

ADDENDUM No. 1

July 18, 2019

Project:

Grant County Airport Terminal Renovation
 Grant County IFB No. B-20-02
 AIP Project No. 3-35-0039-021-2019
 NMDOT – Aviation Division Grant No. SVC-19-03

Architect:

ASA Architects
 201 North Alameda
 Las Cruces, New Mexico 88005

Owner:

Grant County
 1400 Highway 180 East
 Silver City, NM 88061

This addendum forms a part of the Contract Documents and modifies the original specifications and drawings dated July 8, 2019. Acknowledge receipt of this addendum in the space provided on the Bid Form. Failure to do so may subject the bidder to disqualification.

A. PROJECT MANUAL:

1. Section 00 2113 – INSTRUCTIONS TO BIDDERS

a. **CHANGE** 1.2 BIDDING SCHEDULE to following:

Proposed project delivery timeline:

1. Bidding advertised: Sunday, July 7, 2019.
2. Pre-bid meeting: 1:30 p.m., Tuesday, July 16, 2019.
3. Deadline for questions and requests for information: 12:00 noon, Monday, July 22, 2019.
4. Final addendum, if required, issued: Tuesday, 23, 2019.
5. Bids due no later than 2:00 p.m., Thursday, July 25, 2019, for public opening.
6. Consideration of contract award subject to bid results: August 8, 2019

b. **ADD** to 1.3 PREBID MEETING: List of attendees at the Pre-Bid meeting held at the project site on July 16, 2019; included with this addendum as Attachment 1.

2. Section 00 2400 – BID LOT DESCRIPTIONS

a. **REPLACE** “SECTION 00 2400 – BID LOTS (DESCRIPTIONS)” with revised “SECTION 00 2400 – BID LOTS (DESCRIPTIONS)-REV01”; included with this addendum as Attachment 2.

3. Section 00 4113 - BID FORM: PRICES

a. **REPLACE** “SECTION 00 4113 - BID FORM: PRICES” with revised “SECTION 00 4113 - BID FORM: PRICES-REV01”; included with this addendum as Attachment 3.

4. DIVISION 01 – GENERAL REQUIREMENTS

a. **ADD** the following Division 01 sections; included with this addendum as Attachment 4:

Section 01 1100 Summary of Work

Section 01 2000	Price and Payment Procedures
Section 01 2100	Allowances
Section 01 2600	Contract Modification Procedures
Section 01 3000	Administrative Requirements
Section 01 3100	Project Management and Coordination
Section 01 3300	Submittal Procedures
Section 01 4000	Quality Requirements
Section 01 5000	Temporary Facilities and Controls
Section 01 5800	Project Identification
Section 01 6000	Product Requirements
Section 01 6200	Product Options
Section 01 6213	Substitution Request Form
Section 01 7300	Execution Requirements
Section 01 7500	Starting and Adjusting
Section 01 7700	Closeout Procedures
Section 01 7800	Closeout Submittals
Section 01 7900	Demonstration and Training

END OF ADDENDUM No. 1 - GRANT COUNTY AIRPORT TERMINAL RENOVATION

PRE-BID MEETING ATTENDANCE



Date: 07/16/2019

Time: 1:30 p.m.

Project: Grant County Airport Terminal Renovation

**Grant County Airport Terminal Renovation
IFB No. B-20-02**

**Addendum No. 1
Attachment No. 1**

ASA Project No: 19104L / Grant County IFB No. B-20-02 / AIP Project No: 3-35-0039-021-2019 / NMDOT – Aviation Division Grant No. SVC-19-03

No.	Name	Representing	E-Mail	Phone
1	Matthew Beck	J&S Plumbing	JandSPlumbingnrg@gmail.com	575 642 3480
2	DANNY FLORES	SACATON LLC	SACATON_dr@Yahoo.com	575-590-2580
3	Judith Olivares	Classic Industries	classicindustries@comcast.net	(575) 993-0273
4	Edward Chapman	ECF Power & Lighting	estimating@ecpowerinc.com	(575) 532-1110
5	Mische Caris L	Grant County	mlaris@grantcountynm.com	575-574-0007
6	Randy Villa	Grant County	rvilla@grantcountynm.com	574-0035
7	David Hernandez	CAD Inc	cad.gen.in@gmail.com	575-647-1544
8	NATHAN WILCOX	LYNCO ELECTRIC CO	LYNCOELEC.NATHAN@COMCAST.NET	575 523-9066
9	Vivian Flores	Sacaton Const. LLC	harleydreamer67@gmail.com	575-590-7100
10	Randy Hernandez	Grant County	rhernandez@grantcountynm.com	575-574-0016
11	Rebekah Wenger	Airport	rwenger@grantcountynm.com	575-388-4154
12				
13				

No.	Name	Representing	E-Mail	Phone
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SECTION 00 2400 - BID LOTS (DESCRIPTIONS)-REV01

PART 1 - BID LOT IDENTIFICATION

- 1.1 The scope of work shall be divided into a four Bids Lots and an Additive Alternate.
- 1.2 All Bid Lots and Alternates shall include furnishing all the materials and labor related to the work described in each specific Bid Lot/Alternate. The Bid Lots shall include applicable permits, General Conditions, Supplementary Conditions, Special Conditions, Insurance, Bonds, and other overhead items not specifically listed in this paragraph.
- 1.3 References elsewhere in the Contract Documents to Bid Lots by number and title as established below shall be interpreted to mean the full and entire Bid Lot as described below.

PART 2 – BID LOT DESCRIPTIONS

- 2.1 BID LOT No. 1 (Base Bid) - Work included in BID LOT No. 1 (Base Bid) shall include all work associated with the general site work improvements and all work associated with the general reroofing of the portions of the building as shown in the drawings, including but not limited to, the following:
 - A. Earthwork to redress grading and drainage
 - B. Asphalt and concrete paving
 - C. Parking lot striping and signage
 - D. Demolition, removal and haul-off of the existing roofing system down to existing deck, to include asbestos-containing material.
 - E. Installation of new rigid roof insulation and a modified bitumen roofing system as specified and as shown in the contract drawings.
 - F. Removal and relocation of existing gas and electrical service lines on the roof as required for reroofing work.
 - G. Installation of flashings, accessories, gutter reinstallation and replacement, painting, and the reinstallation of communication wiring.
 - H. All work shown or required not specifically included in Bid Lots 2, 3, and 4.
- 2.2 BID LOT No. 2 - Work included in Bid Lot No. 2 shall include all work associated with the general upgrades to the HVAC and Electrical systems, including but not limited to, the following:
 - A. Removal and haul-off of existing HVAC system and Electrical system components as shown in demolition drawings.
 - B. Renovation and existing HVAC and Electrical systems as shown in drawings.
 - C. Installation of new HVAC system components and equipment as shown in drawings, including gas service line extensions.
 - D. Electrical work associated with the renovation of the HVAC system and the installation of new HVAC equipment.
 - E. Installation of new lighting system components including sensors, fixtures, and building-mounted area lighting.
 - F. All work shown or required not specifically included in Bid Lots 1, 3, and 4.
- 2.3 BID LOT No. 3 - Work included in Bid Lot No. 3 shall include the general construction of new restrooms and all work associated with the general renovation of the building interior consisting of finishes and replacement of interior doors as shown in the drawings, including but not limited to the following:
 - A. Demolition and removal of existing plumbing fixtures, interior partitions, restroom electrical work (light fixtures, wall heaters, receptacles and associated wiring), and hot water heater and associated piping.

- B. New interior partitions and associated finish work.
- C. Installation of new plumbing fixtures including hot water heater and hot water distribution piping.
- D. New restroom grab bars and
- E. New floor and ceiling finishes.
- F. New toilet accessories including grab bars.
- G. Ventilation and lighting work specifically for the new restrooms.
- H. All work shown or required not specifically included in Bid Lots 1, 2, and 4.

2.4 BID LOT No. 4 - Work included in Bid Lot No. 4 shall include all work associated with the general renovation of the building exterior finishes and the new construction of an entrance canopy, including but not limited to the following:

- A. Demolition and removal of existing finishes.
- B. Repair of damaged wall surfaces prior to application of new finishes.
- C. Demolition and removal of existing exterior aluminum storefronts and door assemblies.
- D. Construction of cmu infill areas in place of existing aluminum storefront assemblies and associated interior finish work.
- E. All work associated with installation of new exterior hollow metal door and window frame assemblies as shown in drawings.
 - 1. Bid Lot No. 4 includes Bid Alternate No. 1: All work associated with the installation of new exterior aluminum storefront door and window assemblies as shown in the drawings.
- F. All work associated with construction of new steel entrance canopy, including footing preparation, concrete work, steel erection, painting and electrical work (lighting and associated wiring).
- G. All work shown or required not specifically included in Bid Lots 1, 2, and 3.

END OF SECTION 00 2400 - BID LOTS (DESCRIPTIONS)-REV01

SECTION 00 4113 - BID FORM: PRICES-REV01

**PROJECT NAME: Grant County Airport Terminal Renovation
Grant County, New Mexico**

**BID NUMBER: Grant County IFB No. B-20-02
AIP Project No. 3-35-0039-021-2019
NMDOT – Aviation Division Grant No. SVC-19-03**

Herein after called Bidder, a (corporation, partnership, individual).

State of incorporation _____

**TO: Purchasing Agent
Grant County, New Mexico**

The undersigned Bidder, in response to the Invitation for Bids, and having examined the Site and Bidding Documents entitled Grant County Airport Terminal Renovations, Grant County IFB No. **B-20-0** prepared by ASA Architects, and the Addenda acknowledged below, and being familiar with all conditions surrounding the construction of the proposed project including availability of materials, equipment, and labor, hereby proposes to perform all work for the construction of the above referenced project for the prices stated below.

In submitting this Bid, the Bidder represents to the Owner that the Bidder has the financial capability and experience to complete the Work and agrees to the following:

1. To hold to the terms of the Bid for 60 days from the bid opening date.
2. To accept the provisions of the Instructions to Bidders.
3. To enter into and execute a Contract with Grant County if awarded on the basis of this Bid, and to furnish a Performance Bond and Labor and Materials Payment Bonds.
4. To accomplish the work in accordance with the Contract Documents.
5. To complete the work within 210 days from the commencement date set in a Notice to Proceed.
6. To pay as liquidated damages the sum of \$300.00 for each consecutive calendar day past the date set for substantial completion of the Work that the work is not completed.

The Bidder acknowledges receipt of the following Addenda:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

The prices set forth in this Bid Form include all work necessary to complete the construction, including overhead, profit, items of incidental expenses, permits, taxes except New Mexico Gross Receipts Tax and local option tax(es), and any other expenses applicable to complete the Work. It is understood that New Mexico Gross Receipts Tax and local option tax(es) will be paid by the Owner and are to be included as a separate line item on Applications for Payment.

BID LOT NO. 1 (Base Bid) – SITE WORK and REROOFING WORK:

The Bidder agrees to construct this portion of the Work for the following lump sum price:

_____ Dollars
(bid amount in words)

\$ _____
(bid amount in numbers)

BID LOT NO. 2 – HVAC and ELECTRICAL WORK:

The Bidder agrees to construct this portion of the Work for the following lump sum price:

_____ Dollars
(bid amount in words)

\$ _____
(bid amount in numbers)

BID LOT NO. 3 – RESTROOMS RENOVATION and BUILDING INTERIOR IMPROVEMENTS WORK:

The Bidder agrees to construct this portion of the Work for the following lump sum price:

_____ Dollars
(bid amount in words)

\$ _____
(bid amount in numbers)

BID LOT NO. 4 – BUILDING EXTERIOR IMPROVEMENTS WORK:

The Bidder agrees to construct this portion of the Work for the following lump sum price:

_____ Dollars
(bid amount in words)

\$ _____
(bid amount in numbers)

ADDITIVE ALTERNATE NO. 1, BID LOT NO. 4 – ALUMINUM STOREFRONTS

The Bidder agrees to construct this portion of the Work for the following lump sum price:

_____ Dollars
(Alternate bid amount in words)

\$ _____
(Alternate bid amount in numbers)

The required Bid Security, Campaign Contribution Disclosure Form, Application for Preference, Listing of Subcontractors, Qualification Statement, Corporate Resolution (if applicable), and other required forms are completed and enclosed with the Bid Form.

SUBMITTED BY: _____ (Firm Name)

PRINTED NAME: _____ (Authorized Representative)

SIGNATURE: _____ (Authorized Representative)

TITLE: _____ (Authorized Representative)

ADDRESS OF FIRM: _____

TELEPHONE NUMBER: _____

NEW MEXICO CONTRACTOR'S LICENSE NUMBER: _____

LICENSE CLASSIFICATION: _____

LICENSE EXPIRATION DATE: _____

NEW MEXICO DEPARTMENT OF WORKFORCE SOLUTIONS
REGISTRATION NUMBER: _____

END OF SECTION 00 4113 - BID FORM: PRICES-REV01

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SECTION 01 1100 – SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes the following:
 - 1. General description of work.
 - 2. Contractor's duties.
 - 3. Work by others.
 - 4. Work sequence.
 - 5. Contractor use of site.
 - 6. Identification of Entities
 - 7. Definitions.
 - 8. Abbreviations.

1.2 RELATED SECTIONS

- A. Section 00 2400 – Bid Lot Descriptions
- B. Section 00 7213 - General Conditions of the Contract.
 - 1. Article 2: Basic responsibilities and rights of Owner.
 - 2. Article 3: Basic responsibilities of Contractor.
 - 3. Article 6: Owner's right to award separate contracts.

1.3 GENERAL DESCRIPTION OF WORK

- A. Work of this contract is for general construction of Grant County Airport Terminal Renovation for Grant County in Hurley, New Mexico.
- B. The Work generally includes, but is not limited to the following:
 - 1. Selective building demolition.
 - 2. Sitework, including clearing, grading, drainage, and paving.
 - 3. Structural foundations and metal building canopy.
 - 4. Architectural including light gauge metal framing, wall finishes, floor finishes, ceilings, doors and frames assemblies, hardware, cabinets and countertops, reroofing, and other architectural components and systems as indicated on the drawings and in the specifications.
 - 5. Mechanical, plumbing and electrical systems, equipment and components comprised of HVAC rooftop units and related ductwork, restroom plumbing fixtures, building lighting and power distribution.

1.4 CONTRACTOR'S DUTIES

- A. Except as noted, provide and pay for all labor, materials, and equipment.
- B. Pay applicable and required taxes.
 - 1. Taxes shall be included as separate amounts on Applications for Payment.
- C. Secure and pay for permits, fees, and licenses necessary for execution of the Work.
- D. Give required notices.
- E. Comply with codes, ordinances, regulations, and other legal requirements of public authorities, which bear on performance of Work.

- F. Request required inspections from public authorities, correct any noted deficiencies, and obtain certifications of satisfactory inspection.
 - 1. Deliver certificates to the Architect in accordance with Section 01 7800 "Closeout Submittals".

1.5 WORK BY OTHERS

- A. Owner may elect to award separate contracts for purchase and installation of:
 - 1. Items indicated or designated as "Not In Contract" (NIC) on Drawings.
 - 2. Furniture and Furnishings not specifically called out as being included in the contract.
 - 3. IT Equipment , including the following:
 - a. Cabling.
 - b. Data jacks and face plates.
 - c. IT racks and shelving.
 - d. Patch panels and power strips.
 - e. Final connections and terminations required at the outlet and back at IT room.
 - f. Refer to electrical drawings for conduit and rough-in by General Contractor.
 - 4. Phone System, including the following:
 - a. Phone jacks and face plates.
 - b. Phone equipment and wiring required.
 - c. Final connections and terminations required at the outlet and back at the IT room.
 - d. Refer to electrical drawings for rough-in and specific hard lines by General Contractor.
 - 5. Security, including the following:
 - a. Security equipment including cameras, sensors, monitors, etc.
 - b. Low voltage power supply and wiring.
 - 6. Cable TV is not included for provision or installation for this project.
- B. Owner's responsibilities:
 - 1. Delivery of Owner supplied products.
 - 2. Schedule of work by others.
- C. Contractor's responsibilities:
 - 1. Inform Owner of required delivery dates for Owner supplied products and installation dates for work by others.
 - 2. Coordinate work with other installers or contractors.

1.6 WORK SEQUENCE

- A. Coordinate construction schedule and operations with Owner and Architect.
- B. Construct work to accommodate Owner's occupancy requirements.

1.7 CONTRACTOR USE OF SITE

- A. Construction shall be limited to the project site.
- B. Do not allow construction debris and waste to enter adjacent properties.
- C. Owner reserves the right to place and install equipment and furnishings in completed areas of buildings prior to Substantial Completion, provided Owner's installation does not interfere with construction.

1. Placement and installation of equipment and furnishings does not constitute acceptance of Work.

1.8 IDENTIFICATION OF ENTITIES

- A. Where the term "Architect" is used in the Contract Documents it is defined as the authorized representative designated by the Owner and acting within the scope of the particular duties entrusted to such representative.
 1. Architect:
ASA Architects
201 North Alameda
Las Cruces, NM 88005
P (575) 526-3111
 - a. Architect: Robert S. Price
- B. Where the term "Owner" is used in the Contract Documents, it is defined as follows:
 1. Owner:
Grant County
1400 Highway 180 East
Silver City, New Mexico
P (575) 574-0007
 - a. County Manager: Charlene Webb
 - b. Owner Representative: Michael "Mischa" Larisch
 - c. Purchasing Agent: Randy J. Hernandez

1.9 DEFINITIONS

- A. Refer to Document 00 7213 "General Conditions of the Contract for Construction", Article 1.1 for definitions of terms used within Contract Documents.
- B. Additional terms used within the Specifications but not defined by Document 007213 "General Conditions" shall have the following definitions:
 1. Products: Materials, manufactured items, components, fixtures, machinery, equipment, or systems forming the Work but not including machinery, equipment, and other aids used for preparing, fabricating, conveying, and installing the Work.
 2. Supply: Furnish, deliver, and unload at the project site (Same meaning as furnish).
 3. Furnish: Supply, deliver, and unload at the project site (Same meaning as supply).
 4. Install: Operations at the project site to incorporate products into the work such as unpacking, assembling, anchoring, erecting, applying, placing, curing, finishing, and preparing for use.
 5. Provide: To supply or furnish a product and to also install it.
 6. Execution: Operations at the project site including preparatory actions, installing, and post-installation adjusting, testing, cleaning, and demonstrating.

1.10 ABBREVIATIONS

- A. Abbreviations used within the Specifications are defined as follows. For abbreviations not listed, contact Architect for definitions.
 1. ADA Americans with Disabilities Act
 2. ANSI American National Standards Institute
 3. ASTM American Society for Testing and Materials
 4. CF Cubic feet
 5. CFM Cubic feet per minute
 6. F Fahrenheit

- 7. IBC International Building Code
- 8. LB Pound
- 9. LF Linear feet
- 10. PSF Pounds per square foot
- 11. PSI Pounds per square inch
- 12. SF Square feet
- 13. SY Square yards
- 14. UL Underwriters Laboratory

END OF SECTION 01 1100 – SUMMARY OF WORK

SECTION 01 2000 - PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes administrative and procedural requirements for formatting and processing applications for payment.

1.2 RELATED SECTIONS

- A. Agreement Between Owner and Contractor.
- B. Section 00 7213 - General Conditions of the Contract.
 - 1. Article 9: General procedures for Schedule of Values, Applications for Payment, Certificates for Payment, and Progress Payments.
- C. Section 01 3100 – Project Management and Coordination.
- D. Section 01 3300 – Submittal Procedures.
- E. Section 017700 – Closeout Procedures.

1.3 SCHEDULE OF VALUES

- A. Procedures:
 - 1. Prepare a Preliminary Schedule of Values allocating the various portions of the work using AIA Document G703.
 - 2. Submit for review by the Architect three (3) copies of Preliminary Schedule of Values within ten (10) calendar days after date of Agreement between Owner and Contractor.
 - 3. Revise Schedule of Values to incorporate Architect's comments and if applicable, approved Change Orders and Construction Change Directives.
 - 4. Submit three (3) copies of the Final Schedule of Values at least seven (7) days before submittal of the initial Application for Payment.
- B. Format:
 - 1. Schedule of Values shall be a complete schedule and breakdown of costs for the entire project prepared using AIA Document G703.
 - 2. Round values to the nearest whole dollar with the sum of all values equal to the total Contract Sum.
- C. Content: Use Project Manual Table of Contents as basis for line items.
 - 1. Cross reference line items with the number and title of corresponding specification sections.
 - 2. Provide sufficient detail to allow computation of values for progress payments during construction.
 - 3. Include within each line item a directly proportional amount of Contractor's overhead and profit.
 - 4. Provide separate line items for materials and for installation when materials will be stored on site prior to installation such that costs of suitably stored materials may be included separately on an Application for Payment.
 - 5. The schedule format shall contain amounts for each portion of the work as follows in addition to the information required in columns A and B:
 - a. Column C – Scheduled Value
 - b. Column D – Work Completed From Previous Application

- c. Column E – Work Completed This Period
 - d. Column F – Materials Presently Stored
 - e. Column G – Total Completed and Stored to Date
 - f. Column G – Percentage Completed
 - g. Column H – Balance to Finish
4. Provide separate line items for:
 - a. Each allowance included in the Contract Sum.
 - b. Each Contract modification.
 - c. For bonds.
 - d. For Insurance.
 5. The Schedule of Values shall provide a separate line item titled Close-Out. To provide a value consistent with and appropriate to the provisions of the specification, the value of the Close-Out line items shall not be less than the following:
 - a. Punch List Items, Record Drawings (As-Builts), O & M Manuals, and Close-Out Documents: five (5) percent of the Contract Sum, as adjusted for authorized change orders.

1.4 APPLICATIONS FOR PAYMENT

- A. Format: AIA Form G702 “Application and Certificate for Payment” and AIA G703 “Continuation Sheet”.
- B. Payment period: Monthly unless otherwise stipulated in the Agreement Between the Owner and the Contractor.
- C. Preparation:
 1. Use Schedule of Values for listing items in Applications for Payment.
 2. Complete each entry on the Application for Payment form.
 - a. Incomplete forms will be returned without action.
 3. List each authorized Change Order and Change Order Directive as a separate line item and in the same format as other line items.
 4. Provide subtotals and total.
 5. Indicate actual and percent of amount used and amount remaining.
 6. Applications shall be signed and dated by an authorized officer of the Contractor. Signature shall be notarized.
- D. Include appropriate invoices for materials stored on site.
- E. At the request of the Architect, provide substantiating data justifying dollar amounts in question.
- F. Submittal: Submit 3 executed copies of each Application for Payment.
- G. Prior to acceptance of each Application for Payment, the Architect will review Project Record Drawings specified in Section 01 7800 “Closeout Submittals” to ensure that recorded data is current.

1.5 INITIAL APPLICATION FOR PAYMENT

- A. Submit the initial application for payment only after the following have been submitted and accepted by the Architect and the Owner.
 1. Certificates of insurance required by Section 00 7213 “General Conditions of the Contract”.

2. Schedule of Values.
3. Copy of building permit.
4. Progress schedule as required by Section 01 3100 "Project Management and Coordination".
5. List of subcontractors, principle suppliers and fabricators as required by Section 01 3300 "Substitution Procedures".
6. Submittal schedule as required by Section 01 3300 "Submittal Procedures".
7. Construction Waste Management Plan as required by Section 01 8113 "Construction Waste Management Disposal".
8. Indoor Air Quality Plan as required by Section 01 8119 "Indoor Air Quality Requirements".
9. LEED Action Plan as required by Section 01 9000 "Sustainable Design Requirements".

1.6 SUBSEQUENT APPLICATIONS FOR PAYMENT

- A. Submit the following with subsequent applications for payment:
 1. Updated Progress Schedule specified in Section 01 3100 "Project Management and Coordination".
 2. Construction Photographs specified in Section 01 3100 "Project Management and Coordination".
 3. Updated Submittal Schedule specified in Section 01 3300 "Submittal Procedures".
 4. Reporting on Construction Waste Management specified in Section 01 8113 "Construction Waste Management Disposal".

1.7 APPLICATION FOR PAYMENT AT SUBSTANTIAL COMPLETION

- A. Submit after issuance of Certificate of Substantial Completion and in accordance with Section 01 7700 "Closeout Procedures".

1.8 FINAL APPLICATION FOR PAYMENT

- A. Submit after completion of final cleaning, final inspection, final submittals, and other final completion procedures specified in Section 01 7700 "Closeout Procedures".

END OF SECTION 01 2000 - PRICE AND PAYMENT PROCEDURES

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SECTION 01 2100 – ALLOWANCES

PART 1 – GENERAL

1.1 SUMMARY

- A. All requirements of General and Supplementary Conditions, applicable sections of the Project Manual, and applicable portions of Drawings shall govern scope, quality, and execution of Allowances.
- B. This section includes procedures and descriptions for Allowances which are to be included in the Base Bid Amount.

1.2 RELATED SECTIONS

- A. Section 00 7200 – General Conditions of the Contract.
- B. Individual Specification Sections as applicable to each Allowance for products, assemblies, installations, and services.

1.3 PROCEDURES

- A. The Contractor shall not expend any portion of an Allowance without first obtaining written authorization from the Architect.
- B. Verify, by invoices or other data as requested by the Architect, all expenditures of monies for products, assemblies, installations, and services purchased under each allowance.
- C. Should the actual cost of any product, assembly, installation, or service covered under any Allowance be more or less than the specified amount of the Allowance, the contract sum will be adjusted by a Change Order equal to the amount of the difference.
- D. It shall be the General Contractor's responsibility to request applicable selections from the Architect far enough in advance of scheduled dates for Work to allow all required time for product review, selection, securing necessary approvals, possible revisions, and for placing orders and securing delivery so as not to delay any portion of the project.
- E. In cases where no technical specification exists for products, assemblies, installations, or services furnished by Allowance submit the following in accordance with Section 01 3300 "Submittal Procedures":
 - 1. Manufacturer's product data, installation instructions, and care and maintenance procedures.
 - 2. Applicable shop drawings.
 - 3. Manufacturer's selection charts for colors, textures, and patterns to be selected by the Architect.
 - 4. Other information as requested by the Architect.
- F. In cases where no technical specification exists for products, assemblies, installations, or services furnished by Allowance provide the manufacturer's standard warranty for materials and installation but for no less than a period of one year after Substantial Completion.

PART 2 – PRODUCTS

2.1 ALLOWANCES

- A. Include the following in the amount of each Allowance:
 - 1. Total cost of the product, assembly, or service.
 - 2. Delivery, unloading, and handling at the project site including uncrating and storage.
 - 3. Labor, installation, and finishing.
 - 4. Other expenses required to complete the installation.
- B. Included in the Base Bid but not included in the amount of each allowance shall be the cost for the following:
 - 1. All applicable taxes except New Mexico Gross Receipts tax and local option tax(es).
 - 2. Bond, Overhead and Profit.

2.2 SELECTION

- A. The Architect will assist in the selection of products and assemblies under each Allowance by performing the following duties:
 - 1. Review proposed manufacturers, products, assemblies, installations, and services.
 - 2. Make selections, receive approvals, and provide approval to proceed to the Contractor.
- B. The Contractor shall assist in the selection of products and assemblies under each Allowance by performing the following duties:
 - 1. Obtain written proposals as requested by the Architect.
 - 2. Make recommendations of products, assemblies, installations, and services for consideration by the Architect.
 - 3. Provide written notification to the Architect of any adverse effect anticipated by the selection of a product, assembly, installation, or service related to the construction schedule or contract sum.
 - 4. Upon the Architect's approval to proceed, enter into a purchase agreement with the appropriate subcontractor or supplier.
 - 5. Designate in the Construction Schedule, dates for delivery, installation, and completion of Allowance related work.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Comply with the manufacturer's written installation instructions and the Architect's Directives for the installation of Allowance purchased products and assemblies.

3.41 SCHEDULE OF ALLOWANCES

- A. Allowances for products, assemblies, installations, and services shall be in the amounts stated under the respective Allowance Description and included in the Base Bid Amount.
- B. ALLOWANCES:
 - 1. Five Thousand Dollars (\$5,000.00) for modifications to the Base Bid scope of work resulting from undiscovered site and building conditions.

END OF SECTION 01 2100 – ALLOWANCES

SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes administrative and procedural requirements for handling and processing contract modifications.

1.2 RELATED SECTIONS

- A. Section 00 7213 – General Conditions of the Contract.
 - 1. Article 7: Procedures for change orders and construction change directives.
- B. Section 01 2000 – Price and Payment Procedures.
- C. Section 01 6200 – Product Options (Substitution approval after award of contract).

1.3 MINOR CHANGES IN THE WORK

- A. The Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on AIA Form G710, Architect's Supplemental Instructions.

1.4 PROPOSAL REQUESTS

- A. Architect and Owner Initiated Requests for Proposals: The Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or Contract Time.
 - 1. If necessary, the description will include supplemental or revised drawings and specifications.
 - 2. Within 3 days of receipt of a request for proposal, submit to the Architect an estimate of cost necessary to execute the change.
 - 3. Proposal requests issued by the Architect are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.
- B. Contractor Initiated Proposals: When latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.
 - 1. Include a statement outlining the reasons for the change and the effect of the change on the Work.
 - 2. Provide a complete description of the proposed change.
 - 3. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
 - 4. Comply with requirements in Section 016200 "Product Options" if the proposed change requires substitution of one product or system for a specified product or system.
- C. Proposal Request Form: Use AIA Document G709 for Change Order Proposal Requests.
- D. Documentation: Maintain adequate records and provide full information required for evaluation of proposed changes and to substantiate costs including the following:
 - 1. Product, labor, and equipment quantities, unit costs, and total amounts.
 - a. When requested, furnish data to substantiate quantities.
 - 2. Delivery charges and equipment rental.
 - 3. Amounts for taxes, insurance, and bonds.

4. Overhead and profit amounts.
5. Documented credits for deletions.
6. Justification for changes in Contract Time.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: The Architect may issue a Construction Change Directive on AIA Form G714 signed by the Owner and instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. The Directive will contain a complete description of the Work.
 2. The Directive will designate the method to be followed to determine changes in the Contract Sum or Contract Time.
- B. Time and Material: The Contractor shall maintain detailed records on a time and material basis of work required by the Construction Change Directive.
- C. Documentation: After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract including the following:
 1. Names of personnel performing Work.
 2. Dates and times Work was performed and by whom.
 3. Time records and wage rates paid.
 4. Invoices for products, equipment, and subcontracts.

1.6 CHANGE ORDER PROCEDURES

- A. Changes in the Work shall be determined and Change Orders executed in accordance with Section 00 7213 "General Conditions."
- B. The Contractor shall prepare a Change Order for approval and signature by the FAA, Owner, Architect, and other funding agencies as required, on AIA Document G701 for the following:
 1. Allowances: Differences in costs between products purchased and cash allowances stated in Section 01 2100 "Allowances".
 2. Unit Prices: Computed from unit prices stated in Contract Documents or subsequently agreed upon and actual measured quantities installed.
 3. Stipulated Sum: Based on Architect's Request for Proposal and Contractor's price quotation or Contractor's Request for Change Order; both only as approved by the Owner and the Architect.
 4. Time and Material: Architect will determine allowable change in Contract Sum and Time.

1.7 AUTHORIZED CHANGE ORDERS

- A. After receiving authorization from the FAA, Owner, Architect, and other funding agencies by means of a Change Order approved and signed by the FAA, Owner, Architect, and other funding agencies as required, the Contractor shall:
 1. Proceed with the change in the work.
 2. Revise the Schedule of Values and Application for Payment forms to record each Change Order as a separate line item and adjust the Contract Sum and Time.
 3. Revise the Progress Schedule to reflect changes in Contract Time and to adjust times for other work items affected by changes.
 4. Record changes in Project Record Documents.

END OF SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

SECTION 01 3000 - ADMINISTRATIVE REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes administrative and procedural requirements for the following:
1. Preconstruction meeting.
 2. Progress meetings.
 3. Progress photographs.

1.2 PRECONSTRUCTION MEETING

- A. The Architect will schedule and administer a Pre-Construction Meeting to be held after execution of the Owner - Contractor Agreement and issuance of a Notice to Proceed.
1. The Pre-Construction Meeting will be held at the site or other agreeable location.
- B. Attendance is required for the following parties:
1. Owner.
 2. Architect.
 3. Architect's Consultants.
 4. Contractor including project manager and job superintendent.
 5. Major subcontractors and suppliers.
- C. Agenda:
1. Permits.
 2. Submission of executed bonds and insurance certificates.
 3. Notice to Proceed.
 4. Distribution of contract documents.
 5. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
 6. Designation of responsible personnel representing Owner, Contractor, and Architect.
 7. Channels of communication.
 8. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, change orders, and contract closeout procedures.
 9. Scheduling, work sequence, project meetings, and delivery priorities.
 10. Use of premises by Owner and Contractor, including work hours and right of way restrictions.
 11. Airfield safety requirements.
 12. Owner's requirements and occupancy prior to completion.
 13. Presentation and discussion of Site Mobilization Plan.
 14. Site storage, construction facilities, and controls.
 15. Temporary utilities.
 16. Survey and building layout.
 17. Security and housekeeping procedures.
 18. Employment practices and wage rates.
 19. Procedures for testing.
 20. Procedures for maintaining record documents.
 21. Requirements for start-up of equipment.
 22. Inspection and acceptance of equipment put into service during construction period.
- D. The Architect will record minutes and distribute copies to all participants.

1.3 PROGRESS MEETINGS

- A. The Contractor will schedule and administer meetings throughout the progress of the Work.
 - 1. Meetings will be held at monthly intervals maximum.
 - 2. Meetings will be held at the site or other agreeable location.
- B. Attendance is required for the following parties:
 - 1. Owner.
 - 2. Architect.
 - 3. Contractor including project manager and job superintendent.
 - 4. Major subcontractors and suppliers.
 - 5. Architect's Consultants when necessary.
 - 6. Owner's independent contractors when necessary.
- C. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review schedule and work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems that impede, or will impede, planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of off-site fabrication and delivery schedules.
 - 7. Maintenance of progress schedule.
 - 8. Corrective measures to regain projected schedules.
 - 9. Planned progress during succeeding work period.
 - 10. Maintenance of quality and work standards.
 - 11. Effect of proposed changes on progress schedule and coordination.
 - 12. Review Project Record Documents.
 - 13. Other business relating to Work.
- D. The Contractor will record minutes and distribute copies within three days after meeting to all participants and those affected by decisions made.

1.4 PROGRESS PHOTOGRAPHS

- A. Submit photographs with each application for payment, taken not more than 7 days prior to submission of application for payment.
- B. Photography Type: Digital, 24 bit color, 1024 x 768 resolution minimum, in JPG format.
 - 1. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.
 - 2. Provide electronic files on CD and 2 sets of 3x5 or 4x6 color prints.
 - 3. Provide files unaltered by photo editing software.
 - 4. File Naming: Include project identification, date and time of view, and view identification.
- C. Provide photographs of site and construction throughout progress of Work produced by an experienced photographer acceptable to the Architect.
- D. Periodic Views:
 - 1. Provide non-aerial photographs from required views at specified times, until Date of Substantial Completion.
 - 2. Consult with Architect for required views and specified times.
- E. In addition to periodic, recurring views, take photographs of each of the following events:
 - 1. Completion of site clearing.
 - 2. Excavations in progress.
 - 3. Foundations in progress and upon completion.
 - 4. Structural framing in progress and upon completion.

5. Enclosure of building upon completion.

PART 2 - PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION 01 3000 - ADMINISTRATIVE REQUIREMENTS

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SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes the following:
 - 1. Project management and coordination.
 - 2. Field engineering.

1.2 RELATED SECTIONS

- A. Section 01 4000 - Quality Requirements.
- B. Section 01 5000 - Temporary Facilities and Controls.

1.3 SUBMITTALS

- A. Provide in accordance with Section 013300 "Submittal Procedures".
 - 1. Coordination drawings:
 - a. Provide where coordination is critical for installation of components fabricated off site and where space is limited and maximum utilization of space is required.
 - b. Show relationship and integration of components and construction entities, required installation sequence, dimensions, and tolerances.
 - B. Staff assignment list:
 - 1. List of Contractor's principal staff assignments for Project. Indicate names, duties and responsibilities, addresses, and telephone numbers.
 - 2. Distribute and post in field office and elsewhere on site as appropriate to provide coordination information.

1.4 PROJECT MANAGEMENT AND COORDINATION

- A. The General Contractor shall employ a Superintendent and necessary assistants who shall be in attendance at the project site during performance of the Work.
- B. The Superintendent's resume shall be submitted to the Owner prior to commencement of construction and must demonstrate to the Owner reasonable satisfaction that the Superintendent has performed the same duties on previous construction projects similar to this project.
- C. The Superintendent shall be a competent and responsible employee who is regularly employed by the Contractor and is designated by the Contractor as its representative to be in full time attendance at the Project site throughout the construction of the Work.
 - 1. The Superintendent shall attend each job meeting.
- D. The Contractor must supply to the Owner & Architect the mobile telephone number of the Project Superintendent and the Project Manager who may be contacted during non-work-hours for emergencies on the project.
- E. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor.
 - 1. Important communications shall be confirmed in writing.
 - 2. Other communications shall be similarly confirmed on written request in each case.

- F. The Superintendent shall be responsible for coordinating all the Work of the Contractor and the Subcontractors.
- G. Coordinate scheduling, submittals, and work of various specification sections to ensure efficient and orderly sequence of installation of interdependent construction elements.
 - 1. Ensure that work of one specification section is not installed in such a manner as to limit, preclude, or restrict work of another section.
- H. Coordinate completion and clean-up of work of separate specification sections in preparation for final inspection specified in Section 01 7700 "Closeout Procedures".
- I. After acceptance of Work, coordinate access to facility for required maintenance, monitoring, adjusting, and correcting deficiencies in manner to minimize disruption of Owner's activities.

1.5 FIELD ENGINEERING

- A. Existing control datum for field engineering is indicated on Drawings.
- B. Locate or establish survey control and reference points prior to starting site construction.
 - 1. Protect points during construction and record locations with horizontal and vertical data on Project Record Documents in accordance with Section 01 7800 "Closeout Submittals".
- C. Prior to start of construction; verify location of control points and layout information on Drawings relative to property, setback, and easement lines.
- D. Provide competent field engineering services and establish elevations, lines, and levels utilizing recognized engineering survey practices.
 - 1. Periodically verify layouts.
- E. Promptly replace dislocated control and reference points based on original survey control.

PART 2 – PRODUCTS

2.1 EQUIPMENT

- A. Verify utility requirements and characteristics of equipment are compatible with facility utilities.
- B. Coordinate work of various specification sections having interdependent requirements for installing, connecting to, and placing in service such equipment.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Space requirements:
 - 1. Coordinate space requirements and installation of mechanical, electrical, and other work shown diagrammatically on Drawings.
 - a. Follow routing shown for pipes, ducts, and wireways as closely as practicable.
 - b. Utilize spaces efficiently to maximize accessibility for other installations, maintenance, and repairs.
 - 2. Where space is limited, coordinate installation of components to ensure maximum access for maintenance.
 - a. Ensure space provided around equipment and fixtures complies with applicable codes.

- B. Concealment: In finished areas, conceal pipes, ducts, and wireways within construction except as otherwise indicated.
 - 1. Where practical, conceal supports, fasteners, and other attachment devices.
- C. Arrangement:
 - 1. Unless otherwise indicated, installations shall be aligned vertically and horizontally.
 - a. Place piping, conduit, wireways, and other linear items parallel with lines of building.
 - 2. Coordinate mounting heights and spacing of components so that finished work is neat and orderly with organized appearance.
 - 3. Repetitive items such as hangers and fasteners shall be equally spaced unless indicated otherwise.
- D. Finished surfaces: Coordinate locations of fixtures, boxes, and other recessed or surface mounted items with finish elements and grades to ensure proper installation and neat appearance.

3.2 CUTTING AND PATCHING

- A. Openings made in installed exterior surfaces shall be closed to protect construction from weather and extremes of temperature and humidity.
- B. Cutting and patching of installed construction shall be accomplished in accordance with Section 01 7300 "Execution Requirements".
- C. Remove, cut, and patch previously installed construction in a manner to minimize damage and to provide a means of restoring finishes to original or better condition.
- D. Where refinishing is required, provide a neat transition to adjacent surfaces.
- E. Patched work shall match existing adjacent work in texture and appearance.

END OF SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

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SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes administrative and procedural requirements for processing the following submittals:
 - 1. Shop drawings.
 - 2. Product data.
 - 3. Samples.
 - 4. Manufacturer's instructions.
 - 5. Design data and calculations.
 - 6. Manufacturer's certificates.
 - 7. Reports for testing, inspecting, and demonstrating.

1.2 RELATED SECTIONS

- A. Section 00 7213 – General Conditions of the Contract.
- B. Section 01 2000 - Price and Payment Procedures.
- C. Section 01 3000 - Administrative Requirements (Progress schedule, coordination drawings, and construction photographs).
- D. Section 01 4000 - Quality Requirements (Manufacturers' field services and reports).
- E. Section 01 6000 - Product Requirements (Substitution requests).
- F. Section 01 7800 - Closeout Submittals.
- G. Refer to individual specification sections for specific products' submittal requirements.

1.3 SUBMITTAL SCHEDULE

- A. Procedure:
 - 1. Submit for review by Architect three (3) copies of Submittal Schedule within twenty (20) days of date of Agreement Between Owner and Contractor.
 - 2. Revise to address review comments and resubmit.
 - 3. Update Submittal Schedule to reflect change orders, progress schedule revisions, and status of individual submittals.
 - a. Submit three (3) copies with each Application for Payment.
- B. Format: Tabular arrangement indicating the following:
 - 1. Submittal number and title.
 - 2. Related specification section number and title.
 - 3. Proposed submittal date, actual submittal date, and date reviewed submittal is required.

1.4 SUBMITTAL PROCEDURES

- A. Schedule submittals to expedite Work and to allow a reasonable amount of time for review.
- B. Preparation:
 - 1. Provide separate submittal for each specification section requiring submittals.
 - a. Include all material requested for that section.
 - b. Provide folders or binders for material.

2. Coordinate submission of related items and group submittals of related products (or a system) in a single transmission.
 3. Identify variations from requirements of Contract Documents and indicate product and system limitations which may adversely affect Work.
 4. Mark or show dimensions and values in same units as specified.
 5. Provide 4 inch x 6 inch minimum space for Architect and Contractor review stamps.
- C. **Contractor review: Submittals not reviewed and stamped as such by the Contractor will be returned without review by the Architect or their consultants. Any delay caused by returning non-reviewed submittals shall be the responsibility of the Contractor.**
1. Review submittals prior to transmittal and verify compatibility with field conditions and dimensions, product selections and designations, and conformance of submittal with requirements of the Contract Documents.
 - a. Return non-conforming submittals to preparer for revision rather than submitting to the Architect.
 2. Coordinate submittals to avoid conflicts between various items of work.
 3. Apply Contractor's stamp with signature certifying that review, verification of products required, field dimensions, adjacent construction, and coordination of information is in accordance with the requirements of the Contract Documents.
 4. Failure of Contractor to review submittals prior to transmittal to Architect shall be cause for rejection.
- D. Transmittal:
1. Transmit each submittal with a separate Submittal Transmittal Form.
 2. Sequentially number transmittal forms.
 - a. Resubmittals shall have original number with an alphabetic or numeric suffix.
 2. Identify project, contractor, subcontractor, supplier, pertinent drawing sheet and detail numbers, and associated specification section numbers.
 3. Sign Submittal Transmittal Form and deliver submittals to Architect.
- E. Review: Architect will review and return submittals with comments.
- F. Do not fabricate products or begin work until return of submittals with Architect's acceptance.
- G. On return promptly distribute reviewed submittals to concerned parties.
1. Instruct parties to promptly report any inability to comply with provisions.
- H. Resubmission:
1. Revise and resubmit submittals as required within fifteen (15) days of return from Architect.
 2. Make re-submittals under procedures specified for initial submittals.
 3. Identify all changes made since previous submittal.
- I. Submittals or samples requiring selection of colors shall be submitted together and reviewed at one time by the Architect.
1. Partial submittals will not be reviewed independently unless allowed by the Architect.

1.5 SHOP DRAWINGS

- A. Submission: Submit the number of copies which the Contractor requires plus two (2) originals to be retained by the Architect.
1. Fold drawings to fit submittal folders.

- B. Form:
1. Size: 8-1/2 inches x 11 inches minimum and 36 inches x 48 inches maximum except for full size details and templates.
 2. Present in a clear and thorough manner, title each drawing with the project name, and identify each element of drawing with reference number.
 3. Plans, elevations, sections, and details shall be to scale with scale indicated.
 4. Indicate field verified dimensions and show relationship of products to adjacent work.
 - a. Note coordination requirements.
 5. Schematics and wiring and other diagrams shall be logically arranged and presented in a clear understandable manner with all items labeled.

1.6 PRODUCT DATA

- A. Submission: Submit the number of copies which the Contractor requires plus two (2) originals to be retained by the Architect.
- B. Form:
1. Provide all critical information such as reference standards, performance characteristics, capacities, power requirements, wiring and piping diagrams, controls, component parts, finishes, dimensions, and required clearances.
 2. Mark each copy of manufacturer's standard printed data to identify products, models, options, and other data pertinent to project.
 - a. Submit only data which is pertinent.
 3. Modify manufacturer's standard schematic drawings and diagrams and supplement standard data to provide specific information applicable to project.
 - a. Delete information not applicable.
 4. Colors and patterns: Unless color and pattern is specified for product, submit accurate color and pattern charts or samples illustrating manufacturer's full range for selection by Architect.

1.7 SAMPLES

- A. Submission:
1. Submit the number of samples which Contractor requires plus One (1) sample which will be retained by Architect.
 2. Label each sample with identification related to Submittal Transmittal Form.
 3. Submit samples at least thirty (30) days prior to date Contractor needs approval for ordering or incorporation into Work.
- B. Type: Submit samples to illustrate functional and aesthetic characteristics of the products, with all integral parts and attachment devices.
1. Include full range of manufacturer's standard finishes, indicating colors, textures, and patterns for selection by the Architect.
- C. Reviewed product samples may be used in work with approval of the Architect.

1.8 MANUFACTURER'S INSTRUCTIONS

- A. Submission: Submit the number of copies which Contractor requires plus two (2) to be retained by the Architect.
- B. Form:
1. Manufacturers' printed instructions for activities such as delivery, storage, assembly, installation, wiring, start-up, adjusting, finishing, and maintaining.
 2. Indicate pertinent portions and identify any conflicts between manufacturer's instructions and Contract Documents.

1.9 DESIGN DATA AND CALCULATIONS

- A. Submission: Submit the number of copies which Contractor requires plus two (2) to be retained by the Architect.
- B. Form:
 - 1. Provide basic calculations, analysis, and data to support design decisions and demonstrate compliance with specified requirements.
 - a. State assumptions and define parameters.
 - b. Give general formulas and references.
 - c. Provide sketches as required to illustrate design method and application.
 - 2. Arrange calculations and data in a logical manner with suitable text to explain procedure.
 - 3. Indicate name, title, and telephone number of individual performing design and include professional seal of design professional where applicable or required.

1.10 MANUFACTURERS' CERTIFICATES

- A. Submission: Submit the number of copies which Contractor requires plus two (2) to be retained by the Architect.
- B. Form:
 - 1. Certificates shall indicate that products conform to or exceed specified requirements.
 - a. Submit supporting reference data, affidavits, and certifications as required.
 - 2. Certificates may be based on recent or previous test results if acceptable to the Architect.

1.11 REPORTS

- A. Submission:
 - 1. Submit the number of copies which Contractor requires plus two (2) to be retained by the Architect.
 - 2. Submit reports within fifteen (15) days after completion of activity.
- B. Form:
 - 1. Present complete information in a clear concise manner.
 - 2. Computer printed on 8-1/2 inch x 11 inch white paper.
 - 3. Bind with titled cover in folder, plastic binder, or three ring binder as appropriate for quantity of material.
- C. Reports shall include:
 - 1. Time, location, conditions, and duration of activity.
 - 2. Names of persons performing and witnessing activity.
 - 3. Equipment used.
 - 4. Description of activity, data recorded, and results.
 - 5. Deficiencies found, corrective measures, and results of retesting.
 - 6. Other pertinent data.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION 01 3300 - SUBMITTAL PROCEDURES

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. This section includes the following:
 - 1. Installation quality control.
 - 2. Reference standards.
 - 3. Field samples.
 - 4. Inspection and testing laboratory services.
 - 5. Manufacturer's field services and reports.

1.2 RELATED SECTIONS

- A. Section 00 7213 - General Conditions of the Contract.
 - 1. Article 3.3: Contractor's supervision and construction procedures.
 - 2. Article 12: Contractor's responsibility for uncovering and correction of work.
 - 3. Article 13.5: Requirements for tests and inspections.
- B. Section 016000 - Product Requirements

1.3 INSTALLATION QUALITY CONTROL

- A. Monitor and maintain quality control over manufacturers, suppliers, subcontractors, work force, site conditions, products, and services to ensure Work is of specified, consistent quality.
- B. Workmanship:
 - 1. Specified requirements represent a minimum acceptable quality for Work. Comply with industry standards except when more stringent specified requirements and tolerances indicate higher standards or more precise workmanship.
 - 2. Perform work with suitable qualified personnel to produce work of specified quality.
 - 3. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and distortion.
- C. Manufacturer's instructions:
 - 1. Comply fully with manufacturer's written instructions and perform steps in manufacturer's recommended sequence.
 - 2. Should manufacturer's instructions conflict with Contract Documents, request clarification from the Architect prior to proceeding with the work.

1.3 REFERENCE STANDARDS

- A. When specifications require conformance to a reference standard, applicable standard shall be the edition current at the date of receiving bids.
- B. Should specified reference standard conflict with Contract Documents, request clarification from the Architect.
- C. Contractual relationship, duties, and responsibilities of the parties to the Contract, including those of the Architect, shall not be altered from that stated in the Contract Documents by mention or inference to the contrary in a specified reference standard.

1.4 FIELD SAMPLES

- A. When required by an individual specification section, install field samples for review by the Architect.

- B. Acceptable installed sample shall remain as part of Work and shall represent quality level for that item of work.
 - 1. Unacceptable sample shall be removed and replaced, repaired, or refinished as directed by the Architect.

1.5 INSPECTION AND TESTING LABORATORY SERVICES

- A. Contractor shall make arrangements, bear costs, and employ an independent firm acceptable to the Architect and the Owner to perform inspections and compliance testing for the following:
 - 1. Materials, components, and systems where testing to determine compliance with Contract Documents is required.
- B. Submit within fourteen (14) days of date of Agreement Between Owner and Contractor, testing laboratory qualifications for acceptance by the Architect.
- C. Testing firm shall perform inspections, tests, and other services specified in individual specification sections and as required.
- D. Testing firm shall submit directly to the Architect three (3) copies of reports indicating observations and results of inspections and tests with indication of compliance or non-compliance with Contract Documents.
 - 1. Additional copies may be required to be distributed to Owner and/or other Engineering Consultants at the direction of the Architect.
- E. Contractor's responsibilities:
 - 1. Cooperate with testing firm and furnish materials and other products to be tested.
 - a. Provide assistance in accessing and obtaining samples.
 - b. Provide storage for samples and testing equipment.
 - 2. Notify Architect two (2) days prior to operations requiring testing services.
 - 3. Make arrangements with testing firm and pay for additional samples and tests required for Contractor's use.
- F. Retesting: Retesting required due to non-conformance with specified requirements shall be performed by same testing firm and paid for by the Contractor.

1.6 MANUFACTURER'S FIELD SERVICES AND REPORTS

- A. When required by an individual specification section, provide services of manufacturer's field representative to observe site conditions, installation, quality of workmanship, starting of equipment, testing and adjusting equipment, and as applicable, to instruct and supervise field operations.
- B. Submit qualifications of manufacturer's field representative to Architect for approval fifteen (15) days in advance of required observation.
- C. Manufacturer's field representatives shall report observations, site decisions, and instructions given to installers that are supplemental or contrary to manufacturer's written instructions.
- D. Submit report of field representative within thirty (30) days of observation and in accordance with Section 01 3300 "Submittal Procedures".

END OF SECTION 01 4000 - QUALITY REQUIREMENTS

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. This section includes the following temporary facilities and controls:
 - 1. Site mobilization.
 - 2. Temporary Services: Electrical, lighting, heating and ventilating, water, and communications.
 - 3. Construction Facilities: Access, field facilities, sanitary facilities, and fire protection.
 - 4. Fencing, barriers, and protection.
 - 5. Protection of installed work.
 - 6. Removal of utilities, facilities, and controls.

1.2 RELATED WORK

- A. Section 00 7213 - General Conditions of the Contract.
 - 1. Article 3.15: Contractor's responsibility for cleaning.
 - 2. Article 10: Safety precautions and programs.

1.3 REFERENCES

- A. NFPA 10 - Standard for Portable Fire Extinguishers.
- B. NFPA 241 - Safeguarding Building Construction, Alterations, and Demolition Operations.

1.4 SITE MOBILIZATION

- A. Locations for temporary facilities shall be determined at the Pre-Construction Conference including the following:
 - 1. Owner's temporary terminal building
 - 2. Field office.
 - 3. Storage areas, sheds, and fencing.
 - 4. Project identification sign.
 - 5. Access routes.
 - 6. Temporary utility routes and connections.
 - 7. Sanitary facilities.
 - 8. Trash and rubbish receptacles.
 - 9. Parking arrangements.

1.5 TEMPORARY ELECTRICITY

- A. Contractor may connect to existing power source at site and pay cost of electricity used.
- B. Contractor shall furnish and maintain all temporary poles and overhead construction, feeders, transformers, meters, disconnects, drops, over-current protection, and other wiring and fittings for temporary electrical service as required by the project.
- C. Provide power outlets for construction operations with branch wiring, distribution boxes, and flexible power cords as required.
- D. Permanent convenience receptacles may be utilized during construction.
- E. All temporary power service, materials and utilization shall conform to all applicable codes.

1. Upon completion, remove temporary facilities.

1.6 TEMPORARY LIGHTING

- A. Provide lighting for construction operations. Lighting levels shall be appropriate for type and difficulty of work. Use these minimums as guidelines:
 1. 20 footcandles: Egress and circulation lighting.
 2. 50 footcandles: Rough assembly and fabrication, ordinary finishing, and ordinary inspection.
 3. 100 footcandles: Detailed assembly, fine finishing, and difficult assembly.
 4. 200 footcandles: Intricate assembly, very fine finishing, and very difficult inspection.
- B. After dark, provide security lighting for interior and exterior work and storage areas.
- C. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- D. Maintain lighting and provide routine repairs.
- E. Permanent building lighting may be utilized during construction.

1.7 TEMPORARY HEATING AND VENTILATING

- A. Ventilate enclosed areas to prevent accumulation of dust, fumes, vapors, and gases.
- B. Provide temporary fan units as may be required to maintain clean air for construction operations.
- C. Provide and pay for supplemental heating and cooling devices and energy needed to maintain required and specified conditions.
- D. Permanent building heating and ventilating equipment may be utilized during construction only if approved in advance with the Owner and Architect.

1.8 TEMPORARY WATER SERVICE

- A. Contractor may connect to existing water source at site and pay cost of water used.
- B. Contractor shall furnish and maintain all temporary mains, laterals, branch lines, meters, and other service piping and fittings to supply temporary water as required by the project.
- C. Assume responsibility for temporary connections and water lines.
 1. Upon completion, remove temporary facilities.

1.9 TEMPORARY COMMUNICATIONS

- A. Cell phone service will be acceptable.

1.10 ACCESS

- A. Acceptable access routes and site entrances shall be determined at the Pre-Construction Conference.
 1. Prepare construction entrance to accommodate traffic.
 2. Protect existing curbs and walks traversed by construction vehicles from damage.
- B. Identify access to Contractor's work and office area with appropriate signs so that delivery personnel and others may contact Contractor.

- C. Prevent unauthorized personnel from proceeding outside of Contractor's work and office area.

1.11 FIELD FACILITIES

- A. Provide and maintain storage sheds and other facilities as required.
- B. Arrange for parking for work force.

1.12 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required sanitary facilities for work force.
- B. New toilet facilities shall not be used by work force.

1.13 TEMPORARY FIRE PROTECTION

- A. Install and maintain temporary fire protection components.
 - 1. Establish and follow procedures to protect against fire losses.
 - 2. Comply with NFPA 241.
- B. Fire extinguishers: Provide hand carried, portable, UL rated fire extinguishers of type and size recommended by NFPA 10 for building exposure conditions.
 - 1. Place in accessible, convenient locations in clear view with a minimum of one extinguisher per floor.
- C. Access: Maintain unobstructed access to fire hydrants, water supply, fire extinguishers, stairways, and access routes for fighting fires.
- D. Heating devices: Exercise care and monitor use of temporary heaters to minimize fire risk.
- E. Store combustible materials in fire-safe containers.
- F. Volatile products: Do not store paints, varnishes, paint removers, solvents, adhesives, cleaning rags, and other volatile products in building.
 - 1. Take precautionary measures to prevent fire hazards and spontaneous combustion.
- G. Cutting and welding: Approve in advance the use of open flame cutting, welding, and soldering equipment.
 - 1. Ensure that safe conditions exist before granting approval.

1.14 FENCING

- A. Provide temporary fencing around materials storage area.
 - 1. Six feet (6') high commercial grade chain link fence.
 - 2. Equip with vehicular and pedestrian gates with locks.

1.15 BARRIERS AND PROTECTION

- A. Security: Provide to protect Work and existing facilities from unauthorized entry, vandalism, and theft.
- B. Barriers: Provide to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from construction operations.
- C. Enclosures: Provide temporary, insulated, weather tight closures of exterior openings to provide acceptable working conditions, protect Work, and prevent unauthorized entry.
 - 1. Fit with self-closing, lockable doors.

- D. Protect existing trees and plants designated to remain.
 - 1. Replace damaged plant material.

1.16 PROTECTION OF INSTALLED WORK

- A. Protect installed Work. Control activity in immediate work area.
- B. Provide temporary and removable protection for installed products.
- C. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, and movement of heavy objects with durable sheet materials.
- D. Prohibit traffic and storage on roof surfaces and landscaped areas.

1.17 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade and buried utilities, equipment, facilities, and excess materials prior to final inspection.
- B. Clean and repair damage caused by installation of temporary facilities.

END OF SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

SECTION 01 5800 - PROJECT IDENTIFICATION

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. This section includes the following types of construction signage:
 - 1. Project signage which identifies the project and the following project team members:
 - a. Owner, including project manager's contact information;
 - b. Architect, including project architect's contact information;
 - c. Contractor, including after-hours contact information;
 - d. Funding agency when requested by Owner
 - 2. Other temporary signs indicating construction traffic routes, Contractor's work site restrictions, and worker safety (e.g. exiting, fire extinguishers etc.).

1.2 RELATED WORK

- A. Section 06 1000 – Rough Carpentry.

1.3 SUBMITTALS

- A. Submit a photographic image of the project sign, including all graphics, for the Architect's approval.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Lumber and Plywood:
 - 1. Project sign shall be constructed of ¾ inch exterior marine plywood bolted to 4 inch x 4 inch treated wood posts.
 - 2. For other signs provide exterior marine plywood of sizes and thicknesses as appropriate for the conditions.
 - a. Support on treated wood posts as conditions require.
 - 3. Preservative chemicals for treated lumber and posts shall contain no arsenic, chromium, or urea formaldehyde.
- B. Painting:
 - 1. For painted sign panels and graphics provide exterior grade alkyd gloss enamel over exterior primer.
- C. Alternate sign fabrication:
 - 1. Aluminum with custom wrap

2.2 FABRICATION

- A. Prepare project signage as indicated on drawings.
 - 1. Sign shall be prepared by an experienced sign fabricator using either painted exhibit lettering or die-cut adhesive applied letters and graphics.
 - 2. Design, style, and size of lettering, color, and text shall be as indicated on drawings or as directed by the Architect.

- B. Temporary Signs: Prepare and install signs to provide directional information to construction personnel and visitors as required.

PART 3 – EXECUTION

3.1 ERECTION

- A. Erect project sign twenty-one (21) days from the effective date of the written Notice to Proceed issued to the Contractor.
 - 1. Erect project sign on site at locations designated by the Architect.
 - 2. Erect supports and framing on secure foundation, rigidly braced and framed to resist applicable wind loads.
 - 3. Install sign surface plumb and level, with butt joints; anchored securely to supports.
- B. No other signs will be allowed to be displayed without the approval of the Architect.

END OF SECTION 01 5800 - PROJECT IDENTIFICATION

SECTION 01 6000 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the following:
 - 1. General product requirements.
 - 2. Re-use of existing products.
 - 3. New products.
 - 4. Product Options.
 - 5. Maintenance materials.
 - 6. Transportation and handling.
 - 7. Storage and protection.

1.2 RELATED SECTIONS

- A. Section 01 1100 – Summary of Work.
- B. Section 01 4000 - Quality Requirements.
- C. Section 01 6200 – Product Options.

1.3 REFERENCES

- A. 16 CFR 260 - Guides for the Use of Environmental Marketing Claims; Federal Trade Commission; current edition.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

PART 2 PRODUCTS

2.1 GENERAL PRODUCT REQUIREMENTS

- A. Products of the same category shall be products of a single manufacturer.
 - 1. Where available, products under a single specification section shall be of the same manufacturer.

2.2 RE-USE OF EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Unforeseen historic items encountered remain the property of the Owner.
 - 1. Notify the Architect and Owner promptly upon discovery;
 - 2. Protect, remove, handle, and store as directed by the Owner.
- C. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.

2.3 NEW PRODUCTS

- A. Provide new products unless otherwise specifically required or permitted by the Contract Documents.
- B. Do not use products having any of the following characteristics:
 - 1. Asbestos Containing Building Material.

- 2. Lead Based Paint.
- C. Provide interchangeable components of the same manufacture for components being replaced.
- D. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Size terminal lugs to NFPA 70, include lugs for terminal box.
- E. Cord and Plug: Provide minimum 6 foot cord and plug including grounding connector for connection to electric wiring system.
 - 1. Cord of longer length is specified in individual specification sections.

2.4 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
 - 1. Submit in accordance with Section 01 6200 "Product Options".

2.5 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site and store as directed by the Owner.

PART 3 – EXECUTION

3.1 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- C. Transport and handle products in accordance with manufacturer's instructions.
- D. Deliver packaged products in unopened and undamaged cartons and wrappings.
- E. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- F. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.2 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work areas in order to minimize waste due

- to excessive materials handling.
- B. Store and protect products in accordance with manufacturers' instructions.
 - C. Store with seals and labels intact and legible.
 - D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
 - E. For exterior storage of fabricated products, place on sloped supports above ground.
 - F. Cover products subject to deterioration with impervious sheet covering.
 - 1. Provide ventilation to prevent condensation and degradation of products.
 - G. Store loose granular materials on solid flat surfaces in a well-drained area and prevent mixing with foreign matter.
 - H. Prevent contact with material that may cause corrosion, discoloration, or staining.
 - I. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
 - J. Arrange storage of products to permit access for inspection.
 - 1. Periodically inspect to verify products are undamaged and are maintained in an acceptable condition.

END OF SECTION 01 6000 – PRODUCT REQUIREMENTS

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SECTION 01 6200 - PRODUCT OPTIONS

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes requirements for product options and substitution procedures.

1.2 RELATED SECTIONS

- A. Section 01 2600 – Contract Modification Procedures.

1.3 PRODUCT OPTIONS

- A. For products specified by reference standards or by description only, provide products meeting those standards or description as approved by the Architect.
- B. For products specified by naming one or more manufacturers, provide named products or approved substitute products.
 - 1. Requests to use unspecified products shall be made in accordance with the “Substitution Request Procedures” as specified herein.

1.4 SUBSTITUTION REQUESTS

- A. Where products are specified by naming specific products of one or more manufacturers, these products shall establish a minimum acceptable level of quality and performance.
- B. Prior Approval: The Architect will consider requests made during bidding to use unspecified products only when indicated in individual specification sections.
 - 1. When substitution requests are allowed during bidding by individual specification sections, requests shall be made in accordance with the “Substitution Request Procedures” as specified herein.
 - 2. If product is acceptable, Architect will provide approval by addendum issued to known recipients of Bidding Documents.
- C. After signing of Agreement between Owner and Contractor, Architect will consider written requests for substitutions.
 - 1. Requests shall be made in accordance with “Substitution Request Procedures” as specified herein.
 - 2. Architect will determine acceptability of proposed substitutions and notify Contractor of decision in writing.
 - a. If approved substitution request requires modification of Contract Amount or Contract Time, Architect will process change order incorporating substitution.
 - 3. Substitutions will not be considered when indicated or implied on shop drawings and product data submittals.
- D. Request for substitution and use of approved substitution shall constitute representation that Contractor.
 - 1. Has investigated product and determined it meets or exceeds quality level of specified product
 - 2. Will provide same warranty for substitution as for specified product.
 - 3. Will coordinate installation and make changes to other work required to accommodate accepted substitution and complete Work.

4. Waives claims for additional costs or time extensions related to substitutions which later become apparent.

1.5 SUBSTITUTION REQUEST PROCEDURES

- A. Submit separate request for each substitution with Form 016213 "Substitution Request Form".
 1. Copy of form follows this Section.
- B. Submit three (3) copies of request for substitution and Include the following:
 1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 2. For products:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature containing product description, performance and test data, and reference standards.
 - c. Samples as required.
 3. For construction methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
 4. Itemized comparison of proposed substitution with product specified.
 5. Data relating to changes in construction schedule.
 6. Give cost data comparing proposed substitution with specified product.
 7. For substitution requests made after signing Agreement, include proposed changes to Contract Amount and Time if substitution is accepted.

END OF SECTION 01 6200 - PRODUCT OPTIONS

[SUBSTITUTION FORM FOLLOWS]



SUBSTITUTION REQUEST

Read **SECTION 01 6200 "PRODUCT OPTIONS"** prior to submission of this form.

The undersigned requests that the following product be accepted for use in the Project.

Product: _____

Model No: _____

Manufacturer: _____

Address: _____

The above product would be used in lieu of:

Product: _____

Specified in: _____ Section: _____ Paragraph: _____

Reason for substitution request: _____

Attached are the following items:

- Product description including specifications, performance and test data, and applicable reference standards
- Drawings
- Photographs
- Samples
- Tabulated comparison with specified product
- For items requiring color selections, full range of manufacturer's color samples
- Documentation of reason for request.
- Cost data for comparing proposed substitution with specified product
- Other: _____

The undersigned certifies that the following statements are correct. Explanations for all items which are **not** true are attached.

1. Proposed substitution has been thoroughly investigated and function, appearance, and quality meet or exceed that of specified product. True False
2. Same warranty will be provided for substitution as for specified product. True False

- 3. **No** aspect of Project will require re-design. True False
- 4. Use of substitution will **not** adversely affect:
 - a. Dimensions shown on Drawings. True False
 - b. Construction schedule and date of completion. True False
 - c. Work of other trades. True False
- 5. Maintenance service and replacement parts for proposed substitution will be readily available in the New Mexico area. True False
- 6. Proposed substitution does **not** contain asbestos in any form. True False
- 7. All changes to Contract Sum related to use of proposed substitution are included in price listed below. Contractor waives claims for additional costs related to acceptance of substitution which may subsequently become apparent. True False
- 8. Costs of modifying project design caused by use of proposed substitution which subsequently become apparent will be paid for by Contractor. True False

If substitution requested after signing of Agreement between Owner and Contractor is accepted:

Contract Sum will be [decreased] [increased] by \$ _____

Contract Time will be [decreased] [increased] by _____ calendar days.

Submitted By:

Company: _____

Address: _____

Telephone Number: _____

Name: _____ Date: _____

Signature: _____

SECTION 01 7300 – EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. This section includes the following:
 - 1. Basic requirements for examination, preparation, and installation.
 - 2. Requirements and limitations for cutting and patching incidental to work and required to make several parts fit together.
 - 3. Progress cleaning.

1.2 RELATED WORK

- A. Section 00 7213 - General Conditions of the Contract:
 - 1. Article 3.14: Contractor's responsibilities regarding cutting and patching operations.
 - 2. Article 12: Uncovering and correction of work.
- B. Section 01 5000 - Temporary Facilities and Controls.
- C. Section 01 7700 - Closeout Procedures (Final Cleaning).

1.3 SUBMITTALS

- A. Submit advance written request to Architect prior to cutting or other alteration that affects the following:
 - 1. Structural integrity of an element.
 - 2. Integrity of weather-exposed or moisture-resistant element.
 - 3. Operation, efficiency, maintenance, or safety of an element.
 - 4. Visual qualities of exposed elements.
 - 5. Work of others under separate contract to Owner.
- B. Cutting requests submitted to the Architect shall include the following:
 - 1. Project and Contractor identification.
 - 2. Location and description of proposed work.
 - 3. Necessity for cutting or alteration and alternatives to cutting and patching.
 - 4. Effect on work of this Contract, existing construction, and work of others under separate contract to Owner.
 - 5. Proposed date work will be executed.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Patching and replacement materials: Same as those used for original installation.
- B. Product substitutions: For any proposed change in patching materials, submit request for substitution in accordance with Section 01 6200 "Product Options".

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Prior to commencing installations:
 - 1. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work.
 - 2. Verify that existing substrate is capable of structural attachment of new work being applied or attached and that required blocking is in place.
 - 3. Verify that existing substrate is compatible with, properly prepared for, and otherwise ready to receive subsequent applications and finishes.
 - a. Ensure that existing conditions conform to requirements of manufacturers of products to be applied.
 - 4. Verify that utility services are available, of correct characteristics, and in correct location.
- B. Prior to commencing cutting and patching inspect existing elements subject to damage or movement during subsequent operations.
 - 1. Document and report existing damage.
 - 2. Beginning of cutting, patching, and new work implies acceptance of existing conditions.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks and openings in substrate prior to applying next material or substance.
- C. Apply manufacturer required substrate primer, sealer, and conditioner prior to applying new material or substance to substrate.

3.3 INSTALLATION

- A. Install, construct, erect, assemble, and apply products in accordance with manufacturer's recommendations, instructions, and specified requirements.
 - 1. Where manufacturer's instructions conflict with specifications, notify Architect.
 - 2. Do not proceed until clarification is received from the Architect.
- B. Install products secure, rigid, plumb, and level within specified or industry acceptable tolerances.
- C. Remove excess materials such as adhesive, grout, mortar, and sealants, from finished surfaces in a manner which does not stain, corrode, disfigure, or otherwise damage finished surface.
- D. Adjust working parts for smooth, proper operation.
- E. Replace deformed, scratched, cracked, broken, or otherwise damaged products as result of installation.
- F. After installation is complete, protect installed products and finished surfaces from subsequent construction operations in accordance with Section 01 5000 "Temporary Facilities and Controls".
 - 1. Replace or repair subsequently damaged products and surfaces.
- G. Clean and maintain installed products in accordance with manufacturer's recommendations and specifications until Substantial Completion is agreed to by the Owner.

3.4 CUTTING AND PATCHING

- A. Execute cutting, fitting, patching, excavation, and fill as required to:

1. Install new work into existing construction.
 2. Fit products together and to integrate them with other work.
 3. Uncover work to execute ill-timed work.
 4. Remove and replace defective and non-conforming work.
 5. Provide openings for penetrations of electrical work.
- B. Provide temporary supports to ensure structural integrity and provide devices and methods to protect other portions of the Work from damage.
- C. Provide protection from elements for areas which may be exposed by cutting operations.
- D. Execute work by methods to avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing.
- E. Perform cutting operations as follows:
1. Cut rigid materials using masonry saw or core drill.
 - a. Pneumatic tools are not allowed without prior approval.
 2. Size openings to exactly fit penetrating item plus allowance for sealant.
 - a. Form edges of hole even and smooth.
 3. Drill penetrations through concrete for conduit and piping.
 4. Drill round holes and saw cut rectangular openings in concrete unit masonry units.
 - a. Where block is broken or chipped in process, remove complete face of exposed block and replace with partial block.
- F. Perform patching operations as follows:
1. Restore work with new products meeting requirements of Contract Documents.
 2. Fit work tight to pipes, sleeves, ducts, conduits, and other elements penetrating surfaces.
 3. At penetrations of fire rated walls, partitions, ceilings, and floors, completely seal voids with fire-resistant material to full thickness of penetrated element.
- G. Perform finishing operations as follows:
1. Refinish surfaces to match adjacent finish.
 - a. For continuous surfaces, refinish to nearest intersection or natural break.
 - b. For an assembly, refinish entire unit.

3.5 ASPHALT PAVEMENT

- A. Where existing or new pavement is damaged from construction operations, cutting to install new underground utilities, and where existing items are removed from paved areas:
1. Cut pavement with saw or other means to provide neat, straight joints.
 2. Where existing pavement is damaged by removals, remove additional pavement to allow clean cuts.
 3. Backfill and sufficiently compact removal area prior to placement of pavement.
 4. Place pavement to match existing materials and thicknesses.
 5. Immediately after placement, protect new pavement from mechanical damage.

3.6 ROOF PENETRATIONS

- A. Make every effort to have any required roof penetrations performed by the roofing subcontractor that installed the existing roof system currently under warranty.

3.7 PROGRESS CLEANING

- A. Maintain site in a clean and orderly condition and maintain work areas free of waste materials, debris, and rubbish.
- B. Remove waste materials, debris, and rubbish from site weekly and legally dispose of off-site.
- C. Remove debris and rubbish from pipe chases, plenums, crawl spaces, above suspended ceilings, and other closed and remote spaces prior to enclosing space.
- D. Prior to surface finishing, broom and vacuum clean interior areas to eliminate dust.
- E. Washing of concrete trucks and dumping of excess cementitious material on site is not allowed.
 - 1. All such materials and contaminated soil shall be removed.
- F. Soils and other site material contaminated by paint residues, oils, fuels, and other construction products shall be removed and replaced with equivalent soil or material at no additional cost to the Owner.
- G. Existing lawns, landscaped areas, and areas for future landscaping affected by construction operations shall be raked to remove stones, mortars, aggregates, and other construction debris in excess of 3/4 inch diameter.

END OF SECTION 01 7300 – EXECUTION REQUIREMENTS

SECTION 01 7500 - STARTING AND ADJUSTING

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. This section includes general procedures for starting, monitoring, and adjusting equipment items and complete systems.

1.2 RELEATED WORK

- A. Section 01 4000 – Quality Requirements.
- B. Section 01 7800 - Closeout Submittals (Operation and maintenance manuals).
- C. Section 01 7900 - Demonstration and Training.

1.3 QUALITY ASSURANCE

- A. Personnel conducting system start-up shall be knowledgeable of installation, operation, and maintenance of specific project equipment and systems.

PART 2- PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Prior to startup, inspect equipment and systems to ensure that:
 - 1. Installation is in accordance with manufacturer's instructions.
 - 2. No defective items have been installed and there are no loose connections.
 - 3. Power supplies are correct voltage, phasing, and frequency.
 - 4. Grounding and transient protection systems are properly installed.
 - 5. Items have been properly lubricated, belts tensioned, and control sequence and other conditions which may cause damage have been addressed.
- B. Verify that system wiring has been tested.
- C. Verify that provisions have been made for safety of personnel.

3.2 STARTING OF SYSTEMS

- A. Execute starting under supervision of responsible personnel in accordance with manufacturer's instructions.
- B. Manufacturer's Representative: When specified in individual sections and in accordance with Section 01 4000 "Quality Requirements", require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment and system installation prior to startup and to supervise placing equipment and system into operation.
- C. Adjustment: Monitor systems, verify performance and correct deficiencies.

1. Replace defective components and equipment.
 2. Adjust equipment and systems for smooth and proper installation.
- D. Submit written report in accordance with Section 01 3300 "Submittal Procedures" that equipment and systems have been properly installed and are functioning correctly.

3.3 SCHEDULING

- A. Coordinate schedule for starting of systems and equipment to ensure proper sequencing.
- B. Notify Architect seven (7) days prior to startup of each system.
- C. Schedule demonstration and training sessions after equipment and systems have been completely installed, startup completed, and adjustments made.

END OF SECTION 01 7500 - STARTING AND ADJUSTING

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. This section includes the following:
 - 1. Substantial completion procedures.
 - 2. Final completion procedures.
 - 3. Final cleaning.
 - 4. Final inspection.
 - 5. Correction period inspection.

1.2 RELATED WORK

- A. Section 00 7213 - General Conditions of the Contract.
 - 1. Article 9.8: Substantial Completion.
 - 2. Article 9.9: Partial occupancy.
 - 3. Article 1.10: Final completion and final payment.
- B. Section 01 2000 - Price and Payment Procedures.
- C. Section 01 7300 - Execution Requirements.
- D. Section 01 7800 - Closeout Submittals.

1.3 SUBSTANTIAL COMPLETION PROCEDURES

- A. Prior to or in conjunction with submission of Notice of Substantial Completion, submit the following items specified in Section 01 7800 "Closeout Procedures".
 - 1. Project record documents.
 - 2. Operation and maintenance data and manuals.
 - 3. Warranties.
 - 4. Certificates of inspection.
 - 5. Extra materials.
 - 6. Keys.
- B. Comply with Section 00 7213 "General Conditions of the Contract", Article 9.8 for issuance of Certificate of Substantial Completion. When Work is sufficiently complete:
 - 1. Inspect Work and prepare comprehensive list (Punchlist) of items to be completed or corrected.
 - 2. Perform final cleaning of portions of Work for which approval of substantial completion is being requested.
 - 3. Submit 3 copies of Notice of Substantial Completion and comprehensive list of items to be completed to Architect.
 - a. Indicate portions of Work suitable for Owner occupancy and for which approval of substantial completion is being requested.
 - 4. Submit Application for Payment in accordance with Section 01 2000 "Price and Payment Procedures".
- C. After inspection by Architect and issuance of Certificate of Substantial Completion, Owner will occupy all of Project for installation of equipment and furnishings under provisions stated in Certificate of Substantial Completion.

1.4 FINAL COMPLETION PROCEDURES

- A. Perform final cleaning as specified herein.
- B. Prior to or in conjunction with submission of Notice of Final Completion, submit the following items:
 - 1. Contractor's Affidavit of Payment of Debts and Claims, AIA G706.
 - 2. Contractor's Affidavit of Release of Liens, AIA G706A.
 - 3. Consent of Surety Company to Final Payment, AIA G707.
 - 4. Final Application for Payment as specified in Section 01 2000 "Price and Payment Procedures".
 - a. Identify total adjusted Contract Sum, previous payments, and sum due.
- C. Submit Notice of Final Completion certifying that Contract Documents have been reviewed, work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect's inspection.
- D. Remove temporary utilities, controls, and facilities in accordance with Section 01 5000 "Temporary Facilities and Controls".
- E. Request final inspection by Architect.

1.5 FINAL CLEANING

- A. Execute final cleaning utilizing qualified personnel employed by a professional cleaning service.
- B. Clean interior and exterior work areas surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; and vacuum carpeted and soft surfaces.
- C. Sanitize any new equipment and fixtures.
- D. Clean or replace filters of any new operating equipment.
- E. Clear debris from roof, gutters and drainage systems, ceiling spaces, plenums, storage areas, and interior spaces which are work areas for the project.
- F. Clean site, sweep paved areas, and rake landscaped areas and other ground surfaces which are work areas for the project.
- G. Remove waste and surplus materials, rubbish, and construction facilities from the site and dispose of legally.

1.6 FINAL INSPECTION

- A. Architect and Owner's representative will make inspection within 7 days of receipt of Certification of Final Completion.
- B. If Work is incomplete or defective:
 - 1. Architect will provide Contractor written list of deficiencies.
 - 2. Contractor shall immediately correct deficiencies and submit certification that Work is complete.
 - 3. Architect and Owner's representative will re-inspect Work.

1.7 CORRECTION PERIOD INSPECTION

- A. Schedule and attend a one year correction period inspection thirty (30) days prior to the end of the one-year correction period.
 - 1. Appropriate subcontractors shall attend.
- B. Coordinate time of inspection with Architect.
- C. Representatives of Owner, Architect, and appropriate consultants will attend.
- D. Correct deficiencies noted.

PART 2 – PRODUCTS

Not used

PART 3 – EXECUTION

Not used

END OF SECTION 01 7700 - CLOSEOUT PROCEDURES

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SECTION 01 7800 - CLOSEOUT SUBMITTALS

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes procedures for preparing and submitting closeout submittals including the following:
 - 1. Project Record Documents.
 - 2. Operation and maintenance data.
 - 3. Warranties.
 - 4. Certificates of inspection.
 - 5. Insurance information.
 - 6. Extra materials.

1.2 RELATED SECTIONS

- A. Section 00 7213 - General Conditions of the Contract:
 - 1. Contractor's warranty that Work is of good quality and free from defects and confirms to contract Documents.
 - 2. Commencement of warranties and correction period.
 - 3. One year correction period for Contractor to correct defective work.
- B. Section 01 2000 - Price and Payment Procedures.
- C. Section 01 3300 - Submittal Procedures.
- D. Section 01 7500 – Starting and Adjusting.

1.3 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents. Record actual revisions to work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed submittals.
- B. Store Record Documents separate from documents used for construction.
 - 1. Label "Project Record Documents".
- C. Record information concurrent with construction progress.
 - 1. Use erasable colored pencil.
 - 2. Date all entries.
 - 3. Call attention to entry by circling area affected.
- D. Specifications: Legibly mark and record in each section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- E. Contract Drawings and shop drawings: Legibly mark each item to record actual construction including:
 - 1. Actual items of equipment and system components installed.

2. Actual locations of components and routing of piping and raceways.
 3. Measured horizontal and vertical locations of underground water, sewer, irrigation, electrical, and other utilities and appurtenances, referenced to permanent surface improvements.
 4. Measured locations of piping, raceways, and other items concealed in construction, referenced to visible and accessible features.
 5. Field changes of dimension and detail.
 6. Details not on original Contract Drawings.
- F. Utilizing a copy of the original contract documents, the Contractor shall neatly transfer all project record information and label each drawing "Project Record Documents".
1. Submit documents to the Architect prior to or in conjunction with submission of Notice of Substantial Completion.
 2. The responsibility for the accuracy of all changes from the original contract documents shall be the responsibility of the Contractor.
 - a. The Architect shall determine if the documents are acceptable.

1.4 OPERATION AND MAINTENANCE DATA

- A. Provide operation and maintenance data for the following:
1. Electrical systems specified in Divisions 26, 27 & 28.
 2. Other items and systems as designated by Architect or requested by Owner.
- B. Submission:
1. Submit data to Architect in one or more binders.
 2. Submit for review one (1) draft copy thirty (30) days prior to need date or as otherwise specified.
 - a. This copy will be returned after review with the Architect's comments.
 - b. Revise content as required.
 3. Once approved, submit five (5) copies of final operation and maintenance manuals.
 - a. All manuals shall be submitted prior to or in conjunction with Notice of Substantial Completion.
- C. Contents:
1. Appropriate design criteria.
 2. Equipment and parts lists.
 3. Operating instructions.
 4. Maintenance instruction for equipment and finishes.
 5. Shop drawings and product data.
 6. Testing, balancing, and other field quality reports.
 7. Copies of warranties.
 8. Other material and information as indicated in individual specification sections and as necessary for operation and maintenance by Owner's personnel.
- D. Form:
1. Manuals shall be 8-1/2 inch x 11 inch text pages bound in three ring expansion binders with a hard durable plastic cover.
 - a. All documents shall be originals unless otherwise noted.
 2. Prepare binder covers with printed subject title of manual, title of project, date, and volume number when multiple binders are required.
 - a. Printing shall be on face and spine.
 3. Internally subdivide the binder contents with divider sheets with typed tab titles under reinforced plastic tabs.
 - a. Place dividers at beginning of each chapter, part, section, and appendix.
 4. Provide a table of contents for each volume.

5. Provide directory listing as appropriate with names, addresses, and telephone numbers of Architect, Contractor, subcontractors, equipment suppliers, and nearest service representatives.

1.5 WARRANTIES

- A. Execute and assemble warranties from subcontractors, suppliers, and manufacturers.
- B. Provide duplicate notarized copies of special and extended warranties as required by individual specifications sections.
- C. Provide Table of Contents and assemble in three ring binder with a hard durable plastic cover.
 1. Internally subdivide the binder contents with permanent page dividers, with tab titling clearly typed under reinforced laminated plastic tabs.
- D. Submit warranties to Architect prior to or in conjunction with submission of Notice of Substantial Completion.
- E. For items of work delayed beyond date of Substantial Completion, provide updated warranty submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty period.

1.6 CERTIFICATES OF INSPECTION

- A. For inspections throughout the construction period required by regulatory agencies, obtain and maintain certificates issued to show compliance.
- B. Prior to Substantial Completion, obtain from authorities having jurisdiction a Certificate of Occupancy.
- C. Assemble certificates in three ring binder with table of contents and submit to the Architect prior to or in conjunction with submission of Notice of Substantial Completion.

1.7 INSURANCE INFORMATION

- A. Submit prior to or in conjunction with submission of Notice of Substantial Completion information regarding insurance including change over requirements and insurance extensions.

PART 2 - PRODUCTS

2.1 EXTRA MATERIALS

- A. Provide spare parts and maintenance materials in quantities specified in individual sections.
- B. Extra materials shall be produced by the same manufacturer of and compatible with the installed products.
- C. Prior to or in conjunction with submission of Notice of Substantial Completion deliver extra materials in unopened containers to Owner's representative at designated storage area at project site and place in location as directed.
 1. Obtain receipt acknowledgement from Owner's representative.
- D. During one year correction period:

1. Extra materials may be used by Contractor to replace expendable and normally worn parts.
2. Extra materials used by Contractor for replacement of defective products shall be replaced at no additional cost to the Owner.

PART 3 - EXECUTION

Not Used

END OF SECTION 01 7800 - CLOSEOUT SUBMITTALS

SECTION 01 7900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 1. Demonstration of operation of systems, subsystems, and equipment.
 2. Training in operation and maintenance of systems, subsystems, and equipment.
 3. Demonstration and training videotapes.

1.2 RELATED SECTIONS

- A. Section 01 3100 - Project Management and Coordination.
- B. Divisions 02 through 44 Sections for specific requirements for demonstration and training for products in those Sections.

1.3 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 01 4000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Photographer Qualifications: A professional photographer who is experienced photographing construction projects.
- D. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Section 01 3100 "Project Management and Coordination". Review methods and procedures related to demonstration and training including, but not limited to, the following:
 1. Inspect and discuss locations and other facilities required for instruction.
 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
 3. Review required content of instruction.
 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.4 SUBMITTALS

- A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module.
 1. Include learning objective and outline for each training module.
 2. At completion of training, submit two complete training manuals for Owner's use.
- B. Qualification Data: For instructor
- C. Attendance Record: For each training module, submit list of participants and length of instruction time.

- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.
- E. Demonstration and Training Videotapes: Submit two copies within seven days of end of each training module.
 - 1. Identification: On each copy, provide an applied label with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date videotape was recorded.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations.
 - 1. Adjust schedule as required to minimize disrupting Owner's operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals.
 - 1. Do not submit instruction program until operation and maintenance data has been reviewed and approved by the Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
 - 1. Motorized doors.
 - 2. Fire-protection systems, including fire alarm and fire-extinguishing systems.
 - 3. Plumbing and Mechanical systems specified in Divisions 22 & 23.
 - 4. Electrical systems specified in Divisions 26, 27 & 28.
 - 5. Other items and systems as designated by the Architect or requested by the Owner.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
 - 1. Basis of System Design, Operational Requirements, and Criteria - Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation - Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.

- c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
3. Emergencies - Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 4. Operations - Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
 5. Adjustments - Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
 6. Troubleshooting - Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
 7. Maintenance - Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
 8. Repairs - Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly, component removal, repair, replacement, and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module.
 - 1. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Owner will furnish an instructor to describe Owner's operational philosophy.
 - 2. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed upon times.
 - 1. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 2. Schedule training with Owner with at least fourteen days' advance notice.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a written performance-based test.
- E. Cleanup: Collect used and leftover educational materials and give to the Owner.
 - 1. Remove instructional equipment.
 - 2. Restore systems and equipment to condition existing before initial training use.

3.3 DEMONSTRATION AND TRAINING VIDEOTAPES

- A. General: Engage a qualified commercial photographer to record demonstration and training videotapes.
 - 1. Record each training module separately.
 - 2. At beginning of each training module, record each chart containing learning objective and lesson outline.
 - 3. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
- B. Recording Format: Provide high-quality DVD (1920x1080, 1080P).
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and training.
 - 1. Display continuous running time.

END OF SECTION 01 7900 - DEMONSTRATION AND TRAINING