



PROJECT MANUAL

RED ROCKS COMMUNITY COLLEGE

LAKWOOD, COLORADO

PROJECT NO. 2019-089M21

REFURBISH WEST WING ELEVATOR

RED ROCKS COMMUNITY COLLEGE LAKWOOD CAMPUS

BID DOCUMENTS

FEBRUARY 28, 2022

SECTION 00 00 01 - PROJECT DIRECTORY

OWNER

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Red Rocks Community College

Project #2019-089M21/Refurbish West Wing Elevator, Lakewood Campus

DIVISION 0, PROCUREMENT AND CONTRACTING REQUIREMENTS

1. ADVERTISEMENT FOR BIDS (POSTED AS SEPARATE DOCUMENT)
2. INFORMATION FOR BIDDERS (SBP-6.12, POSTED AS SEPARATE DOCUMENT)
3. APPRENTICESHIP AND PREVAILING WAGE DETERMINATIONS NOT APPLICABLE
4. SPECIMEN OF BID (SBP-6.13) *
5. SPECIMEN OF BID ALT FORM (SBP-6.131) *
6. SPECIMEN OF BID BOND (SBP-6.14) *
7. SPECIMEN OF NOTICE OF AWARD (SBP-6.15) *
8. ~~SPECIMEN OF CONTRACTOR'S AGREEMENT (SC-6.21) *~~
9. SPECIMEN OF PERFORMANCE BOND (SC-6.22) *
10. SPECIMEN OF LABOR AND MATERIAL BOND (SC-6.221) *
11. SPECIMEN OF NOTICE TO PROCEED (SBP-6.26) *
12. SPECIMEN OF CERTIFICATION AND AFFIDAVIT REGARDING UNAUTHORIZED IMMIGRANTS (UI-1) *
13. GENERAL CONDITIONS OF THE CONTRACT (SC-6.23) *
14. SPECIMEN OF NOTICE OF SUBSTANTIAL COMPLETION (SBP-07) *
15. SPECIMEN OF NOTICE OF OCCUPANCY/USE (SBP-01) *
16. SPECIMEN OF NOTICE OF ACCEPTANCE (SBP-6.27) *
17. SPECIMEN OF NOTICE OF CONTRACTOR'S SETTLEMENT (SBP-7.3) *

00 26 00 PROCUREMENT SUBSTITUTION PROCEDURE

SUBSTITUTION REQUEST FORM

*These documents may be examined and downloaded from the Office of the State Architect Website under State Buildings/Project Management Policies & Guidelines.

DIVISION 1, GENERAL REQUIREMENTS

DIVISION 1- GENERAL REQUIREMENTS

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Elevator Modernization Bid Specifications

January 29, 2022

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ELEVATOR MODERNIZATION BID/SPECIFICATIONS

FOR:

Red Rocks Community College

13300 West sixth Avenue

Lakewood, CO 80228

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SECTION 002600- PROCUREMENT SUBSTITUTION PROCEDURES

PART 1- Procurement Substitution Procedures

1.1 DEFINITIONS

- A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.
- B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 PROCUREMENT SUBSTITUTIONS

- A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
 - 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
 - 3. The request is fully documented and properly submitted.

1.3 SUBMITTALS

- A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing in compliance with the following requirements:
 - 1. Requests for substitution of materials and equipment will be considered if received no later than 10 days prior to date of bid opening.
 - 2. Submittal Format: Submit electronic copy of Procurement Substitution Request, using CSI Substitution Request Form 1.5C, or included substitution request form.
 - a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
 - b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
 - 1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
 - 2) Copies of current, independent third-party test data of salient product or system characteristics.
 - 3) Samples where applicable or when requested by Architect.

- 4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - 5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - 6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from ICC-ES.
 - 7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors which will become necessary to accommodate the proposed substitute.
- c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
 - d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.

B. Architect's Action:

1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

- C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF SECTION 002600

Date:

SR No:

Project: Red Rocks Community College Refurbish West Wing Elevator

To:

From:

CC:

Re:

Specification Section:

Page:

Paragraph:

PROPOSED SUBSTITUTION:

Manufacturer & Model Number:

Manufacturer Address & Phone:

Point-by-point comparative data attached (Required by A/E).

Differences between proposed solution and specified product:

Similar Installation contact:

Changes required to Contract Documents:

Savings to Owner for accepting substitution: \$

Proposed substitution changes Contract Time: Adds _____days Deducts _____ days

The undersigned certifies that the proposed substitution:

- Is equal or superior in all respects to the specified product.
- Will furnish the same warranty or better than the specified product.
- Does not affect dimensions or functional clearances.
- Has spare parts and maintenance service available locally.
- Will have no adverse effect on other trades and will not delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may arise are to be waived.
- Provides compensation to the design team for changes in building design, engineering, and documentation.
- Coordination, installation, and changes in the work are complete in all respects.

Signed:

Date:

Firm:

ARCHITECT/ENGINEER REVIEW

The Architect has reviewed the Substitution Request in accordance with the Specifications and recommends:

Acceptance - Make submittals in accordance with Specifications.

Acceptance as noted - Make submittals in accordance with Specifications.

Resubmission - Unable to evaluate due to incomplete data.

Rejection - Use specified materials.

Rejection - Substitution Request received too late, use specified materials.

Comments:

Architect's Signature:

Date:

OWNER'S REVIEW

Owner has reviewed Substitution Request and the Architect's recommendation and hereby.

Accepts this substitution

Rejects this substitution

Owner's Signature:

Date:

SECTION 00 70 00 – CONTRACTOR'S WARRANTY

WARRANTY FOR

Refurbish West Wing Elevator, Main Building,

Lakewood Campus
RED ROCKS COMMUNITY COLLEGE

We hereby warrant the materials and workmanship of the Work which we have installed at the above-named Project have been provided in accordance with the Contract Documents and that the Work as installed will fulfill the requirements of the warranties included in the Project Manual. We agree to repair or replace any or all our Work that may prove to be defective in its workmanship or materials within a period of two (2) years from date of final acceptance of the above-named Work, without any expense to the Owner, unusual abuse or neglect excepted.

In the event of our failure to comply with the foregoing conditions, within three business (3) days after being notified in writing by the Owner, we collectively or separately do hereby authorize the Owner or his successor in interest to proceed to have said defects repaired and made good at our expense, and we will honor and pay the costs and charges therefore upon demand.

Date of Final Acceptance of above-named Work:

Signature:

(Contractor)

Typed name and title of Company official signing above and issuing this Warranty:

Name:

Title:

Date of Signature:

END OF SECTION 00 70 00

Refurbish West Wing Elevator
Red Rocks Community College, Lakewood Campus, CO

SECTION 01 10 00 - SUMMARY

PART 1- GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Type of the Contract.
 - 3. Work phases.
 - 4. Work under other contracts.
 - 5. Products ordered in advance.
 - 6. Owner-furnished products.
 - 7. Use of premises.
 - 8. Owner's occupancy requirements.
 - 9. Work restrictions.
 - 10. Specification formats and conventions.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: 2019-089M21/Refurbish West Wing Elevator
 - 1. Project Location: Red Rocks Community College, Lakewood Campus, Colorado
- B. Owner: Red Rocks Community College
- C. Consultant: Elevator Consulting and Design, Inc.
7137 South Andes Circle
Centennial, CO 80016
- D. The Work consists of the following:
Prime contractor to modernize one hydraulic passenger/service elevator, including replacement of the elevator control system, cab upgrades and all associated work per the Elevator Modernization Bid Specifications. Work schedule is to be coordinated with the College Facility Services Department, with shut downs scheduled in advance.

1.4 TYPE OF CONTRACT

- A. State of Colorado, Office of the State Architect, State Buildings Program, Contractor's Design/Bid/Build (D/B/B) Agreement (State Form SC-6.21).

1.5 OWNER-FURNISHED PRODUCTS

- A. N/A.

1.6 OWNER'S OCCUPANCY REQUIREMENTS

- A. The existing building shall remain operational throughout the course of the project.
 - 1. Any outages of the existing infrastructure shall be coordinated with owner. Contractor shall provide a minimum of 10 working days advance notice.

1.7 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and CSI/CSC's "MasterFormat" numbering system.
 - 1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
 - 2. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 - 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2- PRODUCTS (Not Used)

PART 3- EXECUTION (Not Used)

END OF SECTION 011000

SECTION 01 26 00- CONTRACT MODIFICATION PROCEDURES

PART 1- GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Section 002600 "Procurement Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 CHANGE ORDER BULLETIN

- A. Owner-Initiated Change Order Bulletin: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Change Order bulletins issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use Colorado State Buildings Change Order Proposal Form.
 - 1) Quotation must be submitted using the format outlined on the worksheet tab of the change order proposal.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use Colorado State Buildings Change Order Proposal Form.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Changes Order Proposal, Architect will issue a Change Order for signatures of Architect and Contractor on Colorado State buildings Form.

1.6 EMERGENCY FIELD CHANGE ORDER

- A. Emergency Field Change Order: Architect may issue an Emergency Field Change Order on Colorado State Buildings Form. Emergency Field Change Order instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Emergency Field Change Order contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2- PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

SECTION 012900- PAYMENT PROCEDURES

PART 1- GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

- B. Related Requirements:

- 1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

- 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:

- a. Application for Payment forms with continuation sheets.

- 2. Submit the schedule of values to Architect for approval at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

- 1. Identification: Include the following Project identification on the schedule of values:

- a. Project name and location.
 - b. Contractor's name and address.
 - c. Date of submittal.

- 2. Arrange schedule of values consistent with format of Colorado State Buildings Form.

- 3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:

- a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.

d. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

- 1) Labor.
- 2) Materials.
- 3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. For materials stored off site, include evidence of insurance, bill of sale, and schedule an inspection of the materials, see section 1.5E.
7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Owner and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Application for Payment Forms: Use forms provided by Owner for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment remaining stored as of date of current Application for Payment.
 - d. Provide photographic documentation of stored materials.
- F. Transmittal: Submit electronic signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.
1. Transmit with a transmittal form listing attachments and recording appropriate information about application.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Approved schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Submittal schedule (preliminary if not final).
 5. List of Contractor's staff assignments.
 6. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 7. Certificates of insurance and insurance policies.
 8. Performance and payment bonds.
 9. Data needed to acquire Owner's insurance.
 10. Preconstruction photographs.
- H. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited to, the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. Evidence that claims have been settled.
5. Final liquidated damages settlement statement.

PART 2- PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.4 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General Project coordination procedures.
 - 2. Coordination Drawings.
 - 3. Project meetings.
- B. See Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.5 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.

6. Preinstallation conferences.
7. Startup and adjustment of systems.
8. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work. Refer to other specification sections and Drawings for disposition of salvaged materials that are designated as Owner's property.

1.6 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect/Engineer for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Number of Copies: Submit three (3) opaque copies of each submittal. Architect/Engineer will return two (2) copies.
4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect/Engineer, but no later than **seven (7)** days after **Notice to Proceed**. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Architect/Engineer; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.

- c. Critical work sequencing and long-lead items.
- d. Designation of key personnel and their duties.
- e. Procedures for processing field decisions and Change Orders.
- f. Procedures for Requests for Interpretations (RFIs).
- g. Procedures for testing and inspecting.
- h. Procedures for processing Applications for Payment.
- i. Distribution of the Contract Documents.
- j. Submittal procedures.
- k. Preparation of Record Documents.
- l. Use of the premises and existing building.
- m. Work restrictions.
- n. Owner's occupancy requirements.
- o. Responsibility for temporary facilities and controls.
- p. Construction waste management and recycling.
- q. Parking availability.
- r. Office, work, and storage areas.
- s. Equipment deliveries and priorities.
- t. First aid.
- u. Security.
- v. Progress cleaning.
- w. Working hours.

- 3. Minutes: **Owner's Representative will record** and distribute the meeting minutes of this Preconstruction Conference.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect/Engineer of scheduled meeting dates.
- 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Options.
 - c. Related Requests for Information (RFIs).
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written recommendations.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.

- u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct formal progress meetings at **weekly** intervals. At the Architect/Engineer's or Owner's discretion, more frequent meetings may be required.
1. Attendees: In addition to representatives of Owner and Architect/Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work. **[Note: The Architect/Engineer is only contracted to participate directly in approximately half of the required weekly progress meetings. The Contractor shall identify to the Owner and Architect/Engineer when it is crucial to have the Architect/Engineer in attendance.]**
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) Requests for Information (RFIs).

- 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
3. Minutes: **Prime Contractor will record and distribute the meeting minutes to the Owner, Architect/Engineer, all other attendees, or parties who should have been present and all other necessary entities.**
- a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule within **three (3)** days after each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 0140 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- B. See Divisions 2 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

1.3 SUBMITTALS

- A. Reports: Prepare and submit certified written reports that include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspectng.
- B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

1.5 QUALITY CONTROL

- A. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - 1. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 - 2. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 3. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 4. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- C. Testing Agency Responsibilities: Cooperate with Owner and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Owner and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.
- D. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.

- E. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1.6 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Owner and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Owner with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2- PRODUCTS (Not Used)

PART 3- EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000-4

SECTION 0142 00 - REFERENCES

PART 1- GENERAL

1.1 DEFINITIONS

- A. Wherever in the Project Manual or upon the Drawings the words "directed", "required", "permitted", "ordered", "designated", "described", or words of like import are used, it shall be understood that the direction, requirements, permission, order, designation, or description of the Owner and Architect is intended; and, similarly, the words "reviewed", "acceptable", "satisfactory", or words of like import, shall mean reviewed by, acceptable to, or satisfactory to the Owner and Architect unless otherwise expressly stated.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless 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 to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- C. Qualifications of Standard Specifications: Wherever references are made in the Building Code to Standard Specifications or methods of the ASTM, and the corresponding materials of tests are specified herein by reference to the current Serial Designations of the ASTM, the require-

ments of the latter shall govern insofar as the same are not in contravention with the maxima or minima prescribed by the documents designated in the Building Code.

- D. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."

- B. Abbreviations: The use of the following abbreviations in the Specifications is hereby defined:

A.A.M.A.	Architectural Aluminum Manufacturer's Association
A.I.A.	American Institute of Architects
A.C.I.	American Concrete Institute
A.I.E.E.	American Institute of Electrical Engineers
A.I.S.C.	American Institute of Steel Construction
A.N.S.I.	American National Standards Institute, New York City
A.W.I.	Architectural Woodwork Institute (Millwork Quality Standards Adopted by A.I.A. and P.C.)
A.S.M.E.	American Society of Mechanical Engineers
A.S.T.M.	American Society of Testing & Materials
A.W.S.C.	American Welding Society Code
C.I.S.P.I.	Cast Iron Soil Pipe Institute
C.R.S.I.	Concrete Reinforcing Steel Institute
C.S.I.	Construction Specifications Institute
Fed. Spec.	Federal Specification
I.E.C.C.	International Energy Conservation Code
I.B.C.	International Building Code
I.F.C.	International Fire Code
I.M.C.	International Mechanical Code
N.I.C.	Not In Contract
N.F.P.A.	National Fire Protection Association
N.B.S.	National Bureau of Standards
N.E.C.	National Electrical Code
N.W.M.A.	National Woodwork Manufacturer's Association
O.F.C.I.	Owner Furnished Contractor Installed
O.F.O.I.	Owner Furnished Owner Installed
O.S .A.	Office of the State Architect
O.S.H.A.	Occupational Safety and Health Act
P.C.	Producers Council
S.C.A.C.M.	Southern California Association of Cabinet Manufacturers
S.M.A.C.N.A.	Sheet Metal and Air Conditioning Contractor's National Association
U.B.C.	Uniform Building Code
U.L.	Underwriters' Laboratories, Inc.

PART 2- PRODUCTS (Not Used)

PART 3- EXECUTION (Not Used)

END OF SECTION 014200-3

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1- GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

1.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1.3 SUBSTITUTION SUBMITTALS

- A. The contract for construction is based upon the standards of quality established in the contract documents. Refer to Section 002600 "Procurement Substitution Procedures."

1.4 QUALITY ASSURANCE

- A. Standards: Unless otherwise specifically provided for in the Project Manual, all Equipment, Materials, and Articles incorporated in the Work covered by this Agreement are to be new, free from defects and imperfections, of current manufacturer, and of the most suitable grade of their respective kinds for the purpose, and all workmanship shall be of the highest grade and in accordance with the best standard practice in the Southern California area.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 - 5. Provide protection for finished floor surfaces prior to allowing equipment or materials to be moved over such surfaces.
 - 6. Protect finished surfaces through which equipment & materials are handled.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Store cementitious products and materials on elevated platforms.

5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

PART 2- PRODUCTS

2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Contractor shall order all materials and equipment for the Work as soon as possible for the award of the Contract. It shall be the duty of the Contractor to keep the Owner continuously informed of the availability of all specified materials and equipment.

2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 2. Requested substitution does not require extensive revisions to the Contract Documents.
 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 4. Substitution request is fully documented and properly submitted.
 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 7. Requested substitution is compatible with other portions of the Work.
 8. Requested substitution has been coordinated with other portions of the Work.
 9. Requested substitution provides specified warranty.

PART 3- EXECUTION (Not Used)

END OF SECTION 016000

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1- GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 3. Products: List products to be used and firms or entities that will perform the Work.
 4. Dates: Indicate when cutting and patching will be performed.
 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
 1. Primary operational systems and equipment.
 2. Air or smoke barriers.
 3. Fire-suppression systems.
 4. Mechanical systems piping and ducts.
 5. Control systems.
 6. Conveying systems.
 7. Electrical wiring systems.

8. Operating systems of special construction in Division 13 Sections.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2- PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3- EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch.. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017329

SECTION 017700- CLOSEOUT PROCEDURES

PART 1- GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 017300 "Execution Requirements" for progress cleaning of Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
 - 1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 - 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 2. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed "WARRANTIES," Project name, and name of Contractor.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the 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

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - e. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 "Construction Waste Management."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 017839- PROJECT RECORD DOCUMENTS

PART 1- GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

- B. Related Requirements:

1. Section 017700 "Closeout Procedures" for general closeout procedures.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.

- B. Record Specifications: Submit one paper copy of Project's Specifications, including addenda and contract modifications.

- C. Record Product Data: Submit one paper copy of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

- a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
- b. Accurately record information in an acceptable drawing technique.
- c. Record data as soon as possible after obtaining it.
- d. Record and check the markup before enclosing concealed installations.
- e. Cross-reference record prints to corresponding archive photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

- a. Dimensional changes to Drawings.
- b. Revisions to details shown on Drawings.
- c. Depths of foundations below first floor.

- d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
 5. Note related Change Orders and record Drawings where applicable.
- B. Format: Submit record Specifications as one paper and one electronic copy.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders and record Drawings where applicable.

- B. Format: Submit record Product Data as one paper and one electronic copy.
 - 1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as one paper and one electronic copy.
 - 1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project. Review and approval of record drawings for completeness shall be prerequisite for review and approval of monthly payment applications.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 017839

ELEVATOR MODERNIZATION BID/SPECIFICATIONS

FOR:

Red Rocks Community College

13300 West sixth Avenue

Lakewood, CO 80228

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ELEVATOR MODERNIZATION/BID SPECIFICATION

1.01 SCOPE OF WORK

- A. Furnish all engineering, structural engineering, fabrication, layouts/drawings, permits, materials, labor, tools, equipment, transportation, supervision, testing, inspection, re-inspection, and "Building Interface" work with the new Elevator Control System to modernize one (1) hydraulic passenger/service elevator as specified herein. In addition, perform full coverage preventive maintenance service commencing upon Notice to Proceed and continuing through the warranty/guarantee period.
- B. Elevator Contractor shall provide all application engineering documentation, layouts, drawings and information required by and to the State of Colorado OPS Conveyance Division, West Metro Fire Department when alterations are made from the original design. All Engineering drawings shall also be submitted to *AEC-West* for review on behalf of the State of Colorado Office of the State Architect. **Note: Upon completion of each State of Colorado 3rd Party Elevator Acceptance Inspection and associated West Metro Fire Department Acceptance Inspection, the Elevator Contractor shall provide the State of Colorado Architect/Project Manager with both an electronic copy, as well as a paper copy of the "Violation Free" Elevator Acceptance. 3rd Party Code Consultant paid for by Owner for plan review and inspections.**
- C. In all cases where a device or part of the equipment is herein referred to in the singular number, it is intended that such reference shall apply to as many such devices as are required to complete the installation/modernization work on one (1) hydraulic passenger/service elevator #5: Three (3) landing, 6,000 Lbs. Capacity, and 100 feet per minute located at Red Rocks Community College – 13300 West 6th Avenue - Lakewood, CO 80228.
- D. Any items not specified in detail by the Contract/Specification, but which are incidental to or necessary for the complete installation and proper operation of the work described herein or reasonably implied, shall be furnished as if called for in detail by the Contract/Specification.
- E. Bidders must report discrepancies or ambiguities occurring in the Contract/Specification prior to the submission of the bid proposal. Submission of the bid without clarification will reflect acceptance of the Contract/Specification as written.

1.02 CONSULTANT'S RESPONSIBILITIES

- A. The Consultant shall act as a representative of the Owner in matters pertaining to the work of the contract, including interpretation of Contract/Specifications and contract documents, review of shop drawing submissions, approval of payment applications, review of project progress, and final review of the completed work prior to acceptance by the Owner.

1.03 STANDARDS AND REGULATIONS

- A. All material, design, clearances, construction, workmanship, operation and tests shall be in accordance with the requirements of ASME A17.1 Edition 2019 Safety Code for Elevators, as well as applicable state or local codes including City of Lakewood, Jefferson County, Lakewood Fire Department, State of Colorado, the National Electrical Code, the BOCA and IBC Codes, the NFPA Code, the Americans with Disabilities Act and all other Codes, regulations, laws, and ordinances as may govern. Where conflicts occur in the above codes, the most rigid

shall apply. Access the following website for Approved State Building Codes:
<https://www.colorado.gov/pacific/osa/bldgcodes>

- B. Nothing contained in this Contract/Specification shall conflict with any codes or federal, state or local laws, ordinances, rules or regulations governing the work.

1.04 PERMITS AND INSPECTIONS

- A. The Elevator Contractor shall give all requisite notices, obtain and pay for all permits, and pay all deposits and fees necessary for the installation of all work provided under this Contract/Specification. In addition, the Elevator Contractor shall obtain and pay for all necessary state and local inspections and conduct such tests as may be required by the regulations of such authorities. These tests shall be made in the presence of the authorized representative of such authorities and in the presence of the Owner. An elevator installation permit shall be displayed on the job site and visible to interested parties.
- B. The installation, when complete, shall receive the final approval of all constituted authorities and the Elevator Contractor shall submit evidence of the inspection results and the Certificate of Operation from the constituted authority.

1.05 ELEVATOR CONTRACTOR QUALIFICATION

- A. The Elevator Contractor must be a licensed Elevator Contractor with the State of Colorado, and shall be one regularly engaged in the business of design, engineering, manufacture, installation, modernization, and/or servicing of elevators of the type and character required by this Contract/Specification, shall be or represent an approved manufacturer, and shall assume full responsibility for the products used in assembling the elevator equipment. Certified engineering drawings and descriptive technical data on the proposed equipment shall be provided by the Elevator Contractor as furnished by the component manufacturer.
- B. The Elevator Contractor shall show successful experience in the complete installation, modernization, and maintenance of elevators, that it employs competent personnel trained in the installation, modernization, and maintenance of the equipment required in this Contract/Specification, that it maintains locally an adequate stock of parts for replacement or emergency, and that it has qualified employees locally available to ensure the fulfillment of the service without unreasonable delay. This maintenance service shall be performed solely by the Elevator Contractor and shall not be assigned or transferred to any agent or subcontractor.

1.06 SHOP DRAWINGS/SUBMITTALS AS BUILT DRAWINGS

- A. Job specific shop drawings and technical coordination information shall be submitted for review prior to commencing with fabrication of the equipment. The first shop drawing submittal shall be complete. Partial shop drawings will not be reviewed until they are complete. Delay in the project as a result of partial submittals shall be the responsibility of the Elevator Contractor. Shop drawing submission shall include, but not be limited to, the following:
 - 1. Hoistway and machine room layouts, including elevator machine room enclosure, if required.
 - 2. Main Line Disconnect Electrical Power Feeder Calculations in order to install Submersible Hydraulic Elevator Power/Pump Units and retain the existing Contract Speed and Capacity.

3. Elevator Cab Interior layouts.
 4. Signal Operating Fixture Details. (Car Operating Panel, Hall Push Button Stations, and other fixtures)
 5. Electrical coordination information and layouts, if required. (Cab light disconnect, machine room light and GFCI receptacle, main line disconnect, hoistway/pit lights and receptacles)
 6. Building Fire Protection, Smoke Detector, and Interface Module requirements. (Emergency Firefighters' Service Phase I - Primary Floor, Alternate Floor, Fire Hat Signal) Shunt Trip Disconnect
 7. Brochures, Descriptive Literature or Cut Sheets for:
 - a. Hydraulic Elevator Control Panel, w/ Emergency Battery Lowering Device
 - b. Hydraulic Elevator Power/Pump Unit
 - c. Car Door Operator
 - d. Hoistway Door Equipment
 - e. Door Protection Detector
 - f. Cab Interior, Handrail, Ceiling, Flooring, and Protective Pads.
- B. Upon completion of the project, the Elevator Contractor shall submit the following:
1. One (1) Set of diagnostic tools, including all manuals, codes and sundries necessary to operate the tools to test, adjust and maintain the elevator equipment provided. The tool shall become the property of the owner.
 2. Complete certified engineering data, including parts lists and parts numbers on all equipment as will be necessary for maintaining the equipment and for ordering replacements. Certified engineering data shall be permanently bound.
 3. Original reproducible and complete and legible sets of blue or black line wiring diagrams and straight-line diagrams showing the complete electrical connections, functions and sequence of operation of all apparatus connected with the elevator, including door operator, both in the machine room and in the hoistway, together with photographs or cuts of controller repair parts with numbers listed. Each device on the wiring diagrams and controller panels shall be properly and permanently identified by name and part number.
 4. Original reproducible and complete sets of As-Built shop drawings, including layouts and signal operating fixture details.
 5. Complete parts catalogs listing all replacement parts and numbers for all equipment installed and the names of the equipment suppliers and reordering procedures. Parts catalogs to be bound in permanent binders.
 6. Neatly bound instructions explaining all operating features including apparatus in the car and lobby control panels, control sequence of operation, adjusting and troubleshooting procedures.
 7. Elevator Company Maintenance Control Plan, with lubrication charts indicating lubrication points and type of lubrication recommended for all equipment. One (1) set shall be bound and permanently maintained in the elevator machine room.

8. Provide one (1) paper copy and two (2) digital copies on two (2) separate flash drives for All materials listed above in this section.
9. Four (4) sets of keys to operate all key operated functions all marked and identified.

1.07 MATERIALS & EQUIPMENT

- A. All materials and equipment to be furnished under this Contract/Specification shall be new, of the best grade and quality used for the purpose of commercial practice and shall be the latest standard product as advertised in printed catalogs by reputable manufacturers. All equipment or apparatus of any one system must be the product of one manufacturer, or equivalent products of a number of manufacturers which are suitable for use in a unified or assembled system. All parts of the elevator equipment shall be built to standard dimensions, tolerances and clearances in order to ensure complete interchangeability of similar parts of similar machines and devices.

1.08 HOISTING, HANDLING AND INSTALLATION OF EQUIPMENT

- A. The Elevator Contractor shall provide for all cartage, handling and receiving, hoisting and lowering and removal of equipment related to the work, from the property. The Elevator Contractor shall be responsible for all permits, fees and coordination with local authorities, including local police and fire departments, for use of crane service on and around the property.
- B. The equipment shall be installed in accordance with the equipment manufacturer's direction, referenced codes and Contract/Specifications.
- C. The machine room, pit, and hoistway equipment shall be installed with clearances complying with referenced and applicable codes and Contract/Specifications.
- D. All items shall be installed so that they are safely accessible for maintenance and so that they may be removable via portable hoist or other means for maintenance and repair.

1.09 ACCEPTANCE OF EQUIPMENT

- A. No approval, either written or verbal, of any drawings, descriptive data or samples of such material, equipment and/or appurtenances shall relieve the Elevator Contractor of his responsibility to turn over the same to the Owner in perfect working order at the completion of the work. Any material, equipment, or appurtenances, the operation, capacity or performance of which does not comply with the Contract/Specification requirements, or which is damaged prior to acceptance by the Owner, shall be held to be defective material and shall be removed and replaced with proper and acceptable materials, equipment and/or appurtenances, or put in proper and acceptable working order, satisfactory to the Owner, without additional cost the Owner.

1.10 INSURANCE – IN ACCORDANCE WITH STATE OF COLORADO REQUIREMENTS

- A. The Elevator Contractor shall maintain a comprehensive general liability insurance policy throughout the term of the contract, including completed operations, blanket contractual and broad form property damage in a casualty or liability insurance company acceptable to the Owner. Reference Contractor's D/B/B Agreement. State Form SC6.21 for all requirements.

- B. Insurance shall fully protect the Elevator Contractor, the Elevator Contractor's subcontractors engaged to perform work under this contract, the Owner, the Owner's Elevator Consultant and any other Owner representatives identified by the Owner, from all loss.
- C. The Elevator Contractor shall submit evidence of the foregoing requirement by submitting a Certificate of Insurance to the Owner in a form approved by the Owner, prior to the start of work on the project. Certificate shall include the statement that the Owner will be notified thirty (30) days prior to any cancellation. Minimum coverages are outlined as follows:

Workman's Compensation	Statutory	
Employer's Liability	\$2,000,000	
Comprehensive General Liability	\$2,000,000	Single Limit, Bodily Injury and Property Damage
Comprehensive Automobile Liability		
Bodily Injury.	\$500,000	Each Person
	\$1,000,000	Each Occurrence
Property Damage	\$1,000,000	Each Occurrence
Umbrella Liability Coverage	\$2,000,000	

- D. The Elevator Contractor shall provide immediate notice and provide copies of all reports of any accidents of any kind to the Owner. Additional insurance as required by Owner, of which a copy is attached in the sample contract.

1.11 SPECIAL TOOLS AND INSTRUCTIONS FOR USE

- A. The Elevator Contractor shall provide all required specialized tools, instructions for their use and sundries as necessary to perform diagnostic evaluations, adjustments and/or programmable software changes on any unit of the microprocessor-based elevator control equipment provided. Diagnostic tools shall become the property of the Owner.
- B. Diagnostic tools which require periodic recalibration and/or re-initiation shall be performed by the Elevator Contractor at no cost to the Owner for a period of ten (10) years from the date of final acceptance of the equipment, regardless of whether the Elevator Contractor is or is not the maintenance contractor for the equipment. Should a diagnostic tool be required to be repaired, recalibrated or reinitiated, the Elevator Contractor shall provide a similar “loaner” tool to the Owner, until the original Owner's tool is returned.
- C. Diagnostic tools provided to the Owner shall be capable of performing all levels of diagnostics, systems adjustments and software program changes that are available to the Elevator Contractor.
- D. The Elevator Contractor shall provide one paper and 2 digital copies of printed instructions for use of any tool that may be necessary to perform diagnostic evaluations, systems adjustment and / or programmable software changes on any unit of the microprocessor-based elevator con-

trol equipment. The Elevator Contractor shall provide access codes, passwords and other proprietary information that is necessary to interface with the microprocessor control equipment. In addition, the Elevator Contractor shall provide step by step adjusting, programming and troubleshooting procedures as pertain to the microprocessor control equipment, a composite listing of the individual settings chosen for the variable software parameters stored on the software programs of both motion and dispatch controllers.

1.12 ADDITIONAL RELATED ELEVATOR/BUILDING INTERFACE WORK INCLUDED AND PART OF THE ELEVATOR CONTRACT (TURN-KEY PROJECT)

- A. The Elevator Contractor shall submit its proposal based on acceptance of the hoistways, machine rooms, overheads, pits, and access to the equipment as exists. The Elevator Contractor shall notify the Owner of any changes to the hoistways, machine rooms, overheads, and pits which are necessary to accommodate the Elevator Contractor's equipment or to comply with Code prior to the submission of the bid for the elevator modernization.
- B. The Elevator Contractor shall coordinate the work to be performed by his subcontractors which is included and part of the Elevator Contract, as required, during the course of the project to assure that all work required of the other trades is completed in such a manner and in such time as will be required to permit the Elevator Contractor to commence and complete the Contract work within the project schedule requirements.
- C. The following Electrical, Fire Protection, Fire Suppression, and Mechanical work is included in the elevator contract:
 1. Provide all engineering, layouts, drawings, calculations, and permits that may be required by the State of Colorado – State Architect and/or City of Lakewood, Jefferson County, or Lakewood Fire Department, as related to the Electrical, Fire Protection, Fire Suppression, Structural, and Mechanical alteration or interface work.
 2. Install a new Elevator Main Line “Shunt Trip” Disconnect for the new Elevator Control Panel. Additionally, provide an “Auxiliary Contact” necessary to disable the “Emergency Battery Lowering Device” when the Main Line Disconnect Switch is manually opened. Increase the Main Line Disconnect and wire feeder size in order to accommodate the new Submersible Hydraulic Power/Pump Unit.
 3. Provide a dedicated 110 Volt circuit necessary to activation of the Shunt Trip Disconnect.
 4. Install new 110 volt – 20 Amp fused and lockable disconnect panel adjacent to each new elevator control panel.
 5. Re-use wiring to the elevator machine room for telephone communication or provide new as needed in order to comply with ASME A17.1 - 2019.
 6. Install and program new addressable Smoke/Heat Detectors in each elevator lobby, elevator machine room, and elevator pit. (Note: In lieu of installing a Smoke Detector in the Elevator Pits, install a Low Temperature 135 degree “Rate of Rise” Heat/Thermal Sensing Device may be installed) If possible, retain the existing or install new Smoke/Heat Detector interface Modules the Elevator Machine Room. (Primary Floor,

Alternate Floor, Fire Hat Signal, and Shunt Trip) The Smoke Detector at the Main Lobby floor and shall be programmed so that when activated the elevator will go the Alternate Recall Floor. (Bottom Floor) When any of the other Smoke Detectors are activated the elevator shall recall to the Main Floor. Activation of a Machine Room Smoke Detector or a Pit “Low Temperature” Heat Sensor shall recall the elevator to the Top/Main Floor and cause the “Fire Hat” light in the Car Operating Panel to flash.

7. Provide all engineering, layouts/drawings, permitting, conduit, wiring and materials in order to interface the Elevator Smoke Detectors, Heat Sensors, and Interface Modules with the existing building addressable Fire Protection System and new Elevator Control Panels.
8. Install new Fire Sprinkler Heads in the Elevator Pit.
9. Provide a new Fire Sprinkler “Shut-Off Valve” and associated “Tamper Switch” outside the Elevator Machine Rooms and Elevator Pits. Clearly mark/identify the location of each Shut-Off Valve.
10. Install new Elevator Pit “195-degree Fixed Temperature Heat Sensors” adjacent to each Fire Sprinkler Head. (Within 2 feet) The activation of an Elevator Pit or Elevator Machine Room Heat Sensor shall activate the Shunt Trip Disconnect. Retain the existing 110 Volt Circuit feeding the new Shunt Trip Disconnect Panels.
11. Provide necessary modifications to expand the existing fire alarm system so that all items related to upgrading the Fire Protection and Fire Suppression Systems are properly interfaced with the existing fire life safety system, and necessary Interface Modules in the elevator machine room.
12. Programming of the new devices with the existing Fire Panel shall be performed by *"Alarm Specialists, Inc. – (303) 986-5900*. If necessary, expand the capability of the existing Fire Panel to include the devices/modules to comply with items 5 thru 10 above. *(Elevator Contractor to secure pricing from Alarm Specialists, Inc. for performing this work.)*
13. Contractor to reuse existing grounding if acceptable or install new wiring for True earth ground from elevator machine room to main building ground if necessary.
14. Provide 110-volt GFCI protection outlets in the Elevator Machine Room and Elevator Pit.
15. Install three (3) new 48-inch double LED light fixtures in the Machine Room and install one (1) new 48-inch double LED light fixture in the Elevator Pit. Provide protective covers on the machine room and pit lights.
16. Provide a Light Switch, 42 inches above the bottom floor and adjacent to the Pit Ladder.

1.13 DEMOLITION, CUTTING, ALTERATIONS AND REMOVALS

- A. All demolition, cutting, alterations and removal required to prepare the building to receive the new work, and any such demolition, cutting, alterations and removal which may be necessary to complete the work in a first-class workmanlike manner, shall be performed by the Elevator Contractor.
- B. All surfaces, such as roofs, walls, windows, floorings, ceiling, etc., which are damaged or disturbed due to the performance of the work of this contract, shall be repaired by the Elevator Contractor in a first-class workmanlike manner to match existing and surrounding areas.
- C. All permanent and temporary bracing and anchoring required for the support or transfer of any load while demolition or installation work is in progress shall be provided by the Elevator Contractor. All work shall be made absolutely stable and secure and the Elevator Contractor shall be held strictly responsible for any damage resulting from failure to properly furnish such support.
- D. The Elevator Contractor shall protect Owner's property, equipment and stored materials against damage, dust and dirt at all times and shall confine all methods of construction to promote safety and reduce noise and dust, due to occupancy of the property and provide necessary protective guards, barricades, tarpaulins and drop cloths.
- E. The Elevator Contractor shall remove all unused and demolished equipment and rubbish on a continual basis and shall keep the premises clean at all times during the term of the project. At the completion of work, the Elevator Contractor shall leave the premises clean and in such condition as is satisfactory to Owner.

1.14 MATERIAL AND EQUIPMENT DELIVERY, STORAGE

- A. All materials shall be delivered in the original unopened protective packaging and shall be stored in the protective packaging to prevent soiling, physical damage and wetting.
- B. Equipment and exposed finishes shall be protected during transportation, erection and construction against damage and stains.
- C. The Elevator Contractor shall confine his apparatus and the storage of materials to limits established by law, ordinances, permits or directions of the Owner and shall not unreasonably encumber the premises with his materials. All flammable or combustible materials shall be properly stored to eliminate potential fire hazards.

1.15 PROJECT MANAGEMENT AND SUPERVISION

- A. The Elevator Contractor shall designate an experienced Project Manager to perform the administrative management of the project and place a competent Superintendent in charge of the project throughout the course of the work. The Elevator Contractor's on-site job Foreman shall be responsible for day-to-day operations and scheduling with the Owner. The Project Manager and Superintendent shall be available to the Owner to assist in the progress and coordination of the work of the project and shall be available and record notes for **“Progress Review Meetings” at least every two-weeks** and represent the Elevator Contractor in all matters relating to the project.

1.16 SAFETY PLAN

- A. The Elevator Contractor shall submit a detailed safety plan for this project at time of shop drawing submittal. Safety Plan shall detail the type and construction of the barricades to be used at open hoistways, rigging to be worn by Elevator Contractors, and first aide kit. The superintendent shall hold a safety meeting on site monthly.

1.17 EXECUTION

- A. The Elevator Contractor shall perform the following as part of the execution of the work of the Elevator Contract:
1. Comply with all requirements of the local Fire Codes that are applicable to this work.
 2. Be sensitive to the needs and entitlements of the occupants of the building while performing the work.
 3. Confirm that the Contract/Specification and contract documents are complete with regard to the work required to provide for a complete, legal and Code compliant installation.
 4. Confirm that the elevator equipment to be provided will fit within the space available. Survey the job site and verify by measurement all dimensions affecting the work to be performed as part of the Contract. Inform the Owner in writing of any deficiencies which may be in conflict with design tolerances of the equipment to be installed, prior to fabrication of the equipment affected.
 5. Provide information as required for coordination of work to be performed by other trades which will affect scheduling of the elevator work and information required for coordination in scheduling the elevator work which will affect the scheduling of other trade contractor work.
 6. Permit only skilled constructors to perform the work of the Elevator Contract.
 7. Install all equipment in accordance with the Elevator Contract, the Contract/Specification and the final approved shop drawings,
 8. Comply with all applicable Codes, manufacturer's instructions and installation procedures.
 9. Keep all means of access and egress to and from the building, stairwells and lobbies free and clear of materials, tools and equipment always.
 10. Broom sweep the work areas, remove all hazardous materials from the site on a daily basis and keep all areas clean of all dirt and grease resulting from the work.
 11. Protect all finished surfaces during installation through to the final acceptance of the elevators. Upon acceptance of the elevators, remove all protective coverings and thoroughly clean finished surfaces of paint, wrappings, mastic, etc. Repair any damage, including scratches, dents, discoloration, etc. which may have occurred to the finished surfaces with the exception of any obvious vandalism, misuse or abuse of the equipment by others.

1.18 LIFE SAFETY SYSTEMS

- A. The Elevator Contractor shall maintain all operating life safety systems in operation at all times, including elevator Fire/Emergency recall and operation and Emergency Power operation. Elevators operating for the Workman's or Public's use are to be Code compliant at all times throughout the work of the Contract.

1.19 TESTING

- A. Upon completion of the elevator, the Elevator Contractor shall completely test the equipment, before AEC West, West Metro Fire Department, and the Owner, to demonstrate that the equipment was provided in accordance with Code and Contract/Specification requirements and complies with the Performance criteria listed elsewhere in the Contract/Specification.
- B. The Elevator Contractor shall provide all labor, tools and equipment necessary for on-site observations, testing, retesting, inspections and re-inspections as may be required to satisfy the Code testing requirements, the requirements of the local testing authority and the requirements of the Owner.
- C. Upon satisfactory completion of required tests, the Elevator Contractor shall obtain and submit to the Owner the Certificate of Operation and/or another documents/instrument, which may be required to legally permit the Owner to operate the elevator.

1.20 FINAL CLEAN-UP

- A. Upon completion of the project, the Elevator Contractor shall clean out and remove all loose materials from the hoistway, pit and machine room; remove all crating and packing materials and all unused elevator equipment from the job site; clean the machine room floor of dirt, oil, grease and dust and paint the machine room floor, pit and car top to provide for the machine room pit and car top to be dust free at the time of the Final Acceptance of the elevator system.

1.21 INSTRUCTIONS TO OWNER

- A. The Elevator Contractor shall provide a minimum of four (4) hours of instructions to the Owner's personnel upon completion of the elevator installation. Instructions shall include safety procedures, proper operation of all equipment and routine maintenance procedures. In addition, the Elevator Contractor shall provide explanation and demonstration of each control feature and operation, including Independent Service Operation, Emergency Recall Operation, Phase I and Emergency in Car Operation Phase II, and Emergency Power Operation.

1.22 WARRANTY AND GUARANTEE

- A. The Elevator Contractor shall warrant and guarantee all equipment provided and installed under this Contract/Specification against defects in materials and workmanship and will correct any defects not due to ordinary wear and tear or improper use or care which may develop within one (1) year from the date the last elevator is completed, placed into operation and accepted by the Owner. This warranty is not intended to supplement normal maintenance service and shall not be construed to mean that the Elevator Contractor shall provide free service or periodic examination, lubrication, or adjustment due to normal use, beyond that included in the Contract/Specifications, nor shall the Elevator Contractor correct, without charge, breakage, maladjustments, or other trouble arising from abuse, misuse, improper or inadequate maintenance, or any other causes beyond his control.

1.23 MAINTENANCE SERVICE

- A. **Warranty Maintenance:** Once the elevator modernization work has been completed and accepted as substantially complete by the Owner and Elevator Consultant the Elevator Contactor shall provide warranty maintenance for 12 months. The Warranty Maintenance shall be all-inclusive and not include any pro-rations or exclusions and shall provide coverage as outlined in the attached "Red Rocks Community College Elevator Maintenance Specifications." **The price for this Warranty Maintenance service shall be included in the Base Bid.**
- B. All maintenance service work shall be performed solely by the Elevator Contractor and shall not be assigned or transferred to any agent or subcontractor. The work shall be performed by competent personnel under the supervision and in the direct employ of the Elevator Contractor.

1.24 CONTINUING SUPPORT

- A. Should the Elevator Contractor's contract for continuing maintenance services not be executed by the Owner, or should it be canceled for any reason by either the Owner or the Elevator Contractor, the Elevator Contractor shall be obligated to notify the Owner and to provide to the Owner continuing information regarding changes recommended or necessary to be performed to the equipment to comply with Code changes or Manufacturer recommended and/or authorized changes or repairs, modifications, adjustments, replacements, etc., to permit for the continued integrity and safe/reliable operation of the equipment provided under the elevator installation contract and this Contract/Specification. In addition, the Elevator Contractor shall provide field and technical assistance and instructions to the Owner or Owner's elevator maintenance company, upon the Owner's request, within a reasonable time following the Owner's request, for which the Elevator Contractor shall be compensated at the Elevator Contractor's direct cost plus a reasonable charge for profit and overhead for materials and labor. Labor charges shall not exceed the Elevator Contractor's standard elevator mechanic hourly billing rates. The Elevator Contractor shall also be obligated to perform any repairs and/or replacements of equipment components required by the component Manufacturer to be made to correct faulty design or manufacture.

2.01 HYDRAULIC PASSENGER ELEVATOR #5 SCHEDULE/EQUIPMENT SUMMARY⁽¹⁾

RRCC – Elevator #5	Existing	After Modernization
Description: Elevator #5		
Speed/Capacity	100 fpm @ 6000	100 FPM @ 3,500 Lbs. (Contractor verify existing)
Stops/Opening	3 in line	Floor Marking: C, 1, and 2
Travel:	Approx. 29 feet (Contractor to verify)	
Operation	Selective/col.	Simplex Microprocessor Collective. (1st Floor Parking)
Machine Room:		
Power Unit	Dry Unit	Install new submersible power unit including valve, motor, tank, pump, and muffler. Install new Machine Room Shut-Off Valve.
Controller	Dover	New microprocessors with Fire Service Phase I and II, ADA Compliant, Independent Service, ASME A17.1 - 2019 Compliant
3 Phase Line Starter		Solid State Line Starter “soft-start” - Nordic or Siemens
Hoistway:		
Hydraulic Jack	Approx. 6 1/2"	Retain Jack and install new Packing
Hoistway Door Panels and Hoistway Door equipment	Baked Enamel Two-Speed Center-Opening	Retain the existing Hoistway Entrances and Hoistway Door Panels. Install New GAL Hoistway Door Tracks, new Hanger Rollers, Pick Up Rollers, Relating Cable, and Closers.
Hoistway Door Entrances and Hoistway Door Panels/Tracks/hangers	Retain the existing Hoistway Door Panels and Hoistway Entrances. Bid Alternate #1: In Lieu of retaining the existing Baked Enamel Hoistway Door Entrances and Door Panels, Install new #4 satin finish Hoistway Door Panels and “Clad” the existing Hoistway Entrances with #4 satin finish Stainless Steel.	
Hoistway Limit Switches		Install new hoistway limit switches.
Fascia, Dust Covers, etc.		Retain. Replace missing covers and panels.
Car Rails		Clean, align, and retain.
Wiring/Duct		Provide new wiring. Existing duct may be reused.
Car:		
Car-top-control		Provide new
Car Slide Guides	Slide Guides	Install new Car Slide Guide Inserts, with “Drip Pans” beneath Rails.
Car Doors and Car Door Operator		Install new Stainless Steel Car Door Panels. Provide new closed loop operator, track, and header. GAL-MOVFR or approved equal.
Door Protective Device		Provide new Janus “Panachrome” 3D or approved equal.
Cab: Remove the existing Elevator Cab Panels, Handrails, Ceiling, and Flooring. Install new <i>SnapCab Design</i> or approved equal Elevator Cab Interiors, including; four (4) 5wl rigidized Stainless Steel Lower Side Panels, two (2) per side and three (3) 5wl rigidized Stainless Steel Lower Rear Panels. Install a 4-inch #4 satin finish stainless-steel reveal between the upper and lower panels. Install four (4) #4 satin finish Stainless Steel Upper Side Panels, two (2) per side and three (3) #4 satin finish Stainless Steel Upper Rear Panels. Install a 2-inch ADA compliant Handrails on each side and rear wall and located between the upper and lower Panels. Install new or clad existing Front Return Panels and Transom. Install new “Drop Ceiling” with six (6) LED “Down Lights.” Install carpet per specifications. Provide new Cab Protective Pads and Pad Hooks.		
Pit:		
Pit Ladder		Provide Pit Ladder complying with codes.
Stop Switch		Provide new Pit Stop Switch in proper location/s.
Pit Light, Switch, & GFIC		Provide in accordance with code.
Pit Rupture Valve	None	Provide new Pit Overspeed/Rupture Valve
Signal Fixtures:		
Main Car Operating Panels (COP)	Provide new Main COP A17.1 2019 Compliant. Provide Digital Position Indicator and a Service Cabinet.	
Service Cabinet	Provide a key operated car light and fan switch, one (1) spare/blank keyed switch, Hoistway Access keyed switch, Inspection/Maintenance key switch, Independent Service key switch, and Emergency Light Test Button.	

Emergency Telephone	Provide ADA and ASME A17.1 2013 Compliant Emergency Telephone, with "Elevator Communications Failure" indicator.
Hall Pushbutton Stations, Hall Position Indicators and Lanterns.	At each landing, provide a new Stainless Steel #4 satin finish "Flush Mounted" ADA Compliant Hall Push Button Stations w/ LED illumination and Hoistway Access keyed switch. At the Ground Floor, install a new ASME A17.1 2019 compliant Hall Pushbutton Station with Phase I Emergency Firefighters' (3 position) key switch, operating instructions, LED illuminated buttons, and Elevator Communications Failure" indicator per Code. Provide a Combination Hall Lantern and PI above each Entrance.

(1) Summary is just a brief outline to give general scope of work. If a discrepancy exists between the summary and body of the technical specifications, or if an item is not included in the summary, the body of the technical specifications should take precedence.

2.02 HYDRAULIC CONTROL SYSTEM

- A. The existing Dover Elevator control system shall be removed and a new programmable micro-processor Simplex controller with selective collective operation furnished and installed.
- B. The new microprocessor controls will include a "Solid State Line Starter." **No "across-the-line" or "wye-delta" contactors are permitted.**
- C. A position selector shall provide positive means of determining the position of the elevator in the hoistway at all times. Hydraulic Elevator Leveling System shall utilize an absolute position multi-turn encoder to minimize the stabilized leveling. A steel tape shall be provided in the hoistway extending the complete length of the hoistway. A detector unit mounted on the top of the car, through which the steel tape is guided, shall be capable of providing a signal as to the position of the car in the hoistway. Floor location for leveling shall be determined via magnetic strips affixed to the tape to define the floor-leveling zone.
- D. The control system shall be designed to automatically bring the cars to a floor landing. The stop shall be smooth without any sudden stopping action. The floor approach shall be without any hesitation or delay in time. Floor sensing devices shall correct for overtravel and undertravel and shall maintain the car within a maximum of 1/4" of the floor line, regardless of rated capacity, load or direction of travel.
- E. The controllers shall be enclosed in properly ventilated metal cabinets with sides and top, and with hinged access doors on the front. Rubber mats shall be installed on the floor in front of each controller, starting panel and selector, as required, for electrical grounding protection of the equipment.
- F. All controller printed circuit boards, discrete components, switches, and other items of control equipment shall be mounted on a common panel or individual panels which shall be made of an approved, moisture-resisting, noncombustible material which shall be securely mounted in a substantial, self-supporting steel frame with fastenings suitable for panel demounting. A vibration absorbing mounting shall be provided for the steel frame, if necessary, to eliminate perceptible vibration.
- G. Electro-mechanical switches and relays shall be used where heavy current is supplied and/or on safety circuits required by the governing Elevator Codes.

- H. Switches shall be of the direct current type, magnet operated with contacts of design and material to ensure maximum conductivity, long life and reliable operation without overheating or excessive wear and provide a wiping action to prevent sticking due to fusion. Switches carrying highly inductive currents shall be provided with arc deflectors or suppressers.
- I. All switches, printed circuit boards and discrete components shall be mounted in the front of panels together with any small electronic components. Large capacity resistors shall be mounted on the rear, sides or top of panels.
- J. Time delay circuits shall be of an accepted design that is reliable and consistent, such as electronic timing circuits. No air dash pot relays shall be used.
- K. Wiring on the controller, whether factory or field wiring, shall be done in neat workmanlike order and all connections shall be made to studs and/or terminals by means of grommets, solderless lugs or similar connections. All wiring shall be copper.
- L. Terminal blocks with identifying studs shall be provided on the controller for connection of board wiring or external wiring.
- M. Identifying symbols or letters shall be permanently marked on or adjacent to each device on the controller and the marking shall be identical to marking used on the wiring diagrams. In addition to the identifying marks, the ampere rating shall be marked adjacent to all fuse holders.
- N. All input-output devices shall be marked similarly to relays for easy reference to wiring diagrams.
- O. The Elevator Contractor shall confirm which floor is to be the main dispatch floor, the Firefighter Recall floor and the Alternate Firefighters Recall floor, prior to fabrication of the control equipment. The control shall be programmable to enable the dispatch and recall floors to be changed in the field.
- P. The Elevator Contractor shall provide all electrical information necessary for review by the Owner and/or Consultant at the time of submission of the elevator hoistway layout drawings.

2.03 CONTROLLER DIAGNOSTICS

- A. The controller shall include ability to perform diagnostic analysis of the system capable of determining faults. When a fault occurs, the computer shall be able to provide a retrievable fault code message identifying the location of the elevator, the time of day of the occurrence, and the number of times the fault has occurred. The fault information for each car shall be identified on the video or LCD screen in the machine room or be capable of sending the fault information to a video screen in a remote location.

2.04 FIREFIGHTERS' EMERGENCY OPERATION

- A. Firefighters Recall/Emergency Operation shall include Phase I and Phase II operation in accordance with State and local governing ANSI Elevator Code requirements.

- B. Firefighters Recall/Emergency key switches shall be located in the main Firefighters access floor.
- C. All floor access restrictions shall be overridden on Fire/Emergency operation.
- D. The elevator control system shall be tied in with the Fire Alarm system and tested with the Fire Alarm system contractor.

2.05 EMERGENCY POWER OPERATION

- A. Provide Emergency Battery Lowering Device: In the event of a normal power supply failure, the elevator system shall be arranged to safely lower and open the car and hoistway doors to allow passengers out. The elevator controller shall have a battery-lowering unit to accomplish this task. (Reynolds & Reynolds or approved equal)
NOTE: Provide new Main Line Disconnect Panel with "Auxiliary Contact" to disable Lowering Device when the Main Line Disconnect to manually open.

2.06 INDEPENDENT SERVICE

- A. Independent Service operation, activated from the Independent Service switch, shall permit the elevator to be removed from the system and used for special service.
- B. When on Independent Service, the elevator shall be disconnected from the system and shall respond only to calls registered on the car buttons. The car doors shall close only when a car call button is pressed continuously.
- C. In the event an elevator is operating on Independent Service and Firefighters Emergency Operation recall becomes activated, following a period of approximately 60 seconds, the elevator shall automatically override Independent Service and engage Phase I Emergency recall. This operation shall be subject to acceptance by Code and Code enforcement authority.

2.07 AMERICANS WITH DISABILITIES ACT

- A. The elevator system operation shall comply with the requirements of the Americans with Disabilities Act. The existing car lanterns shall provide a visual and audible signal of arrival of an elevator at a floor. The car lantern audible signal shall sound once for an Up-direction elevator and twice for a Down direction elevator. The car lanterns shall signal as soon as the doors become fully open. Doors shall open and close automatically and car doors shall include a door-reopening device. The door-reopening device shall remain operative for a minimum of 20 seconds. Door dwell time shall comply with the $T = D/1.5$ formula. Doors shall remain open for a minimum of 5 seconds for a hall call and 3 seconds for a car call. The car position indicator in the car shall provide visual and audible indication of when the car passes or stops at a floor.

2.08 POWER UNIT

- A. Remove the existing Dover Elevator dry power/pump unit and furnish and install a new Submersible hydraulic power unit. The new unit shall be a submersible type built into a single housing; Installed on Six (6) "Thick/Heavy Duty Sound Isolation Pads, high pressure relief valve, check valve, automatic unloading up start valve, lowering and leveling valve, and magnetic controller. The valve shall be a constant speed-lowering valve.

- B. Pump: Provide new positive displacement pump specifically manufactured for oil-hydraulic elevator service. Pump shall be designed for steady discharge with minimum pulsation to give smooth and quiet operation. Output of pump shall not vary more than 10 percent between no load and full load on the elevator car.
- C. Provide new motor specifically designed for oil-hydraulic elevator service. Duty rating shall comply with specified speeds and loads.
- D. Provide new oil control unit consisting of the following units built into a single housing. Welded manifolds with separate valves to accomplish each function are not acceptable. Adjustments shall be accessible and be made without removing the assembly from the oil line. Relief valve shall be externally adjustable and be capable of by passing the total oil flow without increasing backpressure more than 10 percent above that required to barely open the valve. Up start and stop valve shall be externally adjustable and designed to bypass oil flow during start and stop of motor pump assembly. Valve shall close slowly, gradually diverting oil to or from the jack unit, ensuring smooth up starts and up stops. Check valve shall be designed to close quietly without permitting any perceptible reverse flow. Lowering valve and leveling valve shall be externally adjustable for drop-away speed, lowering speed, leveling speed and stopping speed to ensure smooth “down” starts and stops. The leveling valve shall be designed to level the car to the floor in the direction the car is traveling when slowdown is initiated.
- E. Mount Heavy Duty “Sound Isolation and Vibration Pads under the power unit assembly to isolate the unit from the building structure.
- F. Install an oil hydraulic silencer (muffler device) at the power unit location. In order to enhance the quietness of the hydraulic unit, two (2) Silencers may be installed in the Oil Line. (One new plus the existing Silencer may be retained) Silencer shall contain pulsation-absorbing material inserted in blowout proof housing arranged for inspecting interior parts without removing unit from oil line. Rubber hose without blowout proof features will not be acceptable.
- G. Install a new Machine Room “Shut-Off Valve” in the oil line.
- H. Prior to removing the existing power unit, remove all the oil from the tank, valve, oil pipeline and jack. Properly dispose of the oil. Upon completing the installation, provide all new oil.

2.09 CAB INTERIORS

- A. Install new #4 satin finish Stainless Steel Two-Speed Center Opening Car Door Panels. and new Panochrome 3D Door Protective Detectors.
- B. Install new #4 satin finish stainless-steel Front Return Panels, Entrances, and Transom.
- C. Provide the following new Cab Interior Renovation work: See SnapCab *ACERO* Sketch # 70959.
 - i. Remove the existing Elevator Cab Panels, Handrails, Ceiling, and Flooring.
 - ii. Clad or install new #4 satin finish Front Returns and Transom.
 - iii. Install new “Snap Cab or approved equal” (See Sketch # 70959 - Owner to select final finishes and flooring)
 - iv. Install new #4 satin finish stainless steel reveals between each cab Panel.
 - v. Provide new stainless-steel lower side and rear panels. (Layer 2)

- vi. Provide Wilsonart Plastic Laminate (Wild Cherry, Matte) side and rear panels. (Layers 3 & 5)
 - vii. Provide new Moz Aluminum (Kelp, Clear) side and rear panels. (Layer 4)
 - viii. Install new stainless-steel drop ceiling with six (6) new LED illumination and dimmer switch on Car Top.
 - ix. Install new 1.5-inch dia. rear Round Handrail.
 - x. Provide new Cab Protective Pads and Pad Hooks. (1) (One set of Pads per Building)
 - xi. Install new Dens/Dock -Sub Flooring and Karndean – Design flooring (Product # VGW33T Color: Copper Gum **Owner to make final flooring decision.**)
- D. Provide new “Top Emergency Exit” accessible from top of car with emergency switch per code.

2.10 SIGNAL FIXTURES AND ACCESSORIES

- A. Remove the existing car operating panel/s. Furnish and install a new #4 satin finish “Stainless Steel” Main and Auxiliary ASME A17.1 2019 compliant Car Operating Panel. (COP) The new COP shall contain the devices required for the specified operation and shall comply with the ANSI A117.1 Barrier Free Code. and A.D.A. code requirements. The new COP's shall include illuminated pushbuttons (*Innovation Industries PB-35* or approved equal) marked to correspond to the landings served, a keyed "emergency stop" switch, a "door open" button, a "door close" button, and "HELP" button. A Service Cabinet shall be provided and include a key operated car light, fan switch, one (1) spare/blank keyed switch, Emergency Light Test switch, Hoistway Access Keyed Switch, Inspection/Maintenance key switch, and Independent Service key switch and a 110 Volt GFCI Outlet. Emergency Firefighters' Service Phase II cabinet shall be provided in accordance with the current Elevator Safety Code. The floor pushbutton shall be illuminated when a call has been registered and shall remain illuminated until the car reaches the indicated floor.
- B. In the Main Car Operating Panel, provide an approximately 4X4 “smoked Plexiglas” cut-out for a “Security Card Readers” to be provided by the Owner. When on Emergency Firefighters Service Phase II, the Card Readers shall become inoperative, and Car Calls may be registered normally for any floor.
- C. The elevator shall be equipped with an Emergency Telephone device in accordance with the Elevator Safety Code and ADA requirements in accordance with ASME A17.1 - 2019. Provide ASME A17.1 2019 Voice, Messaging Display, and Visual means for communication to entrapped passengers.
- D. New digital Car Position Indicators shall be provided in both the Main and Auxiliary Car Operating Panels.
- E. A solid-state electronic chime shall be provided to indicate to a passenger on the elevator car that the car is stopping or passing a floor. (**No electro-mechanical “Gongs” permitted.**)
- F. A battery-operated emergency car light device shall be installed which will automatically turn on and operate immediately after normal car lighting power fails. The lighting device shall be so installed in the car enclosure to provide an intensity of illumination 4' above the car floor and approximately 1' in front of the car operating device of not less than 0.2-foot candles. The

battery power shall be capable of maintaining the above referenced illumination for a period of not less than four (4) hours.

- G. An emergency alarm bell shall be connected to a plainly marked pushbutton in each car operating panel and to the battery-operated emergency car light device.
- H. The Car Operating Panel shall be engraved with the message “Certificate of Inspection on File In Building Managers Office”, as well detail instructions for Phase II “Firefighters’ Operation”.
- I. Install a new ADA compliant “flush mounted” Hall Pushbutton Stations at each floor. The 1st floor Hall Pushbutton Station shall include a new ASME A17.1 2019 Phase I Emergency Firefighters’ 3 position key switch, engraved Operating Instructions, and "ELEVATOR COMMUNICATIONS FAILURE" indicator jewel, Communication Failure "audible signal" and a Silencing Key Switch.
- J. Install new Combination Hall Lanterns and Position Indicators above each Hoistway Entrance.
- L. Provide a new Car Top Inspection Station with an "emergency stop" switch, constant pressure "up-down" direction buttons, light and light switch shall make the normal operating devices inoperative and give the inspector complete control of the elevator.
- M. Install Key Operated Hoistway Access Switches at the Top and Bottom landings. Provide a key-operated hoistway access device and car top operating device. Key switches may be mounted in the Hall Pushbutton Station/s or adjacent to the door frames with only the ferrule exposed at terminal landings. Means for limiting the travel of the elevator from the Hoistway Access Switch shall be provided in accordance with the current code requirements.

2.11 CAR DOOR OPERATING EQUIPMENT

- A. Remove existing Car Door Panels and Car Door Operator/s. Furnish and install new **#4 finish Stainless Steel** (Two-Speed Center Opening) Car Door Panels, Car Door Operator, header, track, clutch, accessories and new heavy-duty operator drive motor. (GAL or approved equal) mount the new GAL MOVFR Car Door Operator on the Car Top/Canopy. The door operator shall be designed to operate the car and hoistway doors simultaneously, and interface with the new GAL hoistway door interlocks and pick-up rollers. Door movements shall be electrically cushioned at both limits of travel. Doors shall automatically open when the car arrives at a landing and shall automatically close after an adjustable time interval or when the car is dispatched to another landing. The door operator shall be fully closed loop providing direct current feedback and continuously monitor the position of the door throughout the door travel. The door operator shall be capable of applying more torque for heavy lobby doors and to handle varying hoistway wind conditions.
- B. Provide a new solid-state Janus Elevator Products, Inc. “Panachrome” 3D electronic detector designed to operate as described below or equivalent:
 - 1. During the “Open” cycle, the “Panachrome” electronic door detector shall illuminate and flash **Green**. During the “Close” cycle, the “Panachrome” electronic door detector shall illuminate and flash **Red**.

2. After a stop is made, the doors shall remain open for an adjustable time interval. Closing may be initiated instantaneously by registration of a car call, operation of load weighing device or signal from the service demand integrator.
 3. The doors will remain open as long as the electronic detector senses the presence of a passenger or object in the door opening. If door movement is obstructed for a predetermined time, a buzzer will sound, and the doors will close at reduced speed.
 4. If a passenger or object is detected during normal closing operation, the doors will immediately stop and reopen. Closing will be initiated one-half second after the passenger or object has been removed from the opening.
 5. The doors shall remain open for an adjustable time for a stop in response to a car call and a second variable time for a stop in response to a hall call. If the beams of the electronic detector are interrupted and reestablished, door open time for a car stop and for a hall stop shall be reduced.
- C. Furnish and install new door clutch accordance with ASME A17.1 Section 2.12.5 (Restricted Opening of Hoistway and Car Doors)

2.12 CAR SHELL/INTERIOR AND CAR EQUIPMENT

- A. Install new or clad the existing Front Return Panel, Entrance Jambs, and Transom with #4 satin finish Stainless-Steel.
- B. Install Car Top Emergency Exit and Exit Switch.
- C. The existing car sling shall be cleaned, painted, and reused.
- D. Provide "Car Top" railing per Code, if necessary. Provide signage on each Car Top stating: CAUTION - LOW OVERHEAD.
- E. Stencil the "Car Number" clearly on each Car Top, per Code.
- F. Install new "Polished" Aluminum Car Sill.
- G. Provide following Cab Interior Renovation Work: *SnapCab Design or Approved Equal*
 - i. Remove the existing Elevator Cab Panels, Handrails, Ceiling, and Flooring.
 - ii. Install four (4) 5wl rigidized Stainless-Steel Lower Side Panels, two (2) per side and three (3) 5wl rigidized Stainless -teel Lower Rear Panels.
 - iii. Install four (4) #4 satin finish Stainless Steel Upper Side Panels, two (2) per side and three (3) #4 satin finish Stainless Steel Upper Rear Panels.
 - iv. Install a #4 satin finish stainless-steel reveal between to upper panels and the lower panels
 - v. Install new 2-inch ADA compliant Handrails between the upper and lower panels and the required ADA Handrail height.
 - vi. Install new stainless-steel "Drop Ceiling. Six (6) Panel Ceiling.
 - vii. Install six (6) new LED "Down Lights."

- viii. Install new non-slip tile flooring.
- ix. Provide new Cab Protective Pads and Pad Hooks. Install new #4 satin finish stainless steel reveals.

2.13 HOISTWAY EQUIPMENT

- A. Retain the existing Car Slide Guides. Install new “Slide Guide Inserts.” Install “Drip Pans” beneath the Guide Rails
- B. The existing car guide rails and brackets shall be cleaned and properly painted. Check and realign car rails as required.
- C. Install new Hoistway Limit Switches.
- D. Existing hydraulic piping between the pit and machine room may be retained. Verify piping, fittings and couplings meet code requirements, if not replace, as part of this contract at no additional cost to owner. Eliminate all hydraulic oil leaks.
- E. Install new hydraulic packing and seals. Eliminate all oil line leaks.
- F. To reduce Power/Pump Unit noise in the elevator cab, in addition to the Sound Isolation materials in the Elevator Machine Room, install sound isolation material “Jelly-Block” between the Hydraulic Plunger/Bolster Plate and Car Sling.

2.14 HOISTWAY DOOR EQUIPMENT AND ENTRANCES

- A. Retain the existing Baked Enamel two-speed center opening Hoistway Door Panels and Hoistway Entrances.
- B. Install new GAL or approved equal Hoistway Door Tracks, Hanger Rollers, Closers, Relating Cables, Retainers, Fire Stops, Interlocks, and Pick-Up Rollers.

BID ALTERNATE #1

- C. **In lieu of retaining the existing Baked Enamel Hoistway Doors and Entrances, install new #4 satin finish stainless-steel two-speed center opening Hoistway Door Panels, Sight Guards, and clad the existing Baked Enamel Hoistway Entrances with #4 satin finish stainless-steel.**
- D. Hoistway door unlocking devices as specified by the ANSI A17.1 Code shall be provided to permit authorized persons to gain access to hoistway when elevator car is away from the landing.
- E. Retain fascia and ensure a flat even surface throughout. Check to make sure each piece is securely fastened to hanger housings and sill above. Replace any missing.
- F. Existing dust cover plates shall be retained. They shall be arranged to assure hanger accessibility from within the car.
- G. ADA compliant floor designations shall be provided at each hoistway entrance on both sides of jamb visible from within the car and each elevator corridor lobby at a height of 60" from the baseline of the braille cells to the floor. Designations shall be on a contrasting color back-

ground 2" high and raised .030". The designation plate shall be permanently attached with adhesive backing.

- H. Provide floor numbers, not less than 4" in height on the hoistway side of the hoistway doors and Car Tops.
- I. Clean and polish the existing aluminum Hoistway Door "Sills."

2.15 PIT EQUIPMENT

- A. The existing car buffers shall be cleaned, painted, and reused. Each buffer shall be properly tagged in accordance with A17.1.
- B. Install new steel ladders in each pit conforming to code. The ladders shall extend not less than 42" above the sill of the lowest landing door.
- C. A new emergency stop switch shall be provided in the elevator pit and accessible per code. The switch shall be designed to cut off power to the elevator power unit and close the valve as to hold the elevator in its position when the switch is activated.
- D. Install a new Pit Shut Off Valve. Eliminate all "Oil Line" oil leaks.

3.01 PERFORMANCE

- A. The elevator system shall be required to meet the following performance criteria.
 - 1. OPERATING TIME
 - a. Adjust the equipment so that the elapsed time to travel one typical 12'-0" floor does not exceed the time parameters as follows:
 - 1. Flight Time: 14.0 seconds
Start to measure this time when the fully opened doors begin to close and continue to measure the time until the car is stopped level with the next floor and the car and hall doors are open to half of their fully open position for side opening doors and three quarters open for center opening doors.
 - b. The following are criteria to be used when measuring the time durations:
 - 1. A typical floor shall be 12'-0".
 - 2. Floor level is considered to be within 1/8 inch of level.
 - 3. The time is measured with full load in the car and in both directions of travel.
 - 4. The power door operation for the hall and car doors conforms to the elevator Code requirements.
 - c. Adjust the equipment so that the operating speed in both directions of travel under load and no-load conditions does not vary more than three (3%) percent.
 - d. Adjust the equipment so that the operating time as set out above is compatible with dependable, consistent operation without undue wear on the equipment, can be maintained without excessive maintenance and so that the operating time can be readily maintained over the life of the elevator installation.

- e. Adjust the equipment so that, with the control adjusted to give the required time, the elevator operates under smooth acceleration and retardation and provides a comfortable and agreeable ride to the passengers.

3. LEVELING

- a. Cause the car to stop automatically at the floor level without overshooting, regardless of the load or direction of travel, so that the car sill is within 1/8 inch of level with respect to the hoistway sill.
- b. Correct for overtravel or undertravel by returning the car imperceptibly to the floor, releveling shall not commence within the 1/8-inch floor landing zone, above or below, with the doors in the open position. Releveling sequence of operation within this zone shall be initiated with the car doors in the closed position only.

4. DOOR TIME; DOOR OPERATION

- a. Arrange the doors to close with an average horizontal speed of no more than 1.0 FPS.
 - b. Arrange that the time necessary for the doors to operate as per the following:
 - 1. Opening: Open doors in 2.8 seconds.
Closing: Close doors in 3.4 seconds.
 - 2. Arrange that the door closing force, as measured when a door panel is stalled in the act of closing, does not exceed 30 lbs.
 - 3. Arrange the equipment so that the increase in noise level over the ambient noise level as measured within the cab, does not exceed four decibels at any time during a full door open, door close and door reversal cycle.
 - 4. Initiate the door reversal by interruption of the proximity detector or activating the door open button.
- ### 5. Valve
- a. Arrange for the valve to be able to stop the elevator with full load in the car from full speed in the down direction within the normal stopping distance of the car without shock or jar.
 - b. Adjust the valve to lift a minimum of 125% of the contract load.
 - c. Design and adjust the valve so as to operate without discernible noise.

4.01 WIRING

- A. All wiring shall be New to ensure proper operation as set forth in this Contract/Specification. Some hoistway duct may be reused upon prior Consultant's approval.
- B. Electrical work shall be included in the engineering drawings as appropriate to the scope of electrical work provided load is added or new circuits are included. Elevator Contractor to provide temporary wiring, if needed to the new elevator control panel. The Electrical Contractor will provide permanent power.
- C. Provide a minimum of five (5) sets of shielded cable in Traveling Cables, to be terminated at the top of the car junction box and at a point outside of the pit, or in the "Elevator Machine Room", or as directed by owner. Provide 10% spare for other wires.

- D. Provide a 4 X 4 Electrical Box containing a two (2) RG 6 Coaxial Cables and four (4) Pairs of Shielded cable/wiring in a Traveling Cable from Elevator Control Panel to the Top of car.

5.01 MISCELLANEOUS WORK AND SCHEDULE

- A. This Contract/Specification covers all work as specifically set forth to bring the elevator system up to acceptable standards. Any additional work deemed necessary shall be brought to the Owner's attention in writing seven (7) days prior to bid date.
- B. All work shall be performed during regular working hours of regular working days as is customary in the elevator industry.
- C. Prior to commencing work, a work schedule shall be submitted to the Owner for approval.
- E. All material for the elevator shall be on site prior to removing the elevator from service. Owner or owners' representative will inventory material prior to start of job. No exceptions to this item will be granted.
- F. The following schedule shall be followed:

Note: Target installation start date is 12/1/2022.

Phase I - Procurement	Base Bid
▪ Shop Drawings	3 weeks
▪ Shop Drawing Approval	1 weeks
▪ Manufacturing	17 weeks
▪ Deliver Material/Prep Work	1 week
▪ Total Duration Phase I	22 weeks
Phase II – Shut Down Time	
▪ Remove 1 st Car for Modernization	10 weeks
▪ Complete Punch List	1 week
▪ Total Duration Phase II	11 Weeks
Total Project Duration:	33 weeks

6.01 TESTS

- A. Perform Phase I and Phase II Fire Service tests to conform to ASME A17.1, Section 3.27 “Emergency Operation and Signal Devices.”.
- B. Perform emergency power tests to conform to ASME A17.1, Section 3.26.10 “Auxiliary Power Lowering Operation.”
- C. Perform acceptance tests to conform to ASME A17.1, Section 8.10.
- D. Completed copies of test reports shall be provided to the Owner.

7.01 CLEAN UP AND INSPECTION

- A. Remove all debris resulting from work on this contract. Remove from project site all equipment and unused or removed materials and restore building and premises to neat, clean appear-

ance. All oil removed shall be properly disposed of. When installing the new jack if it becomes necessary to remove soil, then this soil shall be removed from the elevator contractor as well. Soil shall be removed daily and stored in container.

- B. All materials and workmanship shall be subject to inspection or testing. The Owner shall have the right to reject defective or inferior material or workmanship and require correction of such without additional cost the Owner.

8.01 SCHEDULE OF APPROVED COMPONENTS

A. CONTROL SYSTEMS

- 1. Elevator Controls (EC)
- 2. Motion Control Engineering (MCE)
- 3. Smart Rise
- 4. VMI
- 5. OEM approved equal

B. DOOR OPERATOR EQUIPMENT

- 1. GAL (Closed Loop)
- 2. Moline (Closed Loop)
- 3. ECI (Closed Loop)

C. SIGNAL FIXTURES

- 1. Innovation
- 2. EPCO
- 3. PT

D. PUMP UNITS

- 1. Minnesota Elevator
- 2. Schumacher Elevator
- 3. Manufactures Standard (Submersible)

E. OEM's (Contractors Alternate)

Manufactures wishing to provide their own in-house components in lieu of the ones listed above are welcome to provide a "contractors alternate" bid, providing they first bid in accordance with the specifications and the "schedule of approved components" listed above and submit for approval a minimum of one (1) week prior to Bid Date. Additionally, it is understood that the OEM Manufacturers will provide full diagnostic equipment at the highest interface level including hand held tools, desk top, and lap top computers, as well as CRT monitors. Adjusters' manual, troubleshooting manual, as well as the service, parts, and owners' manuals will be provided. Leases for special tools will be unacceptable, as the tools will be provided to the owner with no conditions and full support of the OEM for 10 years whether or not they are maintaining the equipment.

Nonproprietary Definition:

For this project, the definition of nonproprietary elevator equipment and components shall be: Equipment must be nonproprietary and maintainable by any licensed or IUEC Elevator Mechanic. Elevator controls must include on-board diagnostics and adjustment tool. No periodic coding or pin

number required for continuous operation or adjustment. Adjustment and Parts manuals shall be provided. Parts shall be available for purchase by any Owner's representative.

End of Bid/Specifications