

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

SECTION	DESCRIPTION
00 00 01	GENERAL REQUIREMENTS
00 00 03	INSURANCE AND BONDS
00 00 03	PROJECT MANUAL
00 01 10	TABLE OF CONTENTS
00 01 15	LIST OF DRAWING SHEETS

END OF INDEX

SECTION 00 00 01 - GENERAL REQUIREMENTS

PART 1 - GENERAL REQUIREMENTS

- A. Further details are provided in this document in the specific applicable section. The Architect shall verify and coordinate any presumed discrepancy.
1. Contractor shall include mark-up for overhead and profit for all allowances in their Base Proposal or as provided for in the agreement. No additional mark up, including labor burden, will be allowed on individual items provided under the allowances. This includes labor and material supplied by the Contractor and any Sub-Contractors.
 2. For change orders outside allowances noted in the document or the agreements, the Contractor will be allowed to add mark up for overhead and profit as stipulated in the Contract Documents.
 3. As-built underground utility drawings shall be provided showing specific locations of all underground utilities, valves, utility boxes, controls and related improvements during the project closeout phase as a key deliverable.
 4. Upon completion/close out of all projects and acceptance by the A/E, the Contractor shall provide the Owner with a USB containing electronic files of all construction documents including, but not limited to, original plans and specs, construction contract, CPR, AEA, as-built drawings, meeting minutes and any other documents related to the project as stipulated in the Contract Documents. These document shall also be provided in one hard copy and uploaded into Project Mates using the closeout structure provided. The USB copy shall follow the same file structure.
 5. The Architect and their consultants shall not approve substitution of products that deviate from those specified in this document without prior written approval from the Owner.
 6. Prior to Bidding, the Architect will note any items in the Contract Documents which the Owner has identified for this project that will be disposed of by the Owner per the TISD "Fixed Asset Reconciliation". The General Contractor will include a copy of the Owner's completed form and include in the Close out documents.
 7. Provide SDS sheets on all materials used as part of close-out documents.
 8. Attic stock to be on pallets, shrink-wrapped and identified with the name of the school on each pallet. Delivery of attic stock to the District's warehouse to be coordinated with District. Provide a transmittal for Owner's signature; include in close-out documents and at the time of delivery when done prior to project closeout.
 9. Architects/Engineers shall participate in the use of the TISD Contractor Selection Criteria Approved by the School Board when requested.
 10. Include current PREVAILING WAGE RATE SCHEDULE in all construction proposal and contract documents.
 11. Where a conflict appears within this document, the A/E/Consultant shall notify the Owner for direction regarding the conflict for Owner clarification or direction. Request for Information (RFI) Guidelines shall be equal to construction standards. Where this situation arises and the A/E/Consultant fails to make the RFI known to the Owner, the A/E/Consultant may be responsible for bearing the cost of any change resulting from the variation which the Owner does not accept.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 00 00 03 - INSURANCE AND BONDS

PART 1 - INSURANCE AND BONDS

- A. All design professionals must provide evidence of errors and omissions insurance and must maintain insurance coverage for the duration of all work with Tomball ISD.
- B. WORKER'S COMPENSATION minimum insurance limits:
 - 1. State: Texas – Statutory
 - 2. Federal: Applicable Statutory
 - 3. Employer's Liability minimum limits:
 - a. \$100,000 per accident
 - b. \$100,000 per disease; each employee
 - c. \$1,000,000 per disease; policy limit
 - 4. Professional Errors and Omissions Liability Insurance:
 - a. \$1,000,000 Per claim and per occurrence
 - b. \$1,000,000 Annual Aggregate
 - 5. Umbrella or Excess Liability insurance:
 - a. \$3,000,000 Each occurrence
 - b. \$3,000,000 Aggregate
 - 6. Comprehensive (Commercial) General Liability:
 - a. \$1,000,000 Occurrence
 - b. \$2,000,000 Aggregate
 - c. \$1,000,000 Personal and Advertising Injury
 - d. \$500,000 Fire damage
 - e. \$10,000 Medical payments
 - f. Per project aggregate.
- C. OWNER must be named as an additional insured by endorsement on the Commercial General Liability and Excess policies. Use the following District address for all insurance policies:

Tomball I.S.D. – Ancillary Services 310 S. Cherry
Tomball, TX 77375
- D. General contractors must provide evidence of CONTRACTOR'S Commercial General Liability and Contractual Liability insurance. Latest version of the ACORD Certificate of Liability Insurance is preferred.
- E. COMMERCIAL GENERAL LIABILITY minimum insurance limits:
 - 1. General Liability
 - a. Bodily Injury & Property Damage Combined
 - i. \$1,000,000 each occurrence
 - ii. \$2,000,000 aggregate

- c. Damage to Rented Premises
 - i. \$100,000 each occurrence
 - iii. Medical Expenses
 - a) \$10,000 any one person
 - iv. Personal and Adv. Injury
 - a) \$1,000,000 each occurrence
 - b) \$2,000,000 aggregate
 - v. General Aggregate
 - a) \$2,000,000 aggregate
 - vi. Products & Completed Operations
 - a) \$1,000,000 each occurrence
 - b) \$2,000,000 aggregate
 - c) Shall be maintained for at least one year after Substantial Completion and certificates shall be filed with the OWNER during this period.
 - d) Property Damage Liability Insurance shall provide X, C and U coverage.
 - e) Broad Form Property Damage Coverage shall include Completed Operations.
- b. Commercial Auto Liability (covering all owned, non-owned and hired vehicles)
 - i. \$1,000,000 combined single limit each accident
- c. Excess/Umbrella Liability
 - i. \$5,000,000 limit required over Commercial General Liability, Automobile Liability and Worker's Compensation
- d. Builder's Risk or Installation Floater:
 - i. C212 written in the name of the OWNER (or additional insured endorsement if blanket policy)
 - ii. Coverage for full insurable value of the work
 - iii. Endorsed allowing OWNER occupancy prior to completion
 - iv. Waiver of subrogation as to the CONTRACTOR, SUB-CONTRACTORS, OWNER and employees and representatives
 - v. Receipt of the original policy
- 2. OWNER'S and CONTRACTOR'S Protective Liability Insurance (OPLI):
 - a. Naming the OWNER as the insured
 - i. \$1,000,000 each occurrence
 - ii. \$2,000,000 aggregate
 - b. Endorse to include officers and employees of OWNER, ARCHITECT and ENGINEER

- c. Written by the same insurance company as the Commercial General Liability policy
 - d. If this requirement is redundant, insurance broker must provide a letter stating that the General Liability policy will cover the same items that the OWNER Protective Liability Insurance would cover. A copy of the letter must be maintained with the contract documents.
- 3. Insurance Company Values and Size
 - a. Best rating of A or better required
- 4. Cancellation Notice: 30-day cancellation notice required on all policies
- 5. Bonds:
 - b. Bid Bond (10% of maximum amount bid)
 - c. Payment Bond (100% of Contract amount for contracts \$25,000 or over)
 - d. Performance Bond (100% of Contract amount for contracts \$100,000 or over)

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 00 00 03 - PROJECT MANUALS

PART 1 - PROJECT MANUALS

- A. On all projects the Prime Consultant shall provide a Project Manual Cover indicating at least:
 - 1. The Project
 - 2. The Address (if known)
 - 3. The Jurisdiction
 - 4. Date of Publication (must be updated with revisions and at closeout)
 - 5. The Firm Name
 - 6. The Firm Address
- B. The order of these items is subjective but they must all be provided in a font style/size which is clearly legible from a reasonable reading distance. No decorative font styles shall be used.
- C. The Cover should be of card stock sufficient to protect the contents for the duration of the project. A back shall also be provide of the same weight material and formatting. No verbiage is required on the back.
- D. The Project Manual shall be bound using screw posts only. Exceptions must be approved.
- E. The Project Manual shall provide the following:
 - 1. A full Table of Contents listed using CSI formatting
 - 2. A Seals Page with all relevant seals and signatures of those who are represented in the Specification
 - 3. Geotechnical and other similar Data
 - 4. Prevailing Wage Rates (The Owner will Provide this for your use)

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

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PART 2 - PRODUCTS NOT USED

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END OF SECTION

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PACKAGE #2a (Carpentry Shop)

MECHANICAL / PLUMBING

ABCS -MEP1.00 - OVERALL PLAN
ABCS -MP0.00 - MECHANICAL AND PLUMBING COVER SHEET
ABCS -MP1.01 - MECHANICAL AND PLUMBING DEMOLITION PLAN
ABCS -MP2.01 - MECHANICAL AND PLUMBING PLAN
ABCS -MP3.01 - MECHANICAL AND PLUMBING SCHEDULES
ABCS -MP4.00 - MECHANICAL AND PLUMBING DETAILS
ABCS -MP5.01 - MECHANICAL AND PLUMBING PIPING SCHEMATIC DIAGRAM

ELECTRICAL

ABCS-E0.0 - ELECTRICAL COVER SHEET
ABCS-E1.0 - ELECTRICAL DEMOLITION PLAN -MECHANICAL YARD
ABCS-E2.0 - ELECTRICAL POWER PLAN -MECHANICAL YARD
ABCS-E3.0 - ELECTRICAL ONE-LINE DIAGRAM & SCHEDULES
ABCS-E4.0 - ELECTRICAL DETAILS

PACKAGE #2b (Maintenance Shop)

MECHANICAL / PLUMBING

ABMS -MEP1.00 - ABMS -OVERALL PLAN
ABMS -MP0.00 - ABMS -MECHANICAL AND PLUMBING COVER SHEET
ABMS -MP1.01 - ABMS -MECHANICAL AND PLUMBING DEMOLITION PLAN -ALTERNATE 1
ABMS -MP1.02 - ABMS -MECHANICAL AND PLUMBING DEMOLITION PLAN -ALTERNATE 2
ABMS -MP2.01 - ABMS -MECHANICAL AND PLUMBING PLAN -ALTERNATE 1
ABMS -MP2.02 - ABMS -MECHANICAL AND PLUMBING PLAN -ALTERNATE 2
ABMS -MP3.00 - ABMS -MECHANICAL AND PLUMBING SCHEDULES
ABMS -MP4.00 - ABMS -MECHANICAL AND PLUMBING DETAILS
ABMS -MP5.01 MECHANICAL AND PLUMBING PIPING SCHEMATIC DIAGRAM (ALTERNATE 1)
ABMS -MP5.02 - MECHANICAL AND PLUMBING PIPING SCHEMATIC DIAGRAM (ALTERNATE 2)

ELECTRICAL

ABMS-E0.0 - ELECTRICAL COVER SHEET
ABMS-E1.0 - ELECTRICAL DEMOLITION PLAN -SERVICE YARD
ABMS-E2.0 - ELECTRICAL POWER PLAN -SERVICE YARD
ABMS-E3.0 - ELECTRICAL ONE-LINE DIAGRAM & SCHEDULES
ABMS-E4.0 - ELECTRICAL DETAILS

PACKAGE #2c (Tomball Elementary School)

MECHANICAL / PLUMBING

TES -MP0.00 - MECHANICAL AND PLUMBING COVER SHEET
TES -MP1.01 - MECHANICAL AND PLUMBING DEMOLITION PLAN
TES -MP2.01 - MECHANICAL AND PLUMBING PLAN
TES -MP3.00 - MECHANICAL AND PLUMBING SCHEDULES
TES -MP4.00 - MECHANICAL AND PLUMBING DETAILS
TES -MP5.01 - MECHANICAL AND PLUMBING PIPING SCHEMATIC DIAGRAM

ELECTRICAL

TES-E0.00 - ELECTRICAL COVER SHEET
TES-E1.01 - ELECTRICAL DEMOLITION PLAN
TES-E2.01 - ELECTRICAL POWER PLAN
TES-E3.00 - ELECTRICAL ONE-LINE DIAGRAM
TES-E3.01 - ELECTRICAL SCHEDULES
TES-E4.00 - ELECTRICAL DETAILS

PACKAGE #2d (Timber Creek Elementary School)

MECHANICAL / PLUMBING

TCES -MP0.00 - MECHANICAL AND PLUMBING COVER SHEET
TCES -MP1.01 - MECHANICAL AND PLUMBING DEMOLITION PLAN
TCES -MP2.01 - MECHANICAL AND PLUMBING PLAN
TCES -MP3.00 - MECHANICAL AND PLUMBING SCHEDULES
TCES -MP4.00 - MECHANICAL AND PLUMBING DETAILS
TCES -MP5.01 - MECHANICAL AND PLUMBING PIPING SCHEMATIC DIAGRAM

ELECTRICAL

TCES-E0.00 - ELECTRICAL COVER SHEET
TCES-E1.01 - ELECTRICAL DEMOLITION PLAN
TCES-E2.01 - ELECTRICAL POWER PLAN
TCES-E3.00 - ELECTRICAL ONE-LINE DIAGRAM & SCHEDULES
TCES-E4.00 - ELECTRICAL DETAILS

PACKAGE #2e (Creekside Forest Elementary School)

MECHANICAL / PLUMBING

CSES -MP0.00 - MECHANICAL AND PLUMBING COVER SHEET
CSES -MP1.01 - MECHANICAL AND PLUMBING DEMOLITION PLAN
CSES -MP2.01 - MECHANICAL AND PLUMBING PLAN
CSES -MP3.00 - MECHANICAL AND PLUMBING SCHEDULES
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CSES -MP5.01 - MECHANICAL AND PLUMBING PIPING SCHEMATIC DIAGRAM

ELECTRICAL

CSES-E0.00 - ELECTRICAL COVER SHEET
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CSES-E2.01 - ELECTRICAL POWER PLAN
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END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

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SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.01 PROJECT DESCRIPTION

- A. The Project, of which the work of this Contract is a part, is Tomball ISD Chiller Package #2 – Carpentry Shop (2a), Maintenance Shop (2b), Tomball ES (2c), Timber Creek ES (2d) and Creekside Forest ES (2e).
- B. Location: The site is located at 1110 Baker Dr, Tomball, Texas 77375 for Carpentry Shop, 1110 Baker Dr, Tomball, Texas 77375 for Maintenance Shop and 1110 Inwood St, Tomball, Texas 77375 for Tomball Elementary School, 8455 Creekside Green Dr, The Woodlands, TX 77389 for Timber Creek Elementary School and 5949 Creekside Forest Dr, The Woodlands, TX 77389 for Creekside Forest Elementary School.
- C. The Project consists of:
 - 1. Central plant work including but not limited to replacement of air cooled chillers, chilled water pumps, modified DDC controls for new equipment and chilled water piping replacement/modifications associated with the new equipment.

1.02 INSTRUCTIONS TO OFFERORS

- A. No work on school test dates. All work shall be scheduled and coordinated with the owner. Chillers shall be replaced one at a time to maintain a level of cooling for the building during construction.

1.03 SALVAGED MATERIALS

- A. Owner may salvage all items deemed reusable or necessary to keep from facilities to be demolished prior to the start of demolition.
- B. Contractor shall remove and turn additional items over to the Owner, as directed.
- C. Contractor shall demolish, remove and salvage all other items of demolished work.

1.04 CONTRACTS AND USE OF SITE

- A. Contractor Use of Premises:
 - 1. Confine operations at site to areas permitted by:
 - a. Law
 - b. Ordinances
 - c. Permits
 - d. Contract Documents
 - 2. Do not unreasonably encumber site with materials or equipment.
 - 3. Assume full responsibility for protection and safekeeping of products stored on premises.
 - 4. Obtain and pay for use of additional storage or work areas as needed for operations.
 - 5. Contractor shall establish secured staging area for work and coordinate and provide for safe passage and exit from building areas during construction, as determined by City and District officials.
 - 6. Contractor shall coordinate all construction activities with Owner.

7. Owner reserves the right to perform construction operations with its own forces or to employ separate contractors on portions of the Project. Contractor shall coordinate with this work in terms of providing site access, work space, and storage space, cooperation of work forces, scheduling, and technical requirements.
8. Coordinate all utility shutdowns with Owner and, as required, with local utility companies, prior to commencement of shutdown.

B. Owner Occupancy:

1. Partial Owner Occupancy: The Owner reserves the right to place and install equipment in completed areas of the building, prior to Substantial Completion provided that such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
2. A Certificate of Substantial Completion will be executed in accordance with conditions of the Contract.
3. Contractor shall obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.
4. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy the Owner will provide operation and maintenance of mechanical and electrical systems in occupied portions of the building.
5. Prior to partial Owner occupancy, emergency and life safety systems shall be fully operational. Emergency and life safety systems include, but are not limited to, fire sprinkler systems, fire alarm systems, and emergency egress devices. For emergency exiting purposes, the path of travel shall be clearly delineated and functional. If required, temporary barricades shall separate on-going construction from occupied spaces as allowed by the governing agency holding jurisdiction over the Project. Required inspections and tests shall have been successfully completed. Upon occupancy the Owner will provide operation and maintenance of emergency and life safety systems in occupied portions of the building.

C. Owner-Furnished Items:

1. The Owner may provide items to the Contractor for installation in accordance with manufacturer's recommendations and instructions.
2. The Owner will arrange and pay for delivery of Owner-furnished items in accordance with the Contractor's Construction Schedule, and will inspect deliveries for damage.
3. If Owner-furnished items are damaged, defective or missing, through no fault of the Contractor, the Owner will arrange for replacement.
4. The Contractor is responsible for designating the delivery dates of Owner-furnished items in the Contractor's Construction Schedule and for receiving, unloading and handling Owner-furnished items at the site. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to elements, and to repair or replace items damaged as a result of his operations.

D. Coordination with Owner's Forces or Owner's Contractors:

1. Provide site access, space allocation, scheduling, scheduling coordination, coordination of work forces and coordination of technical requirements with the contractors that may be selected and employed by Owner to perform work simultaneously and in conjunction with the Work, which may include, but shall not be limited to the following, as applicable to the Project:
 - a. Materials Inspection and Testing Agency
 - b. HVAC Testing, Adjusting and Balancing Agency
 - c. Energy Management System Contractor

- d. Data and Cabling System Contractor
- e. Telephone System Contractor
- f. Modular Furniture Installer
- g. Lighting and Sound
- h. Surveying

1.05 PROTECTION OF EXISTING PROPERTY

- A. Contractor shall provide and maintain adequate protection of all Owner's existing property during duration of Project.
- B. Contractor shall verify location of all existing underground pipelines on site with the owner of such pipelines and authorities having jurisdiction and shall provide and maintain adequate protection of all such pipelines during duration of project.
- C. Protection of Trees:
 - 1. Provide wood barricades around trees and shrubs at their drip line in traffic areas to protect them from construction operations until Substantial Completion, or until barricade removal is direct by Engineer.

1.06 USE OF ASBESTOS FREE MATERIALS, PRODUCTS AND SYSTEMS

- A. The Contractor is reminded to refer to front end documents for requirements regarding asbestos containing materials (ACM).

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Refer to Specification Sections.

PART 3 - EXECUTION

3.01 CONSTRUCTION SCHEDULE

- A. Completion Time: Refer to front end for Schedule of events for construction timeline.
- B. Proposers shall structure their pricing and proposal as required to meet the designated schedule.
- C. Submission of a proposal for consideration shall be construed as proposer's agreement to meet the stipulated schedule without qualification or exclusion.

END OF SECTION

SECTION 01 21 00 - ALLOWANCES

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The following Allowances shall be included in the Base Proposal. These sums shall be reconciled per Article 3.8 of the General Conditions.

1.02 CONDITIONS

- A. The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents.
- B. These allowances shall cover the net cost of the materials and equipment delivered and unloaded at the site and cost of installation where applicable.
 - 1. Use of Owner Contingency shall be solely at the discretion of the Owner, and the Contractor shall expend funds for the purpose and amounts as directed by the Owner.
- C. The Contractor's handling costs on site, labor, installation, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contractor's Base Proposal sum, and not in the allowance.
- D. The Contractor shall cause the work covered by these allowances to be performed for such amounts and by such persons as the Engineer may direct, but he will not be required to employ persons against whom he makes reasonable objection.
- E. If the cost, when determined, is more than or less than the allowance, the Contract sum shall be adjusted accordingly by Change Order, which will include additional handling costs on the site, labor, installation costs, overhead, profit and other expenses resulting to the Contractor from any increase over the original allowance.
 - 1. All labor, equipment and installation required for the installation and / or performance of the designated work shall be included in the allowance amount, unless noted otherwise in the Allowance description.
- F. Unexpended balance of allowance sums shall revert to the Owner in the final settlement Change Order of the Contract.

PART 2 - ALLOWANCES

2.01 ITEMS

- A. Owner Contingency:
 - 1. Contractor shall include in the Base Proposal the following sums as a contingency to cover the cost of hidden, concealed or otherwise unforeseen conditions which develop during completion of the work. Contractor shall proceed with the work in question only after receiving written directions executed by the Owner and the Engineer. Owner will not be obligated to pay the cost of any work performed without prior written authorization. The Contractor's overhead and profit relative to this contingency sum and work performed in accordance herewith, shall be included in

the total Base Proposal price, but not included in the contingency sum. Unexpended balance of contingency sums shall revert to the Owner in the final settlement of the Contract.

Allow the sum of \$250,000 for Owner's Contingency for the 5 campuses.

PART 3 - EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.01 ALTERNATE PRICES

- A. Contractor shall state, in the spaces provided in the Proposal Form, alternate prices for the work described in the Alternate.
 - 1. Proposer's pricing for Alternates shall be the net change to the Base Proposal amount to include the cost of all supporting elements required to implement the described Alternate scope of work.
 - 2. Work for all Alternates shall be in strict accordance with the Specification and applicable work as indicated on the Drawings.
- B. Unless otherwise indicated, scope of work for each alternate shall include material and labor, general conditions and all other costs, as applicable, associated with completing the work described.
- C. Alternates are not listed in the order of priority.
- D. Acceptance of Alternates and inclusion in the Owner-Contractor Agreement shall be at the sole discretion of the Owner.
 - 1. Proposed pricing of Alternate Proposals shall be such that no matter what combination of Base Proposal and Alternates are accepted, the corresponding Contract amount shall be the total sum required to provide the full and defined scope of work.

PART 2 - DESCRIPTION OF ALTERNATE PROPOSALS

1.01 ALTERNATE NO. 1 – CHILLERS

- A. Alternate 2A: Trane Chillers for Carpentry Shop
 - 1. Provide pricing for Trane Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.
- B. Alternate 2A: Carrier Chillers for Carpentry Shop
 - 1. Provide pricing for Carrier Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.
- C. Alternate 2A: York (JCI) Chillers for Carpentry Shop
 - 1. Provide pricing for York (JCI) Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.
- D. Alternate 2B: Trane Chillers for Maintenance Shop
 - 1. Provide pricing for Trane Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.
- E. Alternate 2B: Carrier Chillers for Maintenance Shop
 - 1. Provide pricing for Carrier Chillers as scheduled in the drawings for Alternate chillers.

There are no chillers in the base bid. Provide lead time on bid form.

F. Alternate 2B: York (JCI) Chillers for Maintenance Shop

1. Provide pricing for York (JCI) Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

G. Alternate 2C: Trane Chillers for Tomball ES

1. Provide pricing for Trane Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

H. Alternate 2C: Carrier Chillers for Tomball ES

1. Provide pricing for Carrier Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

I. Alternate 2C: York (JCI) Chillers for Tomball ES

1. Provide pricing for York (JCI) Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

J. Alternate 2D: Trane Chillers for Timber Creek ES

1. Provide pricing for Trane Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

K. Alternate 2D: Carrier Chillers for Timber Creek ES

1. Provide pricing for Carrier Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

L. Alternate 2D: York (JCI) Chillers for Timber Creek ES

1. Provide pricing for York (JCI) Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

M. Alternate 2E: Trane Chillers for Creekside Forest ES

1. Provide pricing for Trane Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

N. Alternate 2E: Carrier Chillers for Creekside Forest ES

1. Provide pricing for Carrier Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

O. Alternate 2E: York (JCI) Chillers for Creekside Forest ES

1. Provide pricing for York (JCI) Chillers as scheduled in the drawings for Alternate chillers. There are no chillers in the base bid. Provide lead time on bid form.

P. Provide alternate pricing for replacement for chilled water piping for package 2b, the maintenance shop.

Q. Provide pricing for chilled water pump replacement including all associated trades labor and

material as shown on the drawings.

PART 3 - EXECUTION NOT APPLICABLE

END OF SECTION

SECTION 01 25 13 - PRODUCTS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS:

- A. **DEFINITIONS:** Definitions used in this Section are not intended to negate the meaning of other terms used in the Contract Documents, including such terms as, "specialties", "systems", "structure", "finishes", "accessories", "furnishings", "special construction" and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.
- B. "Products" are items purchased for incorporation in the Work, regardless of whether they were specifically purchased for the project or taken from the Contractor's previously purchased stock. The term "product" as used herein includes the terms "material", "equipment", "system" and other terms of similar intent.
- C. The Contract is based on the products, materials, and equipment described in the Contract Documents, and added by Addenda.
- D. **AVAILABILITY OF SPECIFIED ITEMS:** Verify prior to bidding that all specified items will be available in time for installation during orderly and timely progress of the Work.
 - 1. In the event specified items or items will not be so available, notify the Engineer at least 10 days prior to receipt of Bids.
 - 2. Additional costs due to delays because of non-availability of specified items, when such delays could have been avoided, will be back-charged to the Contractor and shall not be borne by the Owner.
- E. Where the questions of appearance, artistic effect, or harmony of design are concerned, the Engineer reserves the right to refuse approval of any product proposed to be substituted for that specified if in his opinion the item to be substituted is not harmonious to the finished effect and appearance desired, as portrayed in the Drawings and Specifications. The Engineer's said refusal to approve, established by this Article, is final.

1.02 SUBSTITUTIONS:

- A. The Contractor's requests for changes in the products, materials, equipment and methods of construction required by the Contract Documents are considered requests for "substitutions", and are subject to the requirements specified herein. The following are not considered as substitutions:
 - 1. Revisions to the Contract Documents, where requested by the Owner, Engineer are considered as "changes" not substitutions.
 - 2. Substitutions requested during the bidding period, which have been accepted prior to the Contract Date, are included in the Contract Documents and are not subject to the requirements for substitutions a herein specified.
 - 3. Specified Contractor options on products and construction methods included in the Contract Documents are choices available to the Contractor and are not subject to the requirements for substitutions as herein specified.
 - 4. Except as otherwise provided in the Contract Documents, the Contractor's determination of and compliance with governing regulations and orders as issued by governing authorities do not constitute "substitutions" and do not constitute a basis for change orders.

1.03 QUALITY ASSURANCE

- A. **SOURCE LIMITATIONS:** To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work.
1. **COMPATIBILITY OF OPTIONS:** Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract documents, but must be provided by the Contractor.

1.04 SUBMITTALS

- A. **PRODUCT LISTING SUBMITTAL:** Prepare a product-listing schedule in a form acceptable to the Engineer. Show names of the principal products required for the work, by generic name. Show proprietary product names and the name of the manufacturer for each item listed that is to be purchased and incorporated into the Work.
1. Refer to Division 26 General Provisions sections for a special separate listing of products required for mechanical and electrical Work.
2. **FORM:** Prepare the product-listing schedule with information on each item tabulated under the following scheduled column headings:
- a. Generic name as used in Contract Documents.
 - b. Proprietary name, model number and similar product designation.
 - c. Manufacturer's and supplier's name and city/state addresses.
 - d. Related unit-of-work specification section number.
3. **SUBMITTAL:** Submit 3 copies of the product-listing schedule within 30 days after the date of commencement of the Work. Provide a written explanation for omissions of data, and for known variations from contract requirements.
- a. At the Contractor's option, the initial submittal of the product-listing schedule may be limited to product selections and product designations that must be established early in the Contract Time.
- Submit the completed product-listing schedule within 60 days after commencement of the Work.
4. **ENGINEER'S ACTION:** The Engineer will respond to the Contractor in writing within 2 weeks of receipt of the product-listing schedule. No response by the Engineer within the 2 week time period constitutes no objection to the listed products or manufacturers, but does not constitute a waiver of the requirement that products comply with the requirements of the contract documents. The Engineer's response will include the following:
- a. The Engineer's listing of unacceptable product selections, if any, containing an explanation of the reasons for this action.
 - b. A request for additional data necessary for the review and possible acceptance of the products and manufacturer's listed.

- B. **SUBSTITUTION REQUEST SUBMITTAL:** Submit 3 copies of each request for substitution. In each request identify the product, fabrication, and installation method to be replaced by the substitution; include related Specification Section and Drawing numbers, and complete documentation showing compliance with the requirements for substitutions. Include the following information, as appropriate, with each request.

1. Provide complete product data, drawings and descriptions of products, and fabrication and installation procedures.
2. Provide samples where applicable or requested.
3. Provide a detailed comparison of the significant qualities of the proposed substitution with those of the work originally specified. Significant qualities include elements such as size, weight, durability, performance and visual effect where applicable.
4. Provide complete coordination information. Include all changes required in other elements of the work to accommodate the substitution, including work performed by the Owner and separate Contractors.
5. Provide a statement indicating the effect the substitution will have on the work schedule in comparison to the schedule without approval of the proposed substitution. Include information regarding the effect of the proposed substitution on the Contract Time.
6. Provide complete cost information, including a proposal of the net change, if any in the contract Sum.
7. Provide certification by the manufacturer to the effect that the proposed substitution is suitable for the application as further defined in Article 2.02 herein.
8. Provide certification by the Contractor to the effect that, in the Contractor's opinion, after thorough evaluation, the proposed substitution will result in work that in every significant respect is equal-to or better than the work required by the Contract documents, and that it will perform adequately in the application indicated.
 - a. Include in this certification, the Contractor's waiver of rights to additional payment or time, which may subsequently be necessary because of the failure of the substitution to perform adequately.
9. **ENGINEER'S ACTION:** As soon as possible after receipt of the Contractor's request for substitution, the Engineer will notify the contractor of either the acceptance or rejection of the proposed substitution. Acceptance of substitute products will be contingent upon submission of substantiating data, satisfactory to the Engineer, that:
 - a. Item is equal to quality and serviceability to specified product.
 - b. Use of item will not entail changes in details and construction of related work.
 - c. Item conforms to required design and artistic effect.
 - d. There will be a cost advantage to the Owner.
 - e. The burden of proof shall be upon the Contractor.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. **GENERAL:** Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control delivery schedules to minimize long-term storage at the site and to prevent overcrowding of construction spaces. In particular coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.
1. Deliver products to the site in the manufacturer's sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 2. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

3. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.
 4. Containers which are broken, opened, watermarked, or otherwise damaged, and which contain caked, lumpy or otherwise damaged materials are unacceptable and shall be immediately removed from the premises.
 5. Store all cement, lime, plaster, aggregates, roofing materials, and similar items above ground and protected from dampness, weather and other damage.
 6. Retain all loose and small detachable parts of apparatus and equipment until the completion of the Work. Turn over to Owner or his representative designated to receive them, and obtain from him an itemized receipt thereof in triplicate. Retain one copy of this receipt for final payment for the Work.
- B. Contractor shall ensure that products are delivered to the Project in accordance with the Progress Schedule of the Project. In determining date of delivery, sufficient time shall be allowed for submittal approvals, including the possibility of having to resubmit improperly prepared submittals or products other than those specified, and the necessary fabrication or procurement time along with the delivery method and distance involved.

PART 2 - PRODUCTS

2.01 GENERAL PRODUCT COMPLIANCE

- A. GENERAL: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements is in itself a contract requirement. These requirements may be specified in any one of several different specifying methods, or in any combination of these methods. These methods include the following:
1. Proprietary.
 2. Descriptive.
 3. Performance.
 4. Compliance with Reference Standards.
- B. PROCEDURES FOR SELECTING PRODUCTS: The Contractor's options in selecting products are limited by requirements for the Contract Documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects. Required procedures include but are not limited to the following for the various indicated methods of specifying:
1. PROPRIETARY AND SEMIPROPRIETARY SPECIFICATION REQUIREMENTS:
 - a. SINGLE PRODUCT NAME: Where only a single product or manufacturer is named, provide the product indicated, unless the specification indicates consideration of other products. Advise the Engineer before proceeding, when it is discovered that the named product is not a reasonable or a feasible solution.
 - b. TWO OR MORE PRODUCT NAMES: Where two or more products or manufacturers are named, provide one of the products named, at the Contractor's option. Do not provide or offer to provide an unnamed product, unless the specification indicates consideration of other products. Advise the Engineer before proceeding where none of the named products comply with specification requirements, or are feasible for use.
 - c. Where products or manufacturers are specified by name, accompanied by the term "or-equal" or similar language, comply with the contract document provisions concerning "substitutions" to obtain approval from the Engineer for the use of an unnamed product.

2. **DESCRIPTIVE SPECIFICATION REQUIREMENTS:** Where the specifications describe a product or assembly generically, in detail, listing the exact characteristics required, but without use of a brand or trade name, provide products or assemblies that provide the characteristics indicated and otherwise comply with contract requirements.
 3. **PERFORMANCE SPECIFICATION REQUIREMENTS:** Where the specifications require compliance with indicated performance requirements, provide products that comply with the specific performance requirements indicated, and that are recommended by the manufacturer for the application indicated. The manufacturer's recommendations may be contained in published product literature, or by the manufacturer's individual certification of performance. General overall performance of a product is implied where the product is specified for specific performances.
 4. **COMPLIANCE WITH STANDARDS, CODES AND REGULATIONS:** Where the specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting a product that complies with specification requirements, including the standards, codes and regulations.
 5. **VISUAL MATCHING:** Where matching an established sample is required, the final judgment of whether a product proposed by the Contractor matches the sample satisfactorily will be determined by the Engineer. Where there is no product available within the specified product category that matches the sample satisfactorily and also complies with other specified requirements, comply with the provisions of the contract documents concerning "substitutions" and "change orders" for the selection of a matching product in another product category, or for non-compliance with specified requirements.
 6. **VISUAL SELECTION:** Except as otherwise indicated, where specified product requirements include the phrase "...as selected from the manufacturer's standard colors, patterns, textures..." or similar phrases, the Contractor has the option of selecting the product and manufacturer, provided the selection complies with other specified requirements. The Engineer is subsequently responsible for selecting the color, pattern and texture from the product line selected by the Contractor.
- C. For each product specifically specified or as requested by Engineer, submit a written certified statement from the manufacturer of each specified, or accepted substitute, product, material, and equipment item warranting that each product, material, and item of equipment furnished by him and installed in this Project is suitable for the application shown and specified in the Contract Documents, and includes all features, accessories, and performing characteristics listed in the manufacturer's catalog in force on the date bids are requested for the Work. This warranty is intended as a assurance by the manufacturer that his material or equipment is not being misapplied and is fit and sufficient for the service intended. This warranty is in addition to and not in limitation of any other warranty or remedy required by law of by the Contract Documents. It shall be the responsibility of the Contractor to obtain this warranty in writing.

2.02 SUBSTITUTIONS

- A. With each request for substitution, submit written certified statement from the manufacturer of the substitute warranting that each product, material, and item of equipment is equal to or better than the specified product in all respects and is suitable for application on this specific project.
1. **CONDITIONS:** The Contractor's request for a substitution will be received and considered when extensive revisions to the contract documents are not required, when the proposed changes are in keeping with the general intent of the contract documents, when the requests are timely, fully documented and properly submitted, and when one or more of the following conditions is satisfied, all as judged by the Engineer; otherwise the requests will be returned without action except to record non-compliance with these requirements.
 - a. The Engineer will consider a request for substitution where the request is directly related to an "or equal" clause or similar language in the Contract Documents.

- b. The Engineer will consider a request for substitution where the specified product or method cannot be provided within the Contract Time. However, the request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or to coordinate the various activities properly.
- c. The Engineer will consider a request for substitution where the specified product or method cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
- d. The Engineer will consider a request for a substitution where a substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Engineer for redesign and evaluation services, the increased cost of other work by the Owner or separate contractors, and similar considerations.
- e. The Engineer will consider a request for substitution when the specified product or method cannot be properly coordinated with other materials in the work, and where the Contractor certifies that the proposed substitution can be properly coordinated.

2.03 GENERAL PRODUCT REQUIREMENTS

- A. GENERAL: Provide products that comply with the requirements of the Contract Documents and that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products that are complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 - 1. STANDARD PRODUCTS: Where they are available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 2. CONTINUED AVAILABILITY: Where, because of the nature of its application, the Owner is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard products for which the manufacturer has published assurances that the products and its parts are likely to be available to the Owner at a later date.
- B. Except for code required labels, equipment nameplate data or other similar labels containing manufacturer's name, address, model number, capacity, and other rating information securely attached to each piece of equipment, the installation of any item, element or assembly, which bears on any exposed surface any name, trademark or other insignia which is intended to identify the manufacturer, the vendor, or other sources from which such object has been obtained, is prohibited. Also forbidden is the installation of any article which bears visible evidence that a name, trademark, or other insignia has been removed.
 - 1. CODE REQUIRED LABELS: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface which, in occupied spaces, is not conspicuous.
 - 2. EQUIPMENT NAMEPLATES: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate the nameplate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data.
 - a. Name of manufacturer.
 - b. Name of product.
 - c. Model number.
 - d. Serial number.
 - e. Capacity.

- f. Speed.
- g. Ratings.

PART 3 - EXECUTION

3.01 INSTALLATION OF PRODUCTS

- A. All manufactured products shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's printed directions, unless herein specified to the contrary. Where manufacturer's printed directions are available and where reference is made to manufacturer's directions in the specifications, the Contractor shall submit copies of such directions to the Engineer in accordance with the requirements of Section 01300 prior to the beginning of any work covered thereby.
- B. Where specific installation instructions are not part of these Specifications and Drawings, all products, materials, and equipment shall be installed in strict accordance with instructions from the respective manufacturer. Where installation instructions included in these Specifications or Drawings are at a variance with instructions furnished by the manufacturer, the Contractor shall make written request for clarification from the Engineer.
- C. In accepting or assenting to the use of any apparatus or material, or make or arrangement thereof, the Engineer in no way waives any of the requirements of these Specifications or the warranty embodied therein.

3.02 ACCEPTANCE OF EQUIPMENT OR SYSTEMS

- A. The Owner will not accept the start of the warranty period on systems or equipment until Substantial Completion is issued for Owner's occupancy of the building, in part or whole. Contractor shall make such provisions as required to extend the manufacturer's warranty from time of initial operation of systems or equipment until Substantial Completion is given in writing.

END OF SECTION

SECTION 01 29 73 - SCHEDULE OF VALUES

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the work, as specified herein and in other provisions of the Contract Documents.
- B. Provide separate detailed breakdown of the agreed Contract Sum showing values for the 5 campuses.
- C. Related Work
 - 1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE

- A. Use required means to assure arithmetical accuracy of the sums described. When so required by the Engineer, provide copies of the subcontracts or other data acceptable to the Engineer, substantiating the sums described.
- B. The Schedule of Values shall be broken down into costs for each specification section as labor and materials at a minimum.
 - 1. The contractor is encouraged to make the schedule of values very detailed in order to facilitate review and approval of requested percentages complete on pay applications.
 - 2. Where breakdown is vague, or includes multiple / combined assemblies, stages, tasks, etc., Engineer's review shall be conservative in favor of the Owner regarding approval of Pay Applications.

1.03 APPLICATION FOR PAYMENT SCHEDULE OF VALUES

- A. The schedule of values, once approved shall be transferred to columns B and C of AIA G702/G703 – Application for Payment to be used for all progress payments.
- B. Once AIA G702/G703 – Application for Payment has been submitted for payment, individual line item amounts in column C must remain unchanged throughout the progress of the work.
- C. In the beginning stages of the construction, total amounts for entire divisions may be used if complete breakdowns are not available; and shall be line item populated as soon as practical.
- D. No payments will be approved in divisions that do not have a line item breakdown.
- E. Allowances shall be shown, and remain throughout construction, as a single line item on the master application for payment in amount(s) as stipulated in the Contract Documents.
- F. For each Allowance, expenditures and accounting shall be included on a separate, attached spread sheet of the same format as the master application for payment.

- G. The master application for payment shall reflect only the summary of each allowance; and shall not contain individual allowance activity(s).

1.04 SUBMITTALS

- A. Prior to the first Application for Payment, submit a proposed schedule of values to the Engineer, as outlined below.
- B. Meet with the Engineer and determine additional data, if any, is required to be submitted.
- C. Secure the Engineer's approval of the schedule of values prior to submitting the first Application for Payment.

PART 2 - PRODUCTS

2.01 SCHEDULE OF VALUES

- A. Schedule of values for division 2 through 32 shall be broken down for each separate section of work, and include multiple items covered where appropriate.
- B. Each item of work shall be broken down by material and labor at a minimum.
- C. Where payment for shop drawings, submittals, record drawings and similar are expected, the items must be included as a separate item on the schedule of values.

PART 3 - EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 29 73 - SCHEDULE OF VALUES

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section specifies administrative and procedural requirements necessary for coordinating Work operations including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Sequential work of trades.
- B. Related Work:
 - 1. Section 01 32 16 - Construction Progress Schedule

PART 2 - PRODUCTS NOT APPLICABLE

PART 3 - EXECUTION

3.01 COORDINATION - GENERAL

- A. Contractor shall coordinate operations included in various sections of Contract Documents to assure efficient and orderly installation of each part of Work. Coordinate Work operations included under related sections of Contract Documents that depend on each other for proper installation, connection, and operation of Work, including but not limited to:
 - 1. Schedule construction operations in sequence required where installation of one part of Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
 - 3. Provide provisions to accommodate items scheduled for later installation.
 - 4. Prepare and administer provisions for coordination drawings.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of Work. Such administrative activities include, but are not limited to, following:
 - 1. Preparation of schedules.
 - 2. Installation, relocation, and removal of temporary facilities.
 - 3. Delivery and processing of submittals.
 - 4. Progress meetings.
 - 5. Project closeout activities.
- C. Contractor will be responsible for the overall coordination review. As each coordination drawing is completed, Contractor will meet with Engineer and Owner to review and resolve all conflicts on coordination drawings.

- D. The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of shop drawings, product data, samples or similar submittals until the respective submittal has been reviewed by the Engineer / Consultant without request for re-submittal.

END OF SECTION

SECTION 01 31 19 - PROJECT MEETINGS

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Refer to Section AB – Instructions to Proposers and Section AF – Manufacturer Prequalification for substitutions.
- B. Scope of Work:
 - 1. Contractor participation in preconstruction conference.
 - 2. Contractor administration of pre-installation conferences.
 - 3. Contractor administration of progress meetings

1.02 PRECONSTRUCTION CONFERENCE

- A. Engineer will administer preconstruction conference for execution of Owner-Contractor Agreement, and exchange preliminary submittals.
- B. Engineer will administer site mobilization conference at project site for clarification of Owner and Contractor responsibilities, in use of site and for review of administration procedures.

1.03 PRE-INSTALLATION CONFERENCES

- A. Contractor shall convene pre-installation conferences with each sub-contractor prior to commencing work of the sub-contractor.
 - 1. Contractor shall record attendance on a sign-in sheet.
 - 2. Contractor shall keep minutes of the conference and distribute to all attending parties prior to the start of the work.
- B. The purpose of the meeting is to fully review subcontractor's work to assure initial installation will be in accordance with the Contract Documents. The agenda shall include, but not necessarily limited to the following:
 - 1. Review the contract documents, including any changes thereto.
 - 2. Review all RFI's that may affect the work.
 - 3. Review the final reviewed submittals, including AE and Contractor comments.
 - 4. Review conditions of installation, preparation and installation procedures.
 - 5. Review coordination with related / interfacing work.
 - 6. It is the responsibility of the contractor / sub-contractor to resolve all unknown issues, unclear issues, coordination issues, and assembly interface issues in order to comply with the requirements of the Contract Documents.
- C. Require attendance includes, but is not limited to the following:
 - 1. Contractor's superintendent
 - 2. Engineer's field representative
 - 3. Relative sub-contractor
 - 4. Sub-contractors providing adjacent and / or interfacing work.
 - 5. Other sub-contractors whose work may be affected by the relative sub-contractor.

- D. Pre-installation conferences shall be scheduled a minimum of 48 hours in advance of the start of relative work unless otherwise agreed to by all parties.
- E. Pre-installation conferences may be scheduled with multiple sub-contractors at the same time to facilitate awareness of related work. Coordinate with Engineer's field rep.
- F. The contractor shall keep meeting minutes and distribute to all attendees within three days after the meeting; or sooner if required to facilitate project scheduling.

1.04 PROGRESS MEETINGS

- A. Contractor shall schedule and administer all project meetings after mobilization conference throughout progress of the work at weekly intervals, plus any special called meetings, and all pre-installation conferences.
- B. Contractor shall make physical arrangements for meetings, preside at meetings, record minutes, and distribute copies of minutes within two days to attendees, and those affected by decisions made at meetings.
- C. Required Attendance:
 - 1. Contractor's Superintendent
 - 2. Contractor's Project Manager
 - 3. Engineer's Project Manager
 - 4. Engineer's Field Representative
 - 5. Engineer's Consultants as appropriate to agenda topics for each meeting.
 - 6. Owner's Representative.
- D. The primary purpose of the weekly progress meetings is to update the Owner of the project status, progress, schedule and outstanding issues. It shall not be a venue for resolving issues that can otherwise be resolved between the Contractor and Engineer / consultants; unless direct input from the Owner is required.
 - 1. In as much as practical, meetings shall be scheduled on the same day and time each week. Changes in the normal schedule must be agreed to by all parties.
- E. Suggested Agenda:
 - 1. Review work completed since the previous meeting.
 - 2. Review status of progress schedule and adjustments thereto, and delivery schedules.
 - 3. Review submittal log,
 - 4. Review change proposal log, minor changes and other adjustments to the Work
 - 5. Review pending changes and substitutions.
 - 6. Review AE construction observation reports and resolutions to outstanding issues
 - 7. Review as-built documents and close-out progress,
 - 8. Discuss other items affecting progress of work.
 - 9. New business

1.05 PROGRESS MEETING MINUTES

- A. Progress meeting minutes shall be furnished by the Contractor and shall be structured to identify all discussion topics and action items by the initiating meeting and the eventual outcome.
- B. Each meeting with unresolved information or pending action items shall remain on the meeting minutes, in the above format, through one meeting beyond resolution or completion of the

pending action of the item, where the item can be reviewed one more time and ALL parties agree the item can be removed from the meeting minutes.

- C. The last meeting shown on the meeting minutes shall relate to the most recent meeting held and shall include ALL topics of discussion at that meeting.
- D. Up-to-date meeting minutes shall be furnished to all attendees at the beginning of each meeting.
- E. This sample is created in Excel and an electronic copy shall be furnished to the contractor upon request.

PART 2 - PRODUCTS NOT APPLICABLE

PART 3 - EXECUTION NOT APPLICABLE

END OF SECTION

SECTION 01 32 16 - CONSTRUCTION SCHEDULE

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 SUBMITTALS

A. Schedules:

1. Preliminary Analysis: Within 7 (seven) days after receipt of Notice to Proceed, submit a preliminary construction schedule for review.
2. Construction Schedule: Within 14 (fourteen) days after receipt of Notice to Proceed, submit one (1) reproducible.

1.02 RELIANCE UPON SCHEDULE

- A. The construction schedule as approved by the Engineer will be an integral part of the Contract, and will establish conditions for various activities and phases of construction.

1.03 CONSTRUCTION SCHEDULE

- A. Diagram: Graphically show the order of all activities necessary to complete the work and the sequence in which each activity is to be accomplished.
- B. Activities shown on the diagram shall include, but not necessarily be limited to:
1. Project mobilization.
 2. Submittals and approvals of shop drawings and samples.
 3. Phasing of construction.
 4. Procurement of equipment and critical materials.
 5. Fabrication and installation of special material and equipment.
 6. Final clean-up.
 7. Final inspection and testing.
- C. Contractor shall follow and include the critical dates, as indicated in the front end documents, in the construction schedule. There shall be no deviations from these critical dates unless authorized by Owner/Engineer.

1.04 CONSTRUCTION SCHEDULE LIMITATIONS

- A. Work performed under this Contract shall be performed in accordance with the following paragraphs:
1. All work may proceed immediately upon Construction Start Date and continue as coordinated with owner.
 2. The Owner has a critical need for all submittals to be ready for review upon Notice to Proceed and the work to begin on Construction Start Date and be Substantially Complete by the substantial completion date.
 3. Under the Base Proposal only, the successful Offeror will be 1) entitled to certain extensions of time and 2) subject to liquidated damages for work not completed beyond the agreed date which the Contractor shall required for Substantial Completion of the work included in this contract. Refer to Supplementary Conditions for additional requirements and liquidated damages.

4. Failure to complete and close-out project after substantial completion may result in liquidated damages. Refer to Supplementary Conditions for additional requirements and liquidated damages.
5. The Owner may at his discretion approve changes recommended by the successful Offeror to the above-mentioned schedule provided that the Owner's use of newly completed areas are not disrupted.

PART 2 - PRODUCTS NOT APPLICABLE

PART 3 - EXECUTION NOT APPLICABLE

END OF SECTION

SECTION 01 33 00 - SUBMITTAL PROCEDURES

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION OF WORK OF THIS SECTION

- A. Work of this Section includes procedural requirements for submittals including but not limited to the following items:
1. Administrative Submittals Including:
 - a. Listing of subcontractors.
 - b. Insurance certificates.
 - c. Schedule of Values.
 - d. Performance and Payment Bonds.
 - e. Construction Progress Schedule.
 - f. Inspection and test reports.
 - g. Payment applications.
 - h. Submittal Schedule.
 - i. Product Listing Schedule.
 - j. Project meeting minutes.
 2. Shop Drawings, Including:
 - a. Fabrication and installation drawings.
 - b. Patterns.
 - c. Schedules.
 3. Product Data, Including:
 - a. Manufacturer's product specifications and installation instructions.
 - b. Standard color charts.
 - c. Catalog cuts.
 - d. Roughing-in diagram and templates.
 - e. Standard wiring diagrams.
 - f. Standard product operating and maintenance manuals.
 - g. Manufacturer's product certifications for specified products and as requested by Engineer, and as specified (refer to Section 01600).
 4. Miscellaneous Submittals, Including:
 - a. Field measurement data.
 - b. Survey data and reports.
 - c. Testing and certification reports.
 5. Closeout Submittals:
 - a. Specially-prepared and standard printed warranties.
 - b. Maintenance agreements.
 - c. Workmanship bonds.
 - d. Record drawings.
 - e. Operating and maintenance manuals.
 - f. Keys and other security protection devices.

- g. Maintenance tools and spare parts.
- h. Overrun stock.

PART 2 - PRODUCTS

2.01 SHOP DRAWINGS

A. Special Submittal Requirements:

1. Owner Review of Shop Drawings: Owner review will be in addition to Engineer's review. Submit Shop Drawings promptly and allow additional time for the additional review.
2. Schedule of Values.
3. Construction Progress Schedule.

B. Submittal Preparation: Mark each submittal with a permanent label or title block, as appropriate, for identification with the following information on the label or title block for proper processing and recording of action taken.

1. Title of submittal and date submitted.
2. Sheet number and number of sheets included (as applicable). Number drawings consecutively.
3. Name and location of Project.
4. Name of Engineer and Engineer's Job Number.
5. Name of Contractor, subcontractor, fabrication supplier, and manufacturer, as appropriate.
6. Name of drawing and scale (as applicable).
7. Name and date of each revision.
8. Cross reference to Engineer's Drawings and Specification Section, as appropriate.
9. Provide a space on the label or adjacent to title block for the Contractor's review and approval markings, and appropriate space for the Engineer's "Action" stamp.
10. Number each submitted transmittal sequentially and individually.
11. Contractor's stamp shall provide Project name, date of Contractor review, and number of submittal.

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Engineer, and to other destinations as indicated, by use of a transmittal form. Contractor shall be responsible for delivery and pick-up of all submittals. Submittals received from sources other than the Contractor will be returned to the sender "without action". Use a transmittal form with places for the following information:

1. Project name.
2. Date.
3. To:
4. From:
5. Names of subcontractor, manufacturer and supplier.
6. References.
7. Category and type of submittal.
8. Submittal purpose and description.
9. Submittal and transmittal distribution record.
10. Signature of transmitter.
11. Contractor's certification stating that the information submitted complies with the requirements of the Contract Documents, with a place for the Contractor's signature.
12. Record relevant information and requests for data on the transmittal form. On the transmittal form, or on a separate sheet attached to the form, record deviations from the requirements of the Contract Documents, if any, including minor variations and limitations.

2.02 SPECIFIC SUBMITTAL REQUIREMENTS:

- A. General: Specific submittal requirements for individual units of work are specified in the applicable Specification Section. Except as otherwise indicated in the individual Specification Sections, comply with the requirements specified herein for each type of submittal.
- B. Construction Progress Schedule: Upon award of the Contract, the Contractor shall consult with the Engineer and Owner regarding the order in which the Work is to be performed and shall prepare a Construction Progress Schedule for the Owner's and Engineer's review. This Schedule shall be in a form approved by Engineer and Owner, and shall show a sequence of operations mutually agreeable to all parties concerned, including the work in connection with or affecting the use of streets, services, and utilities, based on final completion of all Work on or before the completion date stated in the Contract. Revise regularly as required. Schedule early completion of designated areas for Owner's usage prior to Substantial Completion of entire Project.
- C. Schedule of Values:
 - 1. Submit Schedule of Values to Engineer for approval.
 - a. Upon request by Engineer support values given with data that will substantiate their correctness.
 - b. Submit quantities of designated materials.
 - c. Use Schedule of Values only as basis for Contractor's Application for Payment.
 - 1) Submit updated Schedule of Values with each Application for Payment.
 - 2. Submit typewritten Schedule of Values on AIA Document G703 Continuation Sheet.
 - a. Identify each line item with number and title as listed in Specification Table of Contents.
 - 3. Itemize separate line item cost for each of the following cost items:
 - a. Performance and Payment Bonds.
 - b. Field supervision and layout.
 - c. Temporary facilities and controls.
 - 4. Itemize separate line item cost for work required by each Section of the Specifications.
 - 5. Round off figures to nearest ten dollars.
 - 6. Make sum of total costs of all items listed in Schedule equal to total Contract Sum.
 - 7. After review by Engineer, revise and resubmit Schedule of Values as required.
 - 8. Resubmit revised Schedule(s) in same manner.

PART 3 – EXECUTION

3.01 REVIEW PROCEDURE

- A. Upon receipt of submittals requiring review, the Engineer will review submittals and return them to the Contractor with results of the review indicated as follows:
 - 1. NO EXCEPTIONS: Means the submittals has been reviewed for conformance with the design concept of the Work and with the information given in the Contract Documents and no exceptions are taken; fabrication/installation may be undertaken. Approval does not authorize changes to the Contract Sum or Contract Time.

2. FURNISH AS NOTED: Means submittal has been reviewed as above and certain exceptions are noted; Contractor may proceed with the work incorporating the notes, but shall revise and resubmit the submittal to the Engineer until no exceptions are taken.
3. REVISE AND RESUBMIT: Means submittal has been reviewed as above and is not acceptable for one of the reasons specified below. In resubmitting, limit corrections to items marked.
 - a. Not enough information is provided to make a determination.
 - b. Submittal contains too many errors or omissions to make a determination.
 - c. Information provided is not in conformance with the information given in the Contract Documents. Fabrication/installation may not be undertaken until submittal has been revised and resubmitted and approved by the Engineer.
4. REJECTED AS NOTED: Means submittal has been reviewed as above and been found to be not in compliance with information given in the Contract Documents and fabricated/installation may not be undertaken. Do not revise or resubmit submittals marked Rejected or Submit Specific Item.

END OF SECTION

SECTION 01 36 13 - CUTTING AND PATCHING

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Requirements and limitations for cutting and patching of work.

1.02 DESCRIPTION OF REQUIREMENTS

- A. Definition: "Cutting and patching" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting, and patching required to restore surfaces to their original condition. This includes removal and replacement of existing ACT ceilings.
 - 1. Provide cutting and patching of existing work as required for the proper installation of new work, including proper interface with existing work.
 - 2. Cutting and patching is performed for coordination of the work, installation of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed, to remove and replace work not conforming to Contract requirements, or for other similar purposes.
- B. Refer to other sections of these specifications for specific cutting and patching requirements, and limitations applicable to individual units or work.
 - 1. Unless otherwise specified, requirements of this Section apply to mechanical, electrical and plumbing work. Refer to Division 22 & 26 sections for additional requirements and limitations on cutting and patching of mechanical and electrical work.

1.03 SPECIFICATIONS

- A. Individual Specifications Sections:
 - 1. Cutting and patching incidental to work of this Section.
 - 2. Advance notification to other trades of openings required in work of those trades.
 - 3. Limitations on cutting structural members.

1.04 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural work in a manner that would result in a reduction of load-carrying capacity or load-deflection ratio.
- B. Before cutting and patching the following categories of work, submit a written request and obtain the Architect's consent to proceed with cutting and patching, as described in the procedural proposal for cutting and patching.
 - 1. Structural steel
 - 2. Miscellaneous structural metals, including lintels, equipment supports, stair systems and similar categories of work
 - 3. Structural concrete
 - 4. Foundation construction
 - 5. Shoring assemblies
 - 6. Bearing and retaining walls

7. Structural decking
8. Exterior wall construction
9. Piping, ductwork, vessels and equipment

- C. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity, to perform in the manner intended, including energy performances, or that would result in increased maintenance, or decreased operational life, or decreasing safety. Before cutting and patching the following elements of work, and similar work elements where directed, obtain the Architect's consent to proceed with cutting and patching.

1. Shoring, bracing, and sheeting
2. Primary operational systems and equipment
3. Water/moisture vapor/air/smoke barriers, membranes and flashings
4. Noise and vibration control elements and systems
5. Control, communication, conveying, and electrical wiring systems
6. Special construction, as specified by Division 13 sections

- D. Visual Requirements: Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in the Architect's opinion, result in lessening the building's aesthetic qualities. Do not cut and patch work in a manner that would result in substantial visual evidence of cut and patch work. Remove and replace work judged by the Architect to be cut or patched in a visually unsatisfactory manner. If possible, retain the original installer or fabricator, or another recognized, experienced and specialized firm to cut and patch the following categories of exposed work:

1. Architectural concrete finishes
2. Brick and concrete unit masonry
3. Ornamental metal
4. Roofing
5. Preformed metal panels
6. Window system
7. Gypsum or cement plaster
8. Acoustical ceilings
9. Carpeting
10. Wall covering
11. HVAC enclosure, cabinets or covers

1.05 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:

1. Structural integrity of any element of the project
2. Integrity of weather-exposed or moisture-resistant element
3. Efficiency, maintenance, or safety of any operational element
4. Visual qualities of sight-exposed elements
5. Work of Owner or separate contractor
6. Any work in or around any known or potential area in which asbestos or lead based products exist.

- B. Procedural Proposal for Cutting and Patching: Where prior consent for cutting and patching is required, submit proposed procedures for this work well in advance of the time work will be performed, and request consent to proceed. Include the following information, as applicable, in the submittal:

1. Describe the nature of the work and how it is to be performed, indicating why cutting and patching cannot be avoided. Describe anticipated results of the work in terms of changes to and effects upon existing work, including structural, operational and visual changes, as well as other significant elements.
2. List products to be used and firms that will perform work.
3. Give dates when work is expected to be performed.
4. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be temporarily out of service. Indicate how long utility services will be disrupted.
5. Where cutting and patching of structural work involves the additional reinforcement, submit details and engineering calculations to show how that reinforcement is integrated with the original structure to satisfy requirements.
6. Consent by the Architect to proceed with cutting and patching work does not waive the Architect's right to later require complete removal and replacement of work found to be cut and patched in an unsatisfactory manner.

1.06 PAYMENT FOR COSTS

- A. Cost for work necessary to accommodate installation of new work shall be borne by the Contractor or subcontractor responsible for installing new work.
- B. Costs caused by ill-timed or defective work, or work not conforming to contract documents, including costs for additional services of the Architect and other Design Consultants shall be borne by the party responsible in the judgment of Architect, for ill-timed, rejected or non-conforming work.
- C. Costs for work performed on instruction of Owner, other than the correction of defective or non-conforming work shall be responsibility of the Owner, who shall issue an appropriate Change Order for the increase in costs.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Except as otherwise indicated, or as directed by the Architect, use materials for cutting and patching that are identical to existing materials. If identical materials are not available or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible, with regard to visual effect. Use materials for cutting and patching that will result in equal-or-better performance characteristics.

PART 3 - EXECUTION

3.01 GENERAL

- A. Execute cutting, fitting, and patching to complete work, and to:
 1. Fit several parts together which will integrate with other work.
 2. Uncover work to install ill-timed work.
 3. Remove and replace defective and non-conforming work.
 4. Remove samples of installed work for testing.
 5. Provide openings in elements of work for penetrations of mechanical and electrical work.
 6. Fill and refinish existing holes and damaged areas.

3.02 INSPECTION

- A. Before cutting, examine the surface to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the work.

3.03 PREPARATION

- A. To prevent failure, provide temporary support of work to be cut.
- B. Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations.
- C. Take precautions not to cut existing pipe, conduit or duct serving the building, but scheduled to be relocated until provisions have been made to bypass them.

3.04 PERFORMANCE

- A. Employ skilled workmen to perform cutting and patching work. Except as otherwise indicated or as approved by the Engineer, proceed with cutting and patching at the earliest feasible time and complete work without delay.
- B. Cut the work using methods that are least likely to damage work to be retained or adjoining work. Where possible, review the proposed procedures with the original installer; comply with original installer's recommendations.
 - 1. In general, where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chipping. Cut through concrete and masonry using a cutting machine such as a carborundum saw or core drill to ensure a neat hole. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Temporarily cover the opening when not in use.
 - 2. Comply with requirements of applicable sections of Division 2 when cutting and patching, excavating and backfilling.
 - 3. Bypass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated or abandoned. Cut-off conduit and pipe in walls or partitions to be removed. After bypassing and cutting, cap, valve or plug, and seal tight the remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.
- C. Patching: Patch with seams which are durable and as visible as possible. Comply with specified tolerances for the work.
 - 1. Where feasible, inspect and test patched areas to demonstrate integrity of work.
 - 2. Restore exposed finishes of patched areas, and where necessary, extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.
 - 3. Where removal of walls or partitions extend one finished area into another finished area, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. If necessary to achieve uniform color and appearance, remove the existing floor and wall coverings and replace with new materials.
 - a. Where a patch occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch, after the patched area has received prime and base coat.

- 4. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.
- D. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- E. At penetrations of fire-rated wall, ceiling, or floor construction, completely seal voids with fire-rated material, full thickness of the construction element.
- F. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

3.05 **CLEANING**

- A. Thoroughly clean areas and spaces where work is performed or used as access to work. Completely remove paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finish is applied. Restore damaged pipe covering to its original condition.

END OF SECTION

SECTION 01 36 16 - REMODELING AND ALTERATION PROCEDURES

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. This Section contains general provisions and requirements pertaining to all remodeling, removal and relocation work in the existing building, and becomes a part of each Section and Division performing remodeling, removal and relocation work for this project, with the same force and effect as if written in full therein.
- B. Take all necessary precautions to keep trespassers out of the work areas. Secure work areas from entry when work is not in progress.
- C. Perform all remodeling, demolition, removal and relocation work in strict accordance with Owner's instructions and applicable Federal, State and local health and safety standards, codes and ordinances. Where conflicts occur, the more restrictive requirement shall govern.

1.02 EXISTING CONDITIONS

- A. Obvious existing conditions, installations and obstructions affecting the work shall be taken into consideration as necessary. Work to be done is the same as though they were completely shown or described.
- B. Items of existing construction indicated to remain upon completion of the Contract, but which require removal to complete the work, shall be carefully removed and replaced as required. The replaced work shall match its condition at the start of the work, unless otherwise required.
- C. Visit the site and inspect all existing conditions, including access to the site, the nature of structures, objects and materials to be encountered, and all other facts concerning or affecting the work. Information on the drawings showing existing conditions does not constitute a guarantee that other items may not be found or encountered.
- D. Utilities: Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the Engineer in writing two weeks in advance. Provide temporary services during interruptions to existing utilities.
- E. Stop work and notify Engineer and owner immediately if any hazardous materials are encountered (especially asbestos or lead based products).

PART 2 - PRODUCTS

2.01 SALVAGED MATERIALS

- A. The Owner reserves the right of first refusal on all salvaged items. Remove remaining items from the site as work progresses. Storage or sale of items on site is not permitted. Burning of removed materials on site is not permitted.
- B. Store salvaged items in a dry, secure place on site.
- C. Salvaged items not required for use in repair of existing work shall remain the property of the Owner.

- D. Do not incorporate salvaged or used material in new construction, except with permission of the Engineer.

2.02 PRODUCTS FOR PATCHING, EXTENDING AND MATCHING

- A. Contract documents do not define products or standards of workmanship present in existing construction. Determine products by inspection and by use of the existing construction. Provide same or similar quality products or types of construction such as the existing structure, where needed to patch or extend existing work.
- B. If reasonably matched products are not obtainable, improve appearance by minor relocating some of the existing products, and grouping new ones in a pattern arranged by the Engineer. Do not replace products scheduled for retaining because matching ones are not obtainable, except as directed by a Change Order.

PART 3 - EXECUTION

3.01 PROTECTION OF WORK TO REMAIN

- A. Protect existing work from damage by use of barricades, tarpaulins, temporary walls, plywood, planking, masking, or other suitable means and methods as approved by the Engineer.
- B. If work to remain in place is damaged, restore to original condition at no additional cost to the Owner.
- C. Concealed Conditions: If conditions cause changes in the work from requirements of the Contract Documents, the Contract Sum will be adjusted in accordance with the General Conditions.

3.02 PROCEDURES

- A. Refinishing at Removed Work: Cut below the surface of substrate materials and patch over the area of removal with finish materials so removal is not apparent.
- B. Remove and replace existing ceilings, cut, patch, or replace existing walls, partitions and floors, as may be necessary for access to valves, piping, conduit and tubing by mechanical and electrical trades, as directed and approved by the Engineer. Work involved shall be performed by the appropriate subcontractor, or by other properly qualified subcontractors.
- C. Patch and extend existing work using skilled mechanics who are capable of matching existing quality of workmanship. Quality of patched or extended work shall not be less than that specified for new work.
- D. Cutting:
 - 1. Concrete and Masonry: Saw cut where feasible.
 - 2. Plaster: Cut back to sound plaster on straight lines, and back-bevel edges of remaining plaster. Trim and prepare existing lath for tie-in of new lath.
 - 3. Woodwork: Cut back to a joint or panel line. Undamaged removed materials may be reused.
 - 4. Resilient Tiles: Remove in whole units to natural breaking points or straight joint lines, with no damaged or defective existing tiles remaining where joining new construction.
 - 5. Salvaged Materials: Carefully remove to avoid damage, thoroughly clean and reinstall as indicated, or store as directed.
 - 6. Doors: Remove in such manner as to facilitate filling in of openings or installation of new work, as required by the drawings.

7. Structural Elements: Remove only as shown on the Structural drawings. If not specifically shown, but removal is required, perform such removal or alteration only upon written approval of the Engineer. Do not damage or alter any structural element of the existing building.

E. Patching:

1. Match existing work where possible; if unavailable, use salvage material for patching, and provide totally new material in areas where salvage has been removed. Consult with the Engineer concerning locations for salvaging materials.
2. Repairs or continuations of existing work shall be relatively imperceptible in the finished work when viewed under finished lighting conditions from a distance of 6 feet.
3. Patching, Repairing, and Finishing of Existing Work: Perform in compliance with the applicable requirements of the specification section covering the work to be performed and the requirement of this Section.

- F. Erect scaffolding as necessary to gain access to the various parts of the work. Provide structurally sound, rigidly braced and properly constructed scaffolding, shoring and bracing as necessary to positively protect the affected elements and building, and to support the activities or workmen and loads. Design and construction of scaffolds and supports shall be in accordance with applicable safety regulations. Material used shall be adequate to support anticipated loads with a properly calculated margin of safety.

- G. Noise Producing Equipment: Minimize use of noise producing equipment. Limit excessive noise to periods of vacancy or provide sound control. Arrange schedules in advance with the Engineer.

3.03 EXISTING FURNITURE AND EQUIPMENT

- A. Owner Salvaged Items: Personal items in areas subject to remodeling will be removed before construction in those areas commences.
- B. Furniture Items: Owner will remove furniture and equipment from small rooms or relocate furniture and equipment to the edges or corners of larger rooms before remodeling commences. Contractor shall exercise care to prevent damage to remaining furniture and equipment. Contractor is responsible for cleaning furniture or equipment that is soiled with construction related materials or debris.

3.04 PAINTING AND FINISHING

- A. Preparation: Prepare patched areas as required for new work. Wash existing painted surfaces with neutral soap or detergent, thoroughly rinse, and sand when dry.
- B. Painting and Finishing: Conform to the applicable provisions of the Painting Section. Prepare bare areas and patches in existing painted surfaces with specified primer and intermediate coats, sanded smooth and flush with adjoining surfaces.

3.05 DISPOSAL OF DEBRIS

- A. Remove material, debris and rubbish resulting from work of this Section from the building and site as it accumulates. Keep all areas of work in "broom clean" condition as the work progresses.
- B. At completion of renovation and remodeling work in each area, provide final cleaning and return space to a condition suitable for use by the Owner.

END OF SECTION

SECTION 01 41 00 - REGULATORY REQUIREMENTS

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 DEFINITIONS

- A. GENERAL: Basic Contract definitions are included in the General Conditions.
- B. Indicated refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.
- C. DIRECTED: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Engineer", requested by the Engineer", and similar phrases. However, no implied meaning shall be interpreted to extend the Engineer's responsibility into the Contractor's area of construction supervision.
- D. APPROVE: The term "approved", where used in conjunction with the Engineer's action on the Contractor's submittals, applications, and requests, is limited to the duties and responsibilities of the Engineer as stated in General and Supplementary Conditions. Such approval shall not release the Contractor from responsibility to fulfill Contract requirements unless otherwise provided in the Contract Documents.
- E. REGULATION: The term "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work, whether lawfully imposed by authorities having jurisdiction or not.
- F. FURNISH: The term "furnish" is used to mean "supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations".
- G. INSTALL: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations".
- H. PROVIDE: The term "provide" means "to furnish and install, complete and ready for the intended use".
- I. INSTALLER: An "Installer" is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
- J. Project Site is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other construction activities as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land upon which the Project is to be built.
- K. TESTING LABORATORIES: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.02 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. **SPECIFICATION FORMAT:** These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 23-Division format and MASTERFORMAT numbering system.
- B. **SPECIFICATION CONTENT:** This Specification uses certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
 - 1. **ABBREVIATED LANGUAGE:** Language used in the Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the full context of the Contract Documents so indicates.
 - 2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
- C. **ASSIGNMENT OF SPECIALISTS:** The Specification requires that certain specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
 - 1. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
 - 2. **TRADES:** Use of titles such as "carpentry" is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter". It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

1.03 INDUSTRY STANDARDS

- A. **APPLICABILITY OF STANDARDS:** Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference. Individual Sections indicate which codes and standards the Contractor must keep available at the Project Site for reference.
- B. **PUBLICATION DATES:** Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of Contract Documents.
 - 1. **UPDATE STANDARDS:** At the request of the Engineer, Contractor, or authority having jurisdiction, submit a Change Order proposal where an applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work affected. The Engineer will decide whether to issue a Change Order to proceed with the updated standard.
- C. **CONFLICTING REQUIREMENTS:** Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents indicate

otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Engineer for a decision before proceeding.

1. **MINIMUM QUANTITY OR QUALITY LEVELS:** In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to the Engineer for a decision before proceeding.
- D. **COPIES OF STANDARDS:** Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.
 1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
- E. **ABBREVIATIONS AND NAMES:** Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. Names and addresses are subject to change and are believed to be, but are not assured to be, accurate and up to date as of the date of Contract Documents.

AA	Aluminum Association 900 19th St., NW, Suite 300 Washington, DC 20006 (200) 862-5100	ALI	Associated Laboratories 641 S. Vermont St. Palatine, IL 60067 (312) 358-7400
AAMA	American Architectural Manufacturer's Association 2700 RIVER RD., Suite 118 Dds Plaines, IL 60018 (312) 699-7310	ALSC	American Lumber Standards Committee P.O. Box 210 Germantown, MD 20874 (301) 972-1700
ACI	American Concrete Institute P.O. BOX 19150 Detroit, MI 48219 (313) 532-2600	ANSI	American National Standards Institute 1430 Broadway New York, NY 10018 (212) 354-3300
ACIL	American Council of Independent Laboratories 1725 K St., NW Washington, DC 20006 (202) 887-5872	APA	American Plywood Association P.O. Box 11700 Tacoma, WA 98411 (206) 565-6600
	AGA American Gas Association 1515 Wilson Blvd. Arlington, VA 22209 (703) 841-8400	API	American Petroleum Institute 1220 L St., NW Washington, DC 20005 (202) 682-8000
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740 (310) 277-4258	ARMA	Asphalt Roofing Manufacturers Association 6288 Montrose Rd. Rockville, MD 20852 (301) 231-9050
AIA	American Institute of Architects 1735 New York AVE, NW WASHINGTON, DC 20006 (202) 626-7300	ASC	Adhesive and Sealant Council 1500 Wilson Blvd., Suite 515 Arlington, VA 22209 (703) 841-1112
A.I.A.	AMERICAN INSURANCE ASSOCIATION 85 JOHN ST. NEW YORK, NY 10038 (212) 669-0400	ASME	American Society of Mechanical Engineers 345 East 47th St. New York, NY 10017 (212) 705-7722

TOMBALL INDEPENDENT SCHOOL DISTRICT
CHILLER PACKAGE #02

ISSUE FOR ADDENDUM #1
OCTOBER 15, 2026

AIHA	American Industrial Hygiene Association 475 Wolf Ledges Parkway Akron, OH 44311 (216) 762-7294	ASTM	American Society for Testing and Materials 1916 Race St. Philadelphia, PA 19103 (215) 299-5400
AISC	American Institute of Steel Construction 400 N. Michigan Ave., 8th Floor Chicago, IL 60611 (312) 670-2400	AWS	American Welding Society P.O. Box 351040, 550 Le Jeune Road, NW Miami, FL 33135 (305) 443-9353
AITC	American Institute of Timber Construction 333 W. Hampden Ave. Englewood, CO 80110 (303) 761-3212	ISA	Instrument Society of America P.O. Box 12277; 67 Alexander Drive Research Triangle Park, NC 27709 (919) 549-8411
AWWA	American Water Works Association 6666 W. Quincy Ave. Denver, CO 80235 (303) 794-7711	LPI	Lightning Protection Institute P.O. Box 458Harvard, IL 60033 (815) 943-7211
BHMA	Builders' Hardware Manufacturers Association 60 E. 42nd. St., Room 511 New York, NY 10165 (212) 682-8142	ML/SFA	Metal Lath/Steel Framing Association 600 S. Federal St., Suite 400 Chicago, IL 60605 (312) 922-6222
CDA	Copper Development Association Box 1840, Greenwich Office Park 2 Greenwich, CT 06836 (203) 625-8210	MSS	Manufacturers Standardization Society of the Valve and Fittings Industry 127 Park St., NE Vienna, VA 22180 (703) 281-6613
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Rd. Schaumburg, IL 60195 (312) 490-1700	NAAMM	National Association of Architectural Metal Mfg. 600 S. Federal St., Suite 400 Chicago, IL 60605 (312) 922-6222
EIA	Electronic Industries Association 2001 Eye St., NW Washington, DC 20006 (202) 457-4900	NCMA	National Concrete Masonry Association P.O. Box 781 Herndon, VA 22070 (703) 435-4900
ETL	ETL Testing Laboratories, Inc. P.O. Box 2040Route 11, Industrial Park Cortland, NY 13045 (607) 753-6711	NEC	National Electric Code (from NFPA)
FM	Factory Mutual Engineering and Research 1151 Boston-Providence Turnpike Norwood, MA 02062 (617) 762-4300	NECA	National Electrical Contractors Association 7315 Wisconsin Ave. Bethesda, MD 20814 (301) 657-3110
ICEA	Insulated Cable Engineers Association Inc. P.O. Box P South Yarmouth, MA 02664 (617) 394-4424	NEMA	National Electrical Manufacturers Association 2101 L St., NW, Suite 300 Washington, DC 20037 (202) 457-8400
IEC	International Electrotechnical Commission (Available from ANSI) 1430 Broadway New York, NY 10018 (212) 354-3300	NFPA	National Fire Protection Association Battlemarch Park Quincy, MA 02269 (617) 770-3000
IEEE	Institute of Electrical and Electronic Engineers 345 E. 47th St. New York, NY 10017 (212) 705-7900	NPCA	National Paint and Coating Association 1500 Rhode Island Ave., NW Washington, DC 20005 (202) 462-6272
IRI	Industrial Risk Insurers 85 Woodland St. Hartford, CT 06102 (203) 520-7300	NSSEA	National School Supply and Equipment Association 2020 Fourteenth St. North, Suite 400 Arlington, VA 22201 (703) 524-8819
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077 (312) 966-6200	SSPC	Steel Structures Painting Council 4400 Fifth Ave. Pittsburgh, PA 15213 (412) 268-3327

PDI	Plumbing and Drainage Institute (c/o Saul Baker) 1106 W. 77th St., South Dr. Indianapolis, IN 46260 (317) 251-6970	TIMA	Thermal Insulation Manufacturers Association 8341 Sangre de Cristo Road Littleton, CO 80217 (303) 933-9774
RMA	Rubber Manufacturers Association 1400 K St., NW Washington, DC 20005 (202) 682-4800	UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062 (312) 272-8800
SDI	Steel Deck Institute P.O. Box 9506 Canton, OH 44711 (216) 493-7886	WWPA	Woven Wire Products Association 2515 N. Nordica Ave., Suite A Myrtle Beach, SC 29577 803) 449-0487
SJI	Steel Joist Institute 1205 48th Street North Chicago, IL 60635 (312) 637-1359		
WRI	Wire Reinforcement Institute 8361-A Greensboro Drive McLean, VA 22102 (703) 790-9790		

- F. FEDERAL GOVERNMENT AGENCIES: Names and titles of federal government standard or Specification producing agencies are frequently abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard or Specification producing agencies of the federal government. Names and address are subject to change but are believed to be, but are not assured to be, accurate and up to date as of the date of the Contract Documents.

CE	Corps of Engineers (U.S. Department of the Army) Chief of Engineers - Referral Washington, DC 20314 (202) 272-0660	NIST	National Institute of Standards and Technology (U.S. Department of Commerce) Gaithersburg, MD 20899 (301) 975-2000
CFR	Code of Federal Regulations Available from the Government Printing Office N. Capital St. between G and H St. W Washington, DC 20402 (202) 783-3238 (Material is usually first published in the Federal Register	DOT	Department of Transportation 400 Seventh St., SW Washington, DC 20590 (202) 366-400
CPSC	Consumer Product Safety Commission 5401 Westbard Ave., Bethesda, MD 20816 (800) 638-2772	EPA	Environmental Protection Agency 401 M St., SW Washington, DC 20460 (202) 382 2090
CS	Commercial Standard (U.S. Department of Commerce) Government Printing Office Washington, DC 20402 (202) 377-2000	FAA	Federal Aviation Administration (U.S. Department of Transportation) 800 Independence Ave., SW Washington, DC 20590 (202) 366-4000
DOC	Department of Commerce 14th St. and Constitution Ave., NW Washington, DC 20230 (202) 377-2000	FHA	Federal Housing Administration (U.S. Department of Housing and Urban Development) 451 Seventh St., SW Washington, DC 20201 (202) 755-6422
FS	Federal Specification (from GSA) Specifications Unit (WFSIS) 7th and D St., SW Washington, DC 20406 (202) 472-2205 or 472-2140	OSHA	Occupational Safety and Health Administration (U.S. Department of Labor) Government Printing Office Washington, DC 20402 (202) 523-6091
GSA	General Services Administration F St. and 18th St., NW, Washington, DC 20405 (202) 472-1082	PS	Product Standard of NBS (U.S. Department of Commerce) Government printing Office Washington, DC 20402 (202) 783-3238

MIL Military Standardization Documents
(U.S. Department of Defense)
Naval Publications and Forms Center
5801 Tabor Ave.
Philadelphia, PA 19120

USDA U.S. Department of Agriculture Independence Ave.
between 12th and 14th St., SW
Washington, DC 20250
(202) 447-8732

1.04 GOVERNING REGULATIONS/AUTHORITIES

- A. The Engineer has contacted authorities having jurisdiction where necessary to obtain information necessary for the preparation of Contract Documents; that information may or may not be of significance to the Contractor. Contact authorities having jurisdiction directly for information and decisions having a bearing on the Work.

1. COPIES OF CORRESPONDENCE: During preparation of the Contract Documents, the Engineer maintained a file of correspondence with authorities having jurisdiction. This file is available at the Engineer's office for reference. If requested, the Engineer will provide copies of correspondence at cost of reproduction.

B. SUBMITTALS

1. PERMITS, LICENSES, AND CERTIFICATES: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS NOT APPLICABLE

PART 3 - EXECUTION NOT APPLICABLE

END OF SECTION

SECTION 01 45 23 - TESTING AND INSPECTION SERVICES

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Refer to Section AB - Instructions to Proposers and Section AF – Manufacturer Prequalification for substitutions.
- B. Scope of Work:
 - 1. The Contractor shall allow in his proposal the coordination and supervision of tests to be performed by an independent laboratory selected by the Owner.
 - 2. Testing laboratory services specified in the Contract Documents shall be provided and paid for by the Owner outside of this Contract.
 - 3. A testing lab shall be selected by the Owner, and the Contractor shall be notified as soon as possible.
 - 4. The Contractor shall cooperate with the testing laboratory in all matters pertaining to the work. The Owner retains the option to add to or delete any or all testing specified herein.
 - 5. Inspections and testing required by laws, ordinances, rules, regulations, orders or similar requirements of authorities having jurisdiction shall be included in the Contractor's proposal and paid for by the Contractor.
- C. Related Work:
 - 1. Each Specification Section Listed: Laboratory test required and standards for testing.
 - 2. Testing laboratory inspection, sampling and testing is required for:
 - 3. Electrical, plumbing and mechanical tests required in relative specification sections.
 - 4. As requested by the Owner or Engineer

1.02 AUTHORITIES AND DUTIES OF THE TESTING LABORATORY

- A. The testing laboratory shall provide testing services under a separate agreement with the Owner or Engineer, who shall be responsible for the costs of initial testing – pass or fail.
 - 1. The Contractor shall be responsible for costs of all re-tests required to achieve passing results.
 - 2. The Contractor shall be responsible for charges of the testing lab for expenses incurred for cancelled and / or mis-scheduled testing requests.
 - 3. The testing lab shall invoice Contractor direct for all re-tests of failed initial tests; and send copies of the invoices to the Engineer and Owner for record.
 - 4. The testing lab and Contractor shall be responsible to negotiate and execute a separate agreement if required by the testing lab for charges described above.
- B. The laboratory is not authorized to revoke, alter, relax, enlarge, or release any requirement of the Specifications, or to approve or accept any portion of the work.
 - 1. When it appears that the material furnished, or work performed by the Contractor fails to fulfill specification requirements, the testing laboratory shall promptly notify the Contractor, Engineer and Owner of work being tested of such deficiencies.
- C. The laboratory shall promptly distribute copies of the laboratory test and inspection reports. Standard distribution shall include copies of all reports to the Owner, Engineer, and Contractor.

1. Electronic distribution of test reports / results is mandatory.
- D. The testing lab is required to furnish a report of the status of testing performed as it relates to anticipated expenses described in the Agreement with the testing lab. Reports shall be furnished at most bi-monthly to the Owner and Engineer.
 1. Report information shall include verification that Owner paid testing progress corresponds with anticipated expenses.
 2. The testing lab shall be required to notify the Engineer and Owner immediately if / when the testing lab anticipates exceeding the lump sum fee agreed to by the Owner.
 3. Such notification must occur prior to expensing 75% of the testing lab fee.

1.03 TESTING LABORATORY CONTRACTUAL RELATIONSHIPS

- A. The Owner shall contract with the Testing Laboratory outside the Owner-Contractor Agreement.
- B. The Owner shall pay for the initial laboratory services / tests – pass or fail.
- C. In the case of a failed test that does not meet the specified requirements, the Contractor shall be responsible for payment directly to the Testing Laboratory for all services / re- testing required to achieve a passing result.
 1. The Owner shall not be invoiced for services or re-testing associated with failed initial tests.
- D. The Testing Laboratory is responsible for making separate arrangements with the Contractor for reimbursement of services or re-testing associated with failed initial tests.

1.04 TESTING LABORATORY GUIDELINES AND PROCEDURES

- A. Technicians scheduled to perform specific testing services must be qualified to review and perform other services that overlap (i.e., earthwork, foundation inspections, rebar inspection, and concrete), when scheduled concurrently at the project site.
- B. Technician time for services performed will be reimbursed at a regular time rate. Compensation at the overtime rate will be considered for any hours over eight hours spent at the job site on a single day, field testing services performed on a Saturday or Sunday, and any field services performed on a recognized holiday.
- C. Concrete design mixes will receive a cursory review with any discrepancies reported to the Engineer.
- D. Nuclear density testing will be based on a daily rental rate for the actual testing equipment; compensation on a per test basis will not be considered.
- E. Report distribution shall include the Owner, Engineer, Contractor, Civil Engineer, Structural Engineer, and others requesting or requiring review of the specific testing results.
- F. Job site trips solely for cylinder pick-up shall be minimized. Whenever possible, cylinder / specimen pick-up shall be conducted when a technician is scheduled to be on-site for other testing work.
- G. Structural steel inspections shall include a plant visit reviewing shop fabrication, welding and an overall review of the shop fabrication quality control standards.

1. Structural steel field inspection shall include a 100% visual review of all field fillet welds and initial frequency of 25% ultrasonic testing of full field penetration welds.
 2. There shall be 100% visual review of all bolted connections, and a minimum of two (2) bolts tested at every bolted connection.
- H. The Contractor shall bear the responsibility of scheduling all testing services. The Contractor and the testing laboratory shall assume full responsibility to coordinate the testing services. Cancellations and/or failed tests will be reimbursable to the Owner by the responsible party for the cancellation or failure of a test or service.

PART 2 - GOVERNMENTAL INSPECTIONS AND CONTRACTOR TESTING

2.01 GOVERNMENTAL INSPECTIONS

- A. The Contractor shall allow in his Proposal the application, coordination, scheduling and cost of all on-site inspections to be performed by governmental authorities having jurisdiction which are required for approval of the Work and occupancy of the building; including, but limited to:
1. City departments
 2. County departments
 3. Municipal Utility Districts
 4. Health Departments
 5. Fire Marshall Offices.
- B. The Contractor shall make all corrective measures in accordance with instructions received from the governing authority inspector having jurisdiction, as required to receive 100% approval for the work being inspected.
- C. The Contractor shall record and keep record of all governmental agency tests and inspections; including deficiencies noted by the agency, and corrective action(s) taken to receive final approval of the agency.
- D. The Contractor shall bear all costs for initial inspections, re-inspections and any other expenses related to on-site inspections made by governing authorities.
- E. No allowance shall be made for additional Contract Time, nor an increase in the Contract Sum for any unanticipated expenses or delays resulting from failed governmental inspection or resulting re-inspections required to obtain agency approval(s).

2.02 BELOW SLAB SANITARY SEWER TESTING

- A. In addition to normal industry / governmental testing required for the sanitary sewer system, Contractor shall allow in his Proposal the application, coordination, scheduling and cost to provide a static water test(s) as described below.
- B. The contractor shall perform a static pressure test on all sanitary sewer piping systems below the building slab.
- C. The test(s) shall be maintained continuously from the time the pipe installation is initially tested prior to final cover-up and continue throughout all foundation preparation and placement of concrete slabs; and terminating a minimum of seven (7) days after the placement of concrete slabs.
- D. Maintain sealed caps on all stub-ups to prevent dissipation of water within the piping system.

- E. Any failure of the static testing indicating leakage during the above period shall be immediately reported to the Engineer, MEP Engineer and Owner.
- F. The Contractor shall be responsible for all corrective measures necessary to repair and / or replace defecting piping as directed by the Engineer.

PART 3 - OWNER CONSULTANT OBSERVATIONS AND INSPECTIONS

3.01 GENERAL

- A. Throughout the progress of the Work, the Owner's A/E consultants shall make regular site visits and prepare observation reports.
- B. Contractor and requested subcontractors shall be present for all A/E observations. Coordinate with A/E field representatives as required.
- C. Contractor shall coordinate all trades as required to address issue or deficiencies identified on the observation reports.
- D. Upon completion of corrective measures, Contractor shall note corrective measures, including date(s) on the observation report(s) and distribute the Engineer.

3.02 TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR)

- A. If required, the Owner /Engineer shall be responsible for interfacing with Texas Department of Licensing and Registration (TDLR) regarding state approval for compliance with Texas Accessibility Standards.
- B. The Owner /Engineer shall make the initial submission of the Contract Documents for review.
- C. TAS review comments affecting the Work shall be incorporated into the Work as directed by the Engineer either by Addendum, Change Proposal Request, Minor Change or Clarification.
- D. During the progress of the Work, the Contractor shall bring to the Engineer's attention any portion of the Work that may be questionably compliant with TDLR / TAS.
- E. The Engineer shall coordinate and manage the TAS inspection of the completed project.
 - 1. TAS required corrective measures due to design issues shall be paid for by the Owner.
 - 2. TAS required corrective issues due to Contractor issues (materials, installation, etc.) shall be paid for by the Contractor.
- F. All corrective work shall be completed within thirty (30) days after notification unless otherwise agreed upon by the Owner.

END OF SECTION

SECTION 01 45 23.13 - OBSERVATION PROCEDURES

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work:
 - 1. The Contractor shall coordinate and cooperate with Engineer and Engineer's Consultants as required for on-site observations and monitoring of the Work.
- B. Related Work:
 - 1. Section 01 45 23 – Testing and Inspection Services

1.02 RELATED REQUIREMENTS

- A. Coordination, scheduling and implementation of inspections and testing required by laws, ordinances, rules, regulations, orders or approvals, or public authorities required for interim and final approval of the Work shall be the sole responsibility of the Contractor.
- B. Contractor shall maintain a log of all required governmental interim and final inspections throughout the progress of the Work.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Throughout the progress of the Work, the Owner's A/E consultants shall make regular site visits and prepare observation reports.
- B. Contractor and requested subcontractors shall be present for all A/E observations. Coordinate with A/E field representatives as required.
- C. Contractor shall coordinate all trades as required to address issue or deficiencies identified on the observation reports.

2.02 OBSERVATION REPORTS

- A. Upon completion of on-site observations by the Engineer and Engineer's Consultants, documentation of the Observation shall be furnished to the Contractor.
- B. Observation report items that reflect instructions for corrective measures shall be addressed/corrected by the Contractor in a timely manner.
- C. Upon completion of corrective measures, Contractor shall detail corrective measures, including date(s) of work and date(s) of Contractor's verification of completeness on the observation report(s) and return a copy the Engineer and Consultant as appropriate.
- D. Wherever possible, Contractor's written documentation shall include all corrective work identified to be addressed on the observation report. Minimize piece meal responses as much as possible.

- E. A complete history of Contractor's observation responses shall be required to be submitted as a condition of project close-out.

PART 3 - GENERAL - PROJECT CONSULTANT OBSERVATIONS

3.01 DESCRIPTION

- A. The Contractor shall allow in his Proposal the coordination and scheduling of Observations to be performed by the Owner's project consultants; including the Engineer, Architect, Structural Engineer, as they may apply to this Work.
- B. All project consultant observation services shall be performed by designees of the relative consultant; upon which the Contractor may rely as to the capability and thoroughness of the observation being performed. Upon request by the Contractor, the names of A/E field representatives performing specific observations shall be furnished by the Engineer.
- C. The Owner shall pay for the observation services of the project consultants in accordance with the Owner – Engineer Agreement and the requirements of the Contract Documents. Excessive observations and re-observations resulting from the Contractor's actions as described in this section, shall be paid for by the Contractor directly to the affected Consultant.
- D. The Contractor shall cooperate with the Owner's project consultants in all matters pertaining to required observations of the work as described in the Contract Documents. The Owner retains the option to add to or delete any or all observations specified herein; and thereby accept the relative work without observation.

3.02 RELATED REQUIREMENTS

- A. Respective Sections of Specifications describing the required consultant observations.

3.03 AUTHORITIES AND DUTIES OF THE A/E FIELD REPRESENTATIVES

- A. The project consultant representatives are not authorized to revoke, alter, relax, increase, or release the Contractor from any requirement of the Contract Documents without written notice furnished to the Contractor by the Engineer.
- B. When it appears that the material, assembly or work performed by the Contractor fails to fulfill Contract requirements, the project consultant representative shall promptly notify the General Contractor, Engineer and Owner.
- C. The project consultant representative(s) shall promptly distribute copies of the observation reports. Standard distribution shall include copies of all reports to the Owner, Engineer, and General Contractor.

3.04 PROJECT CONSULTANT OBSERVATION GUIDELINES AND PROCEDURES

- A. Project Consultants shall make all observations required in the Contract Documents and requested by the Contractor and Owner.
- B. For each material, assembly or phase observation required in the Contract Documents, and upon request by the Contractor, the project consultant(s) shall perform the following observations as required in the Owner – Engineer Agreement; and shall be at the expense of the Owner in accordance with the Owner – Engineer Agreement.:
 - 1. Initial observation to determine compliance with the Contract Documents.

2. Observation to determine deficiencies where the initial observation results do not show 100% compliance with the Contract Documents. At the consultant's discretion, this observation may be performed concurrent with the initial observation.
 3. Re-observation to determine 100% compliance with the Contract Documents.
- C. The Contractor shall bear the responsibility of requesting and scheduling all project consultant observations required by the Contract Documents. The Contractor shall give the project consultant a minimum of forty-eight (48) hours' notice prior to the requested observation.
1. No extension of Contract Time shall be granted for untimely observations due to the Contractor's failure of proper observation request notification.

END OF SECTION

SECTION 01 52 00 - CONSTRUCTION FACILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Specific administrative and procedural minimum actions are specified in this Section, as extensions of provisions in other Contract Documents. These requirements have been included for special purposes as indicated. Nothing in this Section is intended to limit types and amounts of temporary work required, and no omission from this Section will be recognized as an indication that such temporary activity is not required for successful completion of the Work and compliance with requirements of the Contract Documents. Provisions of this Section are applicable to, but are not limited to the temporary power, temporary water, first aid facilities, fire protection, construction aids, and parking facilities as further expanded in this section.

1.02 JOB CONDITIONS

- A. General: Establish and initiate use of each temporary facility at time first reasonable required for proper performance of the Work. Terminate use and remove facilities at earliest reasonable time, when no longer required or when permanent facilities have, with authorized use, replaced their need.
- B. Conditions of use:
 - 1. Install, operate, maintain and protect temporary facilities in a manner and at locations which will be safe, non-hazardous, sanitary, and protective of persons and property, and free of delirious effects.
 - 2. Contractor shall be responsible for overloading or excess use of or damage resulting from the overloading or excess use of existing utilities.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials, not specifically described herein, but required for proper completion of Work of this Section, may be new or used as selected by the Contractor, but shall be of design, type, size, and strength recommended intended purpose.
- B. Items required to protect the tenants, workmen, and public from danger, shall be sufficiently designed to protect them. Where required. Excluded the public from all hazards.

PART 3 - EXECUTION

3.01 UTILITIES

- A. Temporary Power: Project site has existing electrical services which may be utilized during performance of the Work, subject to approval of the Owner. Contractor may use existing facilities' power outlets, but shall provide all necessary temporary wiring, lamps, and equipment to complement the existing power service in capacity and with characteristics as required to complete Work.
- B. Temporary Water: Project site has existing water which may be utilized during performance of the Work, subject to approval of the Owner. Contractor may use existing facilities' water, but shall provide all necessary temporary hoses and equipment required to complete Work.

3.02 SANITARY FACILITIES

- A. The Contractor may use the Owner's sanitary facilities but must keep clean at all times.

3.03 STORAGE FACILITIES

- A. Provide and maintain adequate weather tight lockable storage facilities, raised above the ground, with sides and top enclosed.
- B. Replace materials improperly stored and damaged by weathered conditions.
- C. Remove storage facilities when materials are stored within the structure in a weather tight condition.
- D. Allow for temporary freeze protection as needed.

3.04 SIGNS

- A. Signs permitted at the site:
 - 1. Warning signs
 - 2. Direction signs
 - 3. Identification signs at field office
 - 4. Emergency medical service sign.
- B. Contractor shall allow no other signs to be displayed at the project site, unless authorized by the Owner.

3.05 BARRIERS

- A. Provide temporary barricades on all portions of the site adjacent to the construction and accessible to the public.

3.06 SECURITY

- A. Determine if and when watchmen, fencing or both are necessary for protection of the Work, and provide such services when necessary. Neither provision of watchmen or fencing nor the failure to provide them shall relieve the Contractor of responsibility in event of injury to person or damage to property.

3.07 CLEANING

- A. Trash Removal: Clear the building and site of trash resulting from Work at least once a week. When rapid accumulation occurs, make more frequent removals. Remove highly combustible trash such as paper cardboard daily. Dumpsters shall not be allowed to overflow and should be emptied on a regular basis.
- B. Disposition of Debris: Remove debris from site and make legal disposition. Locations for disposal shall be of the Contractor's choice within the above restriction. No debris or material may be buried or burned at the site. Take necessary precautions to prevent accidental burning of materials by avoiding large accumulations of combustible materials.
- C. Final Cleaning: Thoroughly clean the work, including the removal of smudges, marks, stains, fingerprints, soil, Dirt, paint spots, dust, lint, discolorations, and other foreign materials.

3.08 TEMPORARY FIRST AID FACILITIES

- A. Provide first aid equipment and supplies, with qualified personnel continuously available to render first aid at the site.
- B. Provide a sign, posted in a conspicuous location, listing the telephone numbers for emergency medical services: Physicians, ambulance services and hospitals.

3.09 TEMPORARY FIRE PROTECTION

- A. Provide a fire protection and prevention program for employees and personnel at the site; and provide and maintain fire extinguishing equipment ready for instant use at all areas of the Project and at specific areas of critical fire hazard.
- B. Equipment:
 - 1. Hand extinguishers of the types and sizes recommended by National Board of Fire Underwriters to control fires from particular hazards.
 - 2. Barrels of water with buckets designated for fire-control purposes.
 - 3. Water hoses connected to an adequate water pressure and supply system.
- C. Enforce fire-safety discipline:
 - 1. Store volatile materials in a n isolated, protected location.
 - 2. Avoid accumulations of flammable debris and waste in or about the Project.
 - 3. Prohibit smoking in the vicinity of hazardous conditions.
 - 4. Closely supervise welding and torch-cutting operations in the vicinity of combustible materials and volatile conditions.
 - 5. Supervise locations and operations of portable heating units and fuel.
- D. Maintain fire extinguishing equipment in working condition, with current inspection certificate attached to each extinguisher.

3.10 CONSTRUCTION AIDS

- A. Provide construction aids and equipment required to assure safety for personnel and to facilitate the execution of the work; scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes and other equipment.
- B. Maintain all equipment in a first-class, safe condition.

3.11 PARKING FACILITIES

- A. Coordinate location of parking for personnel and employees at each facility with school district, located to avoid interference with traffic, work or storage areas, or with materials- handling equipment.

END OF SECTION

SECTION 01 74 00 - CONSTRUCTION CLEANING

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Administrative and procedural requirements for final cleaning at Substantial Completion.

1.02 RELATED DOCUMENTS

- A. Drawings, Specifications and provisions of Construction Contract, including General, Special and Supplementary Conditions and other General Requirements.

1.03 RELATED SECTIONS

- A. Other Division 1 Specifications including, but not limited to:
 - 1. Section 01 31 00 – Floor and Wall Protection
 - 2. Section 01 50 00 – Temporary Facilities
 - 3. Section 01 77 00 – Closeout Procedures
 - 4. Special cleaning requirements for specific construction elements are included in appropriate Sections of Divisions 2 through 16

1.04 QUALITY ASSURANCE

- A. Multiple Prime Contracts: Each prime contractor is responsible for final cleaning its own work. Project Manager is responsible for coordinating final cleaning of an area or piece of equipment where more than one prime contractor is involved.

1.05 SITE CONDITIONS

- A. Environmental Requirements: Conduct cleaning and waste disposal operations in compliance with applicable laws, including, without limitation, Environmental Laws.
 - 1. Do not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner, in storm or sanitary drains.
 - 2. Burning or burying of debris, rubbish, or other waste material on premises is not permitted.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. General: Employ experienced workers or a professional cleaning service for final cleaning. Clean each surface or unit of Work to condition expected from commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
- B. Complete following cleaning operations applicable to project before requesting inspection for certification of Substantial Completion for entire Project or portion of Project.
 - 1. Clean site, yard, and grounds in areas disturbed by construction activities including landscape development areas of rubbish, waste material, litter, and foreign substances.
 - a. Sweep paved areas broom clean. Utilize magnetic sweeps on parking lots to remove all metallic debris capable of causing vehicle tire damage.
 - 2. Remove petrochemical spills, stains, and other foreign deposits.
 - 3. Remove tools, construction equipment, machinery, and surplus material from Site.
 - a. Clean exposed exterior and interior hard-surfaced finishes including doors, hardware and casework, to dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to original condition.
 - 4. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - 5. Broom clean concrete floors in unoccupied spaces.
 - 6. All carpeting in work areas shall be cleaned by a professional carpet cleaning company acceptable to the owner. Carpet shall be thoroughly vacuumed prior to the use of hot water extraction.
 - 7. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision- obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - 8. Remove labels that are not permanent labels.
 - 9. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.
 - 10. Wipe surfaces of mechanical and electrical equipment, elevator equipment and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.
 - 11. Clean plumbing fixtures to sanitary condition, free of stains, including stains resulting from water exposure.
 - 12. Replace disposable air filters and clean permanent air filters; clean exposed surfaces of diffusers, registers, and grilles.
 - 13. Clean ducts, blowers and coils if units were operated without filters during construction.
 - 14. Clean any construction related soiled food-service equipment to sanitary condition, ready and acceptable for intended use.
 - 15. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Wipe handprints and paint clean in the ceiling grids following testing and balancing of HVAC system.

16. Thoroughly clean the work, including the removal of smudges, marks, stains, fingerprints, soil, dirty, paint spots, dust, lint, discolorations and other foreign materials.
 17. Disposition of Debris: Remove debris from site and make legal disposition. Locations for disposal shall be of the Contractor's choice within the above restriction. No debris or material may be buried or burned at the site. Take necessary precautions to prevent accidental burning of materials by avoiding large accumulations of combustible materials.
 18. Trash Removal: Clear the building and site of trash at least once a week. When rapid accumulation occurs, make more frequent removals. Remove highly combustible trash such as paper, cardboard, daily.
 19. Leave Site and Work clean and ready for occupancy.
- C. Remove temporary protection and facilities installed during construction to protect previously completed installations during remainder of construction period.
- D. Comply with applicable laws governing cleaning operations. Remove waste materials from site and dispose of lawfully.

END OF SECTION

SECTION 01 77 00 - CLOSE-OUT PROCEDURES

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 CONTRACT CLOSEOUT PROCEDURES

- A. When Contractor considers the work is substantially complete, he shall submit to Engineer a written notice that the Work, or designated portion thereof, is substantially complete, and a list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, Engineer and Engineer, as appropriate, will make an inspection to determine the status of completion.
- C. Should Engineer determine that the Work is not substantially complete, Engineer will promptly notify the Contractor in writing, giving the reasons therefore.
- D. Contractor shall remedy the deficiencies in the Work and send a second written notice of substantial completion to the Engineer.
- E. Engineer, as appropriate, will re-inspect the Work.
- F. When Engineer concur that the Work is substantially complete, the Engineer will:
 - 1. Prepare a Certificate of Substantial Completion AIA form G704, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Engineer.
 - 2. Submit the Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.

1.02 FINAL COMPLETION:

- A. When Contractor considers the Work is complete, he shall submit written certification that he has:
 - 1. Reviewed the Contract Documents.
 - 2. Inspected the Work for compliance with Contract Documents.
 - 3. Completed the Work in accordance with Contract Documents or describe in detail, work remaining to be completed and when it will be complete and ready for inspection.
 - 4. Tested equipment and systems in the presence of the Owner's representative and equipment and systems are operational.
 - 5. Performed final clean-up.
 - 6. Submitted required test reports.
 - 7. Delivered all keys to Owner.
 - 8. Delivered all operating tools, replacement items, and "attic stock" materials specified, to Owner.
 - 9. Delivered all required certificates and guarantees to Owner including, but not limited to, signed-off permits, final inspections, and framed Certificate of Occupancy (suitable for wall hanging), by local authorities having jurisdiction, evidence of payment and release of liens as required by General Conditions and Certificate of Insurance for Products and Completed Operations.
 - 10. Submitted all Record Drawings as specified hereinafter.
- B. Engineer, as appropriate, will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.

- C. Should either Engineer consider that the Work is incomplete or defective:
 - 1. Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
 - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Engineer that the Work is complete
 - 3. Engineer, as appropriate, will re-inspect the Work.
- D. When the Engineer, as appropriate, find that the Work is acceptable under the Contract Documents, the Engineer will request the Contractor to make closeout submittals.
- E. Refer to Supplementary Conditions, Article 3.

1.03 FINAL CLEAN-UP:

- A. Prior to final inspection and the Owner's acceptance of the Work, clean all areas of the building and Project Site, performing all operations called for in the various Sections of these Specifications. These operations include, but are not limited to:
 - 1. Cleaning of all walls and floors.
 - 2. Broom cleaning all exposed concrete floors.
 - 3. Cleaning of all glass areas.
 - 4. Cleaning all exposed unpainted metals.
 - 5. Removing all trash and debris of every nature from the Site and providing legal disposal.
 - 6. Cleaning all exposed surfaces including lenses of all lighting fixtures, removing construction dust, paint over-spray and hand prints.
 - 7. Removing all surplus materials, tools not in active use, scaffolding, and other materials no longer needed.
 - 8. Vacuuming all carpeted floors.
 - 9. Cleaning, waxing, buffing of resilient flooring.
- B. All cleaning operations shall be performed in strict accordance with manufacturer's written recommendations using products approved by the manufacturer for the materials being cleaned.

PART 2 - SUBSTANTIAL COMPLETION

2.01 MANUALS, INSTRUCTIONS AND KEYS

- A. OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS: Prior to and as a requisite for Owner's acknowledgment of Substantial Completion, required equipment maintenance manuals and operating instructions shall be submitted to the Engineer for transmittal to Owner.
 - 1. Provide manuals in "hard cover" three-ring binders, indexed, and include plans, elevations, isometrics as necessary, manufacturer's catalogs, and other instructions to clearly indicate operation and function of the systems.
 - 2. Include manufacturer's standard information and data, edited or modified to identify the equipment actually furnished and installed.
 - 3. In addition to the above, include the following information:
 - a. Manufacturer's identification including model number and serial number.
 - b. Valve list and directory; wiring and piping diagrams.
 - c. Spare parts list, a list of recommended stock of parts, and location of local parts and service centers.
 - d. Complete wiring diagrams.
 - e. Performance data and rating tables.

- f. Specific instructions and operation, adjustment, and maintenance.
 - 4. Organize and assemble each manual with a title sheet directly following the front cover listing the Project title and address, name of Owner, and date of submittal. Immediately after the title sheet include a second page listing the name, address, and phone number of the Engineer, General Contractor, Subcontractors, material suppliers and vendors.
 - 5. Categorize the contents of the manuals with separation sheets having labeled tabular edges, and sequence information in the same order and relationship as in the Project Manual.
 - 6. Furnish a letter to Engineer stating that a responsible representative of the Owner (give name and position) has been instructed and informed of working characteristics of mechanical and electrical installations, as required under the Specification Sections, and that necessary verbal instructions and demonstrations shall be given to maintenance forces for component parts of the building.
- B. Upon completion of the Work, the Contractor shall deliver all keys, including master keys and any special keys, and two copies of the keying schedule to the Owner, and shall assist the Owner in reactivation of construction keyed locks used in the Project.

2.02 RELEASE OF LIENS

- A. The Contractor shall deliver to the Engineer a blanket release of liens covering all Work performed under this Contract, including that of Subcontractors, Sub-subcontractors, vendors, and other suppliers of materials and labor. Execute the release of liens on Documents similar to AIA Document G706 "Contractor's Affidavit of Payment of Debtors and Claims" and AIA Document G706A "Contractor's Affidavit of Release of Liens".
- B. The forms shall be executed by the authorized officer and notarized. All required attachments shall be included as noted on AIA Document G706 or Document G706A, the Contractor shall furnish bond satisfactory to the Owner for each exception.

2.03 GUARANTEES, BONDS AND INSPECTION CERTIFICATES

- A. The Contractor shall have guarantees upon materials and workmanship as required by the General Conditions and special guarantees and bonds required by the Contract Documents executed in the Owner's name.
- B. Prior to making application for final payment, the Contractor shall collect and assemble all required guarantees and bonds and deliver them to the Engineer for review and for transmitting to the Owner.
- C. The Contractor shall collect and assemble all required certificates of inspection, testing, and approval, and deliver them to the Engineer for review and for transmitting to the Owner.

2.04 RECORD DOCUMENTS

- A. Prior to and as requisite for Owner's acknowledgment of Substantial Completion, submit Project Record Documents to the Engineer for the permanent Project file as follows:
 - 1. Mark changes on a set of record Vellums reproductions. Submit all Record Drawings, mechanical, plumbing, and electrical installations, and other installations as specified in the Contract Specifications. Provide "as-built" drawings changes prepared by an experienced draftsman and showing all components as actually fabricated and erected.
 - a. Show depths of various elements in relation to Ground Floor elevation.

- b. Show horizontal and vertical location of underground utilities and other improvements referenced to permanent surface improvements.
 - c. Show location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - d. Indicate field changes of dimension and detail, changes made by field order of Change Order, and details not on original Contract Drawings.
2. Provide Record Drawings signed and dated by the subcontractors. By signing of drawings, subcontractors shall indicate that they have been checked and that they represent a true and accurate record of the work installed.
 - a. Provide a cover sheet for each set of Record Documents indicating the Project title and location, the name and address and phone number of Owner, Engineer, Contractor, and all Subcontractors, and the date submitted.
3. Log of all control and survey work as it progresses.

PART 3 - EXECUTION

3.01 TERMINAL INSPECTION

- A. Immediately prior to expiration of the one-year guarantee period, the Contractor shall make an inspection of the Work in the company of the Engineer and the Owner. The Engineer and the Owner shall be given not less than 5 days notice prior to the anticipated date of terminal inspection.
- B. Where any portion of the Work has proven to be defective and requires replacement, repair or adjustment, the Contractor shall immediately provide materials and labor necessary to remedy such defective Work and shall execute such Work without delay until completed to the satisfaction of the Engineer and the Owner, even though the date of completion of the corrective work may extend beyond the expiration date of the guarantee period.
- C. The Contractor shall not be responsible for correction of Work which has been damaged because of neglect or abuse by the Owner nor the replacement of parts necessitated by normal wear in use.

3.02 WARRANTIES

- A. Furnish written Warranties to the Owner including specific items in each product warranty stipulated in the individual sections.
- B. Secure and transmit required Inspection Certificates.
- C. Repair or replace damaged portion of the construction, under Warranty, when damages result from faulty materials or negligent workmanship.
- D. Warrant that modifications or substitutions suggested by the Contractor will give satisfactory results, and that they will be equal or superior to the specified item or method unless shortcomings are specifically listed in the request for modification or substitution.

END OF SECTION

SECTION 01 78 23 - OPERATION AND MAINTENANCE MANUALS

CONDITIONS OF THE CONTRACT, AND DIVISION 1 SECTIONS APPLY TO THIS SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Refer to Section AB – Instructions to Proposers and Section AF – Manufacturer Prequalification for substitutions.
- B. Scope of Work:
 - 1. Compilation product data and related information appropriate for Owner's operation and maintenance of products furnished under Contract. Prepare operating and maintenance data as specified.
 - 2. Instruct Owner's personnel in operation and maintenance of equipment and systems.
 - 3. Submit three copies of complete manual in final form.
- C. All Operation and Maintenance Manuals MUST be submitted to the Owner in their reviewed, accepted final form PRIOR to any Owner demonstrations.

1.02 SUBMITTALS

- A. Initial Submittal: Submit to A/E consultant, as applicable, one (1) review / draft copy of each Operating and Maintenance Manual.
 - 1. Submit directly to the reviewing consultant (architectural, MEP, Structural, Civil, Food Service, etc.); with a copy of the transmittal delivered to the Engineer.
 - 2. The A/E consultant shall return review comments or approval of each O&M manual submission within twenty-one (21) days.
- B. If a manual is deemed to be incomplete or contain errors, Contractor shall retrieve the review / draft copy and make all necessary corrections. Once complete, resubmit the complete, correct manual for A/E review.
- C. Repeat the above process as necessary to obtain final A/E approval of each O&M manual.
- D. Final Submittal: When O&M manuals have been reviewed and approved for final printing and distribution, submit two (2) complete sets of O&M manuals to Engineer; and two (2) CD's containing PDF files of each O&M manual. Engineer shall deliver final O&M manuals to the Owner.
- E. This copy shall contain as a minimum:
 - 1. Table of Contents for each element.
 - 2. Contractor information for each contractor / sub-contractor.
 - 3. All submittals, coordination drawings and product data, reviewed by the Engineer; bearing the Engineer's stamp of acceptance. (When submittals are returned from Engineer "Correct as Noted", corrected inserts shall be included.)
 - 4. All parts and maintenance manuals for items of equipment.
 - 5. Warranties (without starting dates)
 - 6. Certifications that have been completed. Submit forms and outlines of certifications that have not been completed.
 - 7. Operating and maintenance procedures.

8. Form of Owner's Training Program Syllabus (including times and dates).
9. Control operations/equipment wiring diagrams.
10. Schedule of filters for each item of equipment.
11. Schedule of belts for each item of equipment.
12. Other required operating and maintenance information that are complete.

1.03 **QUALITY ASSURANCE**

- A. It is the Contractor's / sub-contractor's responsibility to compile, review and verify that Operations and Maintenance Manuals are 100% complete and correct in accordance with the specified requirements prior to submission to the Engineer for review.
 1. Failure to comply with required verification may result in return of O & M manuals without a thorough A/E review.
- B. Once submitted to the Engineer for review, the A/E shall review and return any comments and revisions for correction to be incorporated into the final manuals.
- C. Schedule for Submission and Delivery:
 1. Submit O&M Manuals for review far enough in advance to assure completion of review(s), correction(s), publication of the final O&M manuals, and delivery to the Owner PRIOR to any Owner demonstrations / training involving equipment / systems included in the manual(s).
 2. No Owner demonstrations / training shall occur without final, approved O&M manuals have been delivered to the Owner.

PART 2 - PRODUCTS

2.01 **BINDERS**

- A. Commercial quality black three-ring binders with clear overlay plastic covers on front and spine.
- B. Binders shall be a minimum ring size: 1", and a maximum ring size: 3".
- C. When multiple binders are used, correlate the data into related groupings.
- D. Label contents on spine and face of binder with full size insert. Label under plastic cover.

2.02 **CONTENT**

- A. Each O&M manual shall include as a minimum the following material and information:
 1. Table of Contents for each element, including corresponding specification number.
 2. Contractor information for each contractor / sub-contractor.
 3. All submittals, coordination drawings and product data, reviewed by the Engineer; including the Engineer's stamp of acceptance / review comment sheets. When submittals are returned from Engineer "Correct as Noted", corrected inserts shall be included.
 4. All parts and maintenance manuals for items of equipment.
 5. Warranties (without starting dates)
 6. Certifications that have been completed. Submit forms and outlines of certifications that have not been completed.
 7. Operating and maintenance procedures.
 8. Control operations / equipment wiring diagrams.
 9. Schedule of filters for each item of equipment.
 10. Schedule of belts for each item of equipment.

11. Material Safety Data (MSD) sheets
12. Other required operating and maintenance information that are complete.

B. All material will be bound in the 3-ring binder unless otherwise agreed to by the Engineer.

1. Sheets that are 8-12 x 14 or 11 x 17 shall be folded to an 8-1/2 x 11 format.

PART 3 - EXECUTION

3.01 OPERATION AND MAINTENANCE MANUAL

A. Form for Manuals:

1. Prepare data in form of an instructional manual for use by Owner's personnel.
2. Format:
 - a. Size: 8-1/2" x 11".
 - b. Text: Manufacturer's printed data or neatly typewritten.
3. Drawings:
 - a. Provide reinforced punched binder tab and bind in text.
 - b. Fold larger drawings to size of text pages.
4. Provide flyleaf indexed tabs for each separate product or each piece of operating equipment.
5. Cover: Identify each volume with typed or printed title "Operating and Maintenance Instructions". List:
 - a. Title of Project
 - b. Identity of separate structures as applicable.
 - c. Identity of general subject matter covered in the manual.
6. Binder as specified.

B. Content of Manual:

1. Neatly typewritten Table of Contents for each volume arranged in systematic order as outlined in the specifications.
 - a. Contractor, name of responsible principal, address and telephone number.
 - b. A list of each product required to be included, indexed to content of the volume.
 - c. List with each product, name, address and telephone number of:
 - 1) Subcontractor or installer.
 - 2) Maintenance contractor as appropriate.
 - 3) Identify area of responsibility of each.
 - 4) Local source of supply for parts and replacement.
 - d. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
2. Product Data:
 - a. Include those sheets pertinent to the specific product.
 - b. Annotate each sheet to:

- 1) Identify specific product or part installed.
 - 2) Identify data applicable to installation.
 - 3) Delete references to inapplicable information. (All options not supplied with equipment shall be marked out indicated in some manner.
 3. Drawings:
 - a. Supplement product data with drawings as necessary to illustrate:
 - 1) Relations of component parts of equipment and systems.
 - 2) Control and flow diagrams.
 - b. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
 - c. Do not use Project Record Documents as maintenance drawings.
 4. Written text, as required to supplement product data for the particular installation:
 - a. Organize in consistent format under separate headings for different procedures.
 - b. Provide logical sequence of instructions for each procedure.
 5. Copy of each warranty, bond and service contract issued.
 - a. Provide information sheet for Owner's personnel, giving:
 - 1) Proper procedures in event of failure.
 - 2) Instances that might affect validity of warranties or bonds.
 6. Shop drawings, coordination drawings and product data as specified.
- C. Sections for Equipment and Systems:
1. Content for each unit of equipment and system as appropriate:
 - a. Description of unit and component parts.
 2. Function, normal operating characteristics, and limiting conditions.
 3. Performance curves, engineering data and tests.
 4. Complete nomenclature and commercial number of replaceable parts.
 - a. Operating procedures:
 5. Start up, break-in, routine and normal operating instructions.
 6. Regulation, control, stopping, shut down and emergency instructions.
 7. Summer and winter operating instructions.
 8. Special operating instructions.
 - a. Maintenance procedures:
 9. Routine operations
 10. Guide to trouble-shooting.
 11. Disassembly, repair and reassembly.
 12. Alignment, adjusting and checking.
 13. Routine service based on operating hours.

- a. Servicing and lubrication schedule. List of lubricants required.
 - b. Manufacturer's printed operating and maintenance instructions.
 - c. Description of sequence of operation by control manufacturer.
 - d. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
14. Predicted life of part subject to wear.
15. Items recommended to be stocked as spare parts.
- a. As installed control diagrams by controls manufacturer.
 - b. Complete equipment internal wiring diagrams.
 - c. Schedule of filters for each air handling system.
 - d. Schedule of belts for each item of equipment.
 - e. Each Contractor's coordination drawings.
 - f. As installed color coded piping diagrams.
 - g. Charts of valve tag number, with location and function of each valve.
 - h. List of original manufacturer's spare parts and recommended quantities to be maintained in storage.
 - i. Other data as required under pertinent sections of the specifications.
16. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
17. Additional requirements for operating and maintenance data as outlined in respective sections of specifications.
18. Provide complete information for products specified in Division 22.
19. Provide certificates of compliance as specified in each related section.
20. Provide start up reports as specified in each related section.
21. Provide signed receipts for spare parts and material.
22. Provide training report and certificates.
23. Provide backflow preventer certified test reports.
24. Provide gas piping pressure test reports.

END OF SECTION