visitors, a refreshment counter and a self-service kiosk for prospective students. The lobby and a side gallery will include a variety of media to “tell the Lamar story”, and a forty-seat theater for structured presentations is located just off the lobby and is designed to lead visitors to the gathering area for campus tours.

2.2 **MISSION STATEMENT:** Lamar University engages and empowers students with the skills and knowledge to thrive in their personal lives and chosen fields of endeavor. As a doctoral granting institution, Lamar University is internationally recognized for its high-quality academics, innovative curriculum, diverse student population, accessibility, and leading-edge scholarly activities dedicated to transforming the communities of Southeast Texas and beyond.

2.3 **PROJECT DESCRIPTION AND SCOPE:** The scope of the project is defined by the Contract Documents and consists of a new Welcome Center building with an inviting character for prospective students and visitors to the campus.

This new facility is a one story, 6,300 GSF building designed to achieve LEED Silver accreditation. The main structure will be structural steel framing and concrete slab on grade enclosed by brick masonry, cast stone, metal wall panels and a storefront glazing system.

The exterior and interior spaces of the building will be fully integrated with branding, marketing graphics and logos selected by the University. Connection to existing site utilities will require boring work across Jim Gilligan way. Storm and Sewer lines to connect to main lines along Jim Gilligan Way and Rolf Christopher as specified in the contract documents. Existing site conditions will require the demolition of an existing one-story building.

The site will include visitor parking, bus drop-off, outdoor gathering areas with enhanced landscaping, a public art sculpture by Paul Kittelson and Carter Ernst, and an iconic “photo op” monument sign.

Total Construction Cost Limitation for the Project is: \$3,000,000 (Three Million Dollars).

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

2.4.1	RFP Posted.....	01/06/2020
2.4.2	Optional Pre-Proposal Conference.....	01/13/2020
2.4.3	RFQ Submission of Written Questions Deadline (12:00pm)	01/17/2020
2.4.4	Receive Qualifications and Proposals.....	01/29/2020
2.4.5	Read Respondents name aloud at Lamar University	01/29/2020
2.4.6	Receive HSP	01/30/2020
2.4.7	Read Respondents pricing Proposal aloud at System Administration	02/06/2020
2.4.8	Interview shortlisted firms (if required).....	02/12/2020
2.4.9	Owner selects General Contractor	02/13/2020
2.4.10	Execute General Contractor Agreement	02/19/2020
2.4.11	Construction Scheduled Start Date	03/02/2020
2.4.12	Target Construction Substantial Completion date	02/24/2021
2.4.13	Target Construction Final Completion date	03/24/2021

The above schedule of events represent 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 inclusive of all questions in Section 3.1 through 3.7. Under a separate sealed package Respondent shall read 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:

Volume:

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

Revenues:

- Annual revenue totals and percent change per year

Bonding:

- Total bonding capacity
- Available bonding capacity and current backlog

3.1.2 State whether Respondent 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 a contract 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 exist 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. List the projects in order of priority, with the most relevant project listed first. Provide the following information for each project listed:
 - Project name, location, contract delivery method, and description
 - Color images (photographic or machine reproductions)
 - Original and final construction cost
 - Final project size in gross square feet
 - Type of construction (new, renovation, or expansion)
 - Dates of the actual Notice to Proceed, original Substantial Completion, actual Substantial Completion, and Final Payment dates for construction services
 - Name of Project Manager (individual responsible to the Owner for the overall success of the project)
 - Name of Project Superintendent (individual responsible for coordinating the day to day work)
 - Names of Mechanical, Plumbing and Electrical Subcontractors
- 3.3.2 References (for each project listed above, identify the following):
 - The owner's representative who served as the day-to-day liaison during construction, including telephone number and email address

- Architect/Engineer's name and representative who served as the day-to-day liaison during construction, including telephone number and email address
- 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 for "major" institutions of higher education that are MOST RELATED TO THIS PROJECT within the last five (5) years. Provide not less than three but not more than five 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 the Respondent has not previously provided construction services for the Owner, then identify and describe the 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:

- Project name, location, contract delivery method, and description
- Color images (photographic or machine reproductions)
- Original and final construction cost
- Categorize the change order (s) value in terms of owner added scope, error and omission (both Architect/Engineer and Contractor) or unforeseen.
- Final project size in gross square feet
- Type of construction (new, renovation, or expansion)
- Dates of the actual Notice to Proceed, original Substantial Completion, actual Substantial Completion, and Final Payment dates for Construction Services
- Name of Project Manager (individual responsible to the owner for the overall success of the project)
- 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 and identify specific critical process, phases, milestones, approvals, and procurements anticipated. Clearly identify the 10% total project float required during the construction phase.

3.5.2 Describe what Respondent 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 will Respondent address non-conforming work.
- 3.6.3 Provide Respondent's Experience Modification Rate (EMR) for the past five 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 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 your project site. If so, describe how Respondent have revised their program.

3.8 CRITERION EIGHT: PROPOSALS AND BID SECURITY

- 3.8.1 Complete the "Respondent's Pricing and Delivery Proposal".
- 3.8.2 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 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.
- 3.8.3 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.

- 3.8.4 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.
- 3.8.5 If the Owner has not made an award within sixty (60) 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 sixty (60) day period.

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 the 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 (Not including the HSP). The cover, table of contents, divider sheets, HSP (Section 1.13), and Pricing and Delivery Proposal and Execution of Offer do not count as printed pages.
 - 4.1.2.1 Proposals shall be submitted as three (3) separate sealed documents: 1) Statement of Qualifications, 2) Pricing and Delivery Proposal/Execution of Offer, and 3) HSP. The HSP shall be submitted separately on the date, time and location in Article 1.5.2.
- 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. Section 3.8 shall be submitted under a separate sealed package.

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 Respondent's Pricing and Delivery Proposal Form, and other sample bidding and 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 are provided as an attachment to this posting on the Electronic State Business Daily at: <http://www.txsmartbuy.com/sp> Reference the agency name "Board of Regents/Texas State University System – 758" and the RFP number provided in this RFP.

- 5.3 UNIFORM GENERAL CONDITIONS AND OWNER'S DIVISION 1 SPECIFICATIONS: Uniform General Conditions ("UGC") and Division 1 Specifications 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>

RESPONDENT'S PRICING AND DELIVERY PROPOSAL

RFQP No.: 758-20-05030

Project Name: RFP for Competitive Sealed Proposals – Welcome Center and South Campus Entrance for Lamar University

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

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

Having carefully examined the Uniform General Conditions (“UGC”) for Construction Contracts, the sealed Plans and Specifications and addenda thereto, as prepared by Huitt-Zollars, 1001 Fannin Street, Suite 4040, Houston, Texas 77002, 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 the Base Proposal Cost identified above.

1.2.1 Add Alternate No. 1 – Section 074293 – Soffit Panels:

Provide alternative product to Basis of Design product equivalent to the basis of design product including all amounts required for a complete ready to use installation.

_____ DOLLARS
 (\$ _____)

1.2.2 Add Alternate No. 2 – Section 074213 – Metal Composite Material Wall Panels:

Provide alternative product to Basis of Design product equivalent to the basis of design product including all amounts required for a complete ready to use installation.

_____ DOLLARS
 (\$ _____)

1.2.3 **Add Alternate No. 3 – Section 074113.16 – Standing-Seam Metal Roof Panels:**
 Provide alternative product to Basis of Design product equivalent to the basis of design product including all amounts required for a complete ready to use installation.

_____ DOLLARS
 (\$ _____)

1.2.4 **Add Alternate No. 4 – Section 108213 –Roof Screens:**
 Provide alternative product to Basis of Design product equivalent to the basis of design product including all amounts required for a complete ready to use installation.

_____ DOLLARS
 (\$ _____)

1.2.5 **Add Alternate No. 5 - As shown on Branding drawings W3.E5a, W3.E5b and W3.E5c:**
 Provide pricing options for the LU sculpture product, as specified, to be either concrete or a metal including all amount required for a complete ready to use installation.

Product Type Concrete:
 _____ DOLLARS
 (\$ _____)

Product Type Metal:
 _____ 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 Agreement02/19/2020
- 1.3.2 Construction Scheduled Start Date03/02/2020
- 1.3.3 Target Construction Substantial Completion date02/24/2021
- 1.3.4 Target Construction Final Completion date03/24/2021

The above schedule of events represent 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 **One Thousand Dollars (\$1,000)** 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 Contract. This sum constitutes a reasonable estimate of Owner’s actual damages and is not intended as a penalty.

- 1.6 **BID BONDS:** The undersigned shall include a Certified Check or 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 alternates. The Certified Check or 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 if the undersigned defaults in executing the Agreement or furnishing the Performance and Payment Bonds or insurance certificates within ten (10) calendar days of written notification of the award of the Contract, then the Certified Check shall become the property of the Owner, or the Proposal Bond shall become subject to forfeiture to the Owner.
- 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 price, after notification that the Respondent has been identified by the Owner as the Respondent with the “best value” Proposal. The bonds shall be in the full contract amount.
- 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) calendar 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.

(The rest of this page intentionally left blank).

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)

1.10 **RESPONDENT'S EXECUTION OF OFFER FOR: RFP for Competitive Sealed Proposals – Welcome Center and South Campus Entrance for Lamar University, RFP No. 758-20-05030.**

NOTE TO RESPONDENTS: SUBMIT ENTIRE SECTION 1.10 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 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.

- 1.10.1 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.
- 1.10.2 By signature hereon, Respondent offers and agrees to furnish to the Owner the products and/or services more particularly described in its Proposals, and to comply with all terms, conditions and requirements set forth in the RFP documents and contained herein.
- 1.10.3 By signature hereon, Respondent affirms that they has not given, nor intends 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 Proposals.
- 1.10.4 By signature hereon, Respondent that is a "taxable entity" under Section 171.0002 of the *Texas Tax Code* certifies that it is not currently delinquent in the payment of any Franchise Taxes due under Chapter 171, *Texas Tax Code*.
- 1.10.5 By signature hereon, the Respondent hereby certifies that neither the Respondent nor the firm, corporation, partnership or owner represented by the Respondent, or anyone acting for such firm, corporation, or institution 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, nor communicated directly or indirectly the Proposals made to any competitor or any other person engaged in such line of business.
- 1.10.6 By signature hereon, Respondent represents and warrants that:
 - 1.10.6.1 Respondent is a reputable company regularly engaged in providing products and/or services necessary to meet the terms, conditions and requirements of the RFP;

- 1.10.6.2 Respondent has the necessary experience, knowledge, abilities, skills, and resources to satisfactorily perform the terms, conditions and requirements of the RFP;
- 1.10.6.3 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;
- 1.10.6.4 Respondent understands (i) the requirements and specifications set forth in this RFP (ii) the terms and conditions set forth in the contract under which Respondent will be required to operate;
- 1.10.6.5 Respondent, if selected by the Owner, will maintain insurance as required by the contract;
- 1.10.6.6 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.
- 1.10.7 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.
- 1.10.8 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)
- 1.10.9 By signature hereon, Respondent certifies as follows:
 - 1.10.9.1 "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."
 - 1.10.9.2 "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."
 - 1.10.9.3 "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 Proposals only."
- 1.10.10 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 any Texas State University System component, or Respondent has not been an employee of any Texas State University System component within the immediate

twelve (12) months prior to your RFP response. All such disclosures will be subject to administrative review and approval prior to the Owner entering into any contract with Respondent.

- 1.10.11 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*).
- 1.10.12 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.
- 1.10.13 By signature hereon, Respondent signifies his compliance with all federal laws and regulations pertaining to Equal Employment Opportunities and Affirmative Action.
- 1.10.14 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 Proposals.
- 1.10.15 By signature hereon, Respondent agrees to complete a Cybersecurity Training Program. Pursuant to Section 2054.5192, *Texas Government Code*, Contractor and its subcontractors, officers, and employees must complete a cybersecurity training program certified under Section 2054.519, *Texas Government Code* as selected by the Owner. The cybersecurity training program must be completed by Contractor and its subcontractors, officers, and employees during the term and any renewal period of this Agreement. Contractor shall verify in writing completion of the program to the Owner within the first thirty (30) calendar days of the term and any renewal period of this Agreement.
- 1.10.16 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 Proposals, will be applied towards any debt including, but not limited to, delinquent taxes and child support that is owed to the State of Texas.
- 1.10.17 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 Texas State University System 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 Texas State University System Board of Regents has a "substantial interest" (as that term is defined in Section 51.923 of the *Texas Education Code*) in the Respondent.

1.10.18 The Respondent must complete, sign and return this Execution of Offer as part of their 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)

(Title)

(Authorized Signature)

(Date)

Addendum No. 1

Issued January 21, 2020

REQUEST FOR PROPOSALS FOR GENERAL CONTRACTOR COMPETITIVE SEALED PROPOSALS

**FOR
LAMAR UNIVERSITY
BEAUMONT, TEXAS**

WELCOME CENTER AND SOUTH CAMPUS ENTRANCE

RFP No.:

758-20-05030

Notice To All Respondents:

The following is Addendum No. 1 to the Request for Proposals (RFP)
ESBD Posting No. 758-20-05030 was posted on January 6, 2020

Prepared By:

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

I. General:

- A. The optional Pre-Proposal Conference was held on January 13, 2020, at the Wayne A. Reaud Building location. The Attendance Sign-In Sheets are included as part of this Addendum.
- B. Fifteen (15) questions were received in response to this solicitation. Answers to the questions are provided in the attached “Addendum No. 1” document prepared by the project Architect/Engineer Huitt-Zollars, dated January 20, 2020. Aside from the response to the questions received, the document also includes revisions to the Project Manual and Drawings, as follows:
 - a. Table of Contents – revised
 - b. Uniform General Conditions – added
 - c. Section 01524 Construction Waste Management – revised
 - d. Section 102650 Impact Resistant Wall Protection – revised
 - e. Section 101526 Solid Plastic Lockers – added
 - f. Section 274116 Audio Visual Systems – added
 - g. Section 274117 Audio Visual Infrastructure – added
 - h. Drawing Number A-103 Reflected Ceiling Plan and Finish Plan – revised

II. Attachments:

- A. Pre-Submittal Attendance Sign-In Sheet (1 page)
- B. Addendum No.1 by Huitt-Zollars, dated January 20, 2020 (135 pages)

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

ARCHITECT: HUITT-ZOLLARS
1001 Fannin Street, Suite 4040
Houston, TX 77002

OWNER: LAMAR UNIVERSITY
4400 S. ML King Jr. Parkway
Beaumont, TX 77705

This Addendum forms a part of the Contract Documents and modifies the original Project Manual and Drawings, Re-Bid Issue – 01/06/2020, to the extent noted hereinafter.

Careful note of this Addendum shall be taken by all parties of interest so that proper allowance is made in all computations, estimates and contracts and so that all trades affected are fully advised in the performance of work that will be required by them.

Items revised on Drawings are designated by a cloud line and a delta (Δ) surrounding the corresponding revision number. Items revised in Specifications are designated by an asterisk (*) in the left-hand margin.

This Addendum supersedes all previous Drawings, Specifications and instructions pertaining to these items.

Revised Specifications and Drawings are attached as follows:

BIDDERS RFI QUESTIONS – Response Sheet

PROJECT MANUAL

- **Table of Contents**
Revised to show added sections below.
- **Uniform General Conditions**
2005 UGC added.
- **Section 01524 Construction Waste Management**
Specification section revised to clarify waste management plan and coordinator
- **Section 102650 Impact Resistant Wall Protection**
Specification revised to clarify corner guards.
- **Section 101526 Solid Plastic Lockers**
Specification section added.
- **Section 274116 Audio Visual Systems**
Specification section added.
- **Section 274117 Audio Visual Infrastructure**
Specification section added

DRAWINGS

- **A-103 Reflected Ceiling Plan and Finish Plan**
Drawing C1 revised to show corner guard locations

END OF ADDENDUM NO. 1

No.	Bidders RFI Questions	Response	Date
1	The drawings for the Welcome center project show an Audio Visual scope however there aren't any Audio Visual Specifications noted. Please advise.	Specification Sections 274117 Audio Video Infrastructure and 274116 Audio Visual Systems Included in this Addendum	1/20/2020
2	The bid documents for the New Welcome Center Construction Project call for site amenities to be included on this project. We would like you to consider Jamestown Advanced Products' bench and trash receptacle as approved equals. A substitution form and submittals are attached for your review. Color and finish options are available. Quantity discounts may apply.	Site amenities listed (benches and trash receptacles) are not in contract and will be provided by Lamar University.	1/20/2020
3	We respectfully submit for your consideration a request to approve products as an accepted substitute on RFQ/GC: Welcome Center and South Campus Entrance (18-834733); please find substitution request form attached.	There are no exceptions taken to the proposed HPDE locker substitution. The HPDE locker specification 101526 Solid Plastic Lockers is included in this addendum.	1/20/2020
4	During the Preproposal Conference it was state that there are 5 alternates. The Schedule of Alternates in Specification Section 012300 only lists 4 alternates. Please advise.	There are 5 Alternates. Four alternates are located in the Specifications manual. One alternate is located in the branding drawings on sheets W3.5a - W3.5c	1/20/2020
5	Is waste from the demolition of the existing building and site concrete to be included in the waste management plan? Or is the waste management plan strictly for waste resulting from the new construction?	Waste from the demolition of the existing building and the site concrete is to be included in the waste management plan. Refer to attached Specification Section 01524 Construction Waste Management.	1/20/2020
6	Will a LEED Accredited Waste Management Coordinator be required at the Project site full time for the duration of the project?	A LEED accredited waste management coordinator shall be present at project site as required (but not full time) for the duration of the project. Refer to attached Specification Section 01524 Construction Waste Management.	1/20/2020
7	Please confirm if testing will be performed by the owner.	Yes, Construction Material Testing, HVAC TAB and Building Envelope Consults will be under contract by the Owner for this project, under contract by the Owner.	1/20/2020
8	There is no specification for the gallery display units. Please advise.	Sheet W3.5a in the Branding Design Intent Documents and 10 14 00 Specifications (2.07 Pre-Manufactured Units) both have information about the gallery display walls.	1/20/2020
9	Specification section 102650 references impact resistant wall protection with references to the drawings as far as locations. We have not been able to determine exact locations for wall protection from the drawings. Please advise.	Specification section 102650 has been revised to clarify impact resistant wall protection as relating to corner guards. See sheet A-103 for corner guard locations.	1/20/2020
10	Specification 105113 is for welded corridor lockers. We have not identified any lockers in the corridors. Is this specification section referencing the locker in the custodial room?	Specification 105113 for welded corridor lockers references the locker in the custodial room. The metal locker can be substituted for an HPDE locker. HPDE locker specification 101526 Solid Plastic Lockers is included in this addendum.	1/20/2020
11	Original Bid Documents contained a specification section for Packaged Rooftop Air Conditioning Units. This section is not included in the re-bid documents. Please advise.	Specification Sections 2374165 Packaged Rooftop Air-Conditioning Units included in this Addendum	1/20/2020
12	Detail 6 on sheet L-202 shows fixed bollards but the specifications are for removable bollards. Please advise if the bollards are to be fixed or removable?	Bollards are to be removable.	1/20/2020
13	Detail 4 on sheet L-202 has 11 items under Detail Notes. There are 12 items called out on the details. Please advise what item 12 is.	Callout 12 should be Detail Note 11 referencing the Recessed LED wall light.	1/20/2020
14	Sheet C-005 shows a sawtooth curb. The end location is shown on the drawings. Please provide more details as to start location/dimensions.	The start of the saw tooth curb is labeled on the southeast side of the driveway to Rolfe Christopher, opposite of the median dividing the driveway.	1/20/2020
15	It seems that a copy of the Uniform General Conditions is missing from the project documents. Please advise if the UGC requirements will be followed as the insurance and bonding requirements are set forth in this document.	Yes, 2005 Uniform General Conditions Requirements will be followed. The Uniform General Conditions are included in this addendum.	1/20/2020

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PROCUREMENT AND CONTRACTING REQUIREMENTS

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Seals Page

Bidding Documents to be provided by Owner

Document 003126 – Existing Hazardous Material Information (and report)

Document 003132 – Geotechnical Report (and report)

Uniform General Conditions for Construction Contracts

SPECIFICATIONS

Note: Section Designations are not necessarily consecutively numbered.

DIVISION 1 - GENERAL REQUIREMENTS

Division One TSUS Construction Project Division 1 Specifications

- Section 010000 – Miscellaneous Requirements
- Section 012000 – Project Meetings
- Section 013100 – Project Administration
- Section 013200 – Project Planning & Scheduling
- Section 013220 – Photographic Documents
- Section 013520 – LEEDs Requirements
- Section 013523 – Project Safety Requirements
- Section 014200 – Reference Standards
- Section 014300 – Quality Assurance
- Section 014339 – Site Mock Ups
- Section 014500 – Quality Control
- Section 014518 – Field Engineering
- Section 015000 – Construction Facilities & Temporary Controls
- Section 015010 – Project Signage
- Section 015240 – Construction Waste Management
- Section 017000 – Contract Closeout
- Section 019100 – General Commissioning Requirements

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Issue for Re-Bid – 2020.01.06

Addendum 1 – 1/20/2020

TC-1

Section 012300 - Alternates

Section 012513 – Product Substitution Procedures

Section 01352 – LEED Requirements

Section 01353 – Indoor Air Quality Plan – Construction

Section 014523 – Testing and Inspection Services

Section 01524 – Construction Waste Management

Section 01530 – Mold Prevention

Section 01570 – Erosion and Sedimentation Control

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Addendum No. 1 - RFP for General Contractor Competitive Sealed Proposal RFP No. 752420025030
Lamar University - Welcome Center and South Campus Entrance

The seal of the State of Texas is a large, faint watermark in the background. It features a five-pointed star in the center, surrounded by a wreath of olive and live oak branches. The words "THE STATE OF TEXAS" are written in a circular border around the star.

**Uniform General Conditions
for
Construction Contracts**

August 17, 2005

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Article 1. Definitions

Unless the context clearly requires another meaning, the following terms have the meaning assigned herein.

- 1.1 *Architect/Engineer (A/E)* means a person registered as an architect pursuant to Tex. Occ. Code Ann., Chapter 1051, as a landscape architect pursuant to Tex. Occ. Code Ann., Chapter 1052, a person licensed as a professional engineer pursuant Tex. Occ. Code Ann., Chapter 1001 and/or a firm employed by Owner or Design-Build Contractor to provide professional architectural or engineering services and to exercise overall responsibility for the design of a Project or a significant portion thereof, and to perform the contract administration responsibilities set forth in the Contract.
- 1.2 *Change Order* means a written modification of the Contract between the Owner and Contractor, signed by the Owner, the Contractor and the Architect/Engineer.
- 1.3 *Change Order Proposal* means a Contractor-generated document in response to a Change Order Request (COR).
- 1.4 *Change Order Request (COR)* means a document which informs the contractor of a proposed change in the Work, and appropriately describes or otherwise documents such change.
- 1.5 *Close-out documents* means the product brochures, product/equipment maintenance and operations instructions, manuals, and other documents/warranties, as-built record documents, affidavit of payment, release of lien and claim, and as may be further defined, identified, and required by the Contract Documents.
- 1.6 *Contract* means the entire agreement between the Owner and the Contractor, including all of the Contract Documents.
- 1.7 *Contract Date* is the date when the agreement between the owner and the contractor becomes effective.
- 1.8 *Contract Documents* means those documents identified as a component of the agreement (contract) between the owner and the contractor. These may include, but are not limited to, Drawings, Specifications, General, Supplementary and Special Conditions, and all pre-bid and/or pre-proposal addenda.
- 1.9 *Contractor* means the individual, corporation, company, partnership, firm or other entity contracted to perform the Work, regardless of the type of construction contract used, so that the term as used herein includes a Construction Manager-at-Risk or a Design-Build firm as well as a

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General or Prime Contractor. The contract documents refer to *Contractor* as if singular in number.

- 1.10 *Contract Sum* means the total compensation payable to the Contractor for completion of the Work in accordance with the terms of the contract.
- 1.11 *Contract Time* means the period between the Start Date identified in the Notice to Proceed with Construction and the Substantial Completion date identified in the Notice to Proceed or as subsequently amended by Change Order.
- 1.12 *Date of Commencement* means the date designated in the Notice to Proceed for the Contractor to commence the Work.
- 1.13 *Day* means a calendar day, unless otherwise specifically stipulated.
- 1.14 *Drawings* means that product of the Architect/Engineer which graphically depicts the Work.
- 1.15 *Final Completion* means the date determined and certified by the Architect/Engineer and Owner on which the Work is fully and satisfactorily complete in accordance with the Contract.
- 1.16 *Owner* means the State of Texas and any Agency of the State of Texas, acting through the responsible entity of the State of Texas identified in the Contract as the Owner.
- 1.17 *Owner's Designated Representative (ODR)* means the individual assigned by the Owner to act on its behalf, and to undertake certain activities as specifically outlined in the Contract. The ODR is the only party authorized to direct changes to the scope, cost, or time of the contract.
- 1.18 *Project* means all activities necessary for realization of the Work. This includes design, contract award(s), execution of the Work itself, and fulfillment of all contract and warranty obligations.
- 1.19 *Samples* means representative physical examples of materials, equipment or workmanship, used to confirm compliance with requirements and/or to establish standards for use in execution of the Work.
- 1.20 *Schedule of Values* means the detailed breakdown of the cost of the materials, labor and equipment necessary to accomplish the Work as described in the Contract Documents, submitted by Contractor for approval by Owner and Architect/Engineer.
- 1.21 *Shop Drawings* means the drawings, diagrams, illustrations, schedules, performance charts, brochures and other data prepared by the Contractor or its agents, which detail a portion of the Work.
- 1.22 *Site* means the geographical area of the location of the Work.
- 1.23 *Special Conditions* means the documents containing terms and conditions, which may be unique to the project. Special Conditions are a

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part of the Contract Documents and have precedence over the Uniform General Conditions.

- 1.24 *Specifications* means the written product of the Architect/Engineer that establishes the quality and/or performance of products utilized in the Work and processes to be used, including testing and verification for producing the Work.
- 1.25 *Subcontractor* means a business entity that enters into an agreement with the Contractor to perform part of the Work or to provide services, materials or equipment for use in the Work.
- 1.26 *Substantial Completion* means the date determined and certified by the Contractor, Architect/Engineer and Owner when the Work or a designated portion thereof is sufficiently complete, in accordance with the Contract, so as to be operational and fit for the use intended.
- 1.27 *Supplementary General Conditions* means procedures and requirements that modify the Uniform General Conditions. Supplementary General Conditions, when used, have precedence over the Uniform General Conditions.
- 1.28 *Unit Price Work* means Work or a portion of the Work paid for based on incremental units of measurement.
- 1.29 *Unilateral Change Order (ULCO)* means a Change Order issued by the Owner without the agreement of the Contractor.
- 1.30 *Work* means the administration, procurement, materials, equipment, construction and all services necessary for the Contractor, and/or its agents, to fulfill the Contractor's obligations under the Contract.

Article 2. Laws Governing Construction

- 2.1. Environmental Regulations. The Contractor shall conduct activities in compliance with applicable laws and regulations and other requirements of the Contract relating to the environment, and its protection at all times. Unless otherwise specifically determined, the Owner is responsible for obtaining and maintaining permits related to stormwater run-off. The Contractor shall conduct operations consistent with stormwater run-off permit conditions. Contractor is responsible for all items it brings to site, including hazardous materials, and all such items brought to the site by its subcontractors and suppliers, or by other entities subject to direction of the Contractor. The Contractor shall not incorporate hazardous materials into the Work without prior approval of Owner, and shall provide an affidavit attesting to such in association with request for Substantial Completion inspection..
- 2.2. Wage Rates. The Contractor shall not pay less than the wage scale of the various classes of labor as shown on the "Prevailing Wage Schedule" provided by the Owner. The specified wage rates are minimum rates only. The Owner is not bound to pay any claims for additional compensation made by any Contractor because the Contractor pays wages in excess of the applicable minimum rate contained in the Contract. The "Prevailing Wage Schedule" is not a representation that qualified labor adequate to perform the Work is available locally at the prevailing wage rates.
- 2.2.1 Notification to Workers. The Contractor shall notify each worker, in writing, of the following as they commence work on the contract: the worker's job classification, the established minimum wage rate requirement for that classification, as well as the worker's actual wage. The notice must be delivered to and signed in acknowledgement of receipt by the employee and must list both the wages and fringe benefits to be paid or furnished for each classification in which the worker is assigned duties. When requested by the Owner, the Contractor shall furnish evidence of compliance with the Texas Prevailing Wage Law.
- 2.2.1.1 Submit a copy of each worker wage-rate notification to the ODR with the application for progress payment for the period during which the worker was engaged in activities on behalf of the project.
- 2.2.1.2 The "Prevailing Wage Schedule" is determined by the Owner in compliance with Tex. Gov't Code, Chapter 2258. Should the Contractor at any time become aware that a particular skill or trade not reflected on the Owner's Prevailing Wage Schedule will be or is being employed in the Work, whether by the Contractor or by a subcontractor, the Contractor shall promptly inform the ODR of the proposed wage to be paid for the skill along with a justification for same. The Contractor is responsible for determining the most appropriate wage for a particular skill in relation to similar skills or trades identified on the Prevailing Wage

Schedule. In no case shall any worker be paid less than the wage indicated for Laborers.

2.2.1.3 Penalty for Violation. The Contractor and any Subcontractor will pay to the State a penalty of sixty dollars (\$60) for each worker employed for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the Prevailing Wage Schedule.

2.2.1.4 Complaints of Violations

2.2.1.4.1 Owner's Determination of Good Cause. Upon receipt of information concerning a violation of Tex. Gov't Code, Chapter 2258, the Owner will, within 31 days, make an initial determination as to whether good cause exists that a violation occurred. The Owner will send documentation of the initial determination to the Contractor against whom the violation was alleged, and to the worker involved. Upon making a good-cause finding, the Owner will retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the Prevailing Wage Schedule and any supplements thereto, together with the applicable penalties, such amounts being subtracted from successive progress payments pending a final decision on the violation.

2.2.1.4.2 If the Contractor and claimant worker reach an agreement concerning the claim, the contractor shall promptly notify the Owner in a written document countersigned by the worker.

2.2.1.4.3 Arbitration Required. If the violation is not resolved within 14 days following initial determination by the Owner, the Contractor and the claimant worker must participate in binding arbitration in accordance with the Texas General Arbitration Act, Tex. Civ. Prac. & Rev. Code, Chapter 171. For a period not to exceed 10 days, after which, if no agreement reached, a district court may be petitioned by any of the parties to the arbitration to appoint an arbitrator whose decision will be binding on all parties.

2.2.1.4.4 Arbitration Award. If an arbitrator assesses an award against the Contractor, the Contractor shall promptly furnish a copy of said award to the Owner. The Owner may use any amounts retained under Article 2.2.1.4.1 to pay the worker the amount as designated in the arbitration award. If the retained funds are insufficient to pay the worker in accordance with the arbitration award, the worker has a right of action against the Contractor, and/or the surety to receive the amount owed, plus attorneys' fees and court costs. The Owner has no duty to release any funds to either the claimant or the Contractor until

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it has received the notices of agreement or the arbitration award.

2.2.1.4.5 No Extension of Time. If the Owner's determination proves valid that good cause existed to believe a violation had occurred, the Contractor is not entitled to an extension of time for any delay arising directly or indirectly from of the arbitration procedures set forth herein.

- 2.3. Venue for Suits. The venue for any suit arising from this contract will be in a court of competent jurisdiction in Travis County, Texas, or as may otherwise designated in the Supplementary General Conditions.
- 2.4. Licensing of Trades. The Contractor shall comply with all applicable provisions of state law related to license requirements for skilled tradesmen, contractors, suppliers and or laborers, as necessary to accomplish the Work. In the event the Contractor, or one of its Subcontractors, loses its license during the term of performance of the Contract, the Contractor shall promptly hire or contract with a licensed provider of the service at no additional cost to the Owner.
- 2.5. Royalties, Patents & Copyrights. The Contractor shall pay all royalties and license fees, defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.
- 2.6. State Sales and Use Taxes. The Owner qualifies for exemption from certain State and Local Sales and Use Taxes pursuant to the provisions of Tex. Tax Code, Chapter 151. The Contractor may claim exemption from payment of applicable State taxes by complying with such procedures as prescribed by the State Comptroller of Public Accounts.

Article 3. General Responsibilities of Owner & Contractor

- 3.1. Owner's General Responsibilities. The Owner is the entity identified as such in the Contract and referred to throughout the Contract Documents as if singular in number.
 - 3.1.1 Preconstruction Conference. Prior to, or concurrent with, the issuance of Notice to Proceed with Construction, a conference will be convened for attendance by the Owner, Contractor, Architect/Engineer (AE) and appropriate Subcontractors. The purpose of the conference is to establish a working understanding among the parties as to the Work, the operational conditions at the project site, and general administration of the Project. Topics include communications, schedules, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, maintaining required records and all other matters of importance to the administration of the Project and effective communications between the project team members.
 - 3.1.2 Owner's Designated Representative. Prior to the start of construction, Owner will identify the Owner's Designated Representative (ODR), who has the express authority to act and bind the Owner to the extent and for the purposes described in the various Articles of the Contract, including responsibilities for general administration of the Contract.
 - 3.1.2.1 Unless otherwise specifically defined elsewhere in the contract documents, the ODR is the single point of contact between the Owner and Contractor. Notice to the ODR, unless otherwise noted, constitutes notice to the Owner under the Contract.
 - 3.1.2.2 All directives on behalf of the Owner will be conveyed to the Contractor by the ODR in writing.
 - 3.1.3 Owner Supplied Materials and Information.
 - 3.1.3.1 The Owner will furnish to the Contractor those surveys describing the physical characteristics, legal description, limitations of the site, site utility locations, and other information used in the preparation of the Contract Documents.
 - 3.1.3.2 The Owner will provide information, equipment, or services under the Owner's control to the Contractor with reasonable promptness.
 - 3.1.4 Availability of Lands. The Owner will furnish, as indicated in the Contract, all required rights to use the lands upon which the Work occurs. This includes rights-of-way and easements for access and

such other lands that are designated for use by the Contractor. The Contractor shall comply with all Owner identified encumbrances or restrictions specifically related to use of lands so furnished. The Owner will obtain and pay for easements for permanent structures or permanent changes in existing facilities, unless otherwise required in the Contract Documents.

3.1.5 Limitation on Owner's Duties

3.1.5.1 The Owner will not supervise, direct, control or have authority over or be responsible for Contractor's means, methods, technologies, sequences or procedures of construction or the safety precautions and programs incident thereto. The Owner is not responsible for any failure of Contractor to comply with laws and regulations applicable to the Work. The Owner is not responsible for the failure of Contractor to perform or furnish the Work in accordance with the Contract Documents. Owner are not responsible for the acts or omissions of Contractor, or any of its subcontractors, suppliers or of any other person or organization performing or furnishing any of the Work on behalf of the Contractor.

3.1.5.2 The Owner will not take any action in contravention of a design decision made by the AE in preparation of the Contract Documents, when such actions are in conflict with statutes under which the AE is licensed for the protection of the public health and safety.

3.2 Role of Architect/Engineer. Unless specified otherwise in the Contract between the Owner and the Contractor, the AE shall provide general administration services for the Owner during the construction phase of the project. Written correspondence, requests for information, and shop drawings/submittals shall be directed to the AE for action. The AE has the authority to act on behalf of the Owner to the extent provided in the Contract Documents, unless otherwise modified by written instrument, which will be furnished to the Contractor by the ODR, upon request.

3.2.1 Site Visits

3.2.1.1 The AE will make visits to the site at intervals as provided in the AE's contract agreement with the Owner, to observe the progress and the quality of the various aspects of Contractor's executed Work and report findings to the Owner.

3.2.1.2 The AE has the authority to interpret Contract Documents and inspect the Work for compliance and conformance with the Contract. Except as referenced in Article 3.1.5.2, the Owner retains the sole authority to accept or reject Work and issue direction for correction, removal, or replacement of Work.

3.2.2 Clarifications and Interpretations. It may be determined that clarifications or interpretations of the Contract Documents are

necessary. Upon direction by the ODR such clarifications or interpretations will be provided by the AE consistent with the intent of the Contract Documents. The AE will issue these clarifications with reasonable promptness to the Contractor as Architect's Supplemental Instruction (ASI) or similar instrument. If Contractor believes that such clarification or interpretation justifies an adjustment in the Contract Sum or the Contract Time, the Contractor shall so notify the Owner in accordance with the provisions of Article 11.

3.2.3 Limitations on Architect/Engineer Authority. The AE is not responsible for:

- 3.2.3.1 The Contractor's means, methods, techniques, sequences, procedures, safety, or programs incident to the Project nor will the AE supervise, direct, control or have authority over the same.
- 3.2.3.2 The Failure of Contractor to comply with laws and regulations applicable to the furnishing or performing the Work.
- 3.2.3.3 The Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.
- 3.2.3.4 Acts or omissions of the Contractor, or of any other person or organization performing or furnishing any of the Work.

3.3 Contractor's General Responsibilities. The Contractor is solely responsible for implementing the Work in full compliance with all applicable laws and the contract documents and shall supervise and direct the Work using the best skill and attention to assure that each element of the Work conforms to the Contract requirements. The Contractor is solely responsible for all construction means, methods, techniques, safety, sequences, coordination and procedures.

- 3.3.1 Project Administration. The Contractor shall provide project administration for all subcontractors, vendors, suppliers, and others involved in implementing the Work and shall coordinate administration efforts with those of the AE and ODR in accordance with these General Conditions and provisions of Division 1 Specifications, and as outlined in the Pre-construction Conference.
- 3.3.2 Contractor's Superintendent. Employ a competent resident superintendent who will be present at the Project Site during the progress of the Work. The superintendent is subject to the approval of the ODR. Do not change approved superintendents during the course of the project without the written approval of the ODR unless the superintendent leaves the employ of the Contractor.
- 3.3.3 Labor. Provide competent, suitably qualified personnel to survey, lay-out, and construct the Work as required by the Contract Documents. Maintain good discipline and order at the Site at all times.

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- 3.3.4 Services, Materials, and Equipment. Unless otherwise specified, provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities, incidentals, and services necessary for the construction, performance, testing, start-up, inspection and completion of the Work.
- 3.3.5 Non-Compliant Work. Should the AE and/or the ODR identify Work as non-compliant with the Contract Documents, the ODR will communicate the finding to the Contractor and the Contractor will correct such Work at its expense. The approval of Work by either the AE or ODR does not relieve the Contractor from the obligation to comply with all requirements of the Contract Documents.
- 3.3.6 Subcontractors. Do not employ any Subcontractor, supplier or other person or organization, whether initially or as a substitute, against whom the Owner may have reasonable objection. The Owner will communicate such objections in writing. The Contractor is not required to employ any Subcontractor, supplier or other person or organization to furnish any of the work to whom the Contractor has reasonable objection. The Contractor will not substitute Subcontractors without the acceptance of the Owner.
- 3.3.6.1 All Subcontracts and supply contracts shall be consistent with and bound to the terms and conditions of the Contract Documents including provisions of the Agreement between the Contractor and the Owner.
- 3.3.6.2 The Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with the Contractor. Require all Subcontractors, suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with Owner only through the Contractor. Furnish to the Owner a copy of each first-tier subcontract promptly after its execution. The Contractor agrees that the Owner has no obligation to review or approve the content of such contracts and that providing the Owner such copies in no way relieves the Contractor of any of the terms and conditions of the Contract, including, without limitation, any provisions of the Contract which require the subcontractor to be bound to the Contractor in the same manner in which the Contractor is bound to the Owner.
- 3.3.7 Continuing the Work. Carry on the Work and adhere to the progress schedule during all disputes, disagreements or alternative resolution processes with the Owner. Do not delay or postpone any Work

because of the pending resolution of any disputes, disagreements or processes, except as the Owner and the Contractor may agree in writing.

- 3.3.8 Cleaning. At all times, keep the Site and the Work clean and free from accumulation of waste materials or rubbish caused by the construction activities under the Contract. The Contractor shall ensure that the entire Project is thoroughly cleaned prior to requesting Substantial Completion Inspection and, again, upon completion of the Project prior to the final inspection.
- 3.3.9 Acts and Omissions of Contractor, its Subcontractors and Employees. The Contractor is responsible for acts and omissions of his employees and all its subcontractors, their agents and employees. The Owner may, in writing, require the Contractor to remove from the Project any of Contractor's or its subcontractor's employees that the ODR finds to be careless, incompetent, or otherwise objectionable.
- 3.3.10 Indemnification of Owner. The Contractor covenants and agrees to FULLY INDEMNIFY and HOLD HARMLESS, the Owner and the elected officials, employees, officers, directors, volunteers, and representatives of the Owner, individually or collectively, from and against any and all costs, claims, liens, damages, losses, expenses, fees, fines, penalties, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including but not limited to, personal or bodily injury, death and property damage, made upon the Owner directly or indirectly arising out of, resulting from or related to Contractor's activities under this Contract, including any acts or omissions of Contractor, any agent, officer, director, representative, employee, consultant or the Subcontractor of Contractor, and their respective officers, agents, employees, directors and representatives while in the exercise of performance of the rights or duties under this Contract. The indemnity provided for in this paragraph does not apply to any liability resulting from the negligence of the Owner, officers or employees, separate Contractors or assigned contractors, in instances where such negligence causes personal injury, death or property damage. IN THE EVENT CONTRACTOR AND OWNER ARE FOUND JOINTLY LIABLE BY A COURT OF COMPETENT JURISDICTION, LIABILITY WILL BE APPORTIONED COMPARATIVELY IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, WITHOUT WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE STATE UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW.
- 3.3.10.1 The provisions of this Indemnification are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

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- 3.3.10.2 Promptly advise the Owner in writing of any claim or demand against the Owner or the Contractor known to the Contractor related to or arising out of the Contractor's activities under this Contract.
- 3.3.11 Ancillary Areas. Operate and maintain operations and associated storage areas at the site of the Work in accordance with the following:
 - 3.3.11.1 Confine all Contractor operations, including storage of materials and employee parking upon the Site of Work, to areas designated by the Owner.
 - 3.3.11.2 The Contractor may erect, at its own expense, temporary buildings that will remain its property. Remove such buildings and associated utility service lines upon completion of the Work, unless the Contractor requests and the Owner provides written consent that it may abandon such buildings and utilities in place.
 - 3.3.11.3 Use only established roadways or construct and use such temporary roadways as may be authorized by the Owner. Do not allow load limits of vehicles to exceed the limits prescribed by appropriate regulations or law. Provide protection to road surfaces, curbs, sidewalks, trees, shrubbery, sprinkler systems, drainage structures and other like existing improvements to prevent damage and repair any damage thereto at the expense of the Contractor.
 - 3.3.11.4 The Owner may restrict the Contractor's entry to the site to specifically assigned entrances and routes.
- 3.3.12 Separate Contracts. Additional Contractor responsibilities when the Owner awards separate Contracts
 - 3.3.12.1 The Owner reserves the right to award other contracts in connection with other portions of the Project under these or similar contract conditions.
 - 3.3.12.2 The Owner reserves the right to perform operations related to the Project with the Owner's own forces.
 - 3.3.12.3 Under a system of separate contracts, the conditions described herein continue to apply except as may be amended by change order.

Article 4. Historically Underutilized Business (HUB) Subcontracting Plan

- 4.1. General Description. The purpose of the Historically Underutilized Business (HUB) Program is to promote equal business opportunities for economically disadvantaged persons (as defined by Tex. Gov't Code, Chapter 2161) to contract with the State of Texas in accordance with the goals specified in the State of Texas Disparity Study. The HUB Program annual procurement utilization goals per 1 Texas Administrative Code (TAC) §111.13 are: 11.9 percent for heavy construction other than building contracts, 26.1 percent for all building construction, including general contractors and operative builders contracts, 57.2 percent for all special trade construction contracts, 20 percent for professional services contracts, 33 percent for all other services contracts and 12.6 percent for commodities contracts.
 - 4.1.1 State agencies are required by statute to make a good faith effort to assist HUBs in participating in contract awards issued by the State. 1 TAC §111.11-111.28, outline the state's policy to encourage outreach to and potential utilization of HUBs in state contracting opportunities through race, ethnic and gender neutral means.
 - 4.1.2 A Contractor who contracts with the State in an amount of \$100,000 is required to make a good faith effort to award subcontracts to HUBs in accordance with 1 TAC §111.14 by submitting a HUB Subcontracting Plan at the time of bidding and complying with the HUB Subcontracting Plan after it is accepted by the Owner and during the term of the contract.
- 4.2. Compliance with Approved HUB Subcontracting Plan. Contractor, having been awarded this Contract in part by complying with the HUB Program statute and rules, hereby covenants to continue to comply with the HUB Program as follows:
 - 4.2.1 Prior to substituting a Subcontractor, promptly notify the Owner in the event a change is required for any reason to the accepted HUB Subcontracting Plan.
 - 4.2.2 Conduct the good faith effort activities required and provide the Owner with necessary documentation to justify approval of a change to the approved HUB Subcontracting Plan.
 - 4.2.3 Cooperate in the execution of a Change Order or such other approval of the change in the HUB Subcontracting Plans as the Contractor and Owner may agree to.
 - 4.2.4 Maintain and make available to Owner upon request business records documenting compliance with the accepted HUB Subcontracting Plan.
 - 4.2.5 Upon receipt of payment for performance of Work, submit to Owner a compliance report, in the format required by the Owner that demonstrates Contractor's performance of the HUB Subcontracting Plan.

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- 4.2.6 Promptly and accurately explain and provide supplemental information to Owner to assist in the Owner's investigation of the Contractor's good faith effort to fulfill the HUB Subcontracting Plan and the requirements under 1 TAC §111.14.
- 4.3. Failure to Demonstrate Good Faith Effort. Upon a determination by Owner that Contractor has failed to demonstrate a good faith effort to fulfill the HUB Subcontracting Plan or any contract covenant detailed above, the Owner may, in addition to all other remedies available to it, report the failure to perform to the Texas Building and Procurement Commission Vendor Performance and may bar the Contractor from future contracting opportunities with the Owner.

Article 5. Bonds & Insurance

5.1. Construction Bonds.

The Contractor is required to tender to Owner, prior to commencing the Work, performance and payment bonds, as required by Tex. Gov't Code, Chapter 2253.

- 5.1.1. A Performance Bond is required if the Contract Price is in excess of \$100,000. The Performance Bond is solely for the protection of the Owner. The Performance Bond is to be for the Contract Sum to guarantee the faithful performance of the Work in accordance with the Contract Documents. The form of the bond shall be approved by the Attorney General of Texas. The Performance Bond shall be effective through the Contractor's warranty period.
- 5.1.2. A Payment Bond is required if the Contract Price is in excess of \$25,000. The payment bond is to be for the Contract Sum and is payable to the Owner solely for the protection and use of payment bond beneficiaries who have a direct contractual relationship with the Contractor or a Subcontractor. The form of the bond shall be approved by the Attorney General of Texas.
- 5.1.3. Bond Requirements. Each bond shall be executed by a corporate surety or sureties authorized to do business in the State of Texas and acceptable to the Owner, on the Owner's form, and in compliance with the relevant provisions of the Texas Insurance Code. If any bond is for more than 10 percent of the surety's capital and surplus, the Owner may require certification that the company has reinsured the excess portion with one or more reinsurers authorized to do business in the State. A reinsurer may not reinsure for more than 10 percent of its capital and surplus. If a surety upon a bond loses its authority to do business in the State, the Contractor shall, within thirty (30) days after such loss, furnish a replacement bond at no added cost to the Owner.
- 5.1.4. Power of Attorney. Each bond shall be accompanied by a valid Power-of-Attorney (issued by the surety company and attached, signed and sealed with the corporate embossed seal, to the bond) authorizing the attorney in fact who signs the bond to commit the company to the terms of the bond, and stating any limit in the amount for which the attorney can issue a single bond.
- 5.1.5. Bond Indemnification. The process of requiring and accepting bonds and making claims thereunder shall be conducted in compliance with Tex. Gov't Code, Chapter 2253. IF FOR ANY REASON A STATUTORY PAYMENT OR PERFORMANCE BOND IS NOT HONORED BY THE SURETY, THE CONTRACTOR SHALL FULLY INDEMNIFY AND HOLD THE OWNER HARMLESS OF AND FROM ANY COSTS, LOSSES, OBLIGATIONS OR LIABILITIES IT INCURS AS A RESULT.

- 5.1.6. Furnishing Bond Information. Owner shall furnish certified copies of the payment bond and the related Contract to any qualified person seeking copies who complies with Tex. Gov't Code, §2253.026.
- 5.1.7. Claims on Payment Bonds. Claims on payment bonds must be sent directly to the Contractor and his surety in accordance with Tex. Gov't Code § 2253.041. All Payment Bond claimants are cautioned that no lien exists on the funds unpaid to the Contractor on such Contract, and that reliance on notices sent to the Owner may result in loss of their rights against the Contractor and/or his surety. The Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by any agent or employee.
- 5.1.8. Payment Claims when Payment Bond not Required. The rights of Subcontractors regarding payment are governed by Tex. Prop. Code, §§53.231 – 53.239 when the value of the Contract between the Owner and the Contractor is less than \$25,000.00. These provisions set out the requirements for filing a valid lien on funds unpaid to the Contractor as of the time of filing the claim, actions necessary to release the lien and satisfaction of such claim.
- 5.1.9 Sureties shall be listed on the US Department of the Treasury's Listing Approved Sureties stating companies holding Certificates of Authority as acceptable sureties on Federal Bonds and acceptable reinsuring companies (Department Circular 570).

5.2. Insurance Requirements.

The Contractor shall carry insurance in the types and amounts indicated in this Article for the duration of the Contract. The required insurance shall include coverage for Owner's property in the care, custody and control of Contractor prior to construction, during construction and during the warranty period. The insurance shall be evidenced by delivery to the Owner of certificates of insurance executed by the insurer or its authorized agent stating coverages, limits, expiration dates and compliance with all applicable required provisions. Upon request, the Owner, and/or its agents, shall be entitled to receive without expense, copies of the policies and all endorsements. The Contractor shall update all expired policies prior to submission for monthly payment. Failure to update policies shall be reason for withholding of payment until renewal is provided to the Owner.

- 5.2.1. The Contractor shall provide and maintain the insurance coverage with the minimum amounts described below until the end of the warranty period unless otherwise stated in Supplementary General Conditions. Failure to maintain insurance coverage, as required, is grounds for Suspension of Work for Cause pursuant to Article 14. The Contractor will be notified of the date on which the Builder's Risk insurance policy may be terminated through Substantial Completion Notices, Acceptance Notices and/or other means as deemed appropriate by the Owner.

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5.2.2. Coverage shall be written on an occurrence basis by companies authorized and admitted to do business in the State of Texas and rated A- or better by A.M. Best Company or otherwise acceptable to Owner.

5.2.2.1. Insurance coverage required includes:

5.2.2.1.1. Workers' Compensation. Insurance with limits as required by the Texas Workers' Compensation Act, with the policy endorsed to provide a waiver of subrogation as to the Owner, Employer's Liability insurance of not less than:

\$100,000 each accident

\$100,000 disease each employee

\$500,000 disease policy limit

5.2.2.1.2. Commercial General Liability Insurance. Including Independent Contractor's liability, Products and Completed Operations and Contractual Liability, covering, but not limited to, the liability assumed under the indemnification provisions of this contract, fully insuring Contractor's (or Subcontractors) liability for bodily injury and property damage with a combined bodily injury (including death) and property damage minimum limit of :

\$1,000,000 per occurrence

\$1,000,000 general aggregate

\$1,000,000 products and completed operations aggregate

Coverage shall be on an "occurrence" basis.

The policy shall include coverage extended to apply to completed operations and explosion, collapse, underground hazards. The policy shall include endorsement CG2503 Amendment-Aggregate Limits of Insurance (Per Project) or its equivalent.

5.2.2.1.3. Asbestos Abatement Liability Insurance, including coverage for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos containing materials. *This requirement applies if the Work or the Project includes asbestos containing materials.

The Combined single limit for bodily injury and property damage will be a minimum of \$1,000,000 per occurrence.

*Specific Requirement for Claims-Made Form: Required period of coverage will be determined by the following formula: Continuous coverage for life of the contract, plus one (1) year (to provide coverage for the warranty period),

and an extended discovery period for a minimum of five (5) years which shall begin at the end of the warranty period.

If this contract is for asbestos abatement only, the All-Risk Builder's Risk or All-Risk Installation Floater (e) is not required.

- 5.2.2.1.4. Comprehensive Automobile Liability Insurance, covering owned, hired, and non-owned vehicles, with a combined bodily injury (including death) and property damage minimum limit of \$1,000,000 per occurrence. No aggregate shall be permitted for this type of coverage. Such insurance is to include coverage for loading and unloading hazards.
- 5.2.2.1.5. All Risk Builder's Risk Insurance (or All Risk Installation Floater for instances in which the project involves solely the installation of equipment). Coverage shall be All-Risk, including, but not limited to, Fire, Extended Coverage, Vandalism and Malicious Mischief, Flood, Earthquake, Theft and damage resulting from faulty workmanship, design or materials. If Builder's Risk, limit shall be equal to 100 percent of the contract. If Installation Floater, limit shall be equal to 100 percent of the contract cost. The policy shall be written jointly in the names of the Owner, the Contractor, Subcontractors and, Subcontractors shall be named as additional insured. The policy shall have endorsements as follows:
- 5.2.2.1.5.1. This insurance shall be specific as to coverage and not contributing insurance with any permanent insurance maintained on the property.
- 5.2.2.1.5.2. This insurance shall not contain an occupancy clause suspending or reducing coverage should the Owner occupy, or begin beneficial occupancy before the Owner has accepted final completion.
- 5.2.2.1.5.3. Loss, if any, shall be adjusted with and made payable to the Owner as Trustee for the insureds as their interests may appear; the right of subrogation under the Builder's Risk policy shall be waived as to the Owner. The Owner shall be named as Loss Payee. For renovation projects or projects that involve portions of work contained within an existing structure, refer to Special Conditions for possible additional Builder's Risk insurance requirements.
- 5.2.2.1.6. "Umbrella" Liability Insurance. The Contractor shall obtain, pay for and maintain umbrella liability insurance during the contract term, insuring the Contractor (or Subcontractor) for

an amount of not less than amount specified in the Supplementary General Conditions or Special Conditions that provides coverage at least as broad as and applies in excess and follows form of the primary liability coverages required hereinabove. The policy shall provide "drop down" coverage where underlying primary insurance coverage limits are insufficient or exhausted.

If this contract is for asbestos abatement only, the "Umbrella" Excess Liability is not required

5.2.3. Policies must include the following clauses, as applicable:

5.2.3.1. This insurance shall not be canceled, materially changed, or non-renewed until after thirty (30) days prior written notice has been given to the Owner.

5.2.3.2. It is agreed that the Contractor's insurance shall be deemed primary with respect to any insurance or self insurance carried by the Owner for liability arising out of operations under the Contract with the Owner.

5.2.3.3. The Owner, its officials, directors, employees, representatives, and volunteers are added as additional insureds as respects operations and activities of, or on behalf of the named insured performed under contract with the Owner. The additional insured status must cover completed operations as well. This is not applicable to the workers' compensation policy.

5.2.3.4. The workers' compensation and employers' liability policy will provide a waiver of subrogation in favor of the Owner.

5.2.4. Without limiting any of the other obligations or liabilities of the Contractor, the Contractor shall require each Subcontractor performing work under the Contract, at the Subcontractor's own expense, to maintain during the term of the Contract, the same stipulated minimum insurance including the required provisions and additional policy conditions as shown above. As an alternative, the Contractor may include its Subcontractors as additional insureds on its own coverage as prescribed under these requirements. The Contractor's certificate of insurance shall note in such event that the Subcontractors are included as additional insureds and that Contractor agrees to provide Workers' Compensation for the Subcontractors and their employees. The Contractor shall obtain and monitor the certificates of insurance from each Subcontractor in order to assure compliance with the insurance requirements. The Contractor must retain the certificates of insurance for the duration of the Contract plus 5 years and shall have the responsibility of enforcing these insurance requirements among its subcontractors. The Owner shall be entitled, upon request and without expense, to receive copies of these certificates.

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- 5.2.5. Workers' Compensation Insurance Coverage must meet the statutory requirements of the Tex. Lab. Code, §401.011(44) and specific to construction projects for public entities as required by Tex. Lab. Code, §406.096.

Article 6. Contract Documents

6.1. Drawings and Specifications

- 6.1.1 Copies Furnished. The Contractor will be furnished, free of charge, the number of complete sets of the Drawings and Specifications as provided in the Supplementary General Conditions or Special Conditions. Additional complete sets of Drawings and Specifications, if requested, will be furnished at reproduction cost to the one requesting such additional sets.
- 6.1.2 Ownership of Drawings and Specifications. All Drawings, Specifications and copies thereof furnished by the AE are to remain A/E's property. These documents are not to be used on any other project, and with the exception of one Contract set for each party to the Contract, are to be returned to the Architect/Engineer, upon request, following completion of the Work.
- 6.1.3 Interrelation of Documents. The Contract Documents as referenced in the Agreement between the Owner and the Contractor are complimentary, and what is required by one shall be as binding as if required by all.
- 6.1.4 Resolution of Conflicts in Documents. Where conflicts may exist between and/or within the Contract Documents, the higher quality, greater quantity, more restrictive, and/or more expensive requirement shall be the basis of Contractor pricing, and the Contractor shall notify the AE and the ODR for resolution of the issue prior to executing the work in question.
- 6.1.5 Contractor's Duty to Review Contract Documents. In order to facilitate its responsibilities for completion of the Work in accordance with and as reasonably inferable from the Contract Documents, prior to pricing or commencing the Work, the Contractor shall examine and compare the Contract Documents, information furnished by the Owner, relevant field measurements made by the Contractor and any visible or reasonably anticipated conditions at the site affecting the Work. This duty extends throughout the construction phase prior to commencing each particular work activity and/or system installation.
- 6.1.6 Discrepancies and Omissions in Drawings and Specifications
- 6.1.6.1 Promptly report to the ODR and to the AE the discovery of any apparent error, omission or inconsistency in the Contract Documents prior to execution of the Work.
- 6.1.6.2 It is recognized that the Contractor is not acting in the capacity of a licensed design professional, unless it is performing as a Design-Build firm.
- 6.1.6.3 It is further recognized that the Contractor's examination of contract documents is to facilitate construction and does not create an

affirmative responsibility to detect errors, omissions or inconsistencies or to ascertain compliance with applicable laws, building codes or regulations, unless it is performing as a Design-Build firm or a Construction Manager-at-Risk.

- 6.1.6.4 When performing as a Design-Build firm, the Contractor has sole responsibility for discrepancies, errors, and omissions in the drawings and specifications.
- 6.1.6.5 When performing as a Construction Manager-at-Risk, the Contractor has a shared responsibility for discovery and resolution of discrepancies, errors, and omissions in the Contract Documents. In such case, the Contractor's responsibility pertains to review, coordination, and recommendation of resolution strategies within budget constraints, but does not establish a liability for design.
- 6.1.6.6 The Contractor has no liability for errors, omissions, or inconsistencies unless the Contractor knowingly failed to report a recognized problem to the Owner or the Work is executed under a Design-Build or Construction Manager-at-Risk contract as outlined above. Should the Contractor fail to perform the examination and reporting obligations of these provisions, the Contractor is responsible for avoidable costs, direct, and/or consequential damages.

6.2 Requirements for Record Documents

Maintain at the Site one copy of all Drawings, Specifications, addenda, approved Submittals, Contract modifications, and all Project correspondence. Keep current and maintain Drawings and Specifications in good order with postings and markings to record actual conditions of Work and show and reference all changes made during construction. Provide Owner and AE access to these documents.

- 6.2.1 Maintain this record set of Drawings and Specifications which reflect the "As Constructed" conditions and representations of the Work performed, whether it be directed by addendum, Change Order or otherwise. Make available all records prescribed herein for reference and examination by the Owner and its representatives and agents.
- 6.2.2 Update the "As-Constructed" Drawings and Specifications monthly prior to submission of periodic partial pay estimates. Failure to maintain such records constitutes cause for denial of a progress payment otherwise due.
- 6.2.3 Prior to requesting Substantial Completion Inspection by the ODR and AE, furnish a complete set of the marked up "As-Constructed" set maintained at the site and one photocopy of same. Concurrently with furnishing these record drawings, furnish a preliminary copy of each operating and maintenance manual (O&M) required by the Contract Documents, for review by the AE and the ODR.

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- 6.2.4 Once determined acceptable, provide mylar prints of professionally drafted “As-Constructed” drawings, along with electronic copy on CD, “As-Constructed” specifications in bound volume(s) along with electronic copy on CD, two sets of photocopies or prints of the mylar “As-Constructed” drawings, two sets of operating and maintenance manuals, two sets of approved submittals, and other record documents as required elsewhere in the Contract Documents.

Article 7. Safety

- 7.1. General. It is the duty and responsibility of the Contractor and all of its Subcontractors to be familiar with, enforce and comply with all requirements of Public Law 91-596, 29 U.S.C. §§651 et. seq., the Occupational Safety and Health Act of 1970, (OSHA) and all amendments thereto. The Contractor shall prepare a Safety Plan specific to the Project and submit it to the ODR and AE prior to commencing Work. In addition, the Contractor and all of its Subcontractors shall comply with all applicable laws and regulations of any public body having jurisdiction for safety of persons or property to protect them from damage, injury or loss and erect and maintain all necessary safeguards for such safety and protection.
- 7.2. Notices. The Contractor shall provide notices as follows:
- 7.2.1 Notify owners of adjacent property including those that own or operate utility services and/or underground facilities, and utility owners, when prosecution of the Work may affect them or their facilities, and cooperate with them in the protection, removal, relocation and replacement, and access to their facilities and/or utilities.
- 7.2.2 Coordinate the exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in connection with laws and regulations. Maintain a complete file of MSDS for all materials in use on site throughout the construction phase and make such file available to the Owner and its agents as requested.
- 7.3. Emergencies. In any emergency affecting the safety of persons or property, the Contractor shall act to minimize, mitigate, and prevent threatened damage, injury or loss.
- 7.3.1 Have authorized agents of Contractor respond immediately upon call at anytime of day or night when circumstances warrant the presence of Contractor to protect the Work or adjacent property from damage or to take such action pertaining to the Work as may be necessary to provide for the safety of the public.
- 7.3.2 Give the ODR and AE prompt notice of all such events.
- 7.3.3 If Contractor believes that any changes in the Work or variations from Contract Documents have been caused by its emergency response, promptly notify the Owner within 72 hours of the emergency response event.
- 7.3.4 Should Contractor fail to respond, Owner is authorized to direct other forces to take action as necessary and Owner may deduct any cost of remedial action from funds otherwise due the Contractor.
- 7.4. Injuries. In the event of an incident or accident involving outside medical care for an individual on or near the Work, Contractor shall notify the ODR

and other parties as may be directed within twenty-four (24) hours of the event.

- 7.4.1 Record the location of the event and the circumstances surrounding it, by using photography or other means, and gather witness statements and other documentation which describes the event.
- 7.4.2 Supply the ODR and AE with an incident report no later than 36 hours after the occurrence of the event. In the event of a catastrophic incident (one fatality or three workers hospitalized), barricade and leave intact the scene of the incident until all investigations are complete. A full set of incident investigation documents, including facts, finding of cause, and remedial plans shall be provided within one week after occurrence, unless otherwise directed by legal counsel. Contractor shall provide the ODR with written notification within one week of such catastrophic event if legal counsel delays submission of full report.
- 7.5. Environmental Safety. Upon encountering any previously unknown potentially hazardous material, or other materials potentially contaminated by hazardous material, Contractor shall immediately stop work activities impacted by the discovery, secure the affected area, and notify the ODR immediately.
 - 7.5.1 Bind all Subcontractors to the same duty.
 - 7.5.2 Upon receiving such notice, the ODR will promptly engage qualified experts to make such investigations and conduct such tests as may be reasonably necessary to determine the existence or extent of any environmental hazard. Upon completion of this investigation, the ODR will issue a written report to the Contractor identifying the material(s) found and indicate any necessary steps to be taken to treat, handle, transport or dispose of the material.
 - 7.5.3 The Owner may hire third-party contractors to perform any or all such steps.
 - 7.5.4 Should compliance with the ODR's instructions result in an increase in the Contractor's cost of performance, or delay the Work, the Owner will make an equitable adjustment to the Contract price and/or the time of completion, and modify the Contract in writing accordingly.
- 7.6. Trenching Plan. When the project requires excavation which either exceeds a depth of four feet, or results in any worker's upper body being positioned below grade level, the Contractor is required to submit a trenching plan to the ODR prior to commencing trenching operations. The plan is required to be prepared and sealed by a professional engineer registered in the State of Texas, and employed by the Contractor. Said engineer cannot be anyone who is otherwise either directly or indirectly engaged on this project

Article 8. Quality Control

8.1. Materials & Workmanship. The Contractor shall execute Work in a good and workmanlike matter in accordance with the Contract Documents. The Contractor shall develop and provide a Quality Control Plan specific to this project and acceptable to the Owner. Where Contract Documents do not specify quality standards, complete and construct all Work in compliance with generally accepted construction industry standards. Unless otherwise specified, incorporate all new materials and equipment into the Work under the Contract.

8.2. Testing

8.2.1 Contractor Testing. The Contractor is responsible for coordinating and paying for all routine and special tests required to confirm compliance with quality and performance requirement of the Contract Documents. This “quality control” testing shall include any particular testing required by the Specifications and the following general tests.

8.2.1.1. Any test of basic material or fabricated equipment included as part of a submittal for a required item in order to establish compliance with the Contract Documents.

8.2.1.2 Any test of basic material or fabricated equipment offered as a substitute for a specified item on which a test may be required in order to establish compliance with the Contract Documents.

8.2.1.3 Routine, preliminary, start-up, pre-functional and operational testing of building equipment and systems as necessary to confirm operational compliance with requirements of the Contract Documents.

8.2.1.4 All subsequent tests on original or replaced materials conducted as a result of prior testing failure.

8.2.2 Owner Testing. The Owner reserves the right to subject materials and systems incorporated into the Project to routine tests as may be specified or as deemed necessary by the ODR or the AE to insure compliance with the quality and/or performance requirements of the Contract Documents and/or with laws, ordinances, rules, regulations and/or orders of any public authority having jurisdiction. The results of such “quality assurance” testing will be provided to the Contractor and, to the extent provided, the Contractor may rely on findings.

8.2.3 All testing shall be performed in accordance with standard test procedures by an accredited laboratory, or special consultant as appropriate, acceptable to the Owner. Results of all tests shall be provided promptly to the ODR, Architect/Engineer and the Contractor.

8.2.4 Non-Compliance (Test Results). Should any of the tests indicate that a material and/or system does not comply with the contract requirements, the burden of proof remains with the Contractor, subject to:

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- 8.2.4.1 Contractor selection and submission of the laboratory for Owner acceptance.
 - 8.2.4.2 Acceptance by the Owner of the quality and nature of tests.
 - 8.2.4.3 All tests taken in the presence of the Architect/Engineer and/or ODR, or their representatives.
 - 8.2.4.4 If tests confirm that the material/systems comply with Contract Documents, the Owner will pay the cost of the test.
 - 8.2.4.5 If tests reveal noncompliance, the Contractor will pay those laboratory fees and costs of that particular test and all future tests, of that failing Work, necessary to eventually confirm compliance with Contract Documents.
 - 8.2.4.6 Proof of noncompliance with the Contract Documents will make the Contractor liable for any corrective action which the ODR determines appropriate, including complete removal and replacement of non-compliant work or material.
- 8.2.5 Notice of Testing. The Contractor shall give the ODR and the AE timely notice of its readiness and the date arranged so the ODR and AE may observe such inspection, testing or approval.
- 8.2.6 Test Samples. The Contractor is responsible for providing samples of sufficient size for test purposes and for coordinating such tests with their Work Progress Schedule to avoid delay.
- 8.2.7 Covering Up Work - If the Contractor covers up any Work without providing the Owner an opportunity to inspect, the Contractor shall, if requested by ODR, uncover and recover the work at Contractor's expense.

8.3 Submittals

- 8.3.1 Contractor's Submittals. Submit with reasonable promptness consistent with the Project Schedule and in orderly sequence all Shop Drawings, Samples, or other information required by the Contract Documents, or subsequently required by Change Order. Prior to submitting, the Contractor shall review each submittal for compliance with Contract Documents and certify by approval stamp affixed to each copy. Submittal data presented without the Contractor's certification will be returned without review or comment, and any delay resulting from such certification is the Contractor's responsibility.
- 8.3.1.1 Within twenty-one (21) calendar days of the effective date of the Notice To Proceed with construction, submit to the ODR, and the AE, a submittal schedule/register, organized by specification section, listing all items to be furnished for review and approval by the Architect/Engineer and Owner. The list shall include shop drawings, manufacturer's literature, certificates of compliance,

materials samples, materials colors, guarantees, and all other items identified throughout the specifications.

- 8.3.1.2 Indicate the type of item, contract requirements reference, and Contractor's scheduled dates for submitting the item along with the requested dates for approval answers from the Architect/Engineer and Owner. The submittal register shall indicate the projected dates for procurement of all included items and shall be updated at least monthly with actual approval and procurement dates. Show and allow a minimum of thirty (30) calendar days duration after receipt by the Architect/Engineer and ODR for review and approval. If re-submittal required, allow a minimum of an additional fifteen (15) calendar days for review. Submit the updated submittal register with each request for progress payment. The Owner may establish routine review procedures and schedules for submittals at the preconstruction conference and/or elsewhere in the Contract Documents.
- 8.3.1.3 Coordinate the submittal register with the Work Progress Schedule. Do not schedule Work requiring a submittal to begin prior to scheduling review and approval of the related submittal. Revise and/or update both schedules monthly to ensure consistency and current project data. Provide to the ODR the updated submittal register and schedule with each application for progress payment. Refer to requirements for the Work Progress Schedule for inclusion of procurement activities therein. Regardless, the submittal register shall identify dates submitted and returned and shall be used to confirm status and disposition of particular items submitted, including approval or other action taken and other information not conveniently tracked through the Work Progress Schedule.
- 8.3.1.4 By submitting Shop Drawings, Samples or other required information, the Contractor represents and certifies that they have determined and verified all applicable field measurements, field construction criteria, materials, catalog numbers and similar data; and has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and the Contract Documents.
- 8.3.2 Review of Submittals. AE and ODR review is only for conformance with the design concept and the information provided in the Contract Documents. Responses to submittals will be in writing. The approval of a separate item does not indicate approval of an assembly in which the item functions. The approval of a submittal does not relieve the Contractor of responsibility for any deviation from the requirements of the Contract unless the Contractor informs the AE and ODR of such deviation in a clear, conspicuous, and written manner on the submittal transmittal and at the time of submission, and obtains the Owner's written specific approval of the particular deviation. -

- 8.3.3 Correction and Resubmission. Make any corrections required to a submittal and resubmit the required number of corrected copies promptly so as to avoid delay, until submittal approval. Direct attention in writing to the AE and the ODR, when applicable, to any new revisions other than the corrections requested on previous submissions.
- 8.3.4 Limits on Shop Drawing Approvals. The Contractor shall not commence any Work requiring a submittal until approval of the submittal. Construct all such work in accordance with approved submittals. Approval of Shop Drawings and Samples is not authorization to Contractor to perform extra work or changed work unless authorized through a Change Order. The AE's and ODR's approval, if any, does not relieve Contractor from responsibility for defects in the Work resulting from errors or omissions of any kind on the submittal, regardless of any approval action.
- 8.3.5 No Substitutions Without Approval. The ODR and the AE may receive and consider the Contractor's request for substitution when the Contractor agrees to reimburse the Owner for review costs and satisfies 8.3.5.1, 8.3.5.2, and 8.3.5.3 in combination with one or more of the items in 8.3.5.4 through 8.3.5.11 of the following conditions, as determined by the Owner. If the Contractor does not satisfy these conditions, the ODR and AE will return the request without action except to record noncompliance with these requirements. The Owner will not consider the request if the Contractor cannot provide the product or method because of failure to pursue the Work promptly or coordinate activities properly.
- 8.3.5.1 The Contract Documents do not require extensive revisions.
- 8.3.5.2 Proposed changes are in keeping with the general intent of the Contract Documents and the design intent of the AE and do not result in an increase in cost to the Owner.
- 8.3.5.3 The request is timely, fully documented, and properly submitted.
- 8.3.5.4 The Contractor cannot provide the specified product, assembly or method of construction within the Contract Time.
- 8.3.5.5 The request directly relates to an "or-equal" clause or similar language in the Contract Documents.
- 8.3.5.6 The request directly relates to a "product design standard" or "performance standard" clause in the Contract Documents.
- 8.3.5.7 The requested substitution offers the Owner a substantial advantage in cost, time, energy conservation or other considerations, after deducting additional responsibilities the Owner must assume.
- 8.3.5.8 The specified product or method of construction cannot receive necessary approval by an authority having jurisdiction, and the ODR can approve the requested substitution.

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- 8.3.5.9 The Contractor cannot provide the specified product, assembly or method of construction in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
 - 8.3.5.10 The Contractor cannot coordinate the specified product, assembly or method of construction with other materials and where the Contractor certifies they can coordinate the proposed substitution.
 - 8.3.5.11 The specified product, assembly or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
- 8.3.6 Unauthorized Substitutions at Contractor's Risk. The Contractor is financially responsible for any additional costs or delays resulting from using materials, equipment or fixtures other than those specified. The Contractor shall reimburse the Owner for any increased design or contract administration costs resulting from such unauthorized substitutions.
- 8.4 Field Mock-up
- 8.4.1 Mockups shall be constructed prior to commencement of a specified scope of work to confirm acceptable workmanship.
 - 8.4.1.1 As a minimum, field mock-ups shall be constructed for roofing systems, exterior veneer / finish systems, glazing systems, and any other Work requiring a mock-up as identified throughout the Contract Documents. Mockups for systems not part of the project scope shall not be required.
 - 8.4.1.2 Mock-ups may be incorporated into the Work if allowed by the Contract Documents and if acceptable to the ODR. If mock-ups are freestanding, they shall remain in place until otherwise directed by the Owner.
 - 8.4.1.3 The Contractor shall include field mock-ups in their Work Progress Schedule and shall notify the ODR and Architect/Engineer of readiness for review sufficiently in advance to coordinate review without delay.
- 8.5 Inspection During Construction
- 8.5.1 The Contractor shall provide sufficient, safe, and proper facilities, including equipment as necessary for safe access, at all reasonable times for observation and/or inspection of the Work by the Owner and its agents.
 - 8.5.2 The Contractor shall not cover up any work with finishing materials or other building components prior to providing the Owner and its agents an opportunity to perform an inspection of the Work.

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- 8.5.2.1 Should corrections of the Work be required for approval, do not cover up corrected Work until the Owner indicates approval.
- 8.5.2.2 Provide notification of at least five (5) working days or otherwise as mutually agreed, to the ODR of the anticipated need for a cover up inspection. Should the ODR fail to make the necessary inspection within the agreed period, the Contractor may proceed with cover up Work, but is not relieved of responsibility for Work to comply with requirements of the Contract Documents.

Article 9. Construction Schedules

- 9.1. Contract Time. TIME IS AN ESSENTIAL ELEMENT OF THE CONTRACT. The Contract Time is the time between the dates indicated in the Notice to Proceed for commencement of the Work and for achieving Substantial Completion and Final Completion. The Contract Time can be modified only by Change Order. Failure to achieve Substantial Completion within the Contract Time, Final Completion within thirty (30) days following Substantial Completion or as otherwise agreed to in writing will cause damage to the Owner and may subject the Contractor to Liquidated Damages as provided in the Contract Documents.
- 9.2. Notice to Proceed. The Owner will issue a Notice to Proceed which shall state the dates for beginning Work and for achieving Substantial Completion and Final Completion of the Work.
- 9.3. Work Progress Schedule. Refer to Special Conditions and Division 1 General Administration Specifications for additional schedule requirements. Unless indicated otherwise in those documents, Contractor shall submit their initial Work Progress Schedule for the Work in relation to the entire Project not later than twenty-one (21) days after the effective date of the Notice to Proceed to the ODR and the AE. . Unless otherwise indicated in the Contract Documents, the Work Progress Schedule shall be computerized Critical Path Method (CPM) with full reporting capability. This initial schedule shall indicate the dates for starting and completing the various aspects required to complete the Work, including mobilization, procurement, installation, testing, inspection, and acceptance of all the Work of the Contract. When acceptable to the Owner, the initially accepted schedule shall be the Baseline Schedule for comparison to actual conditions throughout the contract duration.
- 9.3.1 Schedule Requirements. Submit electronic and paper copy of the initial Work Progress Schedule reflecting accurate and reliable representations of the planned progress of the Work, the Work to date if any, and of the Contractor's actual plans for its completion. Organize and provide adequate detail so the Schedule is capable of measuring and forecasting the effect of delaying events on completed and uncompleted activities.
- 9.3.1.1 Re-submit initial Schedule as required to address review comments from AE and ODR until such Schedule is accepted as the Baseline Schedule.
- 9.3.1.2 Submittal of a schedule, schedule revision or schedule update constitutes the Contractor's representation to the Owner of the accurate depiction of all progress to date and that the Contractor will follow the schedule as submitted in performing the Work.
- 9.3.2 Schedule Updates. Update the Work Progress Schedule and the Submittal Schedule monthly, as a minimum, to reflect progress to date

and current plans for completing the Work, and submit paper and electronic copy of the update to the AE and ODR as directed. The Owner has no duty to make progress payments unless accompanied by the updated Work Progress Schedule. Show the anticipated date of completion reflecting all extensions of time granted through Change Order as of the date of the update. The Contractor may revise the Progress Schedule logic only with the Owner's concurrence when in the Contractor's judgment it becomes necessary for the management of the Work. Identify all proposed changes to schedule logic to Owner and to the AE via an Executive Summary accompanying the updated schedule for review prior to implementation of revisions.

9.3.3 The Work Progress Schedule is for the Contractor's use in managing the Work and submittal of the Schedule, and successive updates or revisions, is for the information of the Owner and to demonstrate that the Contractor has complied with requirements for planning the Work. The Owner's acceptance of a schedule, schedule update or revision constitutes the Owner's agreement to coordinate its own activities with the Contractor's activities as shown on the schedule.

9.3.3.1 Acceptance of the Work Progress Schedule, or update and/or revision thereto does not indicate any approval of the Contractor's proposed sequences and duration.

9.3.3.2 Acceptance of a Work Progress Schedule update or revision indicating early or late completion does not constitute the Owner's consent, alter the terms of the Contract, or waive either the Contractor's responsibility for timely completion or the Owner's right to damages for the Contractor's failure to do so.

9.3.3.3 The Contractor's scheduled dates for completion of any activity or the entire Work do not constitute a change in terms of the contract. Change Orders are the only method of modifying the completion Date(s) and Contract time.

9.4. Ownership of Float. Unless indicated otherwise in the Contract Documents, the Contractor shall develop the schedule and their execution plan to provide a minimum of 10 percent total float at the project level at acceptance of the Baseline Schedule. Float time contained in the Work Progress Schedule is not for the exclusive benefit of the Contractor or the Owner, but belongs to the Project and may be consumed by either party as needed on a first-used basis.

9.5. Completion of Work. The Contractor is accountable for completing the Work in the time stated in the Contract, or as otherwise amended by Change Order.

9.5.1 If, in the judgment of the Owner, the work is behind schedule and the rate of placement of work is inadequate to regain scheduled progress to insure timely completion of the entire work or a separable portion thereof, the Contractor, when so informed by the Owner, shall immediately take action to increase the rate of work placement by:

- 9.5.1.1 An increase in working forces.
 - 9.5.1.2 An increase in equipment or tools.
 - 9.5.1.3 An increase in hours of work or number of shifts.
 - 9.5.1.4 Expedite delivery of materials.
 - 9.5.1.5 Other action proposed if acceptable to Owner.
- 9.5.2 Within ten (10) calendar days after such notice from the ODR, the Contractor shall notify the ODR in writing of the specific measures taken and/or planned to increase the rate of progress. Include an estimate as to the date of scheduled progress recovery and an updated Work Progress Schedule illustrating the Contractor's plan for achieving timely completion of the project. Should the ODR deem the plan of action inadequate, take additional steps or make adjustments as necessary to its plan of action until it meets with the ODR's approval.

9.6 Modification of the Contract Time

- 9.6.1 Delays and extension of time as hereinafter described are valid only if executed in accordance with provisions set forth in Article 11.
- 9.6.2 When a delay defined herein as excusable prevents the Contractor from completing the Work within the Contract Time, the Contractor is entitled to an extension of time. The Owner will make an equitable adjustment and extend the number of calendar days lost because of excusable delay, as measured by the Contractor's progress schedule. All extensions of time will be granted in calendar days. In no event, however, will an extension of time be granted for delays that merely extend the duration of non-critical activities, or which only consume float without delaying the project completion date.
 - 9.6.2.1 "A Weather Day" is a day on which the Contractor's current schedule indicates Work is to be done, and on which inclement weather and related site conditions prevent the Contractor from performing seven continuous hours of Work between the hours of 7:00 a.m. and 6:00 p.m. Weather days are excusable delays. When weather conditions at the site prevent work from proceeding, immediately notify the ODR for confirmation of the conditions. At the end of each calendar month, submit to the ODR and AE a list of Weather Days occurring in that month along with documentation of the impact on critical activities. Based on confirmation by the ODR, any time extension granted will be issued by Change Order. If the Contractor and Owner cannot agree on the time extension, the Owner may issue a ULCO for fair and reasonable time extension.

- 9.6.2.2 Excusable Delay. The Contractor is entitled to an equitable adjustment of time, issued via change order, for delays caused by the following:
- 9.6.2.2.1 Errors, omissions and imperfections in design which the AE corrects by means of changes in the drawings and specifications.
 - 9.6.2.2.2 Unanticipated physical conditions at the Site which the AE corrects by means of changes to the drawings and specifications or for which the ODR directs changes in the Work identified in the Contract Documents.
 - 9.6.2.2.3 Changes in the Work that effect activities identified in the Contractor's schedule as "critical" to completion of the entire Work, if such changes are ordered by the ODR or the AE.
 - 9.6.2.2.4 Suspension of Work for unexpected natural events (sometimes called "acts of God"), civil unrest, strikes or other events which are not within the reasonable control of the Contractor.
 - 9.6.2.2.5 Suspension of Work for convenience of the ODR, which prevents Contractor from completing the Work within the Contract Time.
- 9.6.3 The Contractor's relief in the event of such delays is the time impact to the critical path as determined by analysis of the Contractor's schedule. In the event that the Contractor incurs additional direct costs because of the delay, they are to be determined pursuant to the provisions of Article 11.
- 9.7 No Damages for Delay. The Contractor has no claim for monetary damages for delay or hindrances to the work from any cause, including without limitation any act or omission of the Owner.
- 9.8 Concurrent Delay. When the completion of the Work is simultaneously delayed by an excusable delay and a delay arising from a cause not designated as excusable, the Contractor may not be entitled to a time extension for the period of concurrent delay
- 9.9 Other Time Extension Requests. Time extensions requested in association with changes to the Work directed or requested by the Owner shall be included with the Contractor's proposed costs for such change. Time extensions requested for inclement weather are covered by paragraph 9.6.2.1 above. If the Contractor believes that the completion of the Work is delayed by a circumstance other than for changes directed to the Work or weather, they shall give the ODR written notice, stating the nature of the delay and the activities potentially affected, within five (5) calendar days after the onset of the event or circumstance giving rise to the excusable delay. Provide sufficient written evidence to document the delay. In the case of a continuing cause of delay, only one claim is necessary. State claims for extensions of time in numbers of whole or half calendar days.

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- 9.9.1 Within ten (10) calendar days after the cessation of the delay, the Contractor shall formalize its request for extension of time in writing to include a full analysis of the schedule impact of the delay and substantiation of the excusable nature of the delay. All Changes to the Contract Time or made as a result of such claims is by Change Order, as set forth in Article 11.
- 9.9.2 No extension of time releases the Contractor or the Surety furnishing a performance or payment bond from any obligations under the contract or such a bond. Those obligations remain in full force until the discharge of the Contract.
- 9.9.3 Contents of Time Extension Requests. Provide with each Time Extension Request a quantitative demonstration of the impact of the delay on project completion time, based on the Work Progress Schedule. Include with Time Extension Requests a reasonably detailed narrative setting forth:
- 9.9.3.1 The nature of the delay and its cause; the basis of the Contractor's claim of entitlement to a time extension.
- 9.9.3.2 Documentation of the actual impacts of the claimed delay on the critical path indicated in the Contractor's Work Progress Schedule, and any concurrent delays.
- 9.9.3.3 Description and documentation of steps taken by the Contractor to mitigate the effect of the claimed delay, including, when appropriate, the modification of the Work Progress Schedule.
- 9.9.4 Owner's Response. The Owner will respond to the Time Extension Request by providing to the Contractor written notice of the number of days granted, if any, and giving its reason if this number differs from the number of days requested by the Contractor.
- 9.9.4.1 The Owner will not grant time extensions for delays that do not affect the Contract Completion Date.
- 9.9.4.2 The Owner will respond to each properly submitted Time Extension Request within fifteen (15) calendar days following receipt. If the Owner cannot reasonably make a determination about the Contractor's entitlement to a time extension within that time, the Owner will notify the Contractor in writing. Unless otherwise agreed by the Contractor, the Owner has no more than fifteen (15) additional calendar days to prepare a final response. If the Owner fails to respond within forty-five (45) calendar days from the date the Time Extension Request is received, the Contractor is entitled to a time extension in the amount requested.
- 9.10 Failure to Complete Work Within the Contract Time. **TIME IS OF THE ESSENCE OF THIS CONTRACT.** The Contractor's failure to substantially complete the Work within the Contract Time or to achieve final completion as required will cause damage to the Owner. These damages are liquidated

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by agreement of the Contractor and the Owner, as set forth in the Contract Documents. -

- 9.11 Liquidated Damages. The Owner may collect Liquidated Damages due from the Contractor directly or indirectly by reducing the contract sum in the amount of Liquidated Damages stated in the Contract Documents.

Article 10. Payments

10.1. Schedule of Values. The Contractor shall submit to the ODR and the AE for acceptance a Schedule of Values, or Work Breakdown, accurately itemizing material and labor for the various classifications of the Work based on the organization of the specification sections and using the same activity names and terms as the Work Progress Schedule. The accepted Schedule of Values will be the basis for the progress payments under the Contract.

10.1.1 No progress payments will be made prior to receipt and acceptance of the Schedule of Values, provided in such detail as required by the ODR, and submitted not less than twenty-one calendar (21) days prior to the first request for payment. The Schedule of Values shall follow the order of trade divisions of the specifications and include costs for general conditions, fees, contingencies, and Owner cash allowances, if applicable, so that the sum of the items will equal the contract price. As appropriate, assign each item labor and/or material values, the subtotal thereof equaling the value of the work in place when complete.

10.1.2 The Contractor shall retain a copy of all worksheets used in preparation of its bid or proposal, supported by a notarized statement that the worksheets are true and complete copies of the documents used to prepare the bid or proposal. Make the worksheets available to the ODR at the time of Contract execution. Thereafter grant the Owner during normal business hours access to said notarized copy of worksheets at any time during the period commencing upon execution of the Contract and ending one year after final payment.

10.2. Progress Payments. The Contractor will receive periodic progress payments for Work performed, materials in place, suitably stored on site, or as otherwise agreed to by the Owner and the Contractor. Payment is not due until receipt by the ODR or his designee of a correct and complete Pay Application in electronic and/or hard copy format as set forth in Supplementary General Conditions, Special Conditions or Division 1 Specifications, and certified by the AE. Progress payments are made provisionally and do not constitute acceptance of work not in accordance with the Contract Documents. The Owner will not process progress payment applications for Change Order work until all parties execute the Change Order.

10.2.1 Preliminary Pay Worksheet once each month that a progress payment is to be requested, the Contractor shall submit to the Architect/Engineer and the ODR a complete, clean copy of a preliminary pay worksheet or Preliminary Pay Application, to include the following:

10.2.1.1 The Contractor's estimate of the amount of Work performed, labor furnished and materials incorporated into the Work, using the established Schedule of Values.

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- 10.2.1.2 An updated Work Progress Schedule including the Executive Summary and all required schedule reports.
- 10.2.1.3 HUB Subcontracting Plan reports.
- 10.2.1.4 Such additional documentation as Owner may require as set forth in the Supplementary General Conditions or elsewhere in the Contract Documents.
- 10.2.2 Contractor's Application for Progress Payment. As soon as practicable, but in no event later than seven days after receipt of the Preliminary Pay Worksheet, the AE and ODR will meet with the Contractor to review the Preliminary Pay Worksheet and to observe the condition of the Work. Based on this review, the ODR and the AE may require modifications to the Preliminary Pay Worksheet prior to the submittal of an application for progress payment, and will promptly notify the Contractor of revisions necessary for approval. As soon as practicable, the Contractor shall submit its Invoice on the appropriate and completed form, reflecting the required modifications to the Schedule of Values required by the AE and/or ODR. Attach all additional documentation required by the ODR and/or AE, as well as an affidavit affirming that all payrolls, bills for labor, materials, equipment, subcontracted work and other indebtedness connected with the Contractor's invoice are paid or will be paid within the time specified in Tex. Gov't Code, Chapter 2251. No invoice is complete unless it fully reflects all required modifications, and attaches all required documentation including the Contractor's affidavit.
- 10.2.3 Certification by Architect/Engineer. Within five days or earlier following the AE's receipt of the Contractor's formal invoice, the AE will review the application for progress payment for completeness, and forward to the ODR. The AE will certify that the application is complete and payable, or that it is incomplete, stating in particular what is missing. If the Invoice is incomplete, the Contractor shall make the required corrections and resubmit the Invoice for processing.
- 10.3 Owner's Duty to Pay. The Owner has no duty to pay the Contractor except on receipt by the ODR of; 1) a complete Invoice certified by the AE and 2) the Contractor's updated Work Progress Schedule, and 3) confirmation that the Contractor's as-built documentation at the site is kept current.
 - 10.3.1 Payment for stored materials and/or equipment confirmed by the Owner and AE to be on-site or otherwise properly stored is limited to 85 percent of the invoice price or 85 percent of the scheduled value for the materials or equipment, whichever is less.
 - 10.3.2 Retainage. The Owner will withhold from each progress payment, as retainage, 5 percent of the total earned amount, the amount authorized by law, or as otherwise set forth in the Supplementary General Conditions. - Retainage is managed in conformance with Tex. Gov't Code, Chapter 2252, Government Code, subchapter B.

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- 10.3.2.1 The Contractor shall provide written consent of its Surety for any request for reduction or release of retainage.
- 10.3.2.2 At least sixty-five (65) percent of the total Contract must be completed before the Owner can consider a retainage reduction or release.
- 10.3.3 Price Reduction to Cover Loss. The Owner may reduce any Periodic Invoice, or application for Progress Payment, prior to payment to the extent necessary to protect the Owner from loss on account of actions of the Contractor including, but not limited to:
 - 10.3.3.1 Defective or incomplete Work not remedied.
 - 10.3.3.2 Damage to Work of a separate Contractor.
 - 10.3.3.3 Failure to maintain scheduled progress or reasonable evidence that the Work will not be completed within the Contract Time.
 - 10.3.3.4 Persistent failure to carry out the Work in accordance with the Contract Documents.
 - 10.3.3.5 Reasonable evidence that the Work cannot be completed for the unpaid portion of the contract sum.
 - 10.3.3.6 Assessment of fines for violations of Prevailing Wage Rate law; or
 - 10.3.3.7 Failure to include the appropriate amount of retainage for that periodic progress payment.
- 10.3.4 Title to all material and Work covered by progress payments transfers to the Owner upon payment.
 - 10.3.4.1 Transfer of title to Owner does not relieve the Contractor of the sole responsibility for the care and protection of materials and Work upon which payments have been made until final acceptance of the entire Work, or the restoration of any damaged Work, or waive the right of the Owner to require the fulfillment of all the terms of the Contract.
- 10.4 Progress payments to the Contractor do not release the Contractor or its surety from any obligations under this Contract.
 - 10.4.1 Upon the Owner's request, the Contractor shall furnish manifest proof of the status of Subcontractor's accounts in a form acceptable to the Owner.
 - 10.4.2 Pay estimate certificates must be signed by a corporate officer or a representative duly authorized by the Contractor.
 - 10.4.3 Provide copies of bills of lading, invoices, delivery receipts or other evidence of the location and value of such materials in requesting payment for materials.

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- 10.4.4 For purposes of Tex. Gov't Code § 2251.021 (a) (2), the date the performance of service is complete is the date when the Owner's representative approves the application for payment.
- 10.5 Off-Site Storage. With prior approval by the Owner and in the event Contractor elects to store materials at an off-site location, abide by the following conditions, unless otherwise agreed to in writing by the Owner.
- 10.5.1.1 Store materials in a Bonded Commercial Warehouse.
- 10.5.1.2 Provide separate Insurance Coverage adequate not only to cover materials while in storage, but also in transit from the off-site storage areas to the project site. Copies of duly authenticated Certificates of Insurance, made out to insure the State Agency which is signatory to the contract, must be filed with the Owner's representative.
- 10.5.1.3 Inspection by Owner's representative is allowed at any time. The Owner's Inspectors must be satisfied with the security, control, maintenance, and preservation measures.
- 10.5.1.4 Materials for this project are physically separated and marked for the project in a sectioned-off area. Only materials which have been approved through the submittal process are to be considered for payment.
- 10.5.1.5 Owner reserves the right to reject materials at any time prior to final acceptance of the complete Contract if they do not meet Contract requirements regardless of any previous progress payment made.
- 10.5.1.6 With each monthly payment estimate, submit a report to the ODR, AE, and Inspector listing the quantities of materials already paid for and still stored in the off-site location.
- 10.5.1.7 Make warehouse records, receipts and invoices available to Owner's representatives, upon request, to verify the quantities and their disposition.
- 10.5.1.8 In the event of Contract termination or default by Contractor, the items in storage off-site, upon which payment has been made, will be promptly turned over to Owner or Owner's agents at a location near the jobsite as directed by the ODR. The full provisions of PERFORMANCE AND PAYMENT BONDS on this project cover the materials off-site in every respect as though they were stored on the Project Site.

Article 11. Changes

- 11.1. Change Orders. A Change Order issued after execution of the Contract is a written order to the Contractor, signed by the ODR, the Contractor, and the Architect/Engineer, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time can only be changed by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum and/or the Contract Time. The ODR may issue written authorization for the Contractor to proceed with work of a change order in advance of final execution by all parties.
- 11.1.1 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, and the Contract Sum and the Contract Time will be adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents. If such changes cause an increase or decrease in the Contractor's cost of, or time required for, performance of the Contract, an equitable adjustment shall be made and confirmed in writing in a Change Order.
- 11.1.2 It is recognized by the parties hereto and agreed by them that the specifications and drawings may not be complete or free from errors, omissions and imperfections or that they may require changes or additions in order for the work to be completed to the satisfaction of Owner and that, accordingly, it is the express intention of the parties, notwithstanding any other provisions in this Contract, that any errors, omissions or imperfections in such specifications and drawings, or any changes in or additions to same or to the work ordered by Owner and any resulting delays in the work or increases in Contractor's costs and expenses, shall not constitute or give rise to any claim, demand or cause of action of any nature whatsoever in favor of Contractor, whether for breach of contract, *quantum meruit*, or otherwise; provided, however, that Owner shall be liable to Contractor for the sum stated to be due Contractor in any Change Order approved and signed by both parties, it being agreed hereby that such sum, together with any extension of time contained in said Change Order, shall constitute full compensation to Contractor for all costs, expenses and damages to Contractor, whether direct, consequential or otherwise in any wise incident to, arising out of, or resulting directly or indirectly from the work performed by Contractor under such Change Order.
- 11.1.3 Procedures for administration of Change Orders shall be established by the Owner and stated in Supplementary General Conditions, Special Conditions, or elsewhere in the Contract Documents.

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- 11.1.4 Except as provided above, no order, oral statement, or direction of the Owner or his duly appointed representative shall be treated as a change under this article or entitle the Contractor to an adjustment.
- 11.1.5 The Contractor agrees that the Owner or any of its duly authorized representatives shall have access and the right to examine any directly pertinent books, documents, papers, and records of the Contractor. Further, the Contractor agrees to include in all its subcontracts a provision to the effect that the subcontractor agrees that the Owner or any of its duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers and records of such contractor relating to any claim arising from this Contract, whether or not the subcontractor is a party to the claim. The period of access and examination described herein which relates to appeals under the Disputes article of the Contract, litigation, or the settlement of claims arising out of the performance of this Contract shall continue until final disposition of such claims, appeals or litigation.
- 11.2. Unit Prices: If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed in a proposed Change Order that application of the agreed unit prices to the quantities of work proposed will cause substantial inequity to the Owner or the Contractor, the applicable unit prices shall be equitably adjusted as provided in the Special Conditions or as agreed to by the parties and incorporated into Change Order.
- 11.3. Claims for Additional Costs
- 11.3.1 If the Contractor wishes to make a claim for an increase in the Contract Sum not related to a requested change, they shall give the Owner and the Architect/Engineer written notice thereof within twenty-one (21) days after the occurrence of the event giving rise to such claim, but, in any case before proceeding to execute the work considered to be additional cost or time, except in an emergency endangering life or property in which case the Contractor shall act in accordance with Article 7.2.1. No such claim shall be valid unless so made. If the Owner and the Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined as set forth under Article 15. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.
- 11.3.2 If the Contractor claims that additional cost is involved because of, but not limited to, 1) any written interpretation of the Contract Documents, 2) any order by the Owner to stop the Work pursuant to Article 14 where the Contractor was not at fault, 3) any written order for a minor change in the Work issued pursuant to Article 11.4, the Contractor shall make such claim as provided in Article 11.3.1.

- 11.3.3 Should the Contractor or his Subcontractors fail to call attention of the AE to obvious discrepancies or omissions in the Bid/Proposal Documents during the pre-bid/pre-proposal period, but claim additional costs for corrective work after contract award, the Owner may assume intent to circumvent competitive bidding for necessary corrective work. In such case, the Owner may choose to let a separate contract for the corrective work, or issue a Unilateral Change Order to require performance by the Contractor. Claims for time extensions or for extra cost resulting from delayed notice of contract document discrepancies or omissions will not be considered by the Owner.
- 11.4. Minor Changes. The AE, with concurrence of the ODR, will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time. Such changes shall be effected by written order which the Contractor shall carry out promptly and record on as-built record documents.
- 11.5. Concealed Site Conditions. If, in the performance of the Contract, subsurface, latent or concealed conditions at the site are found to be materially different from the information included in the bid/proposal documents, or if unknown conditions of an unusual nature are disclosed differing materially from the conditions usually inherent in work of the character shown and specified, the ODR and the Architect/Engineer shall be notified in writing of such conditions before they are disturbed. Upon such notice, or upon its own observation of such conditions, the Architect/Engineer, with the approval of the ODR, will promptly make such changes in the Drawings and Specifications as they deem necessary to conform to the different conditions, and any increase or decrease in the cost of the Work, or in the time within which the Work is to be completed, resulting from such changes will be adjusted by Change Order, subject to the prior approval of the ODR.
- 11.6. Extension of Time. All Changes to the Contract Time shall be made as a consequence of requests as required under Article 9.6, and as documented by Change Order as provided under Article 11.1.
- 11.7. Administration of Change Order Requests
- All changes in the Contract shall be administered in accordance with procedures approved by the Owner, and when required make use of such electronic information management system(s) as the owner may employ.
- 11.7.1 Routine changes in the Construction Contract shall be formally initiated by the Architect/Engineer by means of a Change Request form detailing requirements of the proposed change for pricing by the Contractor. This action may be preceded by communications between the Contractor, AE and ODR concerning the need and nature of the change, but such communications shall not constitute a basis for beginning the proposed Work by the Contractor. Except for emergency conditions described below, approval of the Contractor's

cost proposal by the Architect/Engineer and ODR will be required for authorization to proceed with the Work being changed. The Owner will not be responsible for the cost of work changed without prior approval and the Contractor may be required to remove work so installed.

- 11.7.2 All proposed costs for change order work must be supported by itemized accounting of material, equipment and associated itemized installation costs in sufficient detail, following the outline and organization of the established Schedule of Values, to permit analysis by the AE and ODR using current estimating guides and/or practices. Photocopies of Subcontractor and vendor proposals shall be furnished unless specifically waived by the ODR. Contractor shall provide written response to change request within twenty-one (21) calendar days of receipt.
- 11.7.3 Any unexpected circumstance which necessitates an immediate change in order to avoid a delay in progress of the Work may be expedited by verbal communication and authorization between the Contractor and Owner, with written confirmation following within twenty-four (24) hours. A limited scope not-to-exceed estimate of cost and time will be requested prior to authorizing Work to proceed. Should the estimate be impractical for any reason, the ODR may authorize the use of detailed cost records of such work to establish and confirm the actual costs and time for documentation in a formal Change Order.
- 11.7.4 Emergency changes to save life or property may be initiated by the Contractor alone (see Article 7.3) with the claimed cost and/or time of such work to be fully documented as to necessity and detail of the reported costs and/or time.

11.8. Pricing Change Order Work

The amounts that the Contractor and/or its Subcontractors add to a Change Order for profit and overhead will also be considered by the Owner before approval is given. The amounts established hereinafter are the maximums that are acceptable to the Owner.

- 11.8.1 For work performed by its forces, the Contractor will be allowed their actual costs for materials, the total amount of wages paid for labor, the total cost of Federal Old Age Benefit (Social Security Tax) and of Worker's Compensation and Comprehensive General Liability Insurance, plus Bond cost if the change results in an increase in the Bond premium paid by the Contractor. To the total of the above costs, the Contractor will be allowed to add a percentage as noted below to cover overhead and profit combined. Overhead shall be considered to include insurance other than mentioned above, field and office supervisors and assistants, including safety and scheduling personnel, use of small tools, incidental job burdens and general Home Office expenses, and no separate allowance will be made therefore.

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Allowable percentages for overhead and profit on changes will not exceed 15 percent if the total of self-performed work is less than or equal to \$10,000, 10 percent if the total of self-performed work is between \$10,000 and \$20,000 and 7.5 percent if the total of self-performed work is over \$20,000, for any specific change priced.

11.8.2 For subcontracted Work each affected Subcontractor shall figure its costs, overhead and profit as described above for Contractor's work, all subcontractor costs shall be combined, and to that total subcontractor cost the Contractor will be allowed to add a maximum mark-up of 10 percent if the total of all subcontracted work is less than or equal to \$10,000, 7.5 percent if the total of all subcontracted work is between \$10,000 and \$20,000 and 5 percent if the total of all subcontractor work is over \$20,000.

11.8.3 On changes involving both additions and deletions, percentages for overhead and profit will be allowed only on the net addition.

The Owner does not accept and will not pay for additional contract cost identified as indirect, consequential, or as damages caused by delay.

Article 12. Project Completion and Acceptance

12.1. Closing Inspections

12.1.1 Substantial Completion Inspection. When the Contractor considers the entire Work or part thereof Substantially Complete, it shall notify the ODR in writing that the Work will be ready for Substantial Completion Inspection on a specific date. The Contractor shall include with this notice the Contractor's Punchlist to indicate that it has previously inspected all the Work associated with the request for inspection, has corrected items where possible, and includes all items scheduled for completion or correction prior to final inspection. The failure to include any items on this list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. If any of the items on this list prevents the building from the use to which it is intended, the Contractor shall not request a Substantial Completion Inspection. The Owner and its representatives will review the list of items and schedule the requested inspection, or inform the Contractor in writing that such an inspection is premature because the Work is not sufficiently advanced or conditions are not as represented on the Contractor's list.

12.1.1.1. Prior to the Substantial Completion Inspection, the Contractor shall furnish a copy of its marked-up As-Built Drawings and a preliminary copy of each instructional manual, maintenance and operating manual, parts catalog, wiring diagrams, spare parts, specified written warranties and like publications or parts for all installed equipment, systems and like items. Delivery of these items is a prerequisite for requesting the Substantial Completion Inspection.

12.1.1.2. On the date requested by Contractor, or as mutually agreed upon pending the status of the open items list, the AE, ODR, the Contractor and other Owner representatives as determined by the Owner, will jointly attend the Substantial Completion Inspection, which shall be conducted by the ODR or their delegate. If the ODR determines that the Work is Substantially Complete, the ODR will issue a Certificate of Substantial Completion to be signed by the AE, Owner and Contractor, establishing the date of Substantial Completion. AE will provide with this certificate a list of punchlist items (the Pre-Final Punchlist) for completion prior to final inspection. This list may include items in addition to those on the Contractor's punchlist, which the inspection team deems necessary to correct or complete prior to Final Inspection. If the Owner occupies the facility upon determination of Substantial Completion, the Contractor shall complete all corrective Work at the

convenience of the Owner, without disruption to Owner's use of the facility for its intended purposes.

- 12.1.2 Final Inspection. The Contractor shall complete the list of items identified on the Pre-Final Punchlist prior to requesting a Final Inspection. Unless otherwise specified, or otherwise agreed in writing by the parties as documented on the Certificate of Substantial Completion, the Contractor shall complete and/or correct all Work within thirty (30) days of the Substantial Completion date. Upon completion of the Pre-Final Punchlist work, the Contractor shall give written notice to the ODR and AE that the Work will be ready for Final Inspection on a specific date. The Contractor shall accompany this notice with a copy of the updated Pre-Final Punchlist indicating resolution of all items. On the date specified or as soon thereafter as is practicable, the ODR, AE and the Contractor will inspect the Work. The AE will submit to the Contractor a Final Punchlist of open items that the inspection team requires corrected or completed before final acceptance of the Work.
- 12.1.2.1 Correct or complete all items on the Final Punchlist before requesting Final Payment. Unless otherwise agreed to in writing by the parties, complete this work within seven (7) days of receiving the Final Punchlist. Upon completion of the Final Punchlist, notify the AE and ODR in writing stating the disposition of each Final Punchlist item. The AE, Owner and Contractor shall promptly inspect the completed items. When the Final Punchlist is complete, and the Contract is fully satisfied according to the Contract Documents the ODR will issue a certificate establishing the date of Final Completion. Completion of all Work is a condition precedent to the Contractor's right to receive Final Payment.
- 12.1.3 Annotation. Any Certificate issued under this Article may be annotated to indicate that it is not applicable to specified portions of the Work, or that it is subject to any limitation as determined by the Owner.
- 12.1.4 Purpose of Inspection. Inspection is for determining the completion of the Work, and does not relieve the Contractor of its overall responsibility for completing the Work in a good and competent fashion, in compliance with the Contract. Work accepted with incomplete punchlist items or failure of the Owner or other parties to identify Work that does not comply with the Contract Documents or is defective in operation or workmanship does not constitute a waiver of the Owner's rights under the Contract or relieve the Contractor of its responsibility for performance or warranties.
- 12.1.5 Additional Inspections
- 12.1.5.1 If the Owner's inspection team determines that the Work is not Substantially Complete at the Substantial Completion

Inspection, the ODR or AE will give the Contractor written notice listing cause(s) of the rejection. The ODR will set a time for completion of incomplete or defective work. Complete or correct all work so designated prior to requesting a second Substantial Completion Inspection.

12.1.5.2 If the Owner's inspection team determines that the Work is not complete at the Final Inspection, the ODR or the AE will give the Contractor written notice listing the cause(s) of the rejection. The ODR will set a time for completion of incomplete or defective work. The Contractor shall complete or correct all Work so designated prior to again requesting a Final Inspection.

12.1.5.3 The Contract Agreement contemplates three (3) comprehensive inspections: the Substantial Completion Inspection, the Final Completion Inspection, and the Inspection of Completed Final Punchlist Items. The cost to the Owner of additional inspections resulting from the Work not being ready for one or more of these inspections is the responsibility of the Contractor. The Owner may issue a Unilateral Change Order deducting these costs from Final Payment. Upon the Contractor's written request, the Owner will furnish documentation of any costs so deducted. Work added to the Contract by Change Order after Substantial Completion Inspection is not corrective work for purposes of determining timely completion, or assessing the cost of additional inspections.

12.1.6 Phased Completion. The contract may provide, or project conditions may warrant, as determined by the ODR, that designated elements or parts of the Work be completed in phases. Where phased completion is required or specifically agreed to by the parties, the provisions of the contract related to Closing Inspections, Occupancy and Acceptance apply independently to each designated element or part of the Work. For all other purposes, unless otherwise agreed by the parties in writing, Substantial Completion of the Work as a whole is the date on which the last element or part of the Work completed receives a Substantially Completion certificate. Final Completion of the Work as a whole is the date on which the last element or part of the Work completed receives a Final Completion certificate.

12.2 Owner's Right of Occupancy. The Owner may occupy or use all or any portion of the Work following Substantial Completion, or at any earlier stage of completion. Should the Owner wish to use or occupy the Work, or part thereof, prior to Substantial Completion, the ODR will notify the Contractor in writing. Work performed on the premises by third parties on the Owner's behalf does not constitute occupation or use of the Work by the Owner for purposes of this Article. All Work performed by the Contractor after

occupancy, whether in part or in whole, shall be at the convenience of the Owner so as to not disrupt Owner's use of, or access to occupied areas of the project.

12.3 Acceptance & Payment

- 12.3.1 Request for Final Payment. Following the certified completion of all work, including all punch list items, cleanup, and the delivery of record documents, the Contractor shall submit a certified Application for Final Payment. Include all sums held as retainage and forward to the AE and the ODR for review and approval.
- 12.3.2 Final Payment Documentation. Submit, prior to or with the Application for Final Payment, final copies of all close out documents, maintenance and operating instructions, guarantees and warranties, certificates, record documents and all other items required by the Contract. Submit Consent of Surety to Final Payment and an affidavit that all payrolls, bills for materials and equipment, subcontracted work and other indebtedness connected with the Work, except as specifically noted, are paid, will be paid, or otherwise satisfied within the period of time required by Tex. Gov't Code, Chapter 2251. Furnish documentation establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of claims and liens arising out of the Contract. The Contractor may not subsequently submit a claim on behalf of a subcontractor or vendor unless the Contractor's affidavit notes that claim as an exception.
- 12.3.3 Architect/Engineer Approval. The AE will review a submitted Application for Final Payment promptly but in no event later than ten (10) days after its receipt. Prior to the expiration of this deadline, the AE will either 1) return the Application for Final Payment to Contractor with corrections for action and resubmission or 2) accept it, note their approval and send to Owner.
- 12.3.4 Offsets and Deductions. The Owner may deduct from the Final Payment all sums due from the Contractor. If the Certificate of Final Completion notes any Work remaining, incomplete, or defects not remedied, the Owner may deduct the cost of remedying such deficiencies from the Final Payment. On such deductions, the Owner will identify each deduction, the amount, and the explanation of the deduction on or by the 21st day after Owner's receipt of an approved Application for Final Payment. Such offsets and deductions shall be incorporated via a final Change Order, including Unilateral Change Order as may be applicable.
- 12.3.5 Final Payment Due. Final Payment is due and payable by the Owner, subject to all allowable offsets and deductions, on the 31st day following the Owner's approval of the Application for Payment. If the Contractor disputes any amount deducted by the Owner, the Contractor shall give notice of the dispute on or before the thirtieth

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(30th) day following receipt of Final Payment. Failure to do so will bar any subsequent claim for payment of amounts deducted.-

- 12.3.6 Effect of Final Payment. Final Payment constitutes a waiver of all claims by the Owner, relating to the condition of the Work except those arising from:
- 12.3.6.1 Faulty or defective Work appearing after Substantial Completion (latent defects); and/or
 - 12.3.6.2 Failure of the Work to comply with the requirements of the Contract Documents; and/or
 - 12.3.6.3 Terms of any warranties required by the Contract, or implied by law; and/or
 - 12.3.6.4 Claims arising from personal injury or property damage to third parties.
- 12.3.7 Waiver of Claims. Final payment constitutes a waiver of all claims and liens by the Contractor except those specifically identified in writing and submitted to the ODR prior to the application for Final Payment.
- 12.3.8 Effect on Warranty. Regardless of approval and issuance of Final Payment, the Contract is not deemed fully performed by the Contractor and closed until the expiration of all warranty periods.

Article 13. Warranty & Guarantee

- 13.1. Contractor's General Warranty and Guarantee. Contractor warrants to the Owner that all Work is executed in accordance with the Contract, complete in all parts and in accordance with approved practices and customs, and of the best finish and workmanship. The Contractor further warrants that unless otherwise specified, all materials and equipment incorporated in the Work under the Contract are new. The Owner may, at its option, agree in writing to waive any failure of the Work to conform to the Contract, and to accept a reduction in the Contract Price for the cost of repair or diminution in value of the Work by reason of such defect. Absent such a written agreement, the Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute and is not waived by any inspection or observation by the Owner, Architect/Engineer or others, by making any progress payment or final payment, by the use or occupancy of the Work or any portion thereof by the Owner, at any time, or by any repair or correction of such defect made by the Owner.
- 13.2. Warranty Period. Except as may be otherwise specified or agreed, the Contractor shall repair all defects in materials, equipment, or workmanship appearing within one year from the date of Substantial Completion of the Work. If Substantial Completion occurs by phase, then the warranty period for that particular Work begins on the date of such occurrence, or as otherwise stipulated on the Certificate of Substantial Completion for the particular Work.
- 13.3. Limits on Warranty. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
- 13.3.1 Modification or improper maintenance or operation by persons other than Contractor, Subcontractors, or any other individual or entity for whom Contractor is not responsible, unless Owner is compelled to undertake maintenance or operation due to the neglect of the Contractor.
- 13.3.2 Normal wear and tear under normal usage after acceptance of the Work by the Owner.
- 13.4. Events Not Affecting Warranty. Contractor's obligation to perform and complete the Work in a good and workmanlike manner in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
- 13.4.1.1 Observations by Owner and/or AE.
- 13.4.1.2 Recommendation to pay any progress or final payment by AE.

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- 13.4.1.3 The issuance of a certificate of Substantial Completion or any payment by Owner to Contractor under the Contract Documents.
 - 13.4.1.4 Use or occupancy of the Work or any part thereof by Owner.
 - 13.4.1.5 Any acceptance by Owner or any failure to do so.
 - 13.4.1.6 Any review of a Shop Drawing or sample submittal; or
 - 13.4.1.7 Any inspection, test or approval by others.
- 13.5 Separate Warranties. If a particular piece of equipment or component of the Work for which the contract requires a separate warranty is placed in continuous service before Substantial Completion, the Warranty Period for that equipment or component will not begin until Substantial Completion, regardless of any warranty agreements in place between suppliers and/or Subcontractors and the Contractor. The ODR will certify the date of service commencement in the Substantial Completion Certificate.
- 13.5.1 In addition to the Contractor's warranty and duty to repair, the Contractor expressly assumes all warranty obligations required under the Contract for specific building components, systems and equipment.
 - 13.5.2 The Contractor may satisfy any such obligation by obtaining and assigning to the Owner a complying warranty from a manufacturer, supplier, or Subcontractor. Where an assigned warranty is tendered and accepted by the Owner which does not fully comply with the requirements of the Contract, the Contractor remains liable to the Owner on all elements of the required warranty not provided by the assigned warranty.
- 13.6 Correction of Defects. Upon receipt of written notice from the Owner, or any agent of the Owner designated as responsible for management of the Warranty Period, of the discovery of a defect, the Contractor shall promptly remedy the defect(s), and provide written notice to the Owner and designated agent indicating action taken. In case of emergency where delay would cause serious risk of loss or damage to the Owner, or if the Contractor fails to remedy within 30 days, or within another period agreed to in writing, the Owner may correct the defect and be reimbursed the cost of remedying the defect from the Contractor or its Surety.
- 13.7 Certification of No Asbestos Containing Materials or Work. The Contractor shall ensure compliance with the Asbestos Hazard Emergency Response Act (AHERA– 40 CFR 763-99 (7)) from all subcontractors and materials suppliers, and shall provide a notarized certification to the Owner that all equipment and materials used in fulfillment of their contract responsibilities are non Asbestos Containing building Materials (ACBM). This certification must be provided no later than the Contractor's application for Final Payment.

Article 14. Suspension and Termination

- 14.1. Suspension of Work for Cause. The Owner may, at any time without prior notice, suspend all or any part of the Work, if after reasonable observation and/or investigation, the Owner determines it is necessary to do so to prevent or correct any condition of the Work, which constitutes an immediate safety hazard, or which may reasonably be expected to impair the integrity, usefulness or longevity of the Work when completed.
- 14.1.1.1. The Owner will give the Contractor a written notice of suspension for cause, setting forth the reason for the suspension and identifying the Work suspended. Upon receipt of such notice, the Contractor shall immediately stop the Work so identified. As soon as practicable following the issuance of such a notice, the Owner will initiate and complete a further investigation of the circumstances giving rise to the suspension, and issue a written determination of the findings.
- 14.1.1.2. If it is confirmed that the cause was within the control of the Contractor, the Contractor will not be entitled to an extension of time or any compensation for delay resulting from the suspension. If the cause is determined not to have been within the control of the Contractor, and the suspension has prevented the Contractor from completing the Work within the Contract Time, the suspension is an Excusable Delay and a Time Extension will be granted through a Change Order.
- 14.1.1.3. Suspension of work under this provision will be no longer than is reasonably necessary to remedy the conditions giving rise to the suspension.
- 14.2. Suspension of Work for Owner's Convenience. Upon seven (7) calendar days written notice to the Contractor, the Owner may at any time without breach of the Contract suspend all or any portion of the Work for a period of up to thirty days for its own convenience. The Owner will give the Contractor a written notice of suspension for convenience, which sets forth the number of suspension days for which the Work, or any portion of it, and the date on which the suspension of Work will cease. When such a suspension prevents the Contractor from completing the Work within the Contract Time, it is an Excusable Delay. A notice of suspension for convenience may be modified by the Owner at any time on seven (7) calendar days written notice to the Contractor. If the Owner suspends the Work for its convenience for more than 60 consecutive calendar days, the Contractor may elect to terminate the contract pursuant to the provisions of the contract.
- 14.3. Termination by Owner for Cause
- 14.3.1 The Owner may, without prejudice to any right or remedy, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and

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machinery thereon owned by the Contractor, under any of the following circumstances:

- 14.3.1.1 Persistent or repeated failure or refusal, except during complete or partial suspensions of work authorized under the Contract, to supply enough properly skilled workmen or proper materials; and/or
 - 14.3.1.2 Persistent disregard of laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, including the ODR; and/or
 - 14.3.1.3 Persistent failure to prosecute the work in accordance with the Contract, and to insure its completion within the time, or any approved extension thereof, specified in this Contract; and/or
 - 14.3.1.4 Failure to remedy defective work condemned by the ODR; and/or
 - 14.3.1.5 Failure to pay subcontractors, laborers, and material suppliers pursuant to Tex. Gov't Code Chapter 2251; and/or
 - 14.3.1.6 Persistent endangerment to the safety of labor or of the Work; and/or
 - 14.3.1.7 Failure to supply or maintain statutory bonds or to maintain required insurance, pursuant to the contract; and/or
 - 14.3.1.8 Any material breach of the Contract; and/or
 - 14.3.1.9 The Contractor's insolvency, bankruptcy, or demonstrated financial inability to perform the work.
- 14.4 Failure by the Owner to exercise the right to terminate in any instance is not a waiver of the right to do so in any other instance.
- 14.4.1 Should the Owner decide to terminate the employment of the Contractor under the provisions of Article 14.1.1, it will provide to the Contractor and its Surety thirty (30) days prior written notice.
 - 14.4.2 Should the Contractor or its Surety, after having received notice of termination, demonstrate to the satisfaction of the Owner, remedy to the condition(s) upon which the notice of termination was based, the notice of termination shall be rescinded in writing by the Owner. If so rescinded, the Work may continue without an extension of time.
 - 14.4.3 If the Contractor or its Surety fails to demonstrate remedy to the satisfaction of the Owner within thirty days following receipt of notice, the Owner may arrange for completion of the Work and deduct the cost of completion from the unpaid Contract Sum.
 - 14.4.3.1 This amount includes the cost of additional Owner costs such as AE services, other consultants, and contract administration.
 - 14.4.3.2 The Owner will make no further payment to the Contractor or its Surety until all costs of completing the Work are paid. If the

unpaid balance of the Contract Sum exceeds the costs of administering and finishing the Work, the Contractor will receive the excess funds. If such costs exceed the unpaid balance, the Contractor or its Surety will pay the difference to the Owner.

- 14.4.3.3 This obligation for payment survives the termination of the Contract.
- 14.4.3.4 The owner reserves the right in termination for cause to take assignment of all contracts between the Contractor and its Subcontractors, vendors and suppliers. The ODR will promptly notify the Contractor of the contracts the Owner elects to assume. Upon receipt of such notice, the Contractor shall promptly take all steps necessary to effect such assignment.
- 14.5 Termination for Convenience of Owner. The Owner reserves the right, without breach, to terminate the Contract prior to, or during the performance of the Work, for any reason. Upon such an occurrence, the following shall apply:
 - 14.5.1 The Owner will immediately notify the Contractor and the AE in writing, specifying the reason for and the effective date of contract termination. Such notice may also contain instructions necessary for the protection, storage or decommissioning of incomplete work or systems, and for safety.
 - 14.5.2 Upon receipt of the notice of termination, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due at that point in the Contract:
 - 14.5.4.1 Stop all work.
 - 14.5.4.2 Place no further subcontracts or orders for materials or services.
 - 14.5.4.3 Terminate all subcontracts.
 - 14.5.4.4 Cancel all materials and equipment orders as applicable.
 - 14.5.4.5 Take action that is necessary to protect and preserve all property related to this Contract which is in the possession of the Contractor.
 - 14.5.3 When the Contract is terminated for the Owner's convenience, the Contractor may recover from the Owner payment for all Work executed, including any additional work required pursuant to the notice of termination, and for any provable loss and reasonable expenses attributable to the Work resulting from such termination.
- 14.6 Termination By Contractor. If the Work is stopped for a period of ninety (90) days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the

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Contractor, then the Contractor may, upon thirty (30) additional days' written notice to the ODR, terminate the Contract and recover from the Owner payment for all Work executed and for any provable loss and reasonable expenses attributable to the Work resulting from such termination. If the cause of the work stoppage is removed prior to the end of the thirty (30) day notice period, the Contractor may not terminate the Contract.

- 14.7 Settlement on Termination. When the Contract is terminated for any reason, at any time prior to 180 days after the effective date of termination, the Contractor shall submit a final termination settlement proposal to the Owner based upon recoverable costs as provided under the contract. If the Contractor fails to submit the proposal within the time allowed, the Owner may determine the amount due to the Contractor because of the termination and pay the determined amount to the Contractor. -

Article 15. Dispute Resolution

- 15.1 Unresolved Contractor Disputes. The dispute resolution process provided for in Tex. Gov't Code, Chapter 2260, shall be used by the Owner and the Contractor to attempt to resolve any claim for breach of contract made by the Contractor, that is not resolved under procedures described throughout the Uniform General Conditions, Supplemental Conditions, or Special Conditions of the Contract.
- 15.2 Alternative Dispute Resolution Process. The Owner may establish a dispute resolution process to be utilized in advance of that outlined in Tex. Gov't Code, Chapter 2260.

Article 16. Miscellaneous

- 16.1. Supplemental and Special Conditions. When the Work contemplated by the Owner is of such a character that the foregoing Uniform General Conditions of the Contract cannot adequately cover necessary and additional contractual relationships, the Contract may include Supplemental and Special Conditions as described below:
- 16.1.1 Supplemental Conditions may describe the standard procedures and requirements of contract administration followed by a contracting agency of the State. Supplemental Conditions may expand upon matters covered by the Uniform General Conditions, where necessary, provided the expansion does not weaken the character or intent of the Uniform General Conditions. Supplemental Conditions are of such a character that it is to be anticipated that a contracting agency of the State will normally use the same, or similar, conditions to supplement each of its several projects.
- 16.1.2 Special Conditions shall relate to a particular project and be peculiar to that project but shall not weaken the character or intent of the Uniform General Conditions.
- 16.2. Federally Funded Projects. On Federally funded projects, the Owner may waive, suspend or modify any Article in these Uniform General Conditions which conflicts with any Federal statute, rule, regulation or procedure, where such waiver, suspension or modification is essential to receipt by the Owner of such Federal funds for the project. In the case of any project wholly financed by Federal funds, any standards required by the enabling Federal statute, or any Federal rules, regulations or procedures adopted pursuant thereto, shall be controlling.
- 16.3. Internet-based Project Management Systems. At its option, the Owner may administer its design and construction management through an Internet-based management system. In such cases, the Contractor shall conduct communication through this media and perform all project related functions utilizing this database system. This includes correspondence, submittals, requests for information, vouchers or payment requests and processing, amendment, change orders and other administrative activities.
- 16.3.1 Accessibility And Administration.
- 16.3.1.1 When used, the Owner will make the software accessible via the Internet to all project team members.
- 16.3.1.2 The Owner shall administer the software.
- 16.3.2 Training. When used, the Owner shall provide training to the project team members.

End of Uniform General Conditions – revised 5/4/06

SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following **(including from existing building to be demolished, and site concrete, and waste management for the entire Project)**:
 - 1. Recycling nonhazardous construction waste.
 - 2. Disposing of nonhazardous construction waste.
- B. Related Sections include the following:
 - 1. Division 1 Section 01352, "LEED Requirements" for additional LEED requirements.
 - 2. Division 1 Section 01500, "Temporary Facilities and Controls" for environmental-protection measures during construction.
 - 3. Division 2 Section 02100, "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Disposal: Removal off-site of construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- C. Recycle: Recovery of construction waste for subsequent processing in preparation for reuse.
- D. Salvage: Recovery of construction waste and subsequent sale or reuse in another facility.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of 75 percent by weight of total waste generated by the Work.

1.5 SUBMITTALS

- A. Waste Management Plan: Submit 1 copy of plan within 30 days of date established for commencement of the Work.
- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include the following information:
 - 1. Material category.
 - 2. Generation point of waste.
 - 3. Total quantity of waste in tons.
 - 4. Quantity of waste recycled, both estimated and actual in tons.
 - 5. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 6. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- C. Waste Reduction Calculations: Before request for Substantial Completion, submit three copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- H. LEED Submittal: LEED letter template for Credit MR 2.1 and 2.2, signed by Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.
- I. Qualification Data: For Waste Management Coordinator.
- J. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

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- A. Waste Management Coordinator Qualifications: LEED Accredited Professional by U.S. Green Building Council. Refer to usgbc.org for qualification requirements.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 2. Review requirements for documenting quantities of each type of waste and its disposition.
 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 5. Review waste management requirements for each trade.

1.7 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

3. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.
- D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:
1. Total quantity of waste.
 2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
 3. Total cost of disposal (with no waste management).
 4. Revenue from recycled materials.
 5. Savings in hauling and tipping fees that are avoided.
 6. Handling and transportation costs. Include cost of collection containers for each type of waste.
 7. Net additional cost or net savings from waste management plan.
- E. Forms: Prepare waste management plan on forms included at end of Part 3.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan as approved by Architect. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
1. Comply with Division 1 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. **Coordinator shall be present at Project site as required but not necessarily full time for duration of Project.**
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 2. Comply with Division 1 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING CONSTRUCTION WASTE, GENERAL

- E. General: Recycle paper and beverage containers used by on-site workers.
- F. Recycling Receivers and Processors: List below is provided for information only; available recycling receivers and processors include, but are not limited to, the following:
- G. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- H. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 4. Store components off the ground and protect from the weather.
 5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.2 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - B. Burning: Do not burn waste materials.
 - C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01524

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Appendix A

SUMMARY OF SOLID WASTE DISPOSAL AND DIVERSION

Project Name:

Project Number:

Contractor Name:

License Number:

Contractor Address:

Solid Waste Material	Date Material Disposed/ Diverted	Amount Disposed/ Diverted (ton)	Cost to Dispose/ Divert	Municipal Solid Waste Facility (name, address, & phone number)	Recycling/ Reuse Facility (name, address, & phone number)	Comments (if disposed, state why not diverted)
Land Clearing Debris						
Debris						
Asphalt						
Concrete						
Metal						
Wood						
Debris						
Glass						
Clay brick						
Paper/ Card-board						
Plastic						
Gypsum						
Paint						
Carpet						
Other:						

Signature

Date:

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SECTION 102650 - IMPACT-RESISTANT WALL PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 GENERAL DESCRIPTION OF THE WORK OF THIS SECTION

- A. This Section includes the following:

- ~~1. Wall guards.~~
2. Corner guards.
- ~~3. Wallcovering~~

- B. Related Sections:

1. Section 013300 Submittals
2. Section 01524 Construction Waste Management.
3. Section 01352 LEED Requirements
4. Section 01611 Environmental Management
5. Section 01570 Pollution Prevention and Control

1.3 RELATED WORK OF OTHER SECTIONS

- A. Coordinate work of this Section with work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other Sections.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include construction details, material descriptions, impact strength, dimensions of individual components and profiles, and finishes.
- ~~2. Include fire ratings of units recessed in fire-rated walls and listings for door protection items attached to fire-rated doors.~~

- B. Shop Drawings: For each type of wall and door protection showing locations and extent.

- ~~4. Include plans, elevations, sections, and attachment details. Show design for hand rails.~~

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- C. Samples for Initial Selection: For each type of impact-resistant wall-protection unit indicated, in each color and texture specified.
1. Include Samples of accent strips and accessories to verify color selection.
- D. Samples for Verification: For each type of exposed finish on the following products, prepared on Samples of size indicated below:
1. ~~Wall Guards: 12 inches (300 mm) long. Include examples of joinery, corners, end caps, top caps, and field splices.~~
 2. ~~Handrails: 12 inches (300 mm) long. Include examples of joinery, corners, and field splices.~~
 3. ~~Bed Locators: 12 inches (300 mm) long. Include example of end caps.~~
 4. Corner Guards: 12 inches (300 mm) long. Include example top caps.
 5. ~~Abuse Resistant Wall Covering: 6 by 6 inches (150 by 150 mm) square.~~
- E. Product Data: Unless otherwise indicated, submit the following for each type of product provided under work of this Section:
1. Recycled Content:
 - a. Indicate recycled content; indicate percentage of pre-consumer and post-consumer recycled content per unit of product.
 2. Local/Regional Materials:
 - a. Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site.
 - b. Indicate location of extraction, harvesting, and recovery; indicate distance between extraction, harvesting, and recovery and the project site.
 3. VOC data:
 - a. Submit manufacturer's product data for joint compounds. Indicate VOC and chemical component limits of the product. Submit MSDS highlighting VOC and chemical component limits. VOC contents and chemical component limits must be less than the limits of Green Seal's Standard GS-11.
 - b. Submit manufacturer's certification that products comply with Green Seal's Standard GS-11
 - c. Submit environmental data in accordance with Table 1 of ASTM E2129 for products provided under work of this Section.
 4. Submit the following according to Conditions of the Construction Contract.
 - a. Product data. Unless otherwise indicated, submit the following for each type of product provided under work of this Section:

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5. General: Submit additional LEED submittal requirements included in other sections of the Specifications.
6. LEED submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated LEED requirements.

F. Sustainable Design Submittals:

1. Chain-of-Custody Certificates: For certified wood products. Include statement of costs.
2. Chain-of-Custody Qualification Data: For manufacturer and vendor.
3. Product Data: For adhesives, indicating VOC content.
4. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.
5. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of handrail.
- B. Material Certificates: For each type of exposed plastic material.
- C. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of wall and door protection product to include in maintenance manuals.
 1. Include recommended methods and frequency of maintenance for maintaining best condition of plastic covers under anticipated traffic and use conditions. Include precautions against using cleaning materials and methods that may be detrimental to finishes and performance.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

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1. ~~Wall Guard and Handrail Covers: Full-size plastic covers of maximum length equal to 2 percent of each type, color, and texture of cover installed, but no fewer than two, 96-inch (2400-mm-) long units.~~
2. Corner-Guard Covers: Full-size plastic covers of maximum length equal to 2 percent of each type, color, and texture of cover installed, but no fewer than two, 48-inch- (1200-mm-) long units.
3. Mounting and Accessory Components: Amounts proportional to the quantities of extra materials. Package mounting and accessory components with each extra material.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed installation of impact-resistant wall protection system components similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications: A firm experienced in manufacturing impact-resistant wall protection system components similar to those required for this Project and with a record of successful in-service performance.
- C. Source Limitations: Obtain each color, grade, finish, and type of impact-resistant wall protection system component from a single source with resources to provide components of consistent quality in appearance and physical properties.
- D. Product Options: Drawings indicate size, profiles, and dimensional requirements of impact-resistant wall protection system and are based on the specific system indicated. Other manufacturers systems with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."
 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architects approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- E. Fire-Test-Response Characteristics: Provide impact-resistant wall protection system components with the following surface-burning characteristics, as determined by testing materials identical to those required in this Section per ASTM E 84 by a testing and inspecting agency acceptable to authorities having jurisdiction. Identify impact-resistant wall protection system components with appropriate markings of applicable testing and inspecting agency.
 1. Flame Spread: 25 or less.
 2. Smoke Developed: 450 or less.
- F. Impact Strength: Provide impact-resistant wall protection system components with

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a minimum impact resistance of 25.4 ft-lbf/in. of width when tested according to ASTM D 256, Test Method A.

- G. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
- H. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Store wall surface-protection materials in original undamaged packages and containers inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.
 - 1. Maintain room temperature within the storage area at not less than 70 deg F during the period plastic materials are stored. Keep sheet material out of direct sunlight to avoid surface distortion.
 - 2. Store rigid plastic corner-guard covers in a vertical position, and rigid plastic wall guard and handrail covers in a horizontal position for a minimum of 72 hours, or until the plastic material attains the minimum room temperature of 70 deg F.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install wall surface-protection system components until the space is enclosed and weatherproof and ambient temperature within the building is maintained at not less than 70 deg F for not less than 72 hours before beginning installation. Do not install rigid plastic wall surface-protection systems until that temperature has been attained and is stabilized.

PART 2 - PRODUCTS

2.1 ENVIRONMENTALLY PREFERABLE PRODUCTS

- A. Provide environmentally preferable products to the greatest extent possible.
 - 1. To the greatest extent possible, provide products and materials that promote stewardship of the earth's resources, promote good indoor environmental quality (IEQ), and promote efficiencies in operational performance.
- B. Provide products listed on the EPA Comprehensive Procurement Guidelines to the greatest extent practicable.
- C. Provide products listed on the EPA Comprehensive Procurement Guidelines to the greatest extent practicable/

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2.2 RECYCLED CONTENT

- A. Provide recycled content products to the greatest extent possible.
 - 1. To the greatest extent possible, provide materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the project.

2.3 REGIONAL MATERIALS

- A. Provide Regional materials and products to the greatest extent possible that are extracted and manufactured within the region.
 - 1. Provide materials and products that use a minimum of 20 % of building products that are manufactured regionally within a radius of 500 miles from the project site.
 - a. Manufacturing materials and products that use a minimum of 20 % of building products that are manufactured regionally within a radius of 500 miles from the project site.
 - 2. Of the regionally manufactured materials used and documented, use a minimum of 50% of building materials and products that are extracted, harvested or recovered (as well as manufactured) within 500 miles of the project site

2.4 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide impact-resistant wall protection system products by one of the following:
 - 1. Basis of design: Construction Specialties, Inc.; or approved equal by Inpro Corporation, or Korogard Wall Protection System.

2.5 MATERIALS

~~A. Plastic Sheet Wall Covering Material: Semirigid, textured, chemical and stain-resistant, high impact-resistant, (PVC free) acrylic-modified vinyl plastic sheet; thickness as indicated; with a minimum impact resistance of 25.4 ft-lbf/in. of width when tested according to ASTM D 256, Test Method A.~~

~~1. Color and Texture: As indicated by referencing manufacturer's designations.~~

B. Fasteners: Provide aluminum, nonmagnetic stainless-steel, or other noncorrosive metal screws, bolts, and other fasteners compatible with aluminum components, hardware, anchors, and other items being fastened. Use theftproof fasteners where exposed to view.

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- C. Adhesive: Type recommended by the manufacturer for use with material on the substrate indicated.
 - 1. Adhesives: Refer to Section 01352 – LEED Requirements.
 - 2. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.5 CORNER GUARDS

- A. Surface-Mounted, Corner Guards: Engineered PETG extruded material high impact Construction Specialties Acrovyn 4000 Model SM-10N with shadowgrain texture, .078" thick; extruded aluminum retainers 6063-T6 alloy, nominal .062. Fasteners non-corrosive. Colors in accordance with Cradle to Cradle solid colors or simulated patterns as selected by Architect.

~~2.6 IMPACT RESISTANT WALL COVERINGS~~

- ~~A. Semirigid Sheet Wall Covering: Semirigid, embossed, fiber-backed, impact-resistant plastic sheets. Sheets shall comply with fire test response characteristics specified and be chemical and stain resistant. Provide manufacturer's standard; match moldings and trim as required.~~
 - ~~1. Sheet Size: 48 by 120 inches, unless otherwise indicated.~~
 - ~~2. Sheet Thickness: 0.040 inch, Series 4000 pvc free.~~
 - ~~3. Installation Type: As indicated.~~
 - ~~4. Trim: Provide manufacturer's standard trim and moldings to match wall panels.~~
 - ~~5. Construction Specialties Acrovyn.~~

2.7 FABRICATION

- A. General: Fabricate impact-resistant wall and door protection systems to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including thicknesses of components.
- B. Preassemble components in the shop to greatest extent possible to minimize field assembly. Disassemble only as necessary for shipping and handling.
- C. Fabricate components with tight seams and joints with exposed edges rolled. Provide surfaces free of wrinkles, chips, dents, uneven coloration, and other imperfections. Fabricate members and fittings to produce flush, smooth, and rigid hairline joints.
- D. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges,

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miscellaneous fittings, and anchors for interconnecting members to other construction.

- E. Provide inserts and other anchoring devices for connecting components to concrete or masonry. Fabricate anchoring devices to withstand imposed loads. Coordinate anchoring devices with the supporting structure.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions in which impact-resistant wall protection system components and impact-resistant wall covering materials will be installed.
 - 1. Complete finishing operations, including painting, before installing impact-resistant wall protection system components.
- B. Impact-Resistant Wall Covering Materials: Wall surfaces to receive impact-resistant wall covering materials shall be dry and free from dirt, grease, loose paint, and scale.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Before installation, clean substrate to remove dust, debris, and loose particles.

3.3 INSTALLATION

- A. Install impact-resistant wall protection system components level, plumb, and true to line without distortions.
 - 1. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.
- B. Install aluminum retainers, mounting brackets, and other accessories according to the manufacturer's written instructions.
 - 1. Where splices occur in horizontal runs of more than 20 feet, splice aluminum retainers and plastic covers at different locations along the run.

3.4 CLEANING

- A. General: Immediately on completion of installation, clean plastic covers and

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accessories using a standard ammonia-based household cleaning agent. Clean metal components according to the manufacturer's written instructions.

- B. Remove excess adhesive using methods and materials recommended by the manufacturer.
- C. Remove surplus materials, rubbish, and debris, resulting from installation, on completion of work and leave installation areas in neat, clean condition.

END OF SECTION 102650

SECTION 10 5126 - SOLID PLASTIC LOCKERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Solid plastic lockers.

- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements..

- A. Related Requirements:
 - 1. Section 013300 Submittals
 - 2. Section 01524 Construction Waste Management
 - 3. Section 01352 LEED Requirements
 - 4. Section 01611 Environmental Management
 - 5. Section 01570 Pollution Prevention and Control

1.2 REFERENCES

- A. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Include dimensioned layout, elevations, trim, closures, and accessories.
 - 2. Product Data: Manufacturer's descriptive data.
 - 3. Samples: 2 x 3inch samples showing available colors.

- B. Sustainable Design Submittals:
 - 1. Recycled Content: Certify percentages of post-consumer and pre-consumer recycled content.

- B. Regional Materials: Certify distance between manufacturer and Project and between manufacturer and extraction or harvest point in miles.

- C. Product Data: Unless otherwise indicated, submit the following for each type of product provided under work of this Section:
 - 1. Recycled Content:

- a. Indicate recycled content; indicate percentage of pre-consumer and post-consumer recycled content per unit of product.
2. Local/Regional Materials:
 - a. Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site.
 - b. Indicate location of extraction, harvesting, and recovery; indicate distance between extraction, harvesting, and recovery and the project site.
3. VOC data:
 - a. Submit manufacturer's product data for joint compounds. Indicate VOC and chemical component limits of the product. Submit MSDS Sustainable Design Submittals:
 - b. Product Data: For installation adhesives, indicating VOC content.
 - c. Laboratory Test Reports: For installation adhesives, indicating compliance with requirements for low-emitting materials.
 - d. Laboratory Test Reports: For composite wood products, indicating compliance with requirements for low-emitting materials.
 - e. Highlighting VOC and chemical component limits. VOC contents and chemical component limits must be less than the limits of Green Seal's Standard GS-11. Refer to Section 01352 – LEED Requirements.
 - f. Submit manufacturer's certification that products comply with Green Seal's Standard GS-11
 - g. Submit environmental data in accordance with Table 1 of ASTM E2129 for products provided under work of this Section.
4. Submit the following according to Conditions of the Construction Contract.
 - a. Product data. Unless otherwise indicated, submit the following for each type of product provided under work of this Section:
5. General: Submit additional LEED submittal requirements included in other sections of the Specifications.
6. LEED submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated LEED requirements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 years experience in manufacture of solid plastic lockers with products in satisfactory use under similar service conditions.
- B. Installer Qualifications: Minimum 5 years experience in work of this Section.

1.5 WARRANTIES

- A. Provide manufacturer's 15 year warranty against breakage, corrosion, and delamination under normal conditions.

PART 2 PRODUCTS

2.1 ENVIRONMENTALLY PREFERABLE PRODUCTS

- A. Provide environmentally preferable products to the greatest extent possible.
- B. To the greatest extent possible, provide products and materials that promote stewardship of the earth's resources, promote good indoor environmental quality (IEQ), and promote efficiencies in operational performance.
- C. Provide products listed on the EPA Comprehensive Procurement Guidelines to the greatest extent practicable.
- D. Provide products listed on the EPA Comprehensive Procurement Guidelines to the greatest extent practicable.

2.2 RECYCLED CONTENT

- A. Provide recycled content products to the greatest extent possible.
 - 1. To the greatest extent possible, provide materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the project.

2.3 REGIONAL MATERIALS

- A. Provide Regional materials and products to the greatest extent possible that are extracted and manufactured within the region.
- B. Provide materials and products that use a minimum of 20 % of building products that are manufactured regionally within a radius of 500 miles from the project site.
- C. Manufacturing materials and products that use a minimum of 20 % of building products that are manufactured regionally within a radius of 500 miles from the project site.
- D. Of the regionally manufactured materials used and documented, use a minimum of 50% of building materials and products that are extracted, harvested or recovered (as well as manufactured) within 500 miles of the project site.

2.4 MANUFACTURERS

- 1. Source Limitations: Obtain metal lockers and accessories from single source from single locker manufacturer.

2.5 PERFORMANCE REQUIREMENTS

A. Accessibility Requirements: For lockers indicated to be accessible, comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.

2.6 MANUFACTURERS

- A. Contract Documents are based on products by Scranton Products.
(www.scrantonproducts.com)
- B. Substitutions: Under provisions of Division 01.

2.7 MATERIALS

- A. Solid Plastic Panels:
 - 1. High impact, high density polyethylene (HDPE) formed under high pressure into solid plastic components with homogeneous color throughout, with smooth orange peel finish.
 - 2. Edges machined to accept assembly brackets.
 - 3. Pass NFPA 286.
 - 4. Recycled content: Minimum 25 percent.
 - 5. Color: To be selected from manufacturer's full color range.

2.8 COMPONENTS

- A. Locker Doors: 1/2 inch thick.
- B. Sides, Tops, Bottoms, Backs, and Shelves: 3/8 inch thick.
- C. Latch: Continuous type, manufactured from HDPE, capable of accepting various locking mechanisms, fastened to entire length of door.
- D. Door Hinge: Heavy duty zinc-plated steel, full length, assembled onto door and locker front.
- E. Assembly: Tongue-and-groove joint construction using 3/8 inch thick HDPE, full height of locker.
- F. Coat Hooks: Two-prong, high impact plastic, mounted to bottom of shelf or divider, one per door opening.

2.9 FABRICATION

- A. Fabricate locker components square and rigid, finish free from scratches and chips.
- B. Fabricate locker components for snap-together assembly or slide-together dovetail connections providing solid and secure, anti-racking construction.
- C. Fabricate adjacent lockers with common side panel.
- D. Fabricate locker units for assembly in maximum of three adjacent lockers.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install lockers in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Set lockers directly on floor, unless base is indicated.
- C. Set plumb, level, rigid, and aligned.
- D. Attach lockers to supporting construction with anchors best suited to substrate conditions.

3.2 ADJUSTING

- A. Adjust doors and latches to operate correctly.

END OF SECTION

SECTION 237416 – PACKAGED ROOFTOP AIR-CONDITIONING UNITS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Related Sections

1. Section 013300 Submittals.
2. Section 01524 Construction Waste Management
3. Section 01352 LEED Requirements
4. Section 01611 Environmental Management
5. Section 01570 Pollution Prevention and Control

- B. Section includes packaged, large-capacity, rooftop air conditioning units (RTUs) with the following components and accessories:

1. Casings.
2. Fans.
3. Motors.
4. Rotary heat exchanger.
5. Coils.
6. Refrigerant circuit components.
7. Air filtration.
8. Gas furnaces.
9. Sound-attenuator section.
10. Dampers.
11. Electrical power connections.
12. Controls.
13. Accessories
14. Roof curbs.

1.03 DEFINITIONS

- A. DDC: Direct-digital controls.
- B. ECM: Electronically commutated motor.

- C. Outdoor-Air Refrigerant Coil: Refrigerant coil in the outdoor-air stream to reject heat during cooling operations and to absorb heat during heating operations. "Outdoor air" is defined as the air outside the building or taken from outdoors and not previously circulated through the system.
- D. RTU: Rooftop unit. As used in this Section, this abbreviation means packaged, large-capacity, rooftop air-conditioning units. This abbreviation is used regardless of whether the unit is mounted on the roof or on a concrete base on ground.
- E. Supply-Air Fan: The fan providing supply air to conditioned space. "Supply air" is defined as the air entering a space from air-conditioning, heating, or ventilating apparatus.
- F. Supply-Air Refrigerant Coil: Refrigerant coil in the supply-air stream to absorb heat (provide cooling) during cooling operations and to reject heat (provide heating) during heating operations. "Supply air" is defined as the air entering a space from air-conditioning, heating, or ventilating apparatus.

1.04 ACTION SUBMITTALS

- A. Product Data: Include manufacturer's technical data for each RTU, including rated capacities, dimensions, required clearances, characteristics, furnished specialties, and accessories.
 - 1. Factory selection calculations for each antimicrobial ultraviolet lamp installation.
- B. Shop Drawings:
 - 1. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 2. Include diagrams for power, signal, and control wiring.
- C. Delegated-Design Submittal: For RTU supports indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 1. Design Calculations: Calculate requirements for selecting vibration isolators and wind restraints and for designing vibration isolation bases.
 - 2. Detail mounting, securing, and flashing of roof curb to roof structure. Indicate coordinating requirements with roof membrane system.
 - 3. Wind-Restraint Details: Detail fabrication and attachment of wind and seismic restraints and snubbers. Show anchorage details and indicate quantity, diameter, and depth of penetration of anchors.

1.05 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Structural members to which RTUs will be attached.
 - 2. Roof openings.
 - 3. Roof curbs and flashing.
- B. Product Certificates: Submit certification that specified equipment will withstand wind forces identified in "Performance Requirements" Article and in Section 230548 "Vibration and Seismic Controls for HVAC."
 - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculations.
 - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of wind force and locate and describe mounting and anchorage provisions.
 - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Field quality-control reports.
- D. Sample Warranty: For special warranty.

1.06 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For RTUs to include in emergency, operation, and maintenance manuals.

1.07 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - A. Fan Belts: One set(s) for each belt-driven fan.
 - B. Filters: One set(s) of filters for each unit.

1.08 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of RTUs that fail in materials or workmanship within specified warranty period.
 - A. Warranty Period for Compressors: Manufacturer's standard, but not less than five years from date of Substantial Completion.
 - B. Warranty Period for Gas Furnace Heat Exchangers: Manufacturer's standard, but not less than ten (10) years from date of Substantial Completion.

- C. Warranty Period for Solid-State Ignition Modules: Manufacturer's standard, but not less than three (3) years from date of Substantial Completion.
- D. Warranty Period for Control Boards: Manufacturer's standard, but not less than three years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 SYSTEM DESCRIPTION

A. AHRI Compliance:

- 1. Comply with AHRI 340/360 for testing and rating energy efficiencies for RTUs.
- 2. Comply with AHRI 270 for testing and rating sound performance for RTUs.
- 3. Comply with AHRI 1060 for testing and rating performance for air-to-air exchanger.
- 4. Comply with AHRI 210/240 for testing and rating energy efficiencies for RTUs.

B. AMCA Compliance:

- 1. Comply with AMCA 11 and bear the AMCA-Certified Ratings Seal for air and sound performance according to AMCA 211 and AMCA 311.
- 2. Damper leakage tested in accordance with AMCA 500-D.
- 3. Operating Limits: Classify according to AMCA 99.

C. ASHRAE Compliance:

- 1. Comply with ASHRAE 15 for refrigeration system safety.
- 2. Comply with ASHRAE 33 for methods of testing cooling and heating coils.
- 3. Comply with applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."

D. 2015 IECC Compliance: Applicable requirements in IECC, Section C403.2.2 - "HVAC Equipment Performance Requirements."

E. NFPA Compliance: Comply with NFPA 90A or NFPA 90B.

F. UL Compliance: Comply with UL 1995.

- 1. In the event the unit is not UL approved, the manufacturer must, at his expense, provide for a field inspection by a UL representative to verify conformance to UL standards. If necessary, contractor shall perform modifications to the unit to comply with UL, as directed by the UL representative, at no additional expense to the Owner.

G. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.02 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- A. Carrier Corporation; a unit of United Technologies Corp.
 - B. Daikin Applied.
 - C. Aaon
 - D. Trane.

2.03 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design mounting and restraints for RTUs, including comprehensive engineering analysis.
1. Design RTU supports to comply with [wind] performance requirements.
- B. Wind-Restraint Performance:
1. Basic Wind Speed: 147 mph, 3-second gust.
 2. Building Risk Category: III.
 3. Exposure Category: B.

2.04 CASINGS

- A. General Fabrication Requirements for Casings: Formed and reinforced insulated panels, fabricated to allow removal for access to internal parts and components, with joints between sections sealed.
- B. Exterior Casing Material: Galvanized steel with factory-painted finish, with pitched roof panels and knockouts with grommet seals for electrical and piping connections and lifting lugs.
- C. Corrosion-Resistant Coating: Apply a corrosion-resistant coating capable of withstanding a 3,000-hour salt-spray test according to ASTM B117.
1. Standards:
 - a. ASTM B117 for salt spray.
 - b. ASTM D2794 for minimum impact resistance of 100 in-lb
 - c. ASTM B3359 for cross-hatch adhesion of 5B.
 2. Application: Spray.
 3. Thickness: 1 mil.
 4. Gloss: Minimum of 50 gloss units on a single-angle, 60-degree meter.
- D. Casing Insulation and Adhesive: Comply with NFPA 90A or NFPA 90B.
1. Materials: ASTM C1071, Type I.

2. Thickness: **1 inch**.
 3. Liner materials shall have air-stream surface coated with an erosion- and temperature-resistant coating or faced with a plain or coated fibrous mat or fabric.
 4. Liner Adhesive: Comply with ASTM C916, Type I.
- E. Condensate Drain Pans: Fabricated using stainless **0.025 inch** thick steel sheet, a minimum of **2 inches** deep, and complying with ASHRAE 62.1 for design and construction of drain pans.
1. Double-Wall Construction: Fill space between walls with foam insulation and seal moisture tight.
 2. Drain Connections: Threaded nipple.
- F. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.

2.05 FANS

- A. Supply-Air Fans: Aluminum or painted-steel wheels, and galvanized- or painted-steel fan scrolls.
1. Multiple Direct-Driven Supply-Air Plenum Fans: ECM motors shall be resiliently mounted in the fan inlet.
- B. Condenser-Coil Fan: Variable-speed propeller, mounted on shaft of permanently lubricated ECM motors.
- C. Relief-Air Fan: Propeller, shaft mounted on permanently lubricated motor.

2.06 MOTORS

- A. Comply with Section 230513 "Common Motor Requirements for HVAC Equipment" and the requirements of this Article.

2.07 COILS

- A. Supply-Air Refrigerant Coil:
1. Aluminum-plate fin and seamless internally grooved copper tube in steel casing with equalizing-type vertical distributor.
 2. Coil Split: Interlaced.
 3. Corrosion-Resistant Coating: Apply a corrosion-resistant coating capable of withstanding a 3,000-hour salt-spray test according to ASTM B117 to coils and fan guards.
 - a. Standards:
 - 1) ASTM B117 for salt spray.
 - 2) ASTM D2794 for minimum impact resistance of **100 in-lb**
 - 3) ASTM B3359 for cross-hatch adhesion of 5B.

- b. Application: Immersion.
 - c. Thickness: 1 mil.
 - d. Gloss: Minimum of 50 gloss units on a single-angle, 60-degree meter.
4. Condensate Drain Pan: Stainless steel formed with pitch and drain connections.

B. Outdoor-Air Refrigerant Coil:

- 1. Aluminum-plate fin and seamless internally grooved copper tube in steel casing with equalizing-type vertical distributor.
- 2. Corrosion-Resistant Coating: Apply a corrosion-resistant coating capable of withstanding a 5,000-hour salt-spray test according to ASTM B117 to base, frame, and casing, coils and fan guards.
 - a. Standards:
 - 1) ASTM B117 for salt spray.
 - 2) ASTM D2794 for minimum impact resistance of 100 in-lb
 - 3) ASTM B3359 for cross-hatch adhesion of 5B.
 - b. Application: Immersion.
 - c. Thickness: 1 mil.
 - d. Gloss: Minimum of 50 gloss units on a single-angle, 60-degree meter.

C. Hot-Gas Reheat Refrigerant Coil:

- 1. Aluminum-plate fin and seamless internally grooved copper tube in steel casing with equalizing-type vertical distributor.
- 2. Corrosion-Resistant Coating: Apply a corrosion-resistant coating capable of withstanding a 3,000-hour salt-spray test according to ASTM B117 to coils.
 - a. Standards:
 - 1) ASTM B117 for salt spray.
 - 2) ASTM D2794 for minimum impact resistance of 100 in-lb
 - 3) ASTM B3359 for cross-hatch adhesion of 5B.
 - b. Application: Immersion.
 - c. Thickness: 1 mil.
 - d. Gloss: Minimum of 50 gloss units on a single-angle, 60-degree meter.
- 3. Suction-discharge bypass valve.

2.08 REFRIGERANT CIRCUIT COMPONENTS

- A. Number of Refrigerant Circuits: Refer to equipment schedule on the Drawings..

- B. Compressor: Hermetic, variable speed scroll, mounted on vibration isolators; with internal overcurrent and high-temperature protection, internal pressure relief, and crankcase heater.
- C. Refrigeration Specialties:
1. Refrigerant: R-410A.
 2. Expansion valve with replaceable thermostatic element.
 3. Refrigerant filter/dryer.
 4. Manual-reset high-pressure safety switch.
 5. Automatic-reset low-pressure safety switch.
 6. Minimum off-time relay.
 7. Automatic-reset compressor motor thermal overload.
 8. Brass service valves installed in compressor suction and liquid lines.
 9. Low-ambient kit high-pressure sensor.
 10. Hot-gas reheat solenoid valve modulating with a replaceable magnetic coil.
 11. Hot-gas bypass solenoid valve with a replaceable magnetic coil.
 12. Four-way reversing valve with a replaceable magnetic coil, thermostatic expansion valves with bypass check valves, and a suction line accumulator.

2.09 AIR FILTRATION

- A. Refer to Specification Section 23 41 00 and equipment schedule on the Drawings.

2.10 SOUND-ATTENUATOR SECTION

- A. Factory-installed section integral with unit with range of splitter thickness and air passages to optimize acoustic performance with minimal air pressure resistance.
- B. Provide moisture-resistant coated acoustic lining.

2.11 DAMPERS

- A. Outdoor-Air Damper: Linked damper blades, for 0 to 25 percent outdoor air, with motorized damper actuator.
- B. Outdoor- and Return-Air Mixing Dampers: Opposed blade galvanized-steel dampers mechanically fastened to cadmium plated for galvanized-steel operating rod in reinforced cabinet. Connect operating rods with common linkage and interconnect so dampers operate simultaneously.
1. Leakage Rate: As required by IECC 2015.
 2. Damper Motor: Modulating with adjustable minimum position.

3. Relief-Air Damper: Gravity actuated or motorized, as required by ASHRAE/IES 90.1, with bird screen and hood.

C. Barometric relief dampers.

2.12 ELECTRICAL POWER CONNECTIONS

- A. RTU shall have a single connection of power to unit with unit-mounted disconnect switch accessible from outside unit and control-circuit transformer with built-in overcurrent protection.

2.13 CONTROLS

A. Basic Unit Controls:

1. Control-voltage transformer.
2. Wall-mounted thermostat or sensor with the following features:
 - a. Heat-cool-off switch.
 - b. Fan on-auto switch.
 - c. Fan-speed switch.
 - d. **Automatic** changeover.
 - e. Adjustable deadband.
 - f. **Exposed** set point.
 - g. **Exposed** indication.
 - h. Degree F indication.
 - i. Unoccupied-period-override push button.
 - j. Data entry and access port to input temperature set points, occupied and unoccupied periods, and output room temperature, supply-air temperature, operating mode, and status.

B. **DDC** Controller:

1. Controller shall have volatile-memory backup.
2. Safety Control Operation:
 - a. Smoke Detectors: Stop fan and close outdoor-air damper if smoke is detected. Provide additional contacts for alarm interface to fire alarm control panel.
 - b. Fire stats: Stop fan and close outdoor-air damper if air greater than **130 deg F temperature** enters unit. Provide additional contacts for alarm interface to fire alarm control panel.
 - c. Fire Alarm Control Panel Interface: Provide control interface to coordinate with operating sequence described in Section 283811 "Digital, Addressable Fire-Alarm System."

- d. Low-Discharge Temperature: Stop fan and close outdoor-air damper if supply air temperature is less than **40 deg F**.
- e. Defrost Control for Condenser Coil: Pressure differential switch to initiate defrost sequence.
3. Scheduled Operation: Occupied and unoccupied periods on **seven-day** clock with a minimum of **two** programmable periods per day.
4. Unoccupied Period:
 - a. Heating Setback: **Plus 10 deg F**.
 - b. Cooling Setback: System off.
 - c. Override Operation: **Two** hours.
5. Supply Fan Operation:
 - a. Occupied Periods: Run fan continuously.
 - b. Unoccupied Periods: Cycle fan to maintain setback temperature.
6. Refrigerant Circuit Operation:
 - a. Occupied Periods: Cycle or stage compressors, **and operate hot-gas bypass** to match compressor output to cooling load to maintain **discharge** temperature. Cycle condenser fans to maintain maximum hot-gas pressure. Operate low-ambient control kit to maintain minimum hot-gas pressure.
 - b. Unoccupied Periods: [Compressors off] [Cycle compressors and condenser fans for heating to maintain setback temperature].
 - c. Switch reversing valve for heating or cooling mode on air-to-air heat pump.
7. Hot-Gas Reheat-Coil Operation:
 - a. Occupied Periods: Humidistat opens hot-gas valve to provide hot-gas reheat, and cycles compressor.
 - b. Unoccupied Periods: Reheat not required.
8. Gas Furnace Operation:
 - a. Occupied Periods: Modulate burner to maintain **discharge** temperature.
 - b. Unoccupied Periods: Cycle burner to maintain setback temperature.
9. Fixed Minimum Outdoor-Air Damper Operation:
 - a. Occupied Periods: Open to **25** percent.
 - b. Unoccupied Periods: Close the outdoor-air damper.
10. Economizer Outdoor-Air Damper Operation:
 - a. Morning cool down building outdoor air flush cycles.

- b. Occupied Periods: Open to **25** percent fixed minimum intake, and maximum 100 percent of the fan capacity. Controller shall permit air-side economizer operation when outdoor air is less than **60 deg F**. Use **outdoor-air enthalpy and select between outdoor-air and return-air enthalpy** to adjust mixing dampers During economizer cycle operation, lock out cooling.
 - c. Unoccupied Periods: Close outdoor-air damper and open return-air damper.
 - d. Outdoor-Airflow Monitor: Accuracy maximum plus or minus 5 percent within 15 and 100 percent of total outdoor air. Monitor microprocessor shall adjust for temperature, and output shall range from **4 to 20 mA**.
11. Carbon Dioxide Sensor Operation:
- a. Occupied Periods: Reset minimum outdoor-air ratio down to minimum **10 percent** percent to maintain maximum **1000-ppm** concentration.
 - b. Unoccupied Periods: Close outdoor-air damper and open return-air damper.
12. Terminal-Unit Relays:
- a. Provide heating- and cooling-mode changeover relays compatible with terminal control system required in Section 233600 "Air Terminal Units" and Section 230923 "Energy Management and Control System (EMCS) for HVAC."

C. Interface Requirements for HVAC Instrumentation and Control System:

- 1. Interface relay for scheduled operation.
- 2. Interface relay to provide indication of fault at the central workstation and diagnostic code storage.
- 3. Provide BACnet compatible interface for central HVAC control workstation for the following:
 - a. Adjusting set points.
 - b. Monitoring supply fan start, stop, and operation.
 - c. Inquiring data to include **outdoor-air damper position**, supply- and room-air temperature.
 - d. Monitoring occupied and unoccupied operations.
 - e. Monitoring constant and variable motor loads.
 - f. Monitoring variable-frequency drive operation.
 - g. Monitoring cooling load.
 - h. Monitoring economizer cycles.
 - i. Monitoring air-distribution static pressure and ventilation air volume.

2.14 ACCESSORIES

- A. Electric heater with integral thermostat maintains minimum **50 deg F** temperature in gas burner compartment.
- B. Duplex, 115-V, ground-fault-interrupter outlet with 15-A overcurrent protection. Include transformer if required. **Outlet shall be energized even if the unit main disconnect is open.**
- C. Low-ambient kit using variable-speed condenser fans for operation down to 20°F.
- D. Filter differential pressure switch with sensor tubing on either side of filter. Set for final filter pressure loss.
- E. Remote potentiometer to adjust minimum economizer damper position.
- F. Return-air bypass damper.
- G. Factory- or field-installed demand-controlled ventilation.
- H. Safeties:
 - 1. Smoke detector.
 - 2. Condensate overflow switch.
 - 3. Phase-loss reversal protection.
 - 4. High and low pressure control.
 - 5. Gas furnace airflow-proving switch.
- I. Coil guards of painted, galvanized-steel wire.
- J. Hail guards of galvanized steel, painted to match casing.
- K. Concentric diffuser with white louvers and polished aluminum return grilles, insulated diffuser box with mounting flanges, and interior transition.
- L. Vertical vent extensions to increase the separation between the outdoor-air intake and the flue-gas outlet.
- M. Door switches to disable heating or reset set point when open.
- N. Outdoor air intake weather hood with moisture eliminator.
- O. Service Lights and Switch: Factory installed in each accessible section with weatherproof cover. Factory wire lights to a single-point field connection.

2.15 ROOF CURBS

- A. Roof curbs with vibration isolators and wind or seismic restraints are specified in Section 230548 "Vibration and Wind Controls for HVAC."
- B. Wind Restraints: Metal brackets compatible with the curb and casing, painted to match RTU, used to anchor unit to the curb, and designed for loads at Project

site. Comply with requirements in Section 230548 "Vibration and Wind Controls for HVAC" for wind-load requirements.

- C. Materials: Galvanized steel with corrosion-protection coating, watertight gaskets, and factory-installed wood nailer; complying with NRCA standards.
1. Curb Insulation and Adhesive: Comply with NFPA 90A or NFPA 90B.
 - a. Materials: ASTM C1071, Type I or II.
 - b. Thickness: **2 inches**.
 2. Application: Factory applied with adhesive and mechanical fasteners to the internal surface of curb.
 - a. Mechanical Fasteners: Galvanized steel, suitable for adhesive attachment, mechanical attachment, or welding attachment to duct without damaging liner when applied as recommended by manufacturer and without causing leakage in cabinet.
 - b. Liner materials applied in this location shall have air-stream surface coated with a temperature-resistant coating or faced with a plain or coated fibrous mat or fabric depending on service air velocity.
 - c. Liner Adhesive: Comply with ASTM C916, Type I.
- D. Curb Dimensions: Height of **14 inches**.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of RTUs.
- B. Examine roughing-in for RTUs to verify actual locations of piping and duct connections before equipment installation.
- C. Examine roofs for suitable conditions where RTUs will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Roof Curb: Install on roof structure, level and secure, according to **AHRI Guideline B**. Install RTUs on curbs and coordinate roof penetrations and flashing with roof construction specified in Section 077200 "Roof Accessories." Secure RTUs to upper curb rail, and secure curb base to roof framing or concrete base with anchor bolts.
- B. Unit Support Install unit level on structural curbs. Coordinate wall penetrations and flashing with wall construction. Secure RTUs to structural support with anchor bolts.

C. Equipment Mounting:

1. Comply with requirements for vibration isolation and wind control devices specified in Section 230548 "Vibration and Wind Controls for HVAC."

3.03 CONNECTIONS

A. Install condensate drain, minimum connection size, with trap and indirect connection to nearest roof drain or area drain.

B. Install piping adjacent to RTUs to allow service and maintenance.

1. Gas Piping: Comply with applicable requirements in Section 22200 "Natural Gas Piping." Connect gas piping to burner, full size of gas train inlet, and connect with union and shutoff valve with sufficient clearance for burner removal and service.

C. Duct installation requirements are specified in other HVAC Sections. Drawings indicate the general arrangement of ducts. The following are specific connection requirements:

1. Install ducts to termination at top of roof curb.
2. Remove roof decking only as required for passage of ducts. Do not cut out decking under entire roof curb.
3. Connect supply ducts to RTUs with flexible duct connectors specified in Section 233300 "Air Duct Accessories."
4. Install return-air duct continuously through roof structure.

D. Connect electrical wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

E. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

F. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

1. Nameplate shall be laminated acrylic or melamine plastic signs as specified in Section 260553 "Identification for Electrical Systems."
2. Locate nameplate where easily visible.

3.04 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

B. RTU will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.05 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
- B. Complete installation and startup checks according to manufacturer's written instructions.
 - 1. Inspect for visible damage to unit casing.
 - 2. Inspect for visible damage to furnace combustion chamber.
 - 3. Inspect for visible damage to compressor, coils, and fans.
 - 4. Inspect internal insulation.
 - 5. Verify that labels are clearly visible.
 - 6. Verify that clearances have been provided for servicing.
 - 7. Verify that controls are connected and operable.
 - 8. Verify that filters are installed.
 - 9. Clean condenser coil and inspect for construction debris.
 - 10. Clean furnace flue and inspect for construction debris.
 - 11. Connect and purge gas line.
 - 12. Remove packing from vibration isolators.
 - 13. Inspect operation of barometric relief dampers.
 - 14. Verify lubrication on fan and motor bearings.
 - 15. Inspect fan-wheel rotation for movement in correct direction without vibration and binding.
 - 16. Adjust fan belts to proper alignment and tension.
 - 17. Start unit according to manufacturer's written instructions.
 - a. Start refrigeration system.
 - b. Do not operate below recommended low-ambient temperature.
 - c. Complete startup sheets and attach copy with Contractor's startup report.
 - 18. Inspect and record performance of interlocks and protective devices; verify sequences.
 - 19. Operate unit for an initial period as recommended or required by manufacturer.
 - 20. Perform the following operations for both minimum and maximum firing.
 - a. Measure gas pressure on manifold.

- b. Inspect operation of power vents.
 - c. Measure combustion-air temperature at inlet to combustion chamber.
 - d. Measure flue-gas temperature at furnace discharge.
 - e. Perform flue-gas analysis. Measure and record flue-gas carbon dioxide and oxygen concentration.
 - f. Measure supply-air temperature and volume when burner is at maximum firing rate and when burner is off. Calculate useful heat to supply air.
21. Calibrate thermostats.
 22. Adjust and inspect high-temperature limits.
 23. Inspect outdoor-air dampers for proper stroke and interlock with return-air dampers.
 24. Start refrigeration system and measure and record the following when ambient is a minimum of **15 deg F** above return-air temperature:
 - a. Coil leaving-air, dry- and wet-bulb temperatures.
 - b. Coil entering-air, dry- and wet-bulb temperatures.
 - c. Outdoor-air, dry-bulb temperature.
 - d. Outdoor-air-coil, discharge-air, dry-bulb temperature.
 25. Inspect controls for correct sequencing of heating, mixing dampers, refrigeration, and normal and emergency shutdown.
 26. Measure and record the following minimum and maximum airflows. Plot fan volumes on fan curve.
 - a. Supply-air volume.
 - b. Return-air volume.
 - c. Relief-air volume.
 - d. Outdoor-air intake volume.
 27. Simulate maximum cooling demand and inspect the following:
 - a. Compressor refrigerant suction and hot-gas pressures.
 - b. Short circuiting of air through condenser coil or from condenser fans to outdoor-air intake.
 28. Verify operation of remote panel including pilot-light operation and failure modes. Inspect the following:
 - a. High-temperature limit on gas-fired heat exchanger.
 - b. Low-temperature safety operation.
 - c. Filter high-pressure differential alarm.

- d. Economizer to minimum outdoor-air changeover.
 - e. Relief-air fan operation.
 - f. Smoke and firestat alarms.
29. After startup and performance testing and prior to Substantial Completion, replace existing filters with new filters.

3.06 CLEANING AND ADJUSTING

- A. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.
- B. After completing system installation and testing, adjusting, and balancing RTU and air-distribution systems, clean filter housings and install new filters.

3.07 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain RTUs.

END OF SECTION 237416

SECTION 274116 – AUDIO VISUAL SYSTEMS

PART 1 GENERAL

1.1. SUMMARY

- A. This document covers the general requirements for the installation of audiovisual (AV) systems at Lamar University Welcome Center in Beaumont, Texas.

1.2. RELATED DOCUMENTS

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

1.3. CODES

- A. Execute work in accordance with best AV system installation practices, National Electrical Code, and applicable state and local codes.

1.4. REGULATIONS

- A. Comply with terms and conditions of Americans with Disabilities Act, especially regarding provisions for hearing impaired and wheelchair access in control areas.

1.5. SUBMITTALS

A. General

- 1. Refer to Division 1.
- 2. Submit in quantities, format and timetable as required by General Conditions.

B. Product Data Binders

- 1. Minimum number of Sets: four (4).
- 2. Timetable
 - a. Submit within thirty (30) days after award of contract.
 - b. Submit simultaneously with Shop Drawings.
 - c. Allow minimum of ten (10) business days for review. All sets minus one (1) will be returned with review comments. If a resubmit is required, resubmit total quantity of complete sets. If second resubmit is required, Contractor shall reimburse Owner for expenses incurred during additional review process.
 - d. Review and approval of Product Data is required before equipment purchase and installation.
 - e. Bind product data sheets together either in GBC or 3-ring type binders.

C. Shop Drawings

- 1. Minimum Number of Sets: four (4).
- 2. Timetable
 - a. Submit within thirty (30) days after award of contract.
 - b. Submit simultaneously with Product Data Binders.
 - c. Allow minimum of ten (10) business days for review. All sets minus one (1) will be returned with review comments. If a resubmit is required, resubmit total quantity of complete sets. If second resubmit is required, Contract shall reimburse Owner for expenses incurred during additional review process.
- 3. Description:
 - a. Shop Drawings shall be used for coordination between trades and updated as final record drawings.
 - b. Bind all Shop Drawings together to form set. Loose drawings will not be accepted.

- c. Each drawing shall include: Project, Building, Location, Contractor Name, Architect, AV Consultant, Date and Revision Number.
 - d. Number and title each drawing in logical manner as a set.
 - e. Include cover sheet with listing of all drawings included in bound set.
 - f. Ensure that labeling on Shop Drawings match labeling on equipment.
 - g. Minimum Scale:
 - 1) Floor Plans: 1/8 inch = 1 foot.
 - 2) Rack Elevations: 1-½ inch = 1 foot.
 - 3) Plate/Panel Details: 6 inches = 1 foot.
 - 4) Loudspeaker Details: 1 inch = 1 foot.
 - h. Include as a minimum:
 - 1) Floor plans indicating locations of all AV devices, vertical risers, pull boxes, and exposed wiring. Include Device ID (PRJ, SCREEN, FRK, FB, AVP, etc., as referenced in design contract documents), as appropriate for projectors, screens, racks, floor boxes, AV plates in walls, etc.
 - 2) Schematic diagram showing all primary and secondary devices, interconnectivity and signal flow.
 - 3) Plate details showing size, material, finish, connectors, engraving, etc.
 - 4) Mounting detail drawings of loudspeakers, racks, and overhead equipment. Hire services of professional structural engineer, licensed by the appropriate governing authority, to review shop drawings, building structural drawings, and any existing structures from which equipment is to be suspended. Include Structural Engineer's stamped report with shop drawing submittal. Report shall include:
 - i. Itemization of items reviewed by the Structural Engineer.
 - j. Confirmation that proposed methods of suspending equipment as shown on the shop drawings conform to required safety factors.
 - k. Confirmation that building structure from which equipment is to be suspended will support equipment including required safety factors.
 - 1) Rack elevations.
 - 2) Complete schematic diagram. One-line diagram with detailed descriptions of product inputs and outputs is acceptable. Include terminal strip details and cable label information. If wiring diagram spans more than three (3) sheets, additionally provide simplified block diagram of entire system on one (1) sheet.
 - 3) Electrical power wiring diagram. Include circuit, switching, and control details.
 - 4) Wiring diagram of grounding and shielding scheme.
 - 5) Drawings for custom-fabricated items (i.e., plates, panels, cables, and assemblies).
 - 6) General construction drawings necessary for completion of work.
- D. Operation and Maintenance Manuals
- 1. Minimum number of Sets: four (4).
 - 2. Bind Operation and Maintenance Manuals using either GBC or 3-ring binders.
 - 3. Format and Minimum Information below:
 - a. Section 1 - System Operation.
 - 1) Introduction/overview to system components and their functions and locations. Include a brief listing of basic system functions.
 - 2) Complete but simple system operating instructions to accomplish basic system functions, written for non-technical personnel.
 - 3) Certificate indicating names of Owner personnel trained by AV Contactor, date of training, name of AV Contractor representative that provided training, and name of project.
 - b. Section 2 - System Documentation.
 - 1) Simplified system one-line schematic diagram showing changes made

- during construction.
 - 2) Complete inventory of system components including serial numbers. Identify location (equipment rack, over stage, stored in control room, etc.) of each component.
 - 3) Cable and terminal strip documentation including cable numbers, functions, originating locations, terminating locations, and signal levels.
 - 4) All Shop Drawings corrected to reflect as-built conditions.
 - 5) Other data and drawings required during construction.
 - 6) Initial Tests and Adjustments data.
 - 7) Final Tests and Adjustments data.
 - 8) CD-ROM discs including all utilized manufacturer's software and saved copies of software configurations (configurations as established during Final Tests and Adjustments).
 - c. Section 3 - Manufacturer's Documentation.
 - 1) For each equipment model at no additional costs to Owner, even if manufacturer does not include costs of such documentation with purchase of equipment item.
 - 2) Manufacturer's Product Data.
 - 3) Operating instructions.
 - 4) Installation instructions.
 - 5) Service information.
 - 6) Schematic diagrams.
 - 7) Replacement parts list.
 - d. Section 4 - Maintenance Information.
 - 1) Preventive maintenance schedule letter clearly stating target dates of six month and end-of-warranty preventative maintenance inspections, and list of maintenance tasks performed.
 - 2) Maintenance instructions including manufacturer's recommended maintenance, recommended maintenance schedule and information concerning proper inspection, testing, and replacement of components.
 - 3) Troubleshooting information complete with instructions for procedures during equipment failure.
 - e. Section 5 – Warranty Information
 - 1) System warranty letter.
 - 4. Provide three (3) sets on CD-R disc that include all material in Operation and Maintenance Manuals in PDF format except for copyrighted material.
 - 5. Submit one (1) set of Operation and Maintenance Manuals at least ten (10) days before Final Tests and Adjustments procedures (minus data from Final Tests and Adjustments). This set will be reviewed by Owner and returned to Contractor. Re-submit after Final Tests and Adjustments and include data. NOTE: Do not schedule Final Tests and Adjustments or perform training of Owner personnel before submitting Operation and Maintenance Manual.
 - 6. Submit remaining number of complete manuals as required by General Conditions within ten (10) days after return of reviewed set(s). Include Final Tests and Adjustment data, warranty period letter, and any other data not included in first submission.
- E. Samples
- 1. Request for Samples - Upon request, furnish samples (at no additional cost) to Owner and/or General Contractor of submitted items proposed as substitutes for specified items. Products will be reviewed to determine if proposed substitute items meet required function and quality.
 - 2. Product Tests
 - a. Products submitted as samples may require testing by independent laboratory. Testing at expense of Contractor.
 - b. Obtain written approval of tested products before incorporating into system.

1.6. QUALITY ASSURANCE

A. AV Contractor Qualifications

1. Be established AV System Contractor, regularly engaged in furnishing and installing AV systems. NOTE: Electrical or general contracting firms responsible for completion of this work, but not meeting above requirement, shall employ services of approved AV Contractor as subcontractor to perform work described herein.
2. Be experienced in installations of similar size and scope within last five (5) years. Submit list of four (4) (minimum) installed jobs of similar magnitude, completed within last five years. For verification, submit complete information, including project name, project address, contact person, daytime telephone number plus month and year of project completion. At Owner's request, accompany Owner or Owner's representative on visit to any or all example completed projects submitted.
3. Be Authorized Dealer for all major lines of equipment listed in Part 2 (Biamp, Sony, Crown, Sharp, Crestron, etc.) Must have at least one permanent staff member who is factory trained in the installation and maintenance of each major product line offered.
4. Employ personnel (at all levels of work) experienced in projects of similar size and scope. Provide list of key personnel to be responsible for each of the following aspects of work: Project Management, Technical Documentation, Control System programming, DSP programming and Leadership of Field Work (one who is present for all field work). For each identified employee, indicate number of years employed by contractor, number of years' experience in assigned responsibilities, and list of previously completed projects where similar responsibilities were required.
5. Project manager assigned to this project must have a minimum of five (5) years' experience in installing and integrating AV systems of similar scale. Project Manager shall also have either an INFOCOMM CTS-I or CTS-D certification.

PART 2 PRODUCTS

1.1. GUIDELINES

- A. All active AV equipment shall be furnished by AV Contractor selected by the Owner. All active electronics shall be contractor furnished, contractor installed (CFCI).
- B. Infrastructure Products – All conduits, basket tray/cable tray, pull boxes and associated parts required for infrastructure shall be installed by the electrical contractor unless specifically excluded in these specifications or drawings.
- C. Performance - Regardless of completeness of descriptive paragraphs herein, each device shall meet its manufacturer's published specifications. Verify performance.
- D. Contract Documents - Drawings and specifications are to be used in conjunction with one another and to supplement one another. In general, the specifications determine the nature and quality of the materials, and the drawings establish the quantities, details, and give characteristics of performance that should be adhered to in the installation of the AV system components. If there is an apparent conflict between the drawings and specifications, the items with the greater quantity or quality shall be provided and installed. Clarification with the owner about these items shall be made prior to the ordering and installation.
- E. Quantities – All quantities are indicated on AV drawings or in Part 2 AV Products list. Confirm quantities on final Contract Documents. If Contract Documents do not include quantities necessary to deliver complete working system, provide notification of disparity, and install required quantity of devices for complete working system.
- F. Small Parts - Systems are described in terms of major products. Even if not specifically mentioned, provide and install patch cables, connectors, hardware, converters, power supplies, labels, terminals, mounting accessories etc. necessary for complete and working system meeting design intent of specifications.

- G. Balanced Lines – Unless specifically directed otherwise, wire all line and microphone level circuits as balanced with respect to signal ground. For products without balanced inputs or outputs, provide high quality balancing transformers with proper level, shielding, and impedance characteristics. Assure all audio levels arriving and leaving matrix and routing switchers are equal to the manufacturer’s recommended input audio level. If required, use Radio Design Labs, Inc. products or equivalent for level matching.
- H. Keys - Provide five (5) sets of keys for any AV system product requiring keys.
- I. Condition – Provide and install products listed in this section in factory new condition, conforming to applicable provisions of American National Standards Institute.
- J. Designations - Each major product item is given unique designation (such as MIX1 for mixer number 1). The product designations are unique in this section only and may be repeated in other specification sections.
- K. Security Screws - Use Middle Atlantic HSK Guardian Series button-head screws and bits to secure rack components, LCD mounts, Projector mounts and any other location deemed necessary by Owner. Use nylon washers (not provided by Bryce) to protect equipment surfaces. Account for appropriate tip wear when ordering quantity and do not use a bit beyond the manufacturer’s recommendations. Provide ten (10) additional unused driver bits and deliver to the customer after completion.
- L. AV Electrical Power - Ensure that “Star” ground configuration is properly implemented by the Electrical Contractor. Ensure that ground wires from each outlet are isolated from conduit, neutrals, and each other and are each home-run back to the dedicated breaker panel for AV systems.
- M. Wireless Microphones - Coordinate frequency selection with other radio-frequency sources in the area and with manufacturer’s recommendations.
- N. Control System Programming:
 - 1. Program each panel to provide simple, intuitive control of all basic AV functions including: per zone program and speech volume levels, video source and destination routing, AV system power, media player transport functions and CATV tuner control (including channel guide, navigation, last channel, channel select (up, down and manual input) and channel presets).
 - 2. Utilize Infocomm International’s “Dashboard for Controls” or current industry standard as concept for touch panel layout unless directed otherwise by Owner.
 - 3. Control systems in all meeting and presentation spaces shall be integrated with building window shades and lighting systems allowing the Owner to manage and control these systems as part of the AV system presentation.
 - 4. AV management software shall be installed on Owner furnished computer(s) with adequate specifications per manufacturer’s recommendations.
 - 5. Provide layout of each and every touch panel and hard-button panel pages in the product data submittal for approval by Owner.
 - 6. Provide web-control for each touch panel in AV system. Include page tracking, and track current button feedback between touch panel and web-control panel.
 - 7. Staff member certified by control system manufacturer shall program control system. Control programming must be done by in-house personnel. Programming cannot be subbed out to another contractor or individual.
 - 8. After programming is approved, all control system code and programming, including touch panel code and graphics, will become property of Owner. AV Contractor shall provide Owner both raw and compiled code on CD-R disc.
- O. Audio System Programming - Owner shall coordinate layout and logical branching of DSP audio system. Include screen layout and menu branching drawings in AV submittal. After AV system is approved, all audio control system code and programming will become property of Owner. AV Contractor shall provide Owner both raw and compiled code on CD-R disc.

- P. EDID Configuration – The variety of resolutions of laptops and other computer devices that may be connected to these systems is unknown. Set preferred EDID settings to 1920x1080, 60Hz, 2-channel audio.
- Q. AV Racks:
1. Provide blank faceplate in any area marked BLANK in drawings.
 2. Provide shelf for mounting of any device for which rack mount kit is not available.
 3. Provide one Panelcrafters DATCO-XXXXX-RHIM-01 designer/integrator information plate or approved alternate per rack. Install information plate at the top of each rack unless 1RU space is not available. Contact [Panelcrafters](#) sales department to add AV Contractor graphic to the “integrator” section (approximately 8.5” x 1.75” of the right-hand side). All alternates must include AV Consultant graphic. Submit to AV designer for approval of final plate design prior to purchasing and installation.
- R. AV Floor Boxes and Poke-thrus:
1. Clean floor boxes and poke-thrus of all dust and debris prior to installation of any active or connectorized plate.
 2. Any floor box or poke-thru with active or connectorized AV plates found to have any dust, debris or water in bottom of box are subject to replacement of all plates and components. A re-test of all associated components must be completed.
 3. Provide blank plates for all unused compartments in the AV floor boxes and poke-thrus.
- S. AV Plates
1. The project standard plate color is white unless the plate is mounted on a wood or stone wall in which case it is to be stainless steel.
- T. AV Design Bid & Substitutions:
1. System design is around products listed in Part 2. Intent of product specification is to provide standard of quality and function for installed materials. Certain performance specifications are given to clarify job requirements.
 2. Bid AV system with products specified in section below unless noted otherwise from Consultant.
 3. No substitutions will be allowed without prior approval from Consultant specific to proposed manufacturer and model numbers.
 4. Equipment listed in Part 2 is based on performance criteria to meet Owner design requirements.
 5. All requested substitutions need to meet or exceed performance of devices listed in Part 2. For each request provide manufacturer’s published specifications to verify performance and explain functional and cost impact.
 6. Evaluation and approval of substitution requests will be performed by Consultant.

1.2. ROOM DESCRIPTIONS

- A. Theater/Gallery: the Theater will have a ceiling mounted video projector for showing presentations to a seated audience with overflow seating in the adjacent Galley space. An owner provided computer and wired input at the wall will be provided for content input sources. A wireless presentation system for display of participants’ devices (e.g. laptops or tablets) will also be provided. A wired input at the wall also be provided. Program audio will be accommodated via ceiling loudspeakers. A wireless microphone is provided for speech reinforcement. An installed assistive listening system will be included in the system per ADA requirements. Control will be handled through a wall mounted touchscreen control panel. Equipment will reside in a portable equipment rack in ventilated closet space.
- B. Digital Signage: The Lobby will have a wall mounted flat panel display for digital signage. A small form factor, IP addressable PC will be located at each panel for pushing content from an owner provided signage system.

1.3. AV PRODUCTS

- A. The following are major active and infrastructure products for this project.
1. AMP – Power Amplifier
 - a. Type 1 – Crestron AMP-150-70 single channel 50watt amplifier with rack mount kit
 - b. Type 1 – Extron MPA 601-70V single channel 60watt amplifier with rack mount kit
 2. AVP – AV Input Plate
 - a. Type 1 – Custom one-gang AV plate with one (1) HDMI transmitter (DMT)
 - b. Type MRK - Custom 5-gang plate with five (5) decora style cutouts each with a brush pass-through
 3. AVT – Tuner
 - a. Contemporary Research 232-ATSC 4 HDTV Tuner
 - 1) Include manufacturer recommended rack mount kit
 4. DMR – Digital Twisted Pair Receiver
 - a. Crestron DM-RMC-4K-SCALER-C twisted pair receiver
 - 1) Set scaled output to the native resolution of the receiving display device(s)
 - 2) Power from switcher or PW-2412WU
 - b. Extron DTP R HWP 4K 231 D twisted pair receiver
 5. DMT – Digital Twisted Pair Transmitter
 - a. Crestron DM-TX-4K-100-C-1G twisted pair transmitter
 - 1) Power from switcher or PW-240WUL
 - 2) Include appropriate decora cover plate to fit mounting condition
 - b. Extron DTP T HWP 4K 231 D twisted pair transmitter
 6. DSPC – Digital Signage PC
 - a. Visix Mini Media Player model AXIS-TV-CPA
 7. FPD - Flat Panel Display
 - a. Type DS – size to be 46” to 50” diagonal
 - 1) Panasonic TH-48LFE8U, 48” LED display or equal by Samsung or LG
 - 2) Include Chief Manufacturing LSM1U wall mount
 8. LA - Listening Assist System
 - a. Type 1 - Williams Sound FM ADA KIT 1 assistive listening system
 - 1) Extend antenna as necessary for full coverage within each system’s corresponding room.
 - 2) Provide two (2) additional PPA R37 receivers with EAR 013 earbuds as needed to meet ADA requirements.
 - b. Type 1 – Listen Technologies LT-800-072-P1 FM assistive listening system
 - 1) Extend antenna as necessary for full coverage within each system’s corresponding room.
 - 2) Provide four (4) LR-300-072 receivers with earbuds as needed to meet ADA requirements.
 9. MRK – Millwork Rack
 - a. Type 1 - Middle Atlantic RFR-1628 furniture rack
 - 1) Include vent and blank panels as shown in the AVS drawings
 - 2) Coordinate finish with architect
 10. PRJ - Video Projector
 - a. Type 1 – Panasonic PT-RZ770 with appropriate zoom lens for throw distance
 - 1) 7000 lumens; WUXGA resolution
 - 2) Include Chief Manufacturing RPMAU universal projector mount with extension column sized as required for image height.
 - 3) Include Model CB-12P ceiling plenum box by FSR Inc.
 11. PSW – Presentation Switcher
 - a. Type 1 – Crestron DMPS3-4K-250-C presentation switcher with integrated AirMedia
 - 1) Use Extron Electronics ASA 131 passive audio summing adapters for incoming/outgoing balanced stereo audio signals.
 - 2) Include RS-232 extenders for cable runs over 50 feet.
 - 3) Include Crestron PW-4818DU power supply
 - b. Type 1 – Extron IN1608 xi IPCP MA 70 presentation switcher

- 1) Use Extron Electronics ASA 131 passive audio summing adapters for incoming/outgoing balanced stereo audio signals.
- 2) Include RS-232 extenders for cable runs over 50 feet.
12. PWR - Power Management
 - a. Type 1 - Middle Atlantic PDC-915R-6 power supply
13. S – Loudspeaker
 - a. Tannoy CVS 8 with back can and grill
 - 1) Tap at 7.5 watts.
 - 2) Follow manufacturer's guidelines to paint speakers to match architect provided color sample
14. SW – Speaker Switch
 - a. Emtech Electronics MSC-L or contractor fabricated SPDT switch with decora style cover plate
15. WCP – Wall Mounted Control Panel
 - a. Type 1 – Crestron TSW-760 7” wall mounted control panel
 - 1) Include Crestron PWE-4803RU PoE injector connected to building LAN as required.
 - 2) Include Crestron TSW-UMB-60 universal wall mount kit
 - 3) Coordinate color with architect
 - b. Type 1 – Extron TLP Pro 725M 7” wall mounted control panel
 - 1) Include Extron RWM 2 recessed wall mount kit
 - 2) Coordinate color with architect
16. WMIC – Wireless Microphone
 - a. Type 1 - Shure QLXD124/85 combo lavalier/handheld wireless system
 - 1) Extend antenna as necessary for full coverage within each system's corresponding room
17. WPS – Wireless Presentation System
 - a. Extron ShareLink 200 N wireless presentation system
 - 1) Include Middle Atlantic RSH4A2S custom rack shelf
- B. Interconnect Wiring – All AV cables will be plenum rated per NEC.
 1. Analog Audio Plenum Rated Cable - West Penn 25291, or similar.
 2. Digital Audio Plenum Rated Cable: Belden 1801B plenum-rated AES/EBU compliant equivalent.
 3. Analog Composite Video Plenum Rated Cable: West Penn 25806 or Belden 89120.
 4. RGBHV Plenum Rated Cable: Belden 1283S5, or West Penn 258195.
 5. Control Plenum Rated Cable: West Penn D25350.
 6. Loudspeaker Plenum Rated Cable: West Penn 25226B & 25227B.
 7. Shielded Cat7a Cable: Crestron DM-CBL-ULTRA
 8. Fiber 62.5 µm Cable: Corning 62.5/125.
 9. Interface/Adapter Cables: AMX or Extron Certified Cables
 10. HDMI Interconnect Cables: Extron Pro Series HDMI Cables
- C. Connectors – All AV (including microphone) connectors shall be made by Canare or Neutrik. Connectors shall be of the quantity and type as required for proper and durable operation, and signal transmission of the electrical characteristics for associated circuitry.
 1. Microphone connectors: 3-conductor XLR AES/EBU compliant (for microphones in tables/lecterns, use Neutrik RF shielded connectors).
 2. Control panels: XLR type with number of conductors as required.
 3. Line level and left/right audio connectors: tip/ring/sleeve 1/4” phone jacks with insulated bushings.
 4. Composite video and RGBHV connectors: BNC dual crimp true 75 ohm BCP-C.
 5. BNC shall be made by ADC or Kings and be HD-SDI compliant to 3 GHz.
 6. Fiber: UniCam LC connectors.
 7. Loudspeaker shall be Neutrik Speakon type.
 8. Provide strain relief for each and every connector.

PART 3 EXECUTION

1.1. INSTALLATION

A. General Guidelines

1. Quality of Work - Perform labor to accepted industry standards and state and local codes to accomplish complete and working system.
2. Material and Labor - Provide specified products and other incidental materials, appliances, tools, and transportation required for complete and functioning systems. Provide personnel to perform labor who are skilled in techniques and can demonstrate technical knowledge AV infrastructure system installations.
3. Documents at Job Site - Keep following documents at job site during entire construction period:
 - a. Complete Specifications and Drawings.
 - b. Approved Shop Drawings.
 - c. Approved Product Data.
 - d. Progress Set of Project Record Documents.
4. Mounting - Mount equipment and enclosures plumb and square. Ensure that permanently installed equipment is firmly and safely held in place. Design equipment supports to support loads imposed with project safety factor of five (5) or greater. For devices hung overhead, obtain review by Structural Engineer licensed by the appropriate governing authority prior to installation.
5. Dimension Verification - Verify dimensions and space requirements to assure that proper mounting, clearance, and maintenance access space is available for system components.
6. Clean-Up - Leave project clean each day. Place debris where designated by General Contractor. Debris includes but not limited to: solder splatter, cable ends, stripped insulation, spent crimp connectors, gypsum board and ceiling tile dust, and product wrappings and cartons. After completion of installation, thoroughly clean areas worked, including non-visible areas such as equipment rack interiors, rack top panels, and inside lockable floor and wall boxes.
7. Coordinate installation of AV infrastructure and equipment with other trades in order to follow project schedule.
8. Maintain any licensing required by the appropriate governing authority to install and terminate low voltage systems.

B. Labeling

1. Equipment Labels - AV Contractor shall provide engraved lamicooid labels on front and rear of rack-mounted equipment. Mount labels plumb and square. Include schematic reference design, item name, and system or area controlled by labeled component. On program preamps and mixers, provide label for each input indicating which source is controlled by labeled channel. Unless otherwise indicated, provide permanently-mounted black labels engraved with 1/8-inch white block characters. Handwritten, self-laminating, or embossed plastic (Dymo) labels are not acceptable. Provide labels for major equipment with two (2) lines (minimum) of engraving, coded as follows:
 - a. Line 1: Generic name of device, such as MIXER AMPLIFIER.
 - b. Line 2: Schematic designation of device, such as AV-MSW-1.
2. Control Labels – AV Contractor shall provide engraved label over each user-operated control that describes the function or purpose of control. Provide label of proper size to fit available space.
3. Terminal Strip Labels - AV Contractor shall label each terminal strip with unique identification code in addition to numerical label (Cinch MS series) for each terminal. Show terminal strip codes on system schematic drawings included with Project Record Documents.
4. Rear Equipment Labels - AV Contractor shall provide adhesive label on rear of equipment where cables attach, to indicate designation of cable connected at each point.

5. Cable and Wire Labels - Label cables and wiring logically, legibly and permanently for easy identification. Labels on cables shall be adhesive strip type, covered with clear heat shrink tubing. Factory stamped heat shrink tubing may be used. Hand-written or self-laminating type labels are not acceptable.
 6. Cable Label Codes and Locations - Label each cable with unique alpha-numeric code. Locate cable designation at start and end of each cable run, within three (3) inches of termination point. For cable runs that have intermediate splice points, label cable with same designation throughout, with additional suffix to indicate each segment of run. Provide cable designation codes to schematic drawings included with Project Record Documents and Operation and Maintenance Manuals.
- C. Power and Grounding
1. Power Coordination – Coordinate final connection of power and ground wiring to rack. Electrical contractor will provide power to audio visual systems. Before installation, verify load requirements for systems as accepted.
 2. Bus Bars - Install 1-inch by ¼-inch copper ground bus bar, top to bottom in floor mounted AV racks. Ground and bond equipment chassis of each rack-mounted component without three-pin grounding plug to bus bars with #12 AWG insulated green wire using 6-32 or larger nuts, bolts, lock-washers, and appropriate NEMA connectors. Electrical Contractor (Division 16) shall provide and connect #4 AWG green insulated wire from Bus Bars to ground point in AV technical electrical panel.
- D. Equipment Racks
1. Ventilation - Provide ventilation adequate to keep temperature in rack below 85 degrees Fahrenheit. Use “whisper” type ventilation fans in racks, adjusted to come on when temperature in rack rises above 85 degrees Fahrenheit, only if adequate cooling cannot be provided by Owner.
- E. Wiring
1. Wiring Standards - Execute wiring in strict adherence to best AV engineering practices.
 2. Field Connection Devices - Connect cable to active components through screw terminal connections and spade lugs when appropriate. For BNC connections use three-piece, dual crimp BNC properly sized for cable with insulating bushings. Wire nut or “Skotchlock” connectors are not acceptable. Do not wrap audio cable splices or connections with adhesive backed tape. Punch connectors or telephone-style punch blocks are not acceptable anywhere in the installation unless specifically authorized by Owner.
 3. Run cable in ceiling plenums neatly parallel to building walls, supported every three feet to structure with plenum rated ties.
 4. Raceways - Run vertical wiring inside rack in Panduit (or equivalent) plastic raceways with snap-on covers, sized to allow at least 50% future wiring. Mount raceways on full length ¾-inch flat black plywood backboards, attached to rack sides. If between-rack wiring chases are provided, Panduit raceways are not required. Horizontal wiring in rack shall be neatly tied in manageable bundles with cable lengths cut to minimize excess cable slack, but still allow for service and testing. Provide horizontal support bars if cable bundles sag. Individually bundle excess AC power cable away from rack mounted equipment with plastic cable ties. Electrical tape and adhesive backed cable tie anchors are not acceptable.
 5. Accessibility - Ensure that wiring and connections are completely visible and labeled in rack. Mount termination resistors, if required, on terminal strips, fully visible and not concealed within equipment or connectors.
 6. Loudspeaker Polarity - Connect loudspeakers electrically in phase, using same wire color for loudspeaker wiring throughout project.
 7. Physical Damage Prevention - Take necessary precautions to prevent physical damage to cables and equipment. Damaged cables or equipment will not be accepted. Separate, organize, and route cables to restrict channel crosstalk and feedback oscillation.

8. Racks - Looking into the rack from the rear, locate AC power, control, data and speaker wiring on the left; line level audio, control, video, and RF wiring on the right. Keep several inches of space between power cables and other signals.
9. Hum Prevention - Ensure that electromagnetic and electrostatic hum is at inaudible levels. For line level signals, float cable shields at the output of the source device. Do not cut or remove shield conductors; fold back unconnected shields over cable jacket and cover with clear heat-shrink tubing. Do not obstruct cable labels.
10. Other Connections - Make connections using rosin core solder or approved mechanical connectors. Where spade lugs are used, crimp properly with ratchet type crimping tool. Solder spade lugs mounted on #22 AWG or smaller cable after crimping.

1.2. STORAGE AND HANDLING

- A. Power up any electronic equipment to ensure its proper functioning before its arrival onsite.
- B. Ensure that materials (especially electronic and electro-acoustic devices) are protected against physical, environmental, and electronic damage until final acceptance by Owner.
- C. Schedule delivery to minimize delays in the project.
- D. Provide storage protection against temperature and humidity extremes, theft, vandalism, physical damage, and environmental damage.

1.3. WARRANTY

- A. Refer to Division 1.
- B. Warranty - Submit letter providing warranty covering labor and materials supplied under this contract. Bind in Operation and Maintenance Manuals. Terms as described in General Conditions. Minimum terms as follows:
 1. System - Systems shall be free of manufacturing or installation defects for a minimum period of one (1) year from the date of final acceptance. Clearly designate begin and end dates of system warranty period.
 2. Parts and Labor - Provide parts and labor to repair defects in materials and workmanship during system warranty period.
 3. Response Time - Within system warranty period, provide initial on-site service response within one (1) business day of service call. Provide resolution to any system defects within 72 hours or within 48 hours of receipt of repaired or replaced product from manufacturer.
 4. Replacement Products - If any item must be removed for repair during system warranty period, provide replacement item of similar quality at no charge.
 5. Repair Limit - Do not repair any piece of equipment found defective during installation or system warranty period more than two (2) times. After second repair, replace defective item with similar approved item at no additional cost to Owner.
 6. Extended Manufacturer's Warranties – Identify products with manufacturer's warranties extending beyond one (1) year. Provide terms and conditions of such warranties.
 7. Service Personnel Information - Provide name(s) and telephone number(s) of service personnel to be contacted regarding repair and maintenance.
- C. Extended Warranty - Provide cost to extend complete AV system warranty from one (1) year to three (3) years. Included a list of all provided services including maintenance schedules.

1.4. INITIAL TESTS

- A. Purpose – These tests are to ensure that the AV system is installed and functioning as specified, and to ensure the system is ready for Final Tests and Adjustments (described later).
- B. Testing Standards – Perform testing in accordance with ANSI standards.

- C. Inspection - Verify prior to beginning actual tests and adjustments on systems:
 - 1. Proper grounding of all electronic components (through third prong of power connector or separate connection between component chassis and ground bus bar).
 - 2. Cables dressed, routed, and labeled, connected with proper polarity.
 - 3. Insulation and shrink tubing in place.
 - 4. Dust, debris, solder splatter, etc. removed.
 - 5. Proper frequency settings (or modules) at crossovers and controllers.
 - 6. All equalizer bands and tone controls set for flat frequency response.
 - 7. Survey temperatures of each piece of equipment after four (4) hours use (minimum). Note and report any hot equipment.
- D. Electrical Power Quality - While all sound and AV system components are unplugged from electrical power outlets, AV Contractor shall turn on power to outlets, and confirm proper voltages at each outlet across the following pairs of terminals: hot and neutral, hot and ground, and neutral and ground (zero volts across neutral and ground). AV Contractor to document measurements.
- E. General Function Tests - Test each piece of equipment to ensure that it performs its intended function. Include all portable equipment in tests. Intent of initial tests is to verify complete, functioning system before Final Tests and Adjustments. Correct problems found during initial testing before beginning Final Tests and Adjustments. Document whether all pieces performed intended functions; note any unresolved malfunctions.
- F. Initial Tests and Adjustments Data - Submit written report of Initial Tests and Adjustments data upon completion to Owner. Include printed name(s) of technician(s) performing tests, date(s) and time(s) of tests, model and serial numbers of test equipment, results of each initial test, descriptions of problems encountered and their solutions, and statement that system is ready for Final Tests and Adjustments. Initial Tests and Adjustments Data to include signatures of technician(s) performing tests.

1.5. FINAL TESTS AND ADJUSTMENTS

- A. Purpose – These tests are to be witnessed by AV Consultant to determine if system is complete and functioning as designed and specified. Also, AV Consultant will perform listening and viewing tests and witness adjustments of all images for optimum clarity.
- B. Timetable - Coordinate with Owner, General Contractor, and AV Consultant to schedule Final Tests and Adjustments after submittal of Initial Tests and Adjustments data.
- C. System and Site Conditions – AV Consultant will witness Final Tests and Adjustments. Have systems fully functional and ready for observation and testing upon AV Consultant's arrival. Coordinate with all trades for quiet conditions throughout the listening areas and for the duration of the test schedule. If upon AV Consultant's arrival, systems do not meet criteria, site is not sufficiently quiet, or if Owner or AV Consultant is required to make additional trips to job site to witness additional testing or perform additional reviews of installed equipment, Contractor shall reimburse Owner for labor and expenses incurred by having incurred costs deducted from payments to contractor.
- D. Test Labor - Provide technician familiar with this project's AV systems and operation of test equipment to perform testing. Provide additional technician to assist in the tests and to perform troubleshooting, repairs, and adjustments. Include labor for these technicians to be present for one (1), eight (8)-hour day during Final Tests and Adjustments.
- E. Tools - Provide standard hand tools including screwdrivers, pliers, wire strippers, nut drivers, soldering iron, and other tools appropriate for troubleshooting system problems.
- F. Ladders and Scaffolds - Provide ladders and scaffolds to inspect/adjust loudspeakers and rigging points.

- G. Verification of Initial Tests and Adjustments - Verify that Initial Tests and Adjustments have been performed and meet criteria. During Final Tests and Adjustments, AV Consultant may require portions of the Initial Tests and Adjustments to be repeated. Repeat measurements as requested without claim for additional payment.

1.6. FINAL ACCEPTANCE BY OWNER

- A. Certificate – Submit Certificate of Final Acceptance form signed by Owner verifying complete installation and proper operation of systems upon fulfillment of all requirements and upon recommendation by Owner.
- B. General Adjustments – Adjust, balance, and align equipment for optimum quality, meeting manufacturers published specifications.
- C. Input/Output Jack Demonstration – Demonstrate proper performance and phase of each system input and output jack (all audio input and output jacks) as received at AV and network systems.
- D. Inventory – Inventory all installed and portable equipment for correct quantities.
- E. Functional Demonstration – Demonstrate operation of each function of each major piece of equipment.
- F. Other Tests - Perform any other tests on any part of the AV system as requested by Owner.
- G. Final Equipment Settings – Record final settings of all equalizer bands, tone controls, filters, delays, limiters, etc., including those established through computer software settings. Include descriptions of settings (including software settings) in Operation and Maintenance Manual. Include software copy of configuration file(s) in Operation and Maintenance Manual.
- H. Security Inspection – Inspect equipment for security from tampering (covers, shaft-locks, etc.).
- I. Review of Labels – Review installed labels on cables, equipment, controls, and terminal strips.

1.7. OWNER TRAINING

- A. Provide Owner training as described in General Conditions. As a minimum, provide twelve (12) hours instruction (within four (4) trips to site) regarding AV Systems operation to Owner-designated personnel. Schedule instruction time(s) with Owner to occur after completion of Final Tests and Adjustments. Coordinate with Owner in advance to schedule instruction time. Document date, time, and attendees of the training session and include documentation in Operation and Maintenance Manuals to serve as record of trained personnel.

1.8. SUPPORT DURING OWNER'S FIRST USE OF COMPLETED SYSTEM

- A. Provide personnel familiar with design, installation, and operation of each system to be present at Owner's first use of each completed system (up to six (6) hours total in two sessions). During first use of each system, respond to Owner requests for troubleshooting, adjustments, and additional training. If no one contractor employee or representative can provide expertise in all aspects of the system, provide multiple personnel for the six (6) hours per session as required. Schedule presence of personnel in advance with Owner. Should significant elements of the new system be operational prior to final completion, Owner may elect to schedule contractor presence for Owner function prior to final completion of system. Should Owner exercise this option, contractor presence will not be required at first use following final completion.

END OF SECTION

SECTION 274117 – AUDIO VIDEO INFRASTRUCTURE

PART 1 - GENERAL

1.1 SUMMARY

- A. This document covers the general requirements for the installation of Audio Video (AV) Infrastructure systems for the Welcome Center at Lamar University in Beaumont, Texas.

1.2 CODES

- A. Execute work in accordance with best AV system installation practices and codes listed below.
- B. Codes and Standards (Most recent editions or as required in contract)
 - 1. ANSI/TIA-568-C: Commercial Building Telecommunications Wiring Standard.
 - 2. ANSI/TIA-569-B Commercial Building Standard for Telecommunications Pathways and Spaces
 - 3. ANSI/TIA-606-A Administration Standard for Commercial Telecommunications Infrastructure
 - 4. ANSI-J-STD-607-A Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
 - 5. Underwriters Laboratories (UL) Cable Certification and Follow-Up Program
 - 6. National Electrical Manufacturers Association (NEMA)
 - 7. American Society for Testing Materials (ASTM)
 - 8. National Electrical Code (NEC)
 - 9. National Electrical Safety Code (NESC)
 - 10. Institute of Electrical and Electronic Engineers (IEEE)
 - 11. UL Testing Bulletin
 - 12. BICSI Information Transport Systems Methods Manual (ITSMM)
 - 13. Local, county, state and federal regulations and codes in effect as of date of installation
 - 14. Equipment of foreign manufacture must meet U.S. codes and standards.

1.3 REGULATIONS

- A. Comply with terms and conditions of Americans with Disabilities Act, especially regarding provisions for hearing impaired and wheelchair access in control areas.

1.4 SUBMITTALS

- A. General
 - 1. Refer to Division 1
 - 2. Submit in quantities, format and timetable as required by General Conditions
- B. Product Data Binders
 - 1. The Contractor shall provide at least four (4) sets of Product Data Binders
 - 2. Timetable:
 - a) Submit within thirty (30) days after award of contract
 - b) Submit simultaneously with Shop Drawings.
 - c) Allow minimum of ten (10) business days for review. All sets minus one (1) will be returned with review comments.
 - 1) If a resubmit is required, resubmit total quantity of complete sets.

- 2) If second resubmit is required, Contractor shall reimburse Owner for expenses incurred during additional review process.
 - d) Review and approval of Product Data is required before equipment purchase and installation.
 - e) Bind product data sheets together either in GBC or 3-ring type binders.
- C. Shop Drawings
1. The Contractor shall provide at least four (4) sets of Shop Drawings
 2. Timetable:
 - a) Submit within thirty (30) days after award of contract
 - b) Submit simultaneously with Product Data Binders.
 - c) Allow minimum of ten (10) business days for review.
 - 1) All sets minus one (1) will be returned with review comments.
 - 2) If a resubmit is required, resubmit total quantity of complete sets.
 - 3) If second resubmit is required, Contract shall reimburse Owner for expenses incurred during additional review process.
 3. Description:
 - a) Shop Drawings shall be used for coordination between trades and updated as final record drawings.
 - b) Bind all Shop Drawings together to form set. Loose drawings will not be accepted.
 - c) Each drawing shall include:
 - 1) Project
 - 2) Building
 - 3) Location
 - 4) Contractor Name
 - 5) Architect
 - 6) AV Consultant
 - 7) Date and Revision Number
 - d) Number and title each drawing in logical manner as a set.
 - e) Include cover sheet with listing of all drawings included in bound set.
 - f) Ensure that labeling on Shop Drawings match labeling on equipment.
 - g) Minimum Scale:
 - 1) Floor Plans: 0'-1/8" = 1'-0"
 - 2) Rack Elevations: 0'-1.5" = 1'-0"
 - 3) Details: 0'-6" = 1'-0"
 4. Shop Drawings shall include
 - a) Floor plans shall indicate locations of all AV devices, vertical risers, pull boxes, and exposed wiring.
 - 1) Include Device ID (PRJ, SCREEN, FRK, FB, AVP, etc., as referenced in design contract documents), as appropriate for projectors, screens, racks, floor boxes, AV plates in walls, etc.
 - b) Electrical power wiring diagram.
 - 1) Include circuit, switching, and control details.
 - c) Wiring diagram of grounding and shielding scheme.
 - d) Drawings for custom-fabricated items:

- 1) i.e., plates, panels, cables, and assemblies
 - e) General construction drawings necessary for completion of work.
 - f) Mounting detail drawings of loudspeakers, racks, and overhead equipment.
5. Hire services of professional structural engineer, licensed by the appropriate governing authority, to review shop drawings, building structural drawings, and any existing structures from which equipment is to be suspended.
- a) Include Structural Engineer's stamped report with shop drawing submittal. Report shall include:
 - 1) Itemization of items reviewed by the Structural Engineer.
 - 2) Confirmation that proposed methods of suspending equipment as shown on the shop drawings conform to required safety factors.
 - 3) Confirmation that building structure from which equipment is to be suspended will support equipment including required safety factors.

D. Samples

1. Request for Samples
 - a) Upon request, furnish samples (at no additional cost) to Owner and/or General Contractor of submitted items proposed as substitutes for specified items.
 - b) Products will be reviewed to determine if proposed substitute items meet required function and quality.
2. Product Tests
 - a) Products submitted as samples may require testing by independent laboratory.
 - 1) Testing at expense of Contractor
 - b) Obtain written approval of tested products before incorporating into system.

1.5 QUALITY ASSURANCE

A. AV Contractor Qualifications

1. The AV System Contractor shall be regularly engaged in furnishing and installing AV systems.
 - a) Electrical or general contracting firms responsible for completion of this work, but not meeting above requirement, shall employ services of approved AV Contractor as subcontractor to perform work described herein.
2. The AV System Contractor shall have installed AV systems of similar size and scope within last five (5) years.
 - a) Submit list of four (4) (minimum) installed jobs of similar magnitude, completed within last five years.
 - b) For verification, submit complete information, including project name, project address, contact person, daytime telephone number plus month and year of project completion.
 - c) At Owner's request, accompany Owner or Owner's representative on visit to any or all example completed projects submitted.
3. The AV System Contractor shall be an Authorized Dealer for all major components of the AV equipment specified.

- a) Must have at least one permanent staff member who is factory trained in the installation and maintenance of each major product line offered.
4. Employ personnel (at all levels of work) experienced in projects of similar size and scope.
 - a) Provide list of key personnel to be responsible for each of the following aspects of work including:
 - 1) Project Management
 - 2) Technical Documentation
 - 3) For each identified employee, indicate number of years employed by contractor, number of years experience in assigned responsibilities, and list of previously completed projects where similar responsibilities were required.
5. Project manager assigned to this project must have a minimum of five(5) years experience in installing and integrating AV systems of similar scale.

PART 2 - PRODUCTS

2.1 GUIDELINES

A. Infrastructure Products

1. All conduits, basket tray/cable tray, pull boxes and associated parts required for infrastructure shall be installed by the electrical contractor unless specifically excluded in these specifications or drawings.

B. Performance

1. Regardless of completeness of descriptive paragraphs herein, each device shall meet its manufacturer's published specifications and verified.

C. Contract Documents

1. Drawings and specifications are to be used in conjunction with one another and to supplement one another.
 - a) In general, the specifications determine the nature and quality of the materials, and the drawings establish the quantities, details, and give characteristics of performance that should be adhered to in the installation of the AV system components.
 - b) If there is an apparent conflict between the drawings and specifications, the items with the greater quantity or quality shall be provided and installed.
 - c) Clarification with the owner about these items shall be made prior to the ordering and installation.

D. Quantities

1. Confirm quantities on final Contract Documents.
2. If Contract Documents do not include quantities necessary to deliver complete working system, provide notification of disparity, and install required quantity of devices for complete working system.

E. Condition

1. Provide and install products listed in this section in factory new condition, conforming to applicable provisions of American National Standards Institute.

F. AV Electrical Power

1. Ensure that "Star" ground configuration is properly implemented by the Electrical Contractor. Ensure that ground wires from each outlet are isolated from conduit, neutrals, and each other and are each home-run back to the dedicated breaker panel for AV systems. Electrical circuits should be connected (and outlets wired) by the Electrical Contractor to the AV system circuit breaker panel (N.I.C.).

G. AV Screens

1. Unless otherwise indicated in drawings or specifications, set limits so projected images are 48" above finished floor, and include additional black drop as appropriate considering screen size and mounting height.

H. AV Floor Boxes

1. Clean floor boxes of all dust and debris prior to installation of any active or connectorized plate.
2. Any floor box with active or connectorized AV plates found to have any dust, debris or water in bottom of box are subject to replacement of all plates and components.
 - a) A re-test of all associated components must be completed.

2.2 AV PRODUCTS

A. The following are major active and infrastructure products for this project.

1. FPD (Flat Panel Pull Box)
 - a) Chief Manufacturing PAC526FW in-wall pull box
2. PRJ (Video Projector Mounting Infrastructure)
 - a) Chief Manufacturing CMA345 Structural Ceiling Plate
 - b) Chief Manufacturing CMA640 ceiling decorative ring
 - c) Chief Manufacturing CMS series adjustable length extension column, and fixed length mounting poles both in sizes appropriate for the projectors' positions and the ceiling height in which the projectors are located, and included as indicated by mounting details.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General Guidelines

1. Quality of Work
 - a) Perform labor to accepted industry standards and state and local codes to accomplish complete and working system.
2. Material and Labor
 - a) Provide specified products and other incidental materials, appliances, tools, and transportation required for complete and functioning systems.
 - b) Provide personnel to perform labor who are skilled in techniques and can demonstrate technical knowledge AV infrastructure system installations.
3. Documents at Job Site

- a) Keep following documents at job site during entire construction period:
 - 1) Complete Specifications and Drawings
 - 2) Approved Shop Drawings
 - 3) Approved Product Data
 - 4) Progress Set of Project Record Documents
 4. Mounting
 - a) Mount equipment and enclosures plumb and square.
 - b) Ensure that permanently installed equipment is firmly and safely held in place. Design equipment supports to support loads imposed with project safety factor of five (5) or greater.
 - c) For devices hung overhead, obtain review by Structural Engineer licensed by the appropriate governing authority prior to installation.
 5. Dimension Verification
 - a) Verify dimensions and space requirements to assure that proper mounting, clearance, and maintenance access space is available for system components.
 6. Clean-Up
 - a) Leave project clean each day
 - b) Place debris where designated by General Contractor.
 - c) Debris includes but not limited to:
 - 1) Solder splatter
 - 2) Cable ends
 - 3) Stripped insulation
 - 4) Spent crimp connectors
 - 5) Gypsum board and ceiling tile dust
 - 6) Product wrappings and cartons
 - d) After completion of installation, thoroughly clean areas worked, including non-visible areas such as equipment rack interiors, rack top panels, and inside lockable floor and wall boxes.
 - e) Coordinate installation of AV infrastructure and equipment with other trades in order to follow project schedule.
 - f) Maintain any licensing required by the appropriate governing authority to install and terminate low voltage systems.
- B. Power and Grounding
1. Power Coordination
 - a) Coordinate final connection of power and ground wiring to rack.
 - b) Electrical contractor will provide power to audio visual systems.
 - c) Before installation, verify load requirements for systems as accepted.
 2. Bus Bars
 - a) Install 0'-1" X 0'-¼" copper ground bus bar, top to bottom in floor mounted AV racks.
 - b) Ground and bond equipment chassis of each rack-mounted component without three-pin grounding plug to bus bars with #12 AWG insulated green wire using 6-32 or larger nuts, bolts, lock-washers, and appropriate NEMA connectors.
 - c) Electrical Contractor (Division 16) shall provide and connect #4 AWG green insulated wire from Bus Bars to ground point in AV technical electrical panel.

C. Wiring

1. Physical Damage Prevention

- a) Take necessary precautions to prevent physical damage to cables and equipment. Damaged cables or equipment will not be accepted.
- b) Separate, organize, and route cables to restrict channel crosstalk and feedback oscillation.

2. Data Cable Routing

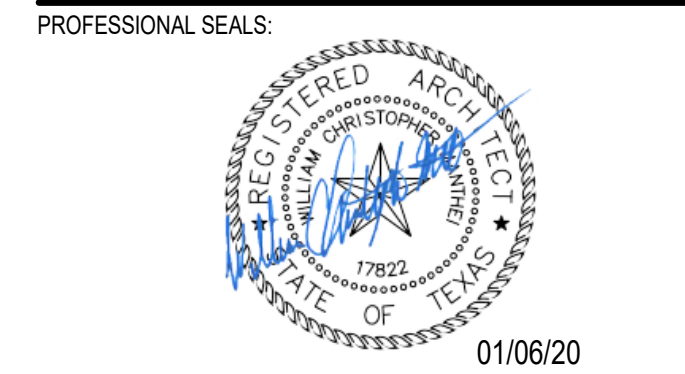
- a) Provide data cabling from each AV device (flat panel display, video projector, wall control panel, camera) homerun to room's lectern or millwork rack location; terminated in floor box, poke-thru or wall junction box as applicable.

3.2 STORAGE AND HANDLING

- A. Power up any electronic equipment to ensure its proper functioning before its arrival onsite.
- B. Ensure that materials (especially electronic and electro-acoustic devices) are protected against physical, environmental, and electronic damage until final acceptance by Owner.
- C. Schedule delivery to minimize delays in the project.
- D. Provide storage protection against temperature and humidity extremes, theft, vandalism, physical damage, and environmental damage.

END OF SECTION 27 41 17

- CONSULTANTS:
- LAMAR UNIVERSITY
OWNER
 - HUITT-ZOLLARS
ARCHITECT
 - MARK W. WHITELEY & ASSOCIATES
CIVIL
 - M2L ASSOCIATES, INC.
LANDSCAPE ARCHITECTURE
 - DALLY & ASSOCIATES, INC.
STRUCTURAL
 - INFRASTRUCTURE ASSOCIATES, INC.
MEP
 - DATACOM DESIGN GROUP, INC.
IT AV SECURITY
 - FOCUS EDG, LLC
BRANDINGS
 - PROJECT COST RESOURCES, INC.
ESTIMATING
 - DOROTHY DENISON, LLC
SPECIFICATIONS
 - GGO ARCHITECTS, INC.
LEED CONSULTANT



OWNER:

LAMAR UNIVERSITY
MEMBER THE TEXAS STATE UNIVERSITY SYSTEM™

LAMAR UNIVERSITY
4400 S M L KING JR PKWY, BEAUMONT, TX 77705

PROJECT:

LAMAR UNIVERSITY
WELCOME CENTER

PROJECT ADDRESS:

1030 JIM GILLIGAN WAY
BEAUMONT, TX 77710

ISSUES / REVISIONS LOG:

MARK	DATE	DESCRIPTION
1	2019 03 26	ISSUE FOR SD
2	2019 04 17	ISSUE FOR 60% DD
3	2019 05 07	ISSUE FOR 100% DD REVIEW
4	2019 06 10	ISSUE FOR 60% CD REVIEW
5	2019 08 27	ISSUE FOR 85% CD REVIEW
6	2019 07 15	ISSUE FOR BID
7	2019 08 02	ADDENDUM No. 2
8	2020 01 06	ISSUE FOR RE-BID
9	2020 01 20	RE-BID ADDENDUM #1

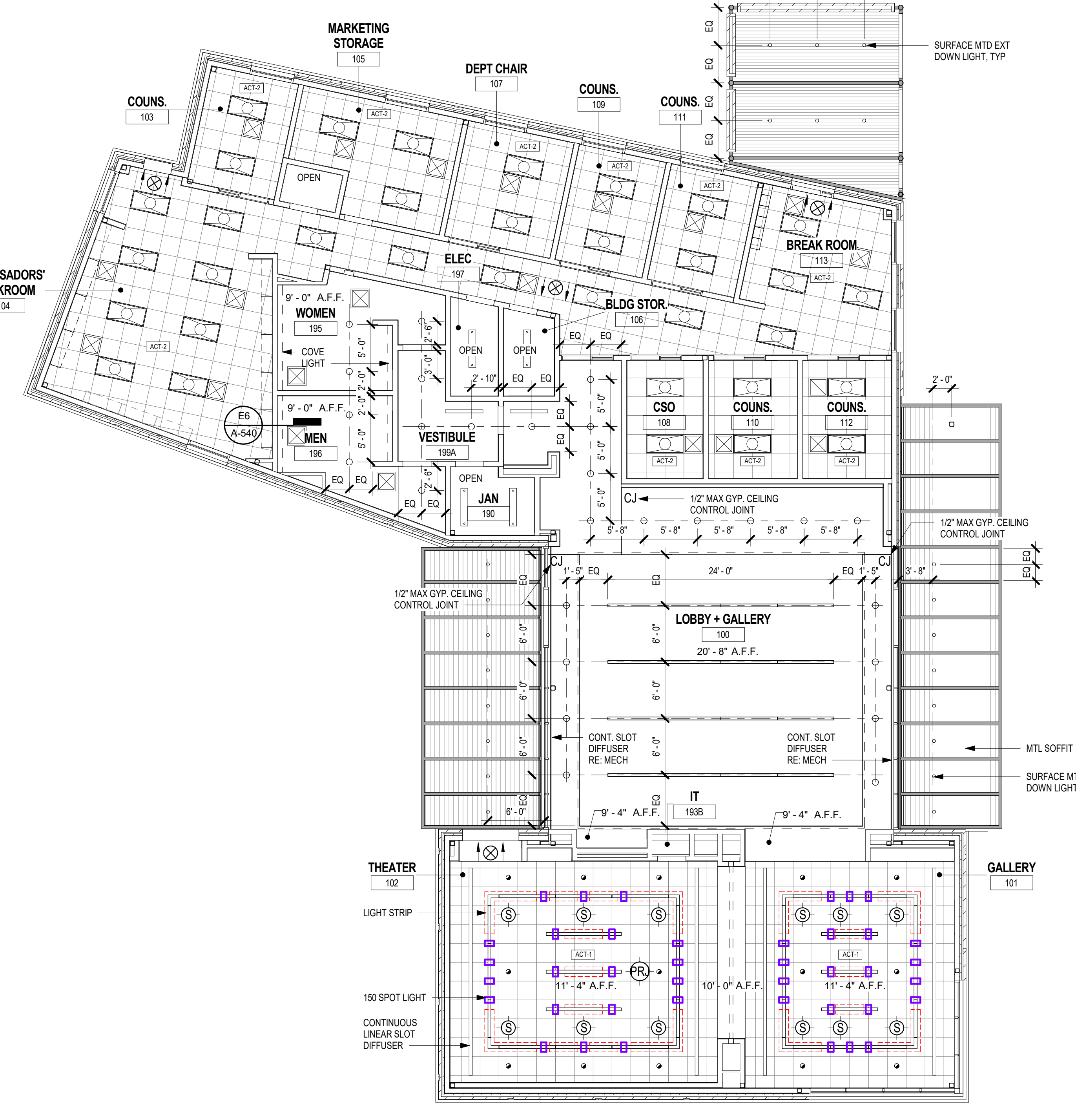
PROJECT NO.: R310123.01
DRAWN BY: Author
REVIEWED BY: Checker
APPROVED BY: Approver

REFLECTED CEILING PLAN & FINISH PLAN

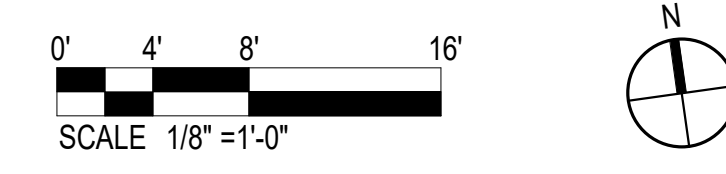
SHEET NUMBER:
A-103



C1 FINISH PLAN
1/8" = 1'-0"



C4 REFLECTED CEILING PLAN
1/8" = 1'-0"



CEILING PLAN NOTES

NOTE	DESCRIPTION
A.	ALL CEILINGS ARE AT 9'-4" A.F.F., U.N.O.
B.	ALL GYP. BD. FURR DOWNS ARE AT 9'-4" A.F.F., U.N.O.
C.	NO ACOUSTICAL TILE CEILING PANELS LESS THAN 6" IN WIDTH. REVIEW ALL POTENTIAL CONDITIONS PRIOR TO GRID INSTALLATION
D.	COORDINATE WITH SUBCONTRACTORS REGARDING SECURITY, FIRE SPRINKLERS, LIGHTING, AND MECHANICAL PRIOR TO INSTALLATION OF GRID
E.	THIS PLAN IS FOR FIXTURE LOCATION ONLY. REFER TO ELECTRICAL AND MECHANICAL ENGINEERING DRAWINGS FOR CIRCUITING AND SWITCHES.
F.	ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO BASE BUILDING SPECIFICATIONS, LOCAL CODES AND ORDINANCES, AND INDUSTRY STANDARDS.
G.	CENTER RECESSED FIXTURES AND SIMILAR CEILING ELEMENTS IN LAY-IN CEILING, U.N.O.
H.	GANG ADJACENT LIGHT SWITCHES AND COVER WITH A SINGLE PLATE.
I.	ALL DIMENSIONS ARE TO CENTERLINE OF FIXTURES, U.N.O.
J.	FINISH HVAC DIFFUSERS, ACCESS PANELS, AND SPRINKLER GRILLES TO MATCH ADJACENT FINISH, U.N.O.
K.	ALL ELECTRICAL RECEPTACLES, SWITCHES, MISCELLANEOUS DEVICES, TRIM PLATES & COVERPLATE TYPES SHALL BE BUILDING STANDARD, U.N.O. COORDINATE WITH ARCHITECT ON COLOR/FINISHES.

CEILING PLAN LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	2x2 ACOUSTIC LAY-IN CEILING		2'x2' EMERGENCY LIGHT FIXTURE - CEILING		FLOS MAGNET EVO SURFACE LINEAR LIGHT STRIP
	GYP. BOARD CEILING		STRIP LIGHT FIXTURE - SUSPENDED/SURFACE		FLOS MAGNET EVO SURFACE SPOT 150
	OPEN TO STRUCTURE ABOVE		STRIP LIGHT FIXTURE - WALL		COVE LED LIGHT FIXTURE
	CEILING-MOUNTED SUPPLY		RECESSED DOWNLIGHT FIXTURE		RECESSED LINEAR LED LIGHT FIXTURE
	CEILING-MOUNTED RETURN		EMERGENCY RECESSED DOWNLIGHT FIXTURE		SPEAKER
	SLOT CEILING DIFFUSER		EXIT SIGN WITH DIRECTIONAL ARROWS - CEILING		PROJECTOR
	2'x4' LIGHT FIXTURE - CEILING		EXIT SIGN WITH DIRECTIONAL ARROWS - WALL		CONTROL JOINT
	2'x4' EMERGENCY LIGHT FIXTURE - CEILING		OCCUPANCY SENSOR - CEILING		
	2'x2' LIGHT FIXTURE - CEILING		CEILING HEIGHT		

CODE	MATERIAL	MANUFACTURER	PRODUCT # / COLOR	REMARKS
1 FLOOR				
CPT-1	CARPET TILE	INTERFACE	WINTER SUN 138990A000 DUSK SUN 10310	ALLOW \$30 / SY; CONTACT: ATURNER@ACSFLOORING.COM
LVT-1	LUXURY VINYL TILE	ASPECTA	ASPECTA FIVE MASON OAK MIST 5383103 7.25'X48"	ALLOW \$5 / SF; CONTACT: KRISTIN.KUBALA@READERSWHOLESALE.COM
PF-1	PORCELAIN FLOOR TILE	ROCA	TREVI SILVER 12'X24"	EPOXY GROUT; CONTACT: ALBERT GONZALEZ ALBERT.GONZALEZ@US.ROCA.COM
PF-2	PORCELAIN FLOOR TILE	CONCEPT SURFACES	HARMONY MOON NATURAL FINISH 24'X48"	CONTACT: NANCY ALBRITTON NANCY@CONCEPTSURFACES.COM
SC-1	SEALED CONCRETE			
2 BASE				
B-1	RUBBER BASE	JOHNSONITE	48 GREY 4" H, 1/8" THICK ROLL GOODS	
B-2	PORCELAIN TILE BASE	ROCA	TREVI SILVER BULLNOSE FTTRVSL-S43C9 3'X12"	EPOXY GROUT; CONTACT: ALBERT GONZALEZ ALBERT.GONZALEZ@US.ROCA.COM
B-3	PORCELAIN TILE BASE	CONCEPT SURFACES	HARMONY MOON BULLNOSE BASE 9'X24"	CONTACT: NANCY ALBRITTON NANCY@CONCEPTSURFACES.COM
3 WALL				
PT-1	PAINT	SHERWIN WILLIAMS	ALABASTER SW 7008	
PT-2	PAINT	SHERWIN WILLIAMS	AQUA SPHERE SW 7613	
PT-3	PAINT	SCREEN GOO	SCREEN GOO 2.0	LEVEL 4 FINISH, 78" X 139", 4'-6" AFF, CENTERED
PT-4	PAINT	SHERWIN WILLIAMS	HIGH REFLECTIVE WHITE SW 7757	TYP. @ GYP. CEILINGS
PT-5	PAINT	SHERWIN WILLIAMS	MATCH MTL-1	
PW-1	PORCELAIN WALL TILE	ROCA	MAGNOLIA BLANCO UVMAG100-618 6'X18"	ALLOW \$7 / SF; CONTACT: ALBERT GONZALEZ ALBERT.GONZALEZ@US.ROCA.COM
4 CEILING				
ACT-1	ACOUSTICAL CEILING TILE	CERTAINTED	ECOPHON FOCUS DG 24X24 ON 15/16" GRID, COLOR: WHITE	
ACT-2	ACOUSTICAL CEILING TILE	ARMSTRONG	ULTIMA 1940 SQUARE LAY-IN 24X24 ON 15/16" GRID, COLOR: WHITE	PT-4 AT ALL GYP. BOARD CEILINGS
GB-1	GYP BOARD			
CG-1	CORNER GUARD	CONSTRUCTION SPECIALTIES, INC.	MACROVYN SM-10N, COLOR: WHITE	TACKABLE 2" THICK PANELS
PL-1	PLASTIC LAMINATE	WILSONART	FAWN CYPRESS 6208K-16 CASUAL RUSTIC FINISH	
PL-2	PLASTIC LAMINATE	FORBICA	FOG 361 36 MATTE FINISH	
QZ-1	QUARTZ SURFACE	CAMBRIA	SWANBRIDGE POLISHED 2CM	
QZ-2	QUARTZ SURFACE	CAMBRIA	CLAREANNE POLISHED 2CM	
SS-1	SOLID SURFACE	WILSONART	SILVER SMOKE 8226SS	
TS-1	TRANSITION STRIP	JOHNSONITE-TARKETT	SLM LINE TRANSITION SLT-178-A	CARPET TO LVT
TS-2	TRANSITION STRIP	JOHNSONITE-TARKETT	CTA-48K	LVT TO TILE
TS-3	TRANSITION STRIP	JOHNSONITE-TARKETT	SLM LINE TRANSITION SLT-178-J	LVT TO SEALED CONCRETE
TS-4	TRANSITION STRIP	SCHLUTER	SCHENE STAINLESS STEEL FINISH	RR WALL TILE EDGE
TS-5	TRANSITION STRIP	JOHNSONITE-TARKETT	CTA-48-P	TILE TO SEALED CONCRETE
WS-1	WINDOW SHADES	LUTRON	E SCREEN THEIA WHITE/PEARL 1.7% OPEN	

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