

PROJECT MANUAL

FOR A NEW

SHELTER

AT

FIRE STATION #6

1300 Terminal Drive
Carlsbad, New Mexico 88220

FOR THE

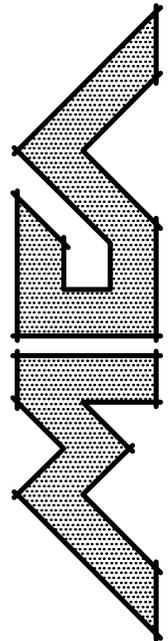
CITY OF CARLSBAD

101 N. Halagueno St.
Carlsbad, New Mexico 88220

CITY BID NUMBER 2022-14

PROJECT NUMBER 22.09

OCTOBER 2022



Mitchell & Cruse Architecture

102 N. Canyon St. Carlsbad, NM 88220
e-mail: mca@mitchellcruse.com

phone: (575) 689-8400
website: www.mitchellcruse.com

TITLE, CERTIFICATION AND SEALS

The technical material and data contained in the specifications were prepared under the supervision and direction on the undersigned, whose seal as a Professional Architect, licenses to practice in the State of New Mexico, is affixed below:

Larry Mitchell
Architect of Record

4613
License Number



APPROVAL OF OWNER:

Dale Janway, Mayor
City of Carlsbad

Acknowledgments:

Dale W. Janway, Mayor, City of Carlsbad
John Lowe, Administrator, City of Carlsbad

All questions about the meaning or intent of these documents shall be submitted, in writing only, to the Architect of Record. Refer to paragraph 3.2 of the Instruction to Bidders as to interpretations.

DIVISION 2 -----	Site Work -----	18
02010	General	
02050	Demolition	
02100	Clearing	
02200	Earthwork	
02275	Site Cleaning	
02500	Paving and Surfacing	
DIVISION 3 -----	Concrete -----	10
03010	General	
03100	Concrete Formwork	
03200	Concrete Reinforcement	
03250	Concrete Accessories	
03300	Cast-In Place Concrete	
DIVISION 13 -----	Special Construction -----	9
13100	Metal Building System	

NOTICE OF INVITATION FOR BID

Competitively sealed bids will be received by the Owner, City of Carlsbad for IFB No. N/A

Project: New Shelter at Fire Station #6

Project No.: 22.09 **City Bid No.:** 2022-14 **Grant No.** Not Applicable

at 101 N. Halagueno St., Room 204, Carlsbad, NM 88220 until November 10, 2022, 2:00 p.m.

at which time bids will be opened and publicly read aloud.

Complete sets of the bidding documents may be obtained at the office of the Architect of Record

Mitchell and Cruse Architecture, LLC 102 N. Canyon St, Carlsbad, NM 88220. Documents

may be obtained for a deposit of \$200.00 for each set. Checks should be made payable to

Mitchell and Cruse Architecture.

PURCHASING AGENT: _____

Date:

(for Owner's Use Only)

Newspaper: _____ Publish:

Newspaper: _____ Publish:

Newspaper: _____ Publish:

(Note: This Notice is issued pursuant to the requirements of §13-1-104 NMSA 1978)

INSTRUCTIONS TO BIDDERS

Notice is hereby give that sealed Proposals for the furnishing of all necessary equipment, materials and labor for the New Shelter at Fire Station #6 in Carlsbad, New Mexico, will be received by the City of Carlsbad at the Municipal Building, 101 N. Halagueno Street, Room 204, Carlsbad, New Mexico until 2:00 p.m. on November 10, 2022, at which time the Bids will be opened and read aloud.

All bidders shall include with their Bids, a Bid Bond in the sum of not less than 10% of the maximum Bid, payable to the City of Carlsbad, as forfeit in case the Contractor fails to provide Surety Bond and execute contract within ten days after "Notice of Award". The successful Bidder will be required to furnish a Performance and Payment Surety Bond in the amount of 100% of his total contract.

Should Bidder find discrepancies in, or omissions from, the Drawings or Documents, or should be in doubt as to their meaning, he should at once notify the Architect in writing who will send written instructions to all Bidders. Neither the Owner nor the Architect will be responsible for any oral instructions.

Before submitting a proposal, Bidder should carefully examine the Drawings and Specifications, visit the site of work, and fully inform himself to all existing conditions and limitations, and the amount of this Proposal shall cover costs of all items included in this contract.

All proposals shall be submitted on the form as issued by the Architect, and same shall be filled out in its entirety. Changes or alternate proposals written on the proposal will automatically cause the Bid to be rejected.

No Bidder may withdraw his bid for **60 days** after the actual date of the opening thereof. The Owner intends to award this Project to the lowest responsible Bidder. The Owner reserves the right to reject any and all bids to waive technical irregularities, and to award the contract to the Bidder whose bid it deems to be in the best interest of the Owner.

Proposals shall be sealed in an opaque envelope and delivered on or before the time stipulated above. Proposals received after the time of opening will be returned unopened.

Complete plans and specifications may be viewed and/or obtained at the office of Mitchell and Cruse Architecture, LLC, 102 N. Canyon St., Carlsbad, NM 88220; telephone: (575) 689-8400, upon payment of two-hundred dollars (\$200.00) per set, which sum shall be refunded if and when said plans and specifications are returned in good condition within ten days after the date of the opening of Bids, provided a Bid is submitted. Deposit will be forfeited by the Contractor obtaining plans, but not submitting a bonafide Bid, unless plans are returned within five (5) days. General Contractors may obtain a maximum of three (3) sets of plans and specifications upon payment of deposit.

FORM OF PROPOSAL

New Shelter at Fire Station #6

City Council
City of Carlsbad
Carlsbad, New Mexico

Bid Date: November 10, 2022
Time: 2:00 p.m.
Project No.: 22.09
City Bid No.: 2022-14

The Undersigned in compliance with your Invitation for Bids for New Shelter at Fire Station #6, Carlsbad, New Mexico, having examined the plans and specifications with related documents and the site of the proposed project, will contract to provide all necessary tools, apparatus and implements, do all the work, and furnish all materials and items called for by the contract, plans and specifications, and to complete the entire work in accordance with the contract documents in _____ days for the sum stated below. This sum is to cover all expenses incurred to perform the work as required by the contract documents of which this proposal is a part.

BASE BID: For the New Shelter at Fire Station #6, entire facility as specified and in accordance with all drawings and specifications, covering the work, the sum of:

_____ (_____)

The above Base Bid does include New Mexico Sales Tax in the amount of \$_____ At the current rate of 7.5208%. It is understood that if the sales tax increases or decreases during the time of construction, that amount will be added or credited to the bid documents.

ALTERNATE #1 – INSTALL CONCRETE SLAB: In the event the owner elects to install a new concrete slab in lieu of new asphalt paving as shown add the sum of:

_____ (_____)

The above alternate does include New Mexico Sales Tax in the amount of \$_____ at the current rate of 7.5208%. It is understood that if the sales tax increases or decreases during the time of construction, that amount will be added or credited to the bid documents.

Allowance: Refer to Division 1, Section 01020, 3.3 and include \$10,000 Contingency Allowance.

The bidders agree that:

- A. The above prices shall include all labor, materials, removal, overhead, profit, insurance, (excluding applicable taxes), etc. to cover the finished work of the several kinds called for. Changes shall be processed in accordance with The Contract Documents.

B. It is understood that the Owner reserves the right to reject any or all Bids and to waive any technical irregularities in the bidding.

C. This bid will remain subject to acceptance for a period of **60 days** after the bid opening.

The undersigned acknowledges receipt of the following addenda:

CONTRACTOR

BY:

ADDRESS

TITLE

NEW MEXICO CONTRACTOR'S LICENSE NO.

WORKFORCE SOLUTIONS DEPARTMENT REGISTRATION NO.

LIST AND ADDRESSES OF SUB-CONTRACTORS.
INCLUDE THEIR WORKFORCE NUMBER IF THEIR CONTRACT IS IN EXCESS
OF \$60,000.00

METAL BUILDING MANUFACTURER

OTHER

OTHER

CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Pursuant to the Procurement Code, Sections 13-1-28, et seq., NMSA 1978 and NMSA 1978, § 13-1-191.1 (2006), as amended by Laws of 2007, Chapter 234, any prospective contractor seeking to enter into a contract with any state agency or local public body **for professional services, a design and build project delivery system, or the design and installation of measures the primary purpose of which is to conserve natural resources** must file this form with that state agency or local public body. This form must be filed even if the contract qualifies as a small purchase or a sole source contract. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds two hundred and fifty dollars (\$250) over the two year period.

Furthermore, the state agency or local public body may cancel a solicitation or proposed award for a proposed contract pursuant to Section 13-1-181 NMSA 1978 or a contract that is executed may be ratified or terminated pursuant to Section 13-1-182 NMSA 1978 of the Procurement Code if: 1) a prospective contractor, a family member of the prospective contractor, or a representative of the prospective contractor gives a campaign contribution or other thing of value to an applicable public official or the applicable public official's employees during the pendency of the procurement process or 2) a prospective contractor fails to submit a fully completed disclosure statement pursuant to the law.

The state agency or local public body that procures the services or items of tangible personal property shall indicate on the form the name or names of every applicable public official, if any, for which disclosure is required by a prospective contractor.

THIS FORM MUST BE INCLUDED IN THE REQUEST FOR PROPOSALS AND MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE.

The following definitions apply:

“Applicable public official” means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

“Campaign Contribution” means a gift, subscription, loan, advance or deposit of money or other thing of value, including the estimated value of an in-kind contribution, that is made to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that official’s behalf for the purpose of electing the official to statewide or local office. “Campaign Contribution” includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

“Family member” means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son-in-law of (a) a prospective contractor, if the prospective contractor is a natural person; or (b) an owner of a prospective contractor.

“Pendency of the procurement process” means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

“Prospective contractor” means a person or business that is subject to the competitive sealed proposal process set forth in the Procurement Code or is not required to submit a competitive sealed proposal because that person or business qualifies for a sole source or a small purchase contract.

“Representative of a prospective contractor” means an officer or director of a corporation, a member or manager of a limited liability corporation, a partner of a partnership or a trustee of a trust of the prospective contractor.

Name(s) of Applicable Public Official(s) if any:

Mayor Dale Janway
Councilwoman Lisa A. Anaya-Flores
Councilman Edward Rodriguez
Councilman Jeff Forrest
Councilman J.J. Chavez
Councilwoman Karla Hamel Niemeier
Councilwoman Judy Waters
Councilman Mark Walterscheid
Councilman Wesley Carter

DISCLOSURE OF CONTRIBUTIONS BY PROSPECTIVE CONTRACTOR:

Contribution Made By: _____

Relation to Prospective Contractor: _____

Date Contribution(s) Made: _____

Amount(s) of Contribution(s) _____

Nature of Contribution(s) _____

Purpose of Contribution(s) _____

(Attach extra pages if necessary)

Signature

Date

Title (position)

--OR--

NO CONTRIBUTIONS IN THE AGGREGATE TOTAL OVER TWO HUNDRED FIFTY DOLLARS (\$250) WERE MADE to an applicable public official by me, a family member or representative.

Signature

Date

Title (Position)

STANDARD A.I.A. FORMS

1. The following standard A.I.A. forms applicable to this Contract are included herein by reference. The Forms are available to Bidders from the Architect's Office upon written request.
 - 1.1 Form of Instruction to Bidders
A.I.A. Form, A701, Instruction to Bidders, 1987 Edition.
 - 1.2 Form of Agreement
A.I.A. Form A107, Abbreviated Form of Agreement Between Owner and Contractor, 1987 Edition.
 - 1.3 Form of Bid Bond
A.I.A. Form A310, Bid Bond, 1987 Edition.
 - 1.4 Form of Performance Bond
A.I.A. Form A311, Performance Bond, Labor and Material Payment Bond, 1987 Edition.
 - 1.5 General Conditions
A.I.A. Form A-201 General Conditions, 1997 Edition.
 - 1.6 Form of Application & Certificate for Payment
A.I.A. Form G702 and G703, Application and Certificate for Payment, 1983 Edition.
- 2.0 Other A.I.A. forms and/or Documents that may be considered by the Owner and the Contractor for mutual beneficial use and application.

END OF STANDARD A.I.A. FORMS

SUPPLEMENTARY CONDITIONS

A. EXAMINATION OF SITE: Contractor shall familiarize itself with each site, in order to anticipate unseen problems that may develop as the job progresses. Failure to have visited the site before bidding shall in no way relieve the Contractor from furnishing any materials or performing any work required to complete the project in accordance with the specifications without additional cost to the Owner.

B. NOTICE TO PROCEED: The Contractor shall not begin work on the project until all contract documents are signed by both Owner and Contractor and Notice to Proceed has been issued to the Contractor.

C. SAFETY REQUIREMENTS: Contractor shall provide for the safety of workmen, Owner's personnel, and the public and comply with the requirements of public health and safety, OSHA rules and regulations, and comply with all applicable safety laws and regulations. Contractor shall provide temporary enclosures or barricades at excavations and the removable sites of hazardous materials.

D. LICENSED CONTRACTORS: All Contractors and sub-contractors required to be licensed by the State of New Mexico shall be so currently licensed. They shall have a license which covers the work called for in the contract.

E. PREQUALIFICATION OF BIDDERS: In an effort to ensure that all prospective bidders have adequate financial resources, production facilities, personnel, reputation, and experience to accomplish the project, bidders shall submit such information and data upon request. If requested to do so, please comply. Contractors who have obtained plans or information from one of the Plan Rooms or other services are to notify the Architect of their intent to bid the project in order to be included on the List of Plan Holders, List of Bidders, Bid Tab, and if necessary, provide pre-qualification information.

F. MEASUREMENT AND PAYMENT

1.0 GENERAL:

1.1 Progress Schedule: The Contractor shall submit a progress schedule to the Architect after receipt of the Notice to Proceed to show the term of the construction for the completed project. The schedule shall show the dates for commencement and completion of the various categories of work and the percentage of scheduled completion at the end of each month for each category. The Contractor shall submit three copies of the Progress Schedule with each Certificate for Payment, showing the actual commencement and percentage of completion for each category of the work, at the end of that particular month.

1.2 Stored Materials: Progress payments will include materials and equipment suitably stored on the construction site or at some other location agreed upon in writing.

2.0 MATERIALS:

2.1 Progress Payment: Monthly payments in triplicate shall be initiated by the Contractor on AIA Documents G702 and G703A, Application and Certificate for Payment, and submitted to the Architect for approval.

2.2 Change Orders: When required, shall be issued by the Architect on the standard AIA Form G701, April 1970. With each proposal for a change in the amount of the Contract, the Contractor shall submit a detailed breakdown indicating all costs for the change, and the Contractor's overhead liability insurance, profit and taxes.

3.0 EXECUTION:

3.1 Retention of Percentage of Contract: Five percent (5%) of the final contract amount shall be assigned as the value of final closeout documents including but not limited to, all release of liens, consent of surety, punch list completions, record documents, owner's manuals, and any and all warranties pertaining to this project. This amount shall be withheld until all closeout documents, and punch list items are completed.

G. SPECIAL PROJECT PROCEDURES

1.0 GENERAL: On all types of Insurance as called for in Par. 1.1, 1.2, 1.3, & 1.4 below the coverage is to name the General Contractor & in addition shall name the owner, the architect, and all Sub-Contractors as their interest may appear. The coverage will hold each of the additional insured harmless and waive any subrogation rights.

1.1 Property Insurance: **The Contractor shall effect and maintain "All Risk" Coverage Insurance** upon the new work on which the work of this Contract is to be done to one-hundred percent (100%) of the insurable value thereof, including items of labor and materials connected therewith whether in or adjacent to the structure insured, materials place to be used as a part of the permanent construction, including surplus materials, shanties, protective fences, bridges, temporary structures, miscellaneous materials and supplies incidental to the work and such scaffoldings, staging, towers, forms and equipment as are not owned or rented by the Contractor, the cost of which is included in the cost of the work. **Note:** Contractor is responsible to insure contractor's tools and equipment. Transit limit is \$250,000.00

The Certificate of Insurance is to list all types of insurance, amounts, parties covered and list any exclusions.

1.2 Workman's Compensation - Employers' Liability Insurance: Coverage is to be provided as required by law for the State of New Mexico and Employer's Liability Coverage in the amount of \$100,000/\$500,000/\$100,000 Basic Limits.

1.3 Comprehensive General Liability: To include the following:

TYPE	EACH TYPE TO INCLUDE THE FOLLOWING:	
Commercial General Liability	General Aggregate	\$3,000,000.00
	Products-Comp/OP Aggr.	\$1,000,000.00
	Personal & Adv. Injury	\$1,000,000.00
	Each Occurrence	\$1,000,000.00
	Fire Damage (Any one Fire)	\$ 50,000.00
	Med. Expense (Any one person)	\$ 5,000.00
Umbrella Excess Liability	Each Occurrence	\$ 1,000,000.00
	Aggregate	\$ 1,000,000.00
	With 25,000 retention	
WORKER'S COMPENSATION &	Statutory Limits	\$ 1,000,000.00
EMPLOYER'S LIABILITY	Each Accident	\$ 1,000,000.00
	Disease-Policy Limit	\$ 1,000,000.00
	Disease-Each Employee	\$ 1,000,000.00

1.4 Comprehensive Automobile Liability: To include the following:

TYPE	EACH TYPE TO INCLUDE THE FOLLOWING:		
Automobile Liability	Any Auto	Combined Single Limit	\$ 1,000,000.00
	Scheduled Autos	Bodily Injury	
	Hired Autos	(Per person)	\$ 1,000,000.00
	Non-owned Autos	(Per accident)	\$ 1,000,000.00
		Property Damage	\$ 1,000,000.00

1.5 Special Conditions: If the job is a remodel or add-on to an existing building the General Contractor shall, when feasible, obtain all insurance coverage from the same carrier that the owner then has in effect.

1.6 Cancellation: In the event that any of the insurance set forth in Par. 1.1. thru 1.4 is cancelled the issuing company shall give 30 days written notice to all parties.

1.7 Form of Agreement between Owner & Contractor: AIA Document A101 shall be executed in triplicate with the successful bidder.

1.8 Bidders License Number on Bid Form: Bidder's attention is directed to the requirements of New Mexico Construction Industries Licensing Act, Section 67-35-15. The Bidder's license number and classification shall be shown in the space provided on the Bid Form and shall be posted at job site.

1.9 Addenda: Addenda issued during the time of bidding shall be included in the Proposal, and in closing a Contract, they will become a part thereof. The Bidder shall acknowledge the receipt of all Addenda on the Bid Form.

1.10 Guarantee: The Contractor shall guarantee all the work covered by the Contract Documents against failure caused by omission of materials, defective materials or poor workmanship for a period of one year from the date of acceptance by the Owner. The guarantee shall include all labor, materials, equipment and appliances against failure, as were required to complete the mechanical, electrical, structural and architectural work for the construction of the project.

The guarantee shall include all costs of replacement or repair.

2.0 MATERIALS: Immediately upon Notification of Award, the Contractor is to furnish three (3) copies of bond and insurance as outlined above to Architect's office.

3.0 EXECUTION: Upon receipt of bond, insurance, list of subcontractors and suppliers and after all contracts are signed by Contractor and Owner - one copy of the contract will be returned to Contractor.

H. BACKGROUND CHECKS

1.0 GENERAL: Section 1. Section 22-10-3.3 NMSA 1978 (being Laws 1997, Chapter 238, Section 1) is amended to read:

2.0 REQUIREMENT: **ALL** Contractors or Contractor's employees with unsupervised access to students are required to have a background check.

3.0 BACKGROUND CHECKS: An applicant for initial certification shall be fingerprinted and shall provide two fingerprint cards or the equivalent electronic fingerprints to the Department of Education to obtain the applicant's Federal Bureau of Investigation record. Convictions of felonies or misdemeanors contained in the Federal Bureau of Investigation record shall be used in accordance with the Criminal Offender Employment Act. Other information contained in the Federal Bureau of Investigation record, if supported by independent evidence, may form the basis for the denial, suspension or revocation of a certificate for good and just cause. Records and any related information shall be privileged and shall not be disclosed to a person not directly involved in the certification or employment decisions affecting the specific applicant. The applicant for initial certification shall pay for the cost of obtaining the Federal Bureau of Investigation record.



LABOR RELATIONS DIVISION

401 Broadway NE
Albuquerque, NM 87102
Phone: 505-841-4400
Fax: 505-841-4424

226 South Alameda Blvd
Las Cruces, NM 88005
Phone: 575-524-6195
Fax: 575-524-6194

WWW.DWS.STATE.NM.US

1596 Pacheco St, Suite 103
Santa Fe, NM 87505
Phone: 505-827-6817
Fax: 505-827-9676

Wage Decision Approval Summary

1) Project Title: Metal Building for Fire Station 6
Requested Date: 10/04/2022
Approved Date: 10/05/2022
Approved Wage Decision Number: ED-22-2485-B

Wage Decision Expiration Date for Bids: 02/02/2023

2) Physical Location of Jobsite for Project:
Job Site Address: 1300 Terminal Drive
Job Site City: Carlsbad
Job Site County: Eddy

3) Contracting Agency Name (Department or Bureau): City of Carlsbad
Contracting Agency Contact's Name: Matt Fletcher
Contracting Agency Contact's Phone: (575) 234-7905 Ext.

4) Estimated Bid Opening Date: 10/27/2022

5) Estimated total project cost: \$165,000.00
a. Are any federal funds involved?: No
b. Does this project involve a building?: Yes - a pre-engineered metal building structure adjacent but not connected to the existing Fire Station at the Carlsbad Airport.
c. Is this part of a larger plan for construction on or appurtenant to the property that is subject to this project?: No
d. Are there any other Public Works Wage Decisions related to this project?: No
e. What is the ultimate purpose or functional use of the construction once it is completed?: To provide a metal building shelter structure for the Fire Station located at the Cavern City Airport.

6) Classifications of Construction:

Classification Type and Cost Total	Description
General Building (B) Cost: \$165,000.00	The scope of work is the new construction of a pre-engineered metal building structure adjacent but not connected to the existing Fire Station at the Carlsbad Airport. It is not connected to the building and is a separate project on its own. i.e. it is not a part or phase of a larger project.



PUBLIC WORKS PROJECT REQUIREMENTS

As a participant in a Public Works project valued at more than \$60,000 in the state of New Mexico, the following list addresses many of the responsibilities that are defined by statute or regulation to each project stakeholder.

Contracting Agency

- Ensure that all contractors wishing to bid on a Public Works project when the project is \$60,000 or more are actively registered with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> (Contractor Registration) prior to bidding.
- Please submit Notice of Award (NOA) and Subcontractor List(s) to the PWAA website promptly after the project is awarded.
- Please update the Subcontractor List(s) on the PWAA website whenever changes occur.
- All sub-contractors and tiers (excluding professional services) regardless of contract amount must be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.
- Ninety days after project completion please go into the PWAA system and close the project. Only contracting agencies are allowed to close the project. Agents or contractors are not allowed to close projects.

General Contractor

- Provide a complete Subcontractor List and Statements of Intent (SOI) to Pay Prevailing Wages for all contractors, regardless of amount of work, to the contracting agency within 3 (three) days of award.
- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- Confirm the Wage Rate poster, provided in PWAA, is displayed at the job site in an easily accessible place.
- When the project has been completed, make sure the Affidavits of Wages Paid (AWP) are sent to the contracting agency.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.



LABOR RELATIONS DIVISION
401 Broadway NE
Albuquerque, NM 87102
Phone: 505-841-4400
Fax: 505-841-4424

WWW.DWS.STATE.NM.US

Subcontractor

- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.

Additional Information

Reference material and forms may be found in the New Mexico Department of Workforce Solutions Public Works web pages at: <https://www.dws.state.nm.us/Labor-Relations/Labor-Information/Public-Works>.

CONTACT INFORMATION

Contact the Labor Relations Division for any questions relating to Public Works projects by email at public.works@state.nm.us or call (505) 841-4400.



TYPE "B" – GENERAL BUILDING

Effective January 1, 2022

Trade Classification	Base Rate	Fringe Rate	Apprenticeship
Asbestos Workers/Heat and Frost insulators	34.51	12.06	0.60
Asbestos Workers/Heat and Frost insulators: Los Alamos County	36.94	12.06	0.60
Boilermaker/blacksmith	34.88	32.28	0.60
Boilermaker/blacksmith: San Juan County	35.83	31.88	0.60
Bricklayer/Block layer/Stonemason	24.97	9.50	0.60
Carpenter/Lather	26.48	12.14	0.60
Carpenter: Los Alamos County	29.24	13.94	0.60
Millwright/pile driver	35.08	27.57	0.60
Cement Mason	22.04	10.73	0.60
Electricians-Outside Classifications: Zone 1			
Ground man	24.57	11.74	0.60
Equipment Operator	35.25	16.06	0.60
Lineman/technician	44.32	18.08	0.60
Cable Splicer	48.75	19.19	0.60
Electricians-Outside Classification: Zone 2			
Ground man	24.57	11.74	0.60
Equipment Operator	35.25	16.06	0.60
Lineman/technician	44.32	18.08	0.60

Cable Splicer	48.75	19.19	0.60
Electricians-Outside Classifications: Los Alamos County			
Ground man	25.27	11.76	0.60
Equipment Operator	36.27	16.09	0.60
Lineman/technician	45.47	18.36	0.60
Cable Splicer	49.59	19.50	0.60
Electricians-Inside Classifications: Zone 1			
Wireman/ low voltage technician	35.20	12.21	0.60
Cable Splicer	38.72	12.31	0.60
Electricians-Inside Classification: Zone 2			
Wireman/ low voltage technician	38.37	12.30	0.60
Cable Splicer	41.89	12.41	0.60
Electricians-Inside Classification: Zone 3			
Wireman/ low voltage technician	40.48	12.36	0.60
Cable Splicer	44.00	12.47	0.60
Electricians-Inside Classification: Zone 4			
Wireman/low voltage technician	44.35	12.48	0.60
Cable Splicer	47.87	12.58	0.60
Electricians-Inside Classification: Dona Ana, Hidalgo, Luna and Otero Counties			
Wireman/low voltage technician	31.42	8.87	0.60
Cable splicer	30.77	8.64	0.60
Electricians-Inside Classification: Los Alamos County			
Wireman/low voltage technician	40.48	14.38	0.60
Cable Splicer	44.00	14.67	0.60
Elevator Constructor	46.54	37.49	0.60

Elevator Constructor Helper	37.48	37.49	0.60
Glazier			
Journeyman/ Fabricator	21.00	6.45	0.60
Delivery Driver	11.50	6.45	0.60
Ironworker	27.70	17.89	0.60
Painter	17.75	8.20	0.60
Paper Hanger	17.75	8.20	0.60
Drywall Finisher/Taper - Light Commercial & Residential			
Ames tool operator	26.21	8.00	0.60
Hand finisher/machine texture	25.21	8.00	0.60
Plasterer	23.95	9.59	0.60
Plumber/Pipefitter	33.10	13.10	0.60
Roofer	26.34	9.16	0.60
Sheet metal worker			
Zone 1	34.54	17.92	0.60
Zone 2 – Industrial	35.54	17.92	0.60
Zone 3 – Los Alamos County	36.54	17.92	0.60
Soft Floor Layer	20.75	8.45	0.60
Sprinkler Fitter	32.67	23.46	0.60
Tile Setter	24.46	8.81	0.60
Tile Setter Helper/Finisher	16.53	8.81	0.60
Laborers			
Group I- Unskilled and semi-skilled	18.75	7.52	0.60
Group II- Skilled	19.75	7.52	0.60
Group III- Specialty	22.00	7.52	0.60
Masonry Laborers			
Group I- Unskilled and Semi-Skilled	19.75	7.75	0.60
Group II- Skilled	21.50	7.75	0.60
Group III- Specialty	22.00	7.75	0.60

Operators			
Group I	22.63	7.67	0.60
Group II	24.79	7.67	0.60
Group III	25.25	7.67	0.60
Group IV	25.69	7.67	0.60
Group V	25.88	7.67	0.60
Group VI	26.09	7.67	0.60
Group VII	26.20	7.67	0.60
Group VIII	29.24	7.67	0.60
Group IX	31.63	7.67	0.60
Group X	35.03	7.67	0.60
Truck Drivers			
Group I-VII	16.65	8.27	0.60
Group VIII	16.71	8.27	0.60
Group IX	18.65	8.27	0.60

NOTE: All contractors are required to pay SUBSISTENCE, ZONE AND INCENTIVE PAY according to the particular trade. Details are located in a PDF attachment at WWW.DWS.STATE.NM.US. Search Labor Relations/Labor Information/Public Works/Prevailing Wage Rates.

For more information about the Subsistence, Zone, and Incentive Pay rates, or to file a wage claim, contact the Labor Relations Division at (505) 841-4400 or visit us online at www.dws.state.nm.us.

INDEX OF DRAWINGS

New Shelter at Fire Station #6

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- 2 Fire Station #6 Site Plan
- 3 Plans, Elevations
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DIVISION 1**GENERAL REQUIREMENTS**

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01010 SUMMARY OF WORK

1.0 GENERAL:

1.1 RELATED DOCUMENTS: Drawings and general provision of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

1.2.1: The Project consists of furnishing all labor, materials and equipment and of performing all operations for a new shelter at Fire Station #6 in Carlsbad, New Mexico.

- a) Project Location: 1300 Terminal Drive, Carlsbad, New Mexico
- b) Owner: City of Carlsbad
P.O. Box 1569
Carlsbad, New Mexico 88221-1569
- c) Contract Documents were prepared in the office of Mitchell and Cruse Architecture, LLC, 102 N. Canyon Street, Carlsbad, NM 88220
Telephone: (575) 689-8400
- d) The Work consists of complete construction of a new metal building foundation, frame, walls and roof.
- e) The Work will be constructed under a single prime contract.

1.3 WORK SEQUENCE

1.3.1: The Work will be conducted in one phase.

1.4 CONTRACTOR USE OF PREMISES

1.4.1. General: During the construction period the Contractor shall have full use of the premises for construction operations, including use of the site. The Contractor's use of the premises are limited only by the Owner's right to perform work or to retain other contractors on portions of the Project.

- a) Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
 1. Owner Occupancy: Allow for Owner occupancy.
 2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Schedule deliveries to minimize space and time requirements

1.5 OCCUPANCY REQUIREMENTS

1.5.1 Owner Occupancy: The Owner will occupy the site and existing building during the entire construction period. However, the contractor shall coordinate with the Owner during construction operations to minimize conflicts and facilitate owner usage. Perform the Work so as not to interfere with the Owner's operations.

2.0 MATERIALS: Not Used.

3.0 EXECUTION: Not Used.

END OF SECTION 01010

01020 - ALLOWANCES

1.0 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

1.2.1: This Section includes administrative and procedural requirements governing allowances.

- a) Selected materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

1.2.2: Types of allowances include the following:

- a) Lump-sum allowances.
- b) Contingency allowances.

1.2.3: Related Sections: The following Sections contain requirements that relate to this Section:

- a) Division 1 Section "Modification Procedures" specifies procedures for submitting and handling Change Orders.
- b) Division 1 Section "Quality Control Services" specifies procedures governing the use of allowances for inspection and testing.

1.3 SELECTION AND PURCHASE

1.3.1: At the earliest practical date after award of the Contract, advise the Architect of the date when the final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

1.3.2: Purchase products and systems selected by the Architect from the designated supplier.

1.4 SUBMITTALS

1.4.1: Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.4.2: Submit invoices or delivery slips to show the actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.5 CONTINGENCY ALLOWANCES

1.5.1: Use the contingency allowance only as directed for the Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

1.5.2: Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

1.5.3: At Project closeout, credit unused amounts remaining in the contingency allowance to the Owner by Change Order.

1.6 UNUSED MATERIALS

1.6.1: Return unused materials to the manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.

- a) When requested by the Architect, prepare unused material for storage by Owner where it is not economically practical to return the material for credit. When directed by the Architect, deliver unused material to the Owner's storage space. Otherwise, disposal of unused material is the Contractor's responsibility.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1 EXAMINATION

3.1.1: Examine products covered by an allowance promptly upon delivery for damage or defects.

3.2: PREPARATION

3.2.1: Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES:

3.3.1: The Contractor shall include in his Base Bid an allowance of Ten Thousand Dollars (\$10,000.00) Contingency Miscellaneous Fund, to be used if and when authorized by the Owner, and as recommended by the Architect, in a duly executed Change Order. Any of the above sum not used will be credited to the Owner at the time of final payment. Any funds required in excess of the above sum will require the same authorization.

END OF SECTION 01020

01027 - APPLICATIONS FOR PAYMENT

1.0 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

1.2.1: This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.

1.2.2: This Section specifies administrative and procedural requirements governing each prime contractor's Applications for Payment.

- a) Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule, Submittal Schedule, and List of Subcontracts.

1.2.3 Related Sections: The following Sections contain requirements that relate to this .

- a) Schedules: The Contractor's Construction Schedule and Submittal Schedule are specified in Division 1 Section "Submittals."

1.3 SCHEDULE OF VALUES

1.3.1 Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

1.3.2 Coordination: Each prime Contractor shall coordinate preparation of its Schedule of Values for its part of the Work with preparation of the Contractors' Construction Schedule.

- 1) Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's Construction Schedule.
 - b. Application for Payment forms, including Continuation Sheets.
 - c. List of subcontractors.
 - d. Schedule of allowances.
 - e. Schedule of alternates.
 - f. List of products.
 - g. List of principal suppliers and fabricators.
 - h. Schedule of submittals.
- 2) Submit the Schedule of Values to the Architect at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment.

1.3.3 Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.

- 1) Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Architect.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
- 2) Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.
 - h. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
- 3) Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.
- 4) Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
- 5) Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.
- 6) Provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 7) Margins of Cost: Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at the Contractor's option.
- 8) Schedule Updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT: Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment.

1.4.1: No later than the 25th of each month, the Contractor shall submit to the Architect an itemized Application for Payment for operations completed in accordance with the schedule of values for that month. Such application shall be supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents. No Applications for Payment will be processed until the schedule of values is received and approved by Architect with concurrence from the Owner.

1.4.2: No Application for Payment may include more than:

1. Ninety-five percent (95%) of the scheduled value of any work requiring testing prior to testing and verification of testing by the Architect/Engineer to meeting requirements of the Contract Documents;
2. Ninety percent (90%) of the scheduled value for systems that include testing or balancing including, but not limited to, mechanical heating, air-conditioning and electrical distribution until testing, balancing or other verification required by the Contract Documents has been completed and verified as acceptable by the Architect/Engineer.

1.4.3: Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor of material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

1.4.4: Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation into the Work. Any payments for such materials or equipment shall be conditioned upon the Contractor's demonstration that they are adequately protected from weather, damage, vandalism and theft and that such materials or equipment have been inventoried and stored in accordance with procedures established by or approved by the Owner. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing and with sufficient Contractor provided insurance against loss, and with Owner named as co-insured, to cover the value of stored materials and their transport to the project.

1.4.5: The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, material suppliers and equipment relating to the Work. The Contractor additionally warrants that all As-Built drawings, inclusive of all trades, are accurate and current with completed Work covered by an Application for Payment.

1.5 CERTIFICATES FOR PAYMENT

1.5.1: Applications for Payment must be submitted to the Architect no later than the 25th of the month for which the application is being made. The Architect will review after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the reasons for withholding certification in whole or in part as provided in Subparagraph 1.6.1. In no event will the Owner accept or process a Certification for Payment after the 10th of the month following the month for which the application is being made. Certifications for Payment received after the 10th of the month "owner-cut-off-date" will be processed along with the following month's applications and will not be considered in default of Subparagraph 1.5.3.

1.5.2: The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents and that As-Built drawings are current to actual Work completed. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Design Professional. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified.

1.5.3: The Owner will issue payment to the Contractor in the amount certified in the approved Certificate for Payment within twenty-one (21) days from the end of the progress payment period which shall be the end of the month for which the Certificate of Payment is made. The seven (7) days allowed the Architect for review in Subparagraph 1.1.5 are partially included in the twenty-one (21) day period.

1.6 DECISIONS TO WITHHOLD CERTIFICATION

1.6.1: The Architect may withhold a Certificate for Payment and may assess Liquidated Damages in accordance with terms as set forth in the Bid Form, in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Subparagraph 1.5.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Subparagraph 1.5.

If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described previously because of:

1. Defective Work not remedied;
2. Third party claims filed or reasonable evidence indicting probable filing of

such claims unless security acceptable to the Owner is provided by the Contractor;

3. Failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
4. Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
5. Damage to the Owner or another contractor;
6. Reasonable evidence that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
7. Persistent failure to carry out the Work in accordance with the Contract Documents.

1.6.2: When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

1.7 PROGRESS PAYMENT: After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents.

1.8 FINAL PAYMENT APPLICATION: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:

1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion.
3. Ensure that unsettled claims will be settled.
4. Ensure that incomplete Work is not accepted and will be completed without undue delay.
5. Transmittal of required Project construction records to the Owner.
6. Certified property survey.
7. Proof that taxes, fees, and similar obligations were paid.
8. Removal of temporary facilities and services.
9. Removal of surplus materials, rubbish, and similar elements.
10. Change of door locks to Owner's access.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION (Not Applicable)

END OF SECTION 01027

01035 - MODIFICATION PROCEDURES

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1: This Section specifies administrative and procedural requirements for handling and processing contract modifications.

1. Multiple Prime Contracts: Provisions of this Section apply to the work of each prime contractor.

1.2.2 Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Allowances" for procedural requirements governing the handling and processing of allowances.
2. Division 1 Section "Submittals" for requirements for the Contractor's Construction Schedule.
3. Division 1 Section "Applications for Payment" for administrative procedures governing Applications for Payment.
4. Division 1 Section "Product Substitutions" for administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 MINOR CHANGES IN THE WORK: 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 CHANGE ORDER PROPOSAL REQUESTS

1.4.1 Owner-Initiated Proposal Requests: The Architect will issue a detailed description of proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. 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.
2. Within 20 days of receipt of a proposal request, submit an estimate of cost necessary to execute the change to the Architect for the Owner's review.
 - a. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.

1.4.2 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. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
2. Include a list of quantities of products required with the total amount of purchases to be made.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Comply with requirements in Section "Product Substitutions" if the proposed change requires substitution of one product or system for a product or system specified.

1.4.3 Proposal Request Form: Use AIA Document G709 for Change Order Proposal Requests.

1.4.4 Proposal Request Form: Use forms provided by the Owner for Change Order Proposals. Sample copies are included at the end of this Section.

1.5 ALLOWANCES

1.5.1 Allowance Adjustment: For allowance-cost adjustment, base each Change Order Proposal on the difference between the actual purchase amount and the allowance, multiplied by the final measurement of work-in-place. Where applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in the purchase amount only where indicated as part of the allowance.
2. When requested, prepare explanations and documentation to substantiate the margins claimed.
3. The Owner reserves the right to establish the actual quantity of work-in-place by independent quantity survey, measure, or count.

1.5.2: Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or the Contractor's handling, labor, installation, overhead, and profit. Submit claims within 21 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. The Owner will reject claims submitted later than 21 days.

1. Do not include the Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in Contract Documents.
2. No change to the Contractor's indirect expense is permitted for selection of higher or lower-priced materials or systems of the same scope and nature as originally indicated.

1.6 CHANGE ORDER PROCEDURES: Upon the Owner's approval of a Proposal Request, the Architect will issue a Change Order for signatures of the Owner and the Contractor on AIA Form G701.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION (Not Applicable)

END OF SECTION 01035

01040 - COORDINATION

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1: This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Coordination Drawings.
4. Administrative and supervisory personnel.
5. Cleaning and protection.

1.2.2 Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Project Meetings" for progress meetings, coordination meetings, and preinstallation conferences.
2. Division 1 Section "Submittals" for preparing and submitting the Contractor's Construction Schedule.
3. Division 1 Section "Materials and Equipment" for coordinating general installation.
4. Division 1 Section "Contract Closeout" for coordinating contract closeout.

1.3 COORDINATION

1.3.1: Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
3. Make provisions to accommodate items scheduled for later installation.

1.3.2: Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

1.3.3 Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.

1.4 SUBMITTALS

1.4.1 Coordination Drawings: Prepare coordination drawings where careful coordination is needed for installation of products and materials fabricated by separate entities. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components.

1. Show the relationship of components shown on separate Shop Drawings.
2. Indicate required installation sequences.
3. Comply with requirements contained in Section "Submittals."

1.4.2 Staff Names: Within 15 days of commencement of construction operations, submit a list of the Contractor's principal staff assignments, including the superintendent and other personnel in attendance at the Project Site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers.

1. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

3.1.1 Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

3.1.2: Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

3.2 CLEANING AND PROTECTION

3.2.1: Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.

3.2.2: Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

3.2.3 Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION 01040

01200 - PROJECT MEETINGS

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1: This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:

1. Preconstruction conferences.
2. Preinstallation conferences.
3. Progress meetings.
4. Coordination meetings.

1.2.2 Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Coordination" for procedures for coordinating project meetings with other construction activities.
2. Division 1 Section "Submittals" for submitting the Contractor's Construction Schedule.

1.3 PRECONSTRUCTION CONFERENCE

1.3.1: Schedule a preconstruction conference before starting construction, at a time convenient to the Owner and the Architect, but no later than 15 days after execution of the Agreement. Hold the conference at the Project Site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1.3.2 Attendees: Authorized representatives of the Owner, Architect, and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

1.3.3 Agenda: Discuss items of significance that could affect progress, including the following:

1. Tentative construction schedule.
2. Critical work sequencing.
3. Designation of responsible personnel.
4. Procedures for processing field decisions and Change Orders.
5. Procedures for processing Applications for Payment.
6. Distribution of Contract Documents.
7. Submittal of Shop Drawings, Product Data, and Samples.
8. Preparation of record documents.
9. Use of the premises.
10. Parking availability.
11. Office, work, and storage areas.
12. Equipment deliveries and priorities.
13. Safety procedures.
14. First aid.

15. Security.
16. Housekeeping.
17. Working hours.

1.4 PROGRESS MEETINGS

1.4.1: Conduct progress meetings at the Project Site at regular intervals. Notify the Owner and the Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.

1.4.2 Attendees: In addition to representatives of the Owner and the Architect, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

1.4.3 Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.

1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
2. Review the present and future needs of each entity present, including the following:
 - a. Interface requirements.
 - b. Time.
 - c. Sequences.
 - d. Status of submittals
 - e. Deliveries.
 - f. Off-site fabrication problems.
 - g. Access.
 - h. Site utilization.
 - i. Temporary facilities and services.
 - j. Hours of work.
 - k. Hazards and risks.
 - l. Housekeeping.
 - m. Quality and work standards.
 - n. Change Orders.
 - o. Documentation of information for payment requests.

1.4.4 Reporting: No later than 3 days after each meeting, distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

1. Schedule Updating: Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

1.5 COORDINATION MEETINGS

1.5.1: Conduct project coordination meetings at regular intervals convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special preinstallation meetings.

1.5.2: Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.

1.5.3: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

2.0 - PRODUCTS (Not Applicable)

3.0 - EXECUTION (Not Applicable)

END OF SECTION 01200

01300 - SUBMITTALS

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 Requirements: This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following:

1. Contractor's construction schedule.
2. Submittal schedule.
3. Daily construction reports.
4. Shop Drawings.
5. Product Data.
6. Samples.
7. Quality assurance submittals.

1.2.2 Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits.
2. Applications for Payment.
3. Performance and payment bonds.
4. Insurance certificates.
5. List of subcontractors.

1.2.3 Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Applications for Payment" specifies requirements for submittal of the Schedule of Values.
2. Division 1 Section "Coordination" specifies requirements governing preparation and submittal of required Coordination Drawings.
3. Division 1 Section "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.
4. Division 1 Section "Quality Control" specifies requirements for submittal of inspection and test reports.
5. Division 1 Section "Contract Closeout" specifies requirements for submittal of Project Record Documents and warranties at project closeout.

1.3 DEFINITIONS

1.3.1: Coordination Drawings show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended.

1. Preparation of Coordination Drawings is specified in Division 1 Section "Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.

1.3.2 Samples: Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.

1.3.3 Mockups: Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

1.4 SUBMITTAL PROCEDURES

1.4.1 Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.

1.4.2 Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.

1. Allow 2 weeks for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
2. If an intermediate submittal is necessary, process the same as the initial submittal.
3. Allow 2 weeks for reprocessing each submittal.
4. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.

1.4.3 Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4 by 5 inches on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
2. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of the Architect.
 - d. Name and address of the Contractor.
 - e. Name and address of the subcontractor.
 - f. Name and address of the supplier.

- g. Name of the manufacturer.
- h. Number and title of appropriate Specification Section.
- i. Drawing number and detail references, as appropriate.

1.4.4 Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. The Architect will not accept submittals received from sources other than the Contractor.

1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.
2. Transmittal Form: Use AIA Document G810.
3. Transmittal Form: Use the sample form at the end of this Section for transmittal of submittals.

1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE

1.5.1 Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart-type, contractor's construction schedule. Submit within 30 days after the date established for "Commencement of the Work."

1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values."
2. Within each time bar, indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
5. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.

1.5.2 Phasing: On the schedule, show how requirements for phased completion to permit Work by separate Contractors and partial occupancy by the Owner affect the sequence of Work.

1.5.3 Work Stages: Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.

1.5.4 Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.

1.5.5 Cost Correlation: At the head of the schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of Work performed as of the dates used for preparation of payment requests.

1. Refer to Division 1 Section "Applications for Payment" for cost reporting and payment procedures.

1.5.6 Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

1.5.7 Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.6 SUBMITTAL SCHEDULE

1.6.1 Schedule: After development and acceptance of the Contractor's Construction Schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for submittal of the Contractor's Construction Schedule.

1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the Contractor's Construction Schedule.
2. Prepare the schedule in chronological order. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category (Shop Drawings, Product Data, or Samples).
 - d. Name of the subcontractor.
 - e. Description of the part of the Work covered.
 - f. Scheduled date for resubmittal.
 - g. Scheduled date for the Architect's final release or approval.

1.6.2 Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

1.6.3 Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.7 DAILY CONSTRUCTION REPORTS

1.7.1 Report: Prepare a daily construction report recording the following information concerning events at the site, and submit copy to the Architect at weekly intervals:

1. List of subcontractors at the site.
2. Approximate count of personnel at the site.
3. High and low temperatures, general weather conditions.

4. Accidents and unusual events.
5. Meetings and significant decisions.
6. Stoppages, delays, shortages, and losses.
7. Meter readings and similar recordings.
8. Emergency procedures.
9. Orders and requests of governing authorities.
10. Change Orders received, implemented.
11. Services connected, disconnected.
12. Equipment or system tests and startups.
13. Partial Completions, occupancies.
14. Substantial Completions authorized.

1.8 SHOP DRAWINGS

1.8.1 Submittal: Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.

1.8.2 Requirements: Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:

1. Dimensions.
2. Identification of products and materials included by sheet and detail number.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.
6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 36 by 48 inches.
7. Initial Submittal: Submit one correctable, translucent, reproducible print and one blue- or black-line print for the Architect's review. The Architect will return the reproducible print.
8. Final Submittal: Submit 6 blue- or black-line prints. The Architect will retain 2 prints and return the remainder.
 - a. One of the prints returned shall be marked up and maintained as a "Record Document."
9. Do not use Shop Drawings without an appropriate final stamp indicating action taken.

1.9 PRODUCT DATA

1.9.1 Data: Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with trade association standards.
 - c. Compliance with recognized testing agency standards.

- d. Application of testing agency labels and seals.
- e. Notation of dimensions verified by field measurement.
- f. Notation of coordination requirements.

1.9.2 Compliance: Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

1.9.3 Preliminary Submittal: Submit a preliminary single copy of Product Data where selection of options is required.

1.9.4 Submittals: Submit 6 copies of each required submittal. The Architect will retain two and will return the other marked with action taken and corrections or modifications required.

1.9.5 Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

1. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
2. Do not permit use of unmarked copies of Product Data in connection with construction.

1.10 SAMPLES

1.10.1 Requirements: Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.

1. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least 3 multiple units that show approximate limits of the variations.
2. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
3. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
4. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.

1.10.2 Preliminary Submittals: Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from a range of standard choices.

1. The Architect will review and return preliminary submittals with the Architect's notation, indicating selection and other action.

1.10.3 Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit 3 sets. The Architect will return one set marked with the action taken.

1.10.4 Samples: Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.

1. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
2. Sample sets may be used to obtain final acceptance of the construction associated with each set.

1.10.5 Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1. Field samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the Project standard.
 - a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.11 QUALITY ASSURANCE SUBMITTALS

1.11.1 Submit quality-control submittals: including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.

1.11.2 Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.

1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

1.11.3 Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 Section "Quality Control."

1.12 ARCHITECT'S ACTION

1.12.1 Record: Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.

1. Compliance with specified characteristics is the Contractor's responsibility.

1.12.2 Action Form: The Architect will mark each submittal with a uniform, action form. The Architect will mark the form appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: When the Architect marks a submittal "Approved," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
2. Final-But-Restricted Release: When the Architect marks a submittal "Approved as Noted," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
3. Returned for Resubmittal: When the Architect marks a submittal "Not Approved, Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.

- a. Do not use, or allow others to use, submittals marked "Not Approved, Revise and Resubmit" at the Project Site or elsewhere where Work is in progress.
4. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "Action Not Required."

1.12.3 Unsolicited Submittals: The Architect will return unsolicited submittals to the sender without action.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION (Not Applicable)

END OF SECTION 01300

01400 - QUALITY CONTROL

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 Administration: This Section includes administrative and procedural requirements for quality-control services.

1.2.2 Inspection: Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Architect.

1.2.3 Testing: Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.

1.2.4 Requirements: Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2.5 Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.
2. Division 1 Section "Submittals" specifies requirements for development of a schedule of required tests and inspections.

1.3 RESPONSIBILITIES

1.3.1 Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, Contractor shall provide inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. Costs for these services are included in the Contract Sum.

1. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract Sum.
2. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.

3. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner's responsibility, the Owner will engage the services of a qualified independent testing agency to perform those services.
 - a. Where the Owner has engaged a testing agency for testing and inspecting part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless agreed to in writing by the Owner.

1.3.2 Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.

1. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.

1.3.3 Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

1. Provide access to the Work.
2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
4. Provide facilities for storage and curing of test samples.
5. Deliver samples to testing laboratories.
6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
7. Provide security and protection of samples and test equipment at the Project Site.

1.3.4 Duties of the Testing Agency: The independent agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Architect and the Contractor in performance of the agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.

1. The agency shall notify the Architect and the Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. The agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
3. The agency shall not perform any duties of the Contractor.

1.3.5 Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

1. The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

1.4 SUBMITTALS

1.4.1 Report: Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Architect. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor.

1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address, and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.
 - e. Names of individuals making the inspection or test.
 - f. Designation of the Work and test method.
 - g. Identification of product and Specification Section.
 - h. Complete inspection or test data.
 - i. Test results and an interpretation of test results.
 - j. Ambient conditions at the time of sample taking and testing.
 - k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
 - l. Name and signature of laboratory inspector.
 - m. Recommendations on retesting.

1.5 QUALITY ASSURANCE: Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are prequalified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.

1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1 REPAIR AND PROTECTION

3.1.1 General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section "Cutting and Patching."

3.1.2 Protection: Protect construction exposed by or for quality-control service activities, and protect repaired construction.

3.1.3 Repair and protection: Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 01400

01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 Requirements: This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.

1.2.2 Temporary utilities include, but are not limited to, the following:

1. Water service and distribution.
2. Temporary electric power and light.
3. Temporary heat.
4. Ventilation.
5. Telephone service.
6. Sanitary facilities, including drinking water.
7. Storm and sanitary sewer.

1.2.3 Support facilities include, but are not limited to, the following:

1. Field offices and storage sheds.
2. Temporary roads and paving.
3. Temporary enclosures.
4. Hoists and temporary elevator use.
5. Temporary project identification signs and bulletin boards.
6. Waste disposal services.
7. Rodent and pest control.
8. Construction aids and miscellaneous services and facilities.

1.2.4 Security and protection facilities include, but are not limited to, the following:

1. Temporary fire protection.
2. Barricades, warning signs, and lights.
3. Enclosure fence for the site.
4. Environmental protection.

1.3 SUBMITTALS

1.3.1 Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

1.3.2 Implementation and Termination Schedule: Within 15 days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.

1.4 QUALITY ASSURANCE

1.4.1 Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

1. Building code requirements.
2. Health and safety regulations.
3. Utility company regulations.
4. Police, fire department, and rescue squad rules.
5. Environmental protection regulations.

1.4.2 Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSIA10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."

1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

1.4.3 Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

1.5.1 Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.

1.5.2 Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

2.0 PRODUCTS

2.1 MATERIALS

2.1.1 General: Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.

2.1.2 Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."

2.1.3 Gypsum Wallboard: Provide gypsum wallboard on interior walls of temporary offices.

2.1.4 Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.

2.1.5 Paint: Comply with requirements of Division 9 Section "Painting."

2.1.6 Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.

2.1.7 Water: Provide potable water approved by local health authorities.

2.1.8 Open-Mesh Fencing: Provide 0.120-inch- (3-mm-) thick, galvanized 2-inch (50-mm) chain link fabric fencing 6 feet (2 m) high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 inches (38 mm) I.D. for line posts and 2-1/2 inches (64 mm) I.D. for corner posts.

2.2 EQUIPMENT

2.2.1 General: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.

2.2.2 Water Hoses: Provide 3/4-inch (19-mm), heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet (30 m) long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.

2.2.3 Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

2.2.4 Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

2.2.5 Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

2.2.6 Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.

2.2.7 Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

2.2.8 Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

2.2.9 Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

3.0 EXECUTION

3.1 INSTALLATION

3.1.1 Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

3.1.2 Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

3.2.1 General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Architect. Neither the Owner nor Architect will accept cost or use charges as a basis of claims for Change Orders.

3.2.2 Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.

1. Sterilization: Sterilize temporary water piping prior to use.

3.2.3 Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switch gear.

3.2.4 Temporary Lighting: When overhead floor or roof deck has been installed, provide temporary lighting with local switching.

1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.

3.2.5 Temporary Heat: Provide temporary heat required by construction activities for curing or drying of completed installations or for protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.

3.2.6 Heating Facilities: Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open flame, or salamander heating units is prohibited.

3.2.7 Temporary Telephones: Provide temporary telephone service throughout the construction period for all personnel engaged in construction activities.

3.2.8 Facilities: Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.

1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.

3.2.9 Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted. Provide separate facilities for male and female personnel.

3.2.10 Drinking-Water Facilities: Provide containerized, tap-dispenser, bottled-water drinking-water units, including paper supply.

3.2.11 Barriers: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.3 SUPPORT FACILITIES INSTALLATION

3.3.1 Location: Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.

1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

3.3.2 Field Offices: Provide insulated, weathertight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:

1. Furnish with a desk and chairs, a 4-drawer file cabinet, plan table, plan rack.

3.3.3 Project Identification and Temporary Signs: Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.

1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details indicated.
2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.

3.3.4 Temporary Exterior Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.

3.3.5 Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

3.3.6 Rodent and Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

3.4.1 Temporary Facilities: Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.

3.4.2 Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

3.4.3 Enclosure Fence: Before excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.

1. Provide open-mesh, chain link fencing with posts set in a compacted mixture of gravel and earth.

3.4.4 Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 OPERATION, TERMINATION, AND REMOVAL

3.5.1 Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

3.5.2 Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

3.5.3 Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

END OF SECTION 01500

01600 - MATERIALS AND EQUIPMENT

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 Requirements: This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

1. Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each prime contractor.

1.2.2 Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.
2. Division 1 Section "Submittals" specifies requirements for submittal of the Contractor's Construction Schedule and the Submittal Schedule.
3. Division 1 Section "Substitutions" specifies administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 DEFINITIONS

1.3.1 Wording: Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.

1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - a. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
 - b. "Foreign Products," as distinguished from "domestic products," are items substantially manufactured (50 percent or more of value) outside the United States and its possessions. Products produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of, nor living within, the United States and its possessions are also considered to be foreign products.
2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the work.
3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.4 SUBMITTALS

1.4.1 Product List: A list of products required is included at the end of this Section. Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and

proprietary product names for each item listed.

1.4.2 Product List: Prepare a list showing products specified in tabular form acceptable to the Architect. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.

1. Coordinate product list with the Contractor's Construction Schedule and the Schedule of Submittals.
2. Form: Prepare product list with information on each item tabulated under the following column headings:
 - a. Related Specification Section number.
 - b. Generic name used in Contract Documents.
 - c. Proprietary name, model number, and similar designations.
 - d. Manufacturer's name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date or time span of delivery period.
3. Initial Submittal: Within 30 days after date of commencement of the Work, submit 3 copies of an initial product list. Provide a written explanation for omissions of data and for known variations from Contract requirements.
 - a. At the Contractor's option, the initial submittal may be limited to product selections and designations that must be established early in the Contract period.
4. Completed List: Within 60 days after date of commencement of the Work, submit three (3) copies of the completed product list. Provide a written explanation for omissions of data and for known variations from Contract requirements.
5. Architect's Action: The Architect will respond in writing to Contractor within 2 weeks of receipt of the completed product list. No response within this period constitutes no objection to listed manufacturers or products but does not constitute a waiver of the requirement that products comply with Contract Documents. The Architect's response will include a list of unacceptable product selections, containing a brief explanation of reasons for this action.

1.5 QUALITY ASSURANCE

1.5.1 Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

1. When specified products are available only from sources that do not, or cannot, produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect to determine the most important product qualities before proceeding. Qualities may include attributes, such as visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources producing products that possess these qualities, to the fullest extent possible.

1.5.2 Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1. Each prime contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate contractors.
2. If a dispute arises between prime contractors over concurrently selectable, but incompatible products, the Architect will determine which products shall be retained and which are

incompatible and must be replaced.

1.5.3 Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the Work:

1. No available domestic product complies with the Contract Documents.
2. Domestic products that comply with the Contract Documents are available only at prices or terms substantially higher than foreign products that comply with the Contract Documents.

1.5.4 Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING: Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

2.0 PRODUCTS

2.1 PRODUCT SELECTION

2.1.1 General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.

1. Provide products complete with accessories, trim, finish, safety guards, and other and details needed for a complete installation and the intended use and effect.
2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

2.1.2 Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

1. Proprietary Specification Requirements: Where Specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.
2. Semi proprietary Specification Requirements: Where Specifications name 2 or more products or manufacturers, provide 1 of the products indicated. No substitutions will be permitted.
 - a. Where Specifications specify products or manufacturers by name, accompanied by the term "or equal" or "or approved equal," comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
3. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.
 - a. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
6. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
7. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
 - a. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category.
8. Visual Selection: Where specified product requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.

3.0 EXECUTION

3.1 INSTALLATION OF PRODUCTS: Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01600

01631 - SUBSTITUTIONS

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 Requirements: This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

1. Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each prime contractor.

1.2.2 Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.
2. Division 1 Section "Submittals" specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.
3. Division 1 Section "Materials and Equipment" specifies requirements governing the Contractor's selection of products and product options.

1.3 DEFINITIONS: Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.

1.3.1 Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:

1. Substitutions requested during the bidding period, and accepted by Addendum prior to award of the Contract, are included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
2. Revisions to the Contract Documents requested by the Owner or Architect.
3. Specified options of products and construction methods included in the Contract Documents.
4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS: Substitution Request Submittal: The Architect will consider requests for substitution if received within 7 days after commencement of the Work. Requests received more than 7 days after commencement of the Work may be considered or rejected at the discretion of the Architect.

1.4.1: Submit 3 copies of each request for substitution for consideration. Submit requests in the form and according to procedures required for change-order proposals.

1.4.2: Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.

1.4.3: Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:

1. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors, that will be necessary to accommodate the proposed substitution.
2. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.
3. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
4. Samples, where applicable or requested.
5. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
6. Cost information, including a proposal of the net change, if any in the Contract Sum.
7. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.
8. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

1.4.4 Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.

1. Use the product specified if the Architect cannot make a decision on the use of a proposed substitute within the time allocated.

2.0 PRODUCTS

2.1 SUBSTITUTIONS

2.1.1 Conditions: The Architect will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.

1. Extensive revisions to the Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of the Contract Documents.
3. The request is timely, fully documented, and properly submitted.
4. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
5. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
6. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.

7. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
9. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
11. Where a proposed substitution involves more than one prime contractor, each contractor shall cooperate with the other contractors involved to coordinate the Work, provide uniformity and consistency, and assure compatibility of products.

2.2.2 The Contractor's submittal and the Architect's acceptance of Shop Drawings: Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

3.0 EXECUTION (Not Applicable)

END OF SECTION 01631

01700 - CONTRACT CLOSEOUT

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1: This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:

1. Inspection procedures.
2. Project record document submittal.
3. Operation and maintenance manual submittal.
4. Submittal of warranties.
5. Final cleaning.

1.2.2: Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

1.3 SUBSTANTIAL COMPLETION

1.3.1 Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following.

1. In the Application for Payment that coincides with, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
 - a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
2. Advise the Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra stock, and similar items.
7. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
9. Complete final cleanup requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred, exposed finishes.

1.3.2 Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

1.4.1 Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.
4. Submit consent of surety to final payment.
5. Submit a final liquidated damages settlement statement.
6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

1.4.2 Reinspection Procedure: The Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.

1. Upon completion of reinspection, the Architect will prepare a certificate of final acceptance. If the Work is incomplete, the Architect will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, reinspection will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS

1.5.1 General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Architect's reference during normal working hours.

1.5.2 Record Drawings: Maintain a clean, undamaged set of blue line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown.

1. Mark record sets with red erasable pencil.
2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
3. Note related change-order numbers where applicable.
4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.

1.5.3 Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.

1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
3. Note related record drawing information and Product Data.
4. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.

1.5.4 Record Product Data: Maintain one copy of each Product Data submittal. Note related Change Orders and markup of record drawings and Specifications.

1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
3. Upon completion of markup, submit complete set of record Product Data to the Architect for the Owner's records.

1.5.5 Record Sample Submitted: Immediately prior to Substantial Completion, the Contractor shall meet with the Architect and the Owner's personnel at the Project Site to determine which Samples are to be transmitted to the Owner for record purposes. Comply with the Owner's instructions regarding delivery to the Owner's Sample storage area.

1.5.6 Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to the Architect for the Owner's records.

1.5.7 Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch (51-mm), 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions.
2. Spare parts list.
3. Copies of warranties.

4. Wiring diagrams.
5. Recommended "turn-around" cycles.
6. Inspection procedures.
7. Shop Drawings and Product Data.
8. Fixture lamping schedule.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1 CLOSEOUT PROCEDURES

3.1.1 Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.
7. Identification systems.
8. Control sequences.
9. Hazards.
10. Cleaning.
11. Warranties and bonds.
12. Maintenance agreements and similar continuing commitments.

3.1.2 Demonstrate: As part of instruction for operating equipment, demonstrate the following procedures:

1. Startup.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

3.2 FINAL CLEANING

3.2.1 General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1 Section "Construction Facilities and Temporary Controls."

3.2.2 Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - e. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

3.2.3 Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

3.2.4 Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION 01700

01740 - WARRANTIES

1.0 GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

1.2.1 Requirements: This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers standard warranties on products and special warranties.

1. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.

1.2.2 Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Submittals" specifies procedures for submitting warranties.
2. Division 1 Section "Contract Closeout" specifies contract closeout procedures.
3. Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.
4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

1.2.3 Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.2.4 Separate Prime Contracts: Each prime contractor is responsible for warranties related to its own contract.

1.3 DEFINITIONS

1.3.1 Standard product warranties: Are to be preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

1.3.2 Special warranties: Are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

1.4.1 Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

1.4.2 Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

1.4.3 Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

1.4.4 Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

1.4.5 Special Warranties: Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

1.5.1 Written Warranties: Submit written warranties to the Architect prior to the date certified for Substantial Completion.

2. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.

1.5.2 Special Warranties: When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier, or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.

1.5.3 Form of Submittal: At Final Completion compile 2 copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1.5.4 Binding: Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.
3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION:

3.1 LIST OF WARRANTIES

3.1.1 Schedule: Provide warranties on products and installations as specified in the following Sections:

1. Metal Building Structure

END OF SECTION 01740

END OF DIVISION

02010 GENERAL

1.0 GENERAL CONDITIONS: The "General Conditions," Document A201, apply to all work of this section. Each item, including all labor, equipment and incidentals shall be provided in accordance therein. Where specific items are called for by name, make, or catalog number, such reference shall be interpreted as establishing a standard quality and not construed as limiting competition; and the Contractor may at his option, use any article, device, product, material, fixture, form or type of construction which in the judgment of the Architect, submitted in writing, is equal to that specified.

1.1 Scope: The work required under this section consists of all materials, labor and equipment necessary to do all demolition, footing excavating, filling, temporary drainage, fill, hauling, fencing and final clean-up described in the Specifications and indicated on the Drawings.

END OF SECTION 02010

02050 DEMOLITION

1.0 GENERAL Demolition work, as specified herein, is not intended to be performed as a wrecking operation but as preparatory work relative to the performance of the various construction operations of the Project.

1.1 Job Conditions:

1.1.1 Protection: Exercise care during demolition work to confine demolition operations to the areas as indicated on the Drawings. The physical means and methods used for protection are at the Contractor's option. However, the Contractor will be completely responsible for replacement and restitution work of whatever nature at no expense to the Owner.

Additionally, if public safety is endangered during the progress of the demolition work, provide adequate protective measures to protect public pedestrian and vehicular traffic on streets and walkways.

Signs, signals and barricades used shall conform to requirements of Federal, State and local laws, rules, regulations, precautions, orders and decrees.

Explosives and Blasting: Not permitted in performance of demolition work.

2.0 MATERIALS: Materials needed or required for temporary protection in the form of barricades, fences, enclosures, etc., may be "used" construction materials of sound condition and reasonably clean. However, the condition of same materials shall meet or exceed the requirements of governing agencies or approving bodies as may be involved with the work.

Materials needed or required for temporary protection in the form of barricades, fences, enclosures, etc., shall be new construction materials of sound condition and reasonably clean.

2.1.1 Framing: No. 2 Common or better S4S, 2 x 4 studs.

2.1.2 Facing: 1/4 inch C-C EXT-APA or better sanded Group I or II plywood extending from floor to eight foot height and new 6 mil fiberglass reinforced polyethylene material continuing from top of plywood to ceiling. Joints and seams sealed with cloth-backed "Duct Tape".

2.1.3 Optional Facing: Two layer 6 mil fiberglass reinforced polyethylene sheet material continuous floor to ceiling. To form double layer lap sheets one-half of sheet width. Joints and seams sealed with cloth-backed "Duct Tape".

2.2 Equipment, Machinery and Apparatus: Motorized or otherwise, used to perform the demolition work may be used as chosen at the Contractor's discretion, but which will perform the work within the limits of the Contract requirements.

3.0 EXECUTION

3.1 Inspection: Prior to performance of the actual work, carefully inspect the entire site and locate those objects and structures / partitions designated to be demolished and removed.

Prior to performance of the actual work, carefully inspect the structure and verify with the Architect the objects being removed and objects to be preserved.

Locate existing exposed and buried active utilities and determine the requirement for their protection, or their disposition with respect to the demolition work.

3.2 Performance:

3.2.1 General: The means and methods of performing demolition operations is the sole responsibility of the Contractor. However, equipment used, and methods of demolition will be subject to approval of the Architect.

3.2.2 Debris Removal: Dispose of demolition debris off Site in a lawfully approved landfill area.

3.2.3 Abandoned Equipment & Machinery: Existing equipment and machinery in or on the structures, not claimed as salvage by the Owner, shall also become the property of the Contractor and may not be disposed of on the Site but shall be removed and disposed of in a lawful manner off Site.

3.2.4 Salvage: The Owner shall have the right to claim as salvage any of the materials “removed” under the work of this Contract, and when the Contractor has removed such items, should such right of salvage be exercised by the Owner, the Contractor shall move and neatly store removed items on the site in a location agreeable to the Owner, in a manner approved by the Architect. Remainder of salvage to be disposed of in this Contract.

When removing concrete slabs, the slab must be saw cut at the limits of removal to assure a smooth, uniform joint with new concrete installation. When removing masonry remove to the next full size unit so proper tothing in of new work may be done.

3.2.5 Ventilation: During installation of new work or removal of existing materials, Contractor is to provide a ventilation system in corridors and public areas to remove dust, fumes or objectionable odors.

Removal of all masonry and concrete material must be done, keeping the debris dampened during removal and until outside building.

3.2.6 Backfilling: Perform backfilling in the area of demolished structures in accordance with Structural Excavation, Backfilling and Compacting: Section 02220.

Backfill substructure cavities using Selected Compacted Fill.

3.3 Selective Demolition: In several areas on the Site, as indicated on the Drawings, selective demolition work is required. Perform such work only to the extent indicated or noted.

Following demolition of the above grade portions of the items indicated or noted, completely remove the below grade portions of same wherever possible and practical. Where impossible or impractical to completely remove below grade portions, then remove such to a depth at least 12 inches below existing grade. However, should such below grade items interfere with prosecution of the work at a later time, then removal of same shall be the Contractor's responsibility at no expense to the Owner.

END OF SECTION 02050

02100 CLEARING

1.0 GENERAL: The work covered by this section is the removal of all natural and man-made obstructions from the construction site.

2.0 MATERIALS: Furnish all necessary equipment and labor to perform work as outlined in the Drawings and as herein specified.

2.1 Site Conditions: The site itself is presently covered with some concrete slabs and paving, to be removed in this Contract.

2.2 Drainage and Protection of Foundation Soils: It will be important at this site to keep the soils beneath floor slabs and foundations protected from moisture; soils could either consolidate or swell to some extent. To help prevent moisture intrusions into foundation soils, the following precautions shall be taken. Provide and maintain positive surface water drainage around and away from all foundations and exterior walls; keep all opened footing and/or spot foot excavations dry, with concreting operations to follow as soon as is practical. The Contractor should have equipment and materials readily available to promptly remove surface water ponded for any reason. Properly compact all backfill soils in utility trenches and around foundations to a minimum of 95% of Standard Proctor Density.

3.0 EXECUTION: Grub-out any roots larger than 2" in diameter to 6" below the subgrade. Perform rough-grading in advance of building operations, making cuts where required, using the dirt for filling lower end of site. After buildings are completed and utility trenches filled and compacted, site-grading shall be completed. Surfaces shall be dressed by hand where necessary and shall conform to the finish grade as designed.

END OF SECTION 02100

02200 EARTHWORK

1.0 GENERAL: The work covered by this section includes all equipment, labor and materials necessary for all excavation, backfilling and grading. All work is to be completed in strict accordance with the requirements of this section and applicable Drawings.

2.0 MATERIALS:

2.1 Filling: Provide and place any additional fill material from off-site and/or suitable surplus excavated materials as is necessary to produce the grades required. Where concrete slabs are placed on earth, all loam and organic or other unsuitable materials shall be removed and replaced with suitable material. Earth shall be placed in layers not exceeding 6" in thickness and compacted at least ninety-five percent (95%) of standard density of adjacent surfaces. Place fill at earliest possible time and use water for all compacting operations. Maximum size of material used to be 4".

2.2 Backfilling: Backfill all areas in similar manner as specified for filling. Bring to suitable elevation above grade to provide for settlement. Do not backfill pipe trenches, etc., until mechanical work has been tested for leakage, etc. Provide finish grade to slope away from the outside of the foundation walls as indicated on the Drawings. Where trenches must be cut across existing paved areas, backfill and replace to match existing construction. Notify Owner prior to cutting paving, and obtain approval of cut plus schedule of traffic blockage.

2.3 Engineered Fill: Soil material used for Engineered Fill shall be granular, free of organic material and shall not contain gravel larger than 1" in greatest dimension. Soils classified in the following list according to the Unified Soils Classification System ARE CONSIDERED AS ACCEPTABLE FOR ENGINEERED FILL: SW, SP, SC, SM, SC-SM, SP-SM, SP-SC, GW, GP, GC, GM, GC-GM, GP-GM, GP-GC.

The Engineered Material shall not contain rocks or lumps over one (1) inch in greatest dimensions, and shall meet the following requirements.

1. Passing 1 inch sieve	100%
2. Passing 3/4" sieve	70-100%
3. Passing No. 4 sieve	40-100%
4. Passing No. 200 sieve	0-25%
5. Plasticity Index	12 maximum
6. Liquid Limit	40 maximum

Soils classified in the following list according to the Unified Soils Classification System ARE NOT CONSIDERED ACCEPTABLE FOR ENGINEERED FILL: PT, OL, OH, ML, HM, CL and CH or where the plasticity index exceeds 12.

Engineered fill material may be taken from any source provided it complies with the above requirements. Approval of the material is required before it is used at the site and will be based on tests of representative samples taken from the source. The Contractor shall submit the location of his source with his bid. Sampling shall be done in accordance with ASTM D-75.

2.4 Floor Slab: All on-grade concrete floor slabs should be placed on an engineered fill as per paragraph 2.3 above. Prior to select slab fill placement, the present subgrade soils should be stripped of any vegetation, roots and loose soil zones. The exposed surface should then be scarified to a minimum of 8" in depth, mixed thoroughly with moisture (2% to 3% over optimum) and compacted to not less than 95% of Standard Proctor Density (ASTM-D-1557). Select slab fill may then be placed at or near optimum moisture, and compacted to 95% of Standard Proctor Density. Fill shall be placed in layers not exceeding 6" in thickness and compacted in accordance with Paragraph 3.6 of Section 02200. Positive surface water drainage is to be provided around and away from all structures.

2.5 Equipment: It shall be the duty of this Contractor to provide loaders and truck facilities to transport all excess materials away that cannot be used for fill and final grading work.

3.0 EXECUTION:

3.1 Excavation: For footings, pipe trenches, utilities, etc., excavate to indicated dimensions and elevations, unless otherwise directed. Excavate to allow for placing of forms, except where concrete is authorized to be placed directly against excavation surfaces; do not undercut. Spread and grade excess materials as directed on the Plot Plan. Any excess material that cannot be used is to be hauled away. Make sure that the bottoms of all excavations for concrete footings shall consist of undisturbed natural soil, excavated and dressed to the proper levels.

Excavated material that is suitable, i.e., no clay, caliches or rocks, may be used for fills and backfills required. All unsuitable material and/or surplus excavated materials not required for site grading or backfilling shall be removed from the site.

3.2 Footing Bearing: Where suitable bearing is encountered at different elevations from those indicated on the Drawings, the Architect may direct in writing that the excavation be carried to elevations above or below those indicated. Unless otherwise directed, excavations shall not be carried below or above the grade indicated on the Drawings.

3.3 Temporary Drainage: Grading shall be controlled in the vicinity of the buildings and excavations so that the surface of the ground will be properly sloped to prevent water from running into excavated areas or damaging the structure.

3.4 Existing Utilities: Locate existing underground utilities by careful hand excavation before starting earthwork operations. If utilities are to remain in place, provide protection from damage during construction operations.

Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Architect immediately for directions as to procedure. Cooperate with the Owner and Public Utility Companies in keeping services and facilities in operation. Repair damaged utilities to the satisfaction of the utility owner.

Do not interrupt existing utilities service in facilities occupied and used by the Owner or others, except when permitted in writing by the Architect, and then only after temporary utility services have been provided.

The use of explosives will not be permitted.

3.5 Removal of Existing Curbs, Gutters and Paving: Any existing curbing, gutters and paving as shown on the drawings is to be removed and hauled away by the Contractor.

3.6 Soil Compaction: This Contractor shall submit three (3) copies of certification by a qualified and recognized testing laboratory that all compacted sub-grade areas supporting concrete slabs comply with 95% standard density as determined by A.A.S.H.O. Method T-99. One core sample shall be made for each 900 square feet (30'x30' area), unless otherwise directed by the Architect. Samples will be required after placement of 12" of fill and each 12" layer thereafter.

3.7 Burning on Owner's Property: Burning of combustible material is not permitted on the Owner's property.

3.8 Clean-Up: This Contractor shall remove all trash, scraps, debris, etc., dispose of all excess materials and have entire building site clean prior to acceptance of building by Owner.

END OF SECTION 02200

02275 SITE CLEANING:

1.0 GENERAL: The scope of Work shall include, but shall not necessarily be limited to, the provision of labor, equipment, materials, and other incidentals necessary to accomplish the continuous during-construction, and final cleaning of the site, as shown on the drawings and described in the specifications.

2.0 MATERIALS: Unless otherwise specified, all material removed under this Contract and specification which is not acceptable for, and which is not specified for reuse on this project shall become the property of the Contractor and shall be promptly removed from the site.

3.0 EXECUTION:

3.1 Cleanup: During the course of the Work, excess waste materials shall be continuously and promptly removed. All reasonable precautions shall be taken to avoid damage to existing utilities and improvements, including sprinklers, plants and lawns.

3.1.1 Concrete Dumping: The washing of concrete truck and chutes, and the dumping of excess concrete or other cementitious material on campus shall not be allowed, except at location(s) and as specifically directed by the Architect. At the completion of the Work, the Contractor shall be required to remove from the campus and properly dispose of all such dumped materials, including the surrounding soils contaminated thereby.

3.1.2 Paint Dumping: All paint residues and vehicle deposits such as oils and fuels which, due to the course of the work, contaminate site or campus soils shall be removed together with the contaminated soils, and such soils shall be replaced if required, with equal soils, clean and uncontaminated. In no case shall any contaminated soil or soils contaminating material or substance (including paints, oils, fuels and cements) be turned under at the site during grading or fill operations.

3.1.3 Cleanup and Raking of Areas: Unless otherwise specified, in areas where there is any action or traffic by the Contractor or his employees in the execution of the work shall cause soils, stones, pebbles, aggregates, or other solid materials to be raised to, or placed upon the surface, the Contractor shall rake clean all areas affected, leaving no solid stones, mortars, aggregates, other solid matter or material exposed on the surface in excess of 3/4 inch in size when measured in any direction. Raking shall occur as directed after back filling and compaction, to allow for mowing, and shall reoccur whenever redisturbed through any action or traffic by the Contractor or his employees in the execution of the work throughout the duration of the contract.

3.1.4 Final Cleanup and Raking: Unless otherwise specified, the Contractor shall, in addition to other cleanup requirements specified, perform a final cleanup of the entire building side, leaving no excess materials, paper, cartons, or other refuse at the site. No burning shall be allowed at the site. This cleanup shall include the gathering, removal, and proper off-campus disposal of all refuse originating from the work of this contract or the Contractor's employees thereon, which may, by whatever means, have been transported off site to adjacent properties, or rights-of-way.

In all non-paved areas which are shown on the Drawings or described in the specifications or addenda to receive planting under this contract or after the work of this contract, or which contain existing planting: The Contractor shall, after bringing finish elevations to the specified degree(s) of compaction, slopes, and grades, rake clean and smooth all planting areas (so noted on the drawings or described in the specifications), leaving no solid stones, mortars, aggregates, other solid matter or material exposed on the surface in excess of 3/4 inch in size when measured in any direction.

3.2 Inspections and Acceptance: The final cleanup may be performed in sections or areas and at times as agreed to by the Architect and the Contractor. After the acceptance of each area, reraking shall not be again required to remove over-sized materials dislodged and brought to the surface by non-construction traffic or erosion. Only the reraking of accepted areas which are later disturbed by the Contractor, his employees, delivery persons and vehicles, or others in the performance of the Work or access thereto shall be required.

END OF SECTION 02275

02500 PAVING AND SURFACING

1.0 GENERAL: This work shall consist of paving at the Parking lot areas, as shown on the Site Plan.

1.1 Unsuitable Material: Material shall be considered unsuitable for fill, subgrade, shoulders and other uses if it contains organic matter, soft spongy earth, or other matter of such nature that compaction to the specified density is unobtainable. Stone having a maximum dimension of more than 6" shall be considered unsuitable for fills. Material that is unsuitable for the intended use shall be excavated and removed from the site or otherwise disposed of, as directed.

1.2 Blasting: Blasting will not be permitted.

2.0 MATERIALS:

2.1 Subgrade:

2.1.1 Ground Surface Preparation: Scarify, reshape and thoroughly compact the surface on which base course is to be placed.

2.1.2 Protection of Structures: Take proper precaution to assure that the method of operation in reshaping the subgrade does not cause movements of or undue strain on any structure.

2.1.3 Compaction: After reshaping, the subgrade shall be wetted and rolled. Begin rolling at the edges and continue in parallel overlapping lines until entire area is covered minimum of 4 times. Rollers shall be two or more axles, multiple wheel, and pneumatic tired, self-propelled, minimum roller weight of 250 pounds per inch of roller width, or steel wheel roller, minimum rolling pressure of 200 pounds per inch of width. Reshape backfill at culverts and then compact to 95% standard density in accordance with A.A.S.H.T.O. T-99 immediately prior to placing of bituminous concrete pavement.

2.2 Aggregate Base Course: The work of this section consists of constructing a foundation course composed of 6" caliche, type 2, on prepared subgrade to lines, grades and typical cross-sections indicated.

2.2.1 Quality Assurance: Standards, American Association of State Highway and Transportation Officials (AASHTO) and Standard Specifications for Roads and Bridges - New Mexico State Highway Department - Division 304.

2.2.2 Submittals: Submit certificate from Supplier, if materials are obtained from a commercial source, certifying materials for aggregate base course meet requirements of these Specifications.

2.2.3 Product Handling: Tare weight of hauling trucks will be checked when required by Architect. Truck loadings shall not exceed compensation plate ratings by more than 1,000 pounds.

2.2.4 Aggregate: Clean, hard, durable fragments or particles of stone or gravel crushed to required size with filler of sand or other finely divided mineral matter. Composite base course material shall be free from vegetable matter and clay clumps.

Coarse aggregates, AASHTO T-96, percentage of wear of not more than 50 to 500 revolutions.

Fraction passing #40 sieves shall have a liquid limit not to exceed 25, and a plasticity index of not more than 6, as determined by AASHTO T-89 and T-90, respectively.

Material when prepared for compaction, inclusive of filler, shall meet the following screen analysis requirements by weight.

Passing a 1" sieve	100 %
Passing a 3/4" sieve	85 to 100 %
Passing a #4 sieve	40 to 70 %
Passing a #200 sieve	4 to 12 %

2.2.5 Filler: Finely divided mineral matter such as rock or slag dust, hydrated lime, hydraulic cement, or other suitable mineral matter free from organic impurities.

2.3 Bituminous Coat: The work of this section consists of applying bituminous material on a prepared base to width indicated.

2.3.1 Quality Assurance: Standards as established by American Association of State Highway and Transportation Officials (AASHTO), as amended latest editions, govern the work of this section and Standard Specifications for Roads and Bridges, New Mexico State Highway Department.

2.3.2 Job Conditions: Apply prime coat only during daylight hours when surface is dry, temperature is above 60°F., and weather is not foggy or rainy.

Do not spatter or mar surfaces of adjacent structures or trees during application.

Do not discharge bituminous material into gutter or streams.

2.3.3 Bituminous Material: Liquid asphalt grade MC 30 AASHTO M82. Temperature of application shall be between 105°F and 175°F, or emulsified asphalt, AASHTO M140. Temperature of application shall be between 100°F and 160°F.

2.4 Bituminous Concrete Pavement: The work of this section consists of constructing a surface course composed of aggregate and bituminous material, placed on a prepared base, to lines, grades and typical cross-sections.

2.4.1 Quality Assurance: Standards as established by American Association of State Highway and Transportation Officials (AASHTO), as amended, latest editions, govern the work of this section and Standard Specifications for Roads and Bridges, New Mexico State Highway Department.

2.4.2 Submittals: Furnish certified weight slips for each load of asphalt cement, and submit design mix for bituminous concrete pavement prepared by certified laboratory.

2.4.3 Product Handling: Transport mixture in pneumatic tired vehicles with tight bodies cleaned of all foreign materials. Cover each load with canvas or other suitable material. Minimum delivery temperature shall be average of mixing temperatures.

2.4.4 Job Conditions: Apply only when existing surface is dry, temperature is above 60°F, and weather is not foggy or rainy.

Until bituminous mixture is compacted, no hauling over placed surface will be permitted.

2.4.5 Aggregate: Gradation requirements as follows:

Passing a 3/4" square opening sieve	100 %
Passing a 1/2" square opening sieve	70 to 95 %
Passing a #4 mesh sieve	45 to 60 %
Passing a #10 mesh sieve	32 to 45 %
Passing a #200 mesh sieve	3 to 8 %

That portion retained on #4 sieve, percentage of wear of not more than 50 at 500 revolutions, AASHTO T-96. When using crushed gravel, minimum of 50 percent by weight of particles retained on #4 sieve shall be fractured face. That portion passing #4 sieve, maximum plasticity index of 6, AASHTO T-90.

2.4.6 Bituminous Material: Asphalt cement, viscosity grade AC-10, AASHTO M226, Table 2. The Contractor may use asphalt cement of penetration grade 85 to 100 complying with AASHTO M20. In either case, the grade may be changed one step by the Contracting Officer at no change in the unit price. Mixing temperature shall be from 275°F to 325°F.

2.5 Pavement Marking: The work of this section consists of marking at Service Drive. Refer to layout on plot plan.

2.5.1 Quality Assurance: Standards, Federal Specifications (FS).

2.5.2 Job Conditions: Do not apply paint when surface is moist, air temperature is below 50°F, or unfavorable weather conditions exist.

Protect the painted stripe by use of flagmen and warning and directional signs until paint has dried sufficiently to prevent being picked up by vehicular traffic.

2.5.3 Materials: White or yellow highway traffic paint, FS TT-P-115.

2.6 Concrete Curb & Gutter: The work of this section consists of the construction of concrete curb, gutter, or combination curb and gutter, at locations and to lines, grades, dimensions and designs indicated, including construction of bed course.

2.6.1 Related Work Specified Elsewhere: Concrete - Division 3.

2.6.2 Quality Assurance: Standards, American Association of State Highway and Transportation Officials (AASHTO) and "Standard Specifications for Roads and Bridges" - New Mexico State Highway Department.

2.6.3 Bed Course Material: Cinders, slag, sand, gravel, crushed stone, or other approved porous material graded to pass a ½" sieve.

2.6.4 Concrete: Paragraph 1.0, Section 03300 of Division 3 - air entraining, type 1.

2.6.5 Expansion Joint Filler: Preformed, bituminous,, AASHTO M33; preformed, non-extruding, non-bituminous, AASHTO M153; or preformed, non-extruding, bituminous, AASHTO M213.

3.0 EXECUTION:

3.1 Base Course: 6" minimum thickness, caliche type 2.

3.1.1 Construction Methods: Place aggregate and filler in maximum 6" layers. Mix, shape and compact before placing next layer.

3.1.2 Placing: Place crushed material uniformly at approved rate.

3.1.3 Mixing: Blademix to full depth of layer, alternately blading entire layer to center and back to edges of road. Traveling mixers of approved type may be used.

3.1.4 Watering: Use sprinkler tanks or other approved watering equipment. Apply water to subgrade; immediately spread base material. Continue watering at uniform rate to sufficiently wet layers.

3.1.5 Spreading and Compaction: After mixing, evenly spread wetted mass of first layer over subgrade to lines and typical cross-sections indicated. Spread each successive layer in same manner. Using roller, immediately compact each layer. Begin rolling at edges of layer and continue in parallel overlapping lines until entire area is covered, minimum of 4 times for each layer. Final density of compacted layers shall be uniform over entire roadbed width.

3.1.6 Compaction Equipment: Rollers shall be 2 or more axle, multiple wheel, pneumatic tired, self-propelled or pull type, or steel wheel. Pneumatic rollers shall have overall minimum width of 60", minimum roller weight of 250 lbs. per inch of roller width with weight applied uniformly over entire width. Weight requirement may be increased if directed. Use a smooth steel wheel roller, power-driven, which will give a minimum rolling pressure of 200 lbs. per inch of width for final rolling of top surface of base course - 95% -Standard Density.

3.1.7 Surface Finishes: Water surface and evenly spread loose stones prior to final rolling. Make 2 complete passes over area to embed stones. Correct soft spots developed during rolling.

Vertical thickness flush at project ends and other abrupt end approaches as indicated. Start bituminous surfacing work on individual sections of satisfactorily compacted base course. Compacted base course surface shall be smooth and free from waves and other irregularities. Unsatisfactory portions of base course shall be torn up, reworked, relaid and rerolled, including portions of base course showing raveling. Allowable tolerances, crown ½"; width, 2".

3.2 Bituminous Concrete Paving: 5" minimum thickness.

3.2.1 Mixing Plants: Designed with storage bins, protection from weather, capability of furnishing required amount of all aggregates when operating at maximum capacity. Bins divided into minimum of 2 compartments proportioned to insure adequate storage of appropriate fractions of aggregate. Each compartment shall be provided with an overflow pipe of size and location to prevent backing up of material into other compartments.

Dryer drum mixing plant shall comply to the requirements of Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects FP-74, Section 400, Article 401.09.

Dryer designed to heat and dry aggregate from 225°F to 350°F; agitating continuously during heating. Capable of preparing aggregates at rate equal to full rated capacity. Mixer, adequate capacity. Accurate thermometers to determine temperature of mix.

Provided with weighing volumetric, or other gauging equipment of sufficient capacity. Equipment constructed with devices permitting easy readjustment of working parts necessary for proper and accurate functioning. Weighing equipment, sealed as directed to insure accuracy.

3.2.2 Placing Equipment: Self-contained power machine requiring no supplemental shaping or finishing. Pavers, equipped with adjustable screeds and devices for heating screed to temperature required and placement of mixture without pulling or marring. Screeds and heating devices, integral parts of paving machine, not towed or pushed.

3.2.3 Compaction Equipment: Minimum of one 8 to 10 ton steel wheel tandem roller and one self-propelled or pull type pneumatic roller with effective rolling width of 4'. Equipped with smooth tread tires of equal size and diameter. Weight of roller shall be sufficient to provide an operating weight of 300 to 450 lbs. of weight per inch of track width. Operating weight of roller, as directed.

3.2.4 Preparation of Aggregate: If moisture content is more than 1% of dry weight of aggregate, dry before conveying to plant bins for proportioning. Screen aggregate into minimum of two fractions; convey into separate compartments for proportioning and mixing.

3.2.5 Preparation of Bituminous Mixture: Combine dry aggregates in proportionate amounts of each fraction required to meet specified grades. Where a batching plant is used, quantity of bituminous material to be added to each batch will be as directed. Measure or gauge bituminous material and introduce into mixer in proportionate amounts determined. Aggregate temperature when introduced shall not be more than 25°F above temperature of bituminous material. Continue mixing until all particles are coated.

3.2.6 Application: Immediately before placing, clean surface of loose or deleterious material by sweeping with a power or hand broom. Commence placement as directed.

Deposit and spread bituminous mixture to required thickness over full lane width. Immediately lay second half of road. Use blade or hand methods in areas as directed.

Commence longitudinal rolling at outer edges; continue rolling until surface is of uniform texture, true to grade and cross section.

Place and spread bituminous mixture in the multi-plate underpass pipes by hand or mechanical method over the prepared backfill at a temperature not less than 225°F, in the truck just prior to spreading. Compact to 90% density in accordance with AASHTO T-230. Compacted thickness shall not be less than that called for on the Drawings.

3.3 Pavement Marking:

- 3.3.1 Painting: Road Center Line - Yellow Paint
- Parking Areas Stripes - White Paint
- Handicapped Markings - Blue Paint

3.3.2 Preparation: Clean area with broom or air blast equipment. Remove mud, dirt, or other foreign surface material.

3.3.3 Application: Prior to placing paint, mark line locations by spots of paint at intervals insuring accurate location of line. Mix paint to uniform consistency. Apply with a machine capable of spraying under pressure through a nozzle directly upon the pavement. Finished stripes shall be 4" wide for road center line and 6" wide for parking area; have clear, true edges with no sharp breaks; have uniform covering free from light spots and skips; have a minimum wet film thickness of 15 mils, and not deviate from the true line more than 1" in 50'.

3.4 Concrete Curb and Gutters:

3.4.1 Excavation and Bedding: Excavate to required depth; remove all soft, yielding material, replace with suitable material. Compact base to firm, even surface. Place bed course material and compact to required thickness.

3.4.2 Forms: Wood or metal of depth indicated. Uniform, free from warpage, set to alignment and grade. Of curvatures, set arc segments without chords. Use for both inside and outside face of curbs. Join neatly, tightly and securely; stake to line and grade; tamp on both sides.

3.4.3 Placing and Finishing Concrete: Place concrete monolithically between expansion joints. Deposit to full depth in one operation; consolidate immediately, using an internal vibrator to a dense, smooth surface. Use wooden or cork hand float for finishing. Round edges on face and back as detailed. Construct curb in uniform 10' sections. For closures, sections a minimum of 4'

may be used. Separate sections by sheet templates of metal set perpendicular to face and top of curb. Templates, 1/8" thick, same width as curb, and 2" deeper than curb depth. Open template joints with a double edger after concrete has set sufficiently.

3.4.4 Expansion Joints: Form at intervals indicated using premolded filler 1/2" thick. Edge joints when concrete has set sufficiently.

3.4.5 Form Removal: Remove within 24 hours after concrete placement. Repair minor defects with mortar containing 1-part portland cement and 2 parts fine aggregate. Plastering will not be permitted on exposed surfaces.

3.4.6 Curing: Keep moist for 3 days by covering with burlap or other suitable material. An approved curing compound may be used immediately after finishing.

3.4.7 Backfilling: After concrete has set sufficiently, refill spaces in front and back of curb to required elevation with suitable select material and compact.

END OF SECTION 02500

END OF DIVISION

03010 GENERAL

1.0 GENERAL CONDITIONS: The "General Conditions," Document A201, apply to all work of this section. Each item, including all labor, equipment and incidentals shall be provided in accordance therein. Where specific items are called for by name, make, or catalog number, such reference shall be interpreted as establishing a standard quality and not construed as limiting competition; and the Contractor may at his option, use any article, device, product, material, fixture, form or type of construction which in the judgment of the Architect, submitted in writing, is equal to that specified.

1.1 Scope: This section of the Specifications is intended to cover all necessary work concerning the construction of foundations, slabs, walls, sidewalks, curbs, precast concrete, drive area, and miscellaneous concrete items. This section also covers cement, aggregate, water, admixtures, the handling, placing, finishing and all items related to concrete and its finishes.

1.2 Compliance with Standard and Industry Specifications: Any material or operation specified by reference to published specifications of a manufacturer, the American Society for Testing and Materials (ASTM), the American Concrete Institute (ACI), the Portland Cement Association (PCA), the Concrete Reinforcing Steel Institute (CRSI), or other published standards shall comply with the current or latest specifications or standards listed.

1.3 Submittals: Shop Drawings and/or samples are required in accordance with Paragraph 1.1, Section 01300 of Division 1.

END OF SECTION 03010

03100 CONCRETE FORMWORK

1.0 GENERAL: Forms shall conform to shapes, lines and dimensions of the members as detailed on the plans and shall be substantially free from defects and sufficiently tight to prevent leakage of mortar. Forms to be true and rigid thoroughly braced and sufficiently strong to safely carry, without deflection, all dead and live loads to which they may be subjected. Forms to be oiled before erection or plastic coated plywood may be used.

2.0 MATERIALS:

2.1 Forms: Forms for typical exposed surfaces, unless specifically otherwise noted, shall be a minimum of 5/8" thick, exterior grade plywood with sealed edges, conforming with PS 1-66 Plyform Class 1 and 11, B/B Exterior or H/DO Exterior.

Forms for typical concealed surfaces shall be plywood or board forms as selected by the Contractor, but shall meet the performance requirements described in this section.

All lumber for chamfers, scoring or other purposes in contact with exposed surface of concrete, unless otherwise specifically noted, shall be smooth surfaced, sound and completely straight.

2.2 Form Sealers: All form sealers used shall be nonstaining, non-grain raising, free of mineral oils and other nondrying ingredients, and leaving no bond-inhibiting residues on concrete. Approved form sealers are:

2.2.1 Antisol - by Sika Chemical Corporation.

2.2.2 Nox-Crete - by Nox-Crete Company.

3.0 EXECUTION:

3.1 Surface Conditions: Prior to all work of this section, carefully inspect the installed work of other trades and verify that all work is sufficiently complete to permit the start of work under this section and that the completed work of this section will be in complete accordance with the original design. In the event of discrepancy, immediately notify the Architect and proceed as he directs.

3.2 Design of Forms: Design all forms in strict compliance with ACI 347-68. Design all forms to resist spreading, shifting, settling, and deflecting more than 1/8" between supports after the placement of concrete. Accurately produce the required lines, grades and surfaces within the specified tolerances. In the design, permit mathematical determination of stresses in each member.

Design all shoring to carry vertical and lateral loads to the ground either independently or in combination with portions of the structure which have attained strength, transmitting loads from successive parts of the structure directly through falsework without creating stresses in the concrete, and to withstand all required wind and earthquake forces.

Design all forms and shoring to prevent leakage and washing out of cement mortar.

3.3 Construction of Forms: Construct all forms true to required lines, grades, dimensions and surfaces, and to the tolerances described in ACI 347-68.

Arrange forms to permit single pours of exposed surfaces, areas and panels without joints between adjacent forming materials in the same plane.

Carefully align inside and outside wall forms before tightening ties. On plywood forms, insure that vertical joints are plumb and that horizontal joints are level, arranging all joints in a geometrical pattern or as shown on the Drawings. Frame openings where indicated on the Drawings.

Chamfer to 3/4" with plastic chamfer strip exposed edges of all concrete work.

Provide forms for footings wherever concrete cannot be placed against solid earth excavation.

Provide cleanouts and openings on the interior face of wall forms and at column forms as required for the effective removal of loose dirt, debris and waste material, for inspection of reinforcement, and for the introduction of vibrators where necessary.

Apply form sealer to wood forms prior to placing reinforcement. Apply in strict conformance with the recommendations of the sealer manufacturer.

Adequately brace and maintain shoring to safely support all vertical, lateral and asymmetrical loads until the forms are removed. Distribute shoring loads over the area where shoring is erected and protect against undermining and settlement. Take complete responsibility for adequate strength and safety of all concrete, formwork, including false work and shoring.

3.4 Joints: Provide expansion and/or construction joints in slabs on grade in accordance with the Drawings.

3.5 Inserts, Anchors and Fasteners: Provide for installation of inserts, conduit, pipe sleeves, drains, hangers, metal ties, angle supports, anchors, bolts, stair nosings, metal reglets, nailing strips and other fastening devices required for attachments of other work. Properly locate in cooperation with other trades and secure in position before concrete is poured.

Sufficient time between erection of forms and placing of concrete shall be given various trades to permit proper installation of their work.

All sleeves, chases, inserts, hangers, etc., which are provided and placed in the forms by the various trades shall be maintained in position and protected until concrete is poured.

3.6 Accessory Items: Install all accessory items, as indicated on the Drawings, as recommended by the manufacturer of the item, and as required for complete and adequate concrete formwork.

3.7 Removal of Forms: Do not remove forms until the concrete has attained sufficient strength to resist damage from the form removal. Prevent all damage to the concrete. Do not leave wood forms, stakes or other wood items in earth or covered by backfill.

3.8 Reuse of Forms: Reuse of forms will be approved provided they are in good condition and have been cleaned, repaired and resealed, as required, to achieve concrete of the specified quality and texture.

END OF SECTION 03100

03200 CONCRETE REINFORCEMENT

1.0 GENERAL: Unless otherwise indicated, reinforcing steel shall be handled and placed in accordance with the recommendations of the Building Code Requirements ACI-318.

2.0 MATERIALS:

2.1 Reinforcing Slab Steel: Reinforcing steel bars shall be deformed in accordance with ASTM-A-305-56T and formed of billet steel high-strength conforming to ASTM-A-615-68, Grade 60 with 60,000 psi minimum yield point. Reinforcing shall be clean and free from loose rust, scale or other coatings that will reduce bond. All reinforcing steel is to be domestic steel; furnish certified Mill Test Report.

3.0 EXECUTION:

3.1 Cleaning and Bending Reinforcement: Metal reinforcement at the time concrete is placed shall be free from rust, scale or other coatings that will destroy or reduce the bond. All bars shall be bent cold. Bends for stirrups and ties shall be made around pins having diameter of at least two times the thickness of the bars 1" diameter and smaller, six times the thickness; for the large bars, eight times the thickness.

3.2 Placing Reinforcement: Metal reinforcement shall be accurately placed and adequately secured in position by concrete or metal chairs and spacers. In no case shall the clear distances between bars be less than 1", not less than 1-1/3 times the maximum size of the aggregate. Where reinforcement in beams or girders is placed in two or more layers, the clear distance between layers shall be not less than 1", and the bars in the upper layers shall be placed directly above those in the bottom layer.

3.3 Splices in Reinforcement: Necessary splices not shown on the Drawings shall be lapped sufficiently to develop the strength of the bars by bond; the bars shall be securely wired. Splices in adjacent bars shall be staggered. Adjacent sheets of wire mesh shall be lapped at least 6" and securely wired. The clear distance between bars shall also apply to the clear distance between a contact splice and adjacent contact splices of bars.

3.4 Reinforcing Coverage:

3.4.1 Footings: The reinforcement of footings and other principal structural members in which the concrete is deposited against the ground shall have not less than 3" of concrete between it and the ground contact surface. If concrete surfaces, after removal of the forms, are to be exposed to the weather or be in contact with the ground, the reinforcement shall be protected with not less than 2" of concrete for bars more than a nominal 5/8" in diameter and 1-1/2" for bars 5/8" or less in diameter.

3.4.2 Walls, Beams & Columns: The concrete protective covering for reinforcement at surfaces not exposed directly to the ground or weather shall be not less than 3/4" for slabs and walls, and not less than 1-1/2" for beams, girders and columns. In concrete floor joist, where the clear distance between joists is not more than 30", the protection for reinforcement shall be in all cases at least equal to the diameter of round bars, and 1-1/2 times the side dimension of square bars.

3.4.3 Future Tie - In: Exposed reinforcement bars intended for bonding with future extension shall be protected from corrosion by concrete or other adequate covering.

3.4.4 Fire Protection: Where additional concrete protection over reinforcing steel is required for conformance to fire regulations, the thickness given in this section is to be modified only to meet greater requirements.

END OF SECTION 03200

03250 CONCRETE ACCESSORIES

1.0 GENERAL: Accessory items, as indicated on the Drawings and as herein specified, are to be furnished as required to complete ALL concrete formwork.

2.0 MATERIALS:

2.1 Metal Accessories: All spacers, chairs, bolsters, ties and other devices necessary for properly placing, spacing, supporting and fastening reinforcement in place are to be included. All metal accessories to be galvanized and conform to CRSI Requirements.

2.2 Expansion and/or Isolation Joints: Asphalt, impregnated fiberboard conforming to ASTM-D-544-56T is to be used as indicated on the Drawings. Fillers shall extend full depth of slab.

2.3 Construction Joint: Construction joints as shown on the Drawings and/or as required shall be "Keyed Kold Joint", 24 gauge galvanized, tongue and groove key joint with 7/8" knock-outs, as manufactured by Jann Concrete Forming Method.

2.4 Chamfer Strips: 1" polyvinyl chloride chamfer strips by Gateway or Burke to be used at all exposed corners of columns and beams.

2.5 Snap Ties: Use span ties for 12" wide beams at all concrete beams and grade beams by Gateway or Burke.

2.6 Masonry Anchor Slots and Anchors: Use 26 gauge standard masonry anchor slots and 16 gauge by 3-1/2" long brick anchors by Burke.

2.7 Vapor Barrier: Shall be polyethylene treated, impregnated craft paper, 8" wide; weight 7.2 lbs. per 100 square feet, as manufactured by the American Sisalkraft Corporation under the trade name of Moistop-2.

3.0 EXECUTION: All accessory items to be installed as per instructions by manufacturer and securely anchored. All items are to be level, plumb, and a neat, rigid installation.

3.1 Vapor Barrier: Vapor barrier shall be placed under all concrete slabs. All joints are to lapped not less than 6" and sealed as per manufacture's recommendations with a hot or cold mastic sealing tape.

END OF SECTION 03250

03300 CAST-IN-PLACE CONCRETE

1.0 GENERAL: Except as otherwise specified, concrete shall have the compressive strength at 28 days of 3,000 psi with a slump of 3" to 5".

1.1 Composition: The concrete shall be composed of portland cement, fine aggregate, coarse aggregate, water and the admixtures.

1.2 Design of Mixtures: The Contractor, at his expense, shall have an approved independent testing and/or inspection laboratory prepare the mix designs for the classes of concrete specified for use in the Contract. The concrete shall be homogeneous, readily placeable and uniformly workable, and shall be designed in accordance with ACI-613 to maintain properties of strength, slump, entrained air content and rate of hardening in conformance with the following requirements.

1.3 Test: Provide one test, consisting of four standard 6"x 12" cylinders to be tested at age of seven (7) days and two (2) cylinders to be tested at age of 28 days, on each fresh concrete placed. If any one pour exceeds 50 cubic yards, provide an additional test of four (4) cylinders for each 50 cubic yards placed in any one day. Not less than one test will be taken for each class (footings, beams, slabs, walls, etc.) of concrete each day it is used. Test is to conform to ASTM-C-39 and C-31, and slump shall be in accordance with ASTM-C-143-71.

1.4 Storage: Store bagged cement on platform at least 12" off ground and protect against the elements. Handle and store fine coarse aggregate separately in a manner to prevent intrusion of foreign material. Protect all reinforcing until used. Do not use any frozen materials or hardened cement.

2.0 MATERIALS:

2.1 Portland Cement: To be of American manufacture conforming to ASTM-C-150-73A. Only one brand of cement shall be used throughout the entire job. All floor slabs and sidewalks may be type 1 or type 111. If concrete needs to be accelerated, Contractor may add ½ bag cement and 5% air to the mix; under no circumstances use calcium chloride. Air entraining to be Darex, as manufactured by Deweyland Almy Chemical Company.

2.2 Sand: Clean, hard, natural sand, or manufactured sand, or a combination of both conforming to ASTM-C-33-59.

2.3 Aggregate: To be hard, durable, uncoated, crushed stone or gravel conforming to ASTM-C-33-71A.

2.4 Water: To be clean and free from oil, acid and injurious amounts of vegetable matter, alkali's and other impurities.

2.5 Floor Seal: All exposed slabs are to receive two (2) coats of Burke Cure-Seal-Hardener of Chlorinated Rubber Epoxidized Base Surfacing. First coat is to be roll applied at a rate of 200 to 300 square feet per gallon. Final coat to be roll or spray applied just prior to completion of the building.

2.6 Exposed Aggregate Compound: Burke aggregate surface retarder standard etch in accordance with manufacturer's directions.

2.7 Air-Entraining Admixtures: ASTM C-260; use air-entraining admixtures in all concrete for exterior sidewalks, stairs, slabs, pads, curbs, gutters and hydraulic structures, unless otherwise shown. Add air-entraining admixture at the manufacturer's prescribed rate to result in concrete at the point of placement having air content within 5% to 8% maximum 3/4" aggregate. Air-entraining to be Darex, as manufactured by Deweyland Almy Chemical Company.

3.0 EXECUTION:

3.1 Mixing of Concrete: Unless otherwise authorized, the mixing of concrete shall be done in a batch mixer of approved AGC type or in ready-mix equipment conforming to ASTM Specifications C-94.

3.2 Mixing Time: The concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged. For job mixed concrete, the mixer shall be rotated at the speed recommended by manufacturer and mixing shall continue at least one minute after all materials are in the mixer.

For mixers larger than 1 cubic yard capacity, the minimum mixing time shall be increased 15 seconds for each additional ½ cubic yard of concrete or fraction thereof.

3.3 Cold Weather Batching: When the temperature is below 40°F, or is likely to fall below 40°F during the 24 hour period after placing, adequate equipment shall be provided for heating the concrete materials. No frozen materials or materials containing ice shall be used. Temperature of the separate materials, including the mixing water, when placed in the mixer shall not exceed 140°F. When placed in form, the concrete shall have a temperature between 50°F and 90°F.

3.4 Depositing: Concrete shall be deposited at slumps not greater than those specified in Paragraph 1.0, Section 03300, as nearly as practicable, in its final position, so as to avoid segregation due to rehandling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the spaces between the bars. No concrete

that has partially hardened or been contaminated by foreign material shall be deposited nor shall retempered concrete be used.

3.5 Conveying: Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of materials. Equipment for chuting, pumping and pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery end and without separation of the materials.

3.6 Curing:

3.6.1 Normal Conditions: In all structures, concrete shall be prevented from drying at least for the first seven days after placing. When the use of the admixtures promotes an early strength gain, moist curing may be discontinued after three days.

3.6.2 Cold Weather Conditions: Whenever the temperature of the surrounding air is below 40°F, all concrete shall be maintained at a temperature of not less than 50°F, for at least 72 hours, or for as much time as necessary to insure proper curing of the concrete. The housing, covering or other protection used in connection with curing shall remain in place and intact at least 24 hours after artificial heating is discontinued. No dependance shall be placed on salt or other chemicals for the prevention of freezing. The approved practices for winter concreting are those outlined in ACI-604.

3.7 Slab Finish:

3.7.1 Smooth Finish: On all exposed slabs or slabs to receive floor covering, provide smooth, hard steel troweled surface. Spreading dry cement for finishing is not permitted.

3.7.2 Non-Slip Broom Finish: All ramps, sidewalks, porches or steps to have a non-slip broom finish. Immediately after trowel finishing, slightly roughen the concrete surface by brooming in the direction perpendicular to the main traffic route; use a fiber bristle broom.

END OF SECTION 03300

END OF DIVISION

DIVISION 13

SPECIAL CONSTRUCTION

13010 GENERAL

1.0 GENERAL CONDITIONS: The "General Conditions," Document A201, apply to all work of this section. Each item, including all labor, equipment and incidentals shall be provided in accordance therein. Where specific items are called for by name, make or catalog number, such reference shall be interpreted as establishing a standard quality and not construed as limiting competition; and the Contractor may at his option, use any article, device, product, material, fixture, form or type of construction which in the judgment of the Architect, submitted in writing, is equal to that specified.

1.1 Scope: The work required under this section consists of all metal building systems, and all related items necessary to complete the work indicated on the drawings and described in the Specifications.

1.2 Submittals: Shop Drawings and/or samples are required in accordance with Paragraph 1.1, Section 01300 of Division 1.

1.3 Tentative Approvals Prior To Bidding: Prior approvals to be in accordance with Paragraph 1.0, Section 01350 of Division 1.

1.4 Samples: All bidders, upon request, shall be required to submit samples made in accordance with this Specification. These shall be delivered, at no cost to the Architect or Owner. This must be done seven (7) days prior to bid date as a condition of approval of each bidder. Samples shall be full size, and must illustrate construction, hardware, materials and finish.

END OF SECTION 13010

13100 METAL BUILDING SYSTEM

1.0 GENERAL:

1.1 Scope: These specifications cover the materials and the fabrication of metal buildings designed, fabricated, and readily erected to be weather tight.

These specifications are an outline of performance to ensure that the architect, engineer, building and/or owner understands the basis for design, manufacture, and application of all the manufacturer's metal building systems. Because of a continuing program of research and development, specifications in this manual are subject to change without notice.

1.2 Building Description: Gable Symmetrical is a continuous frame building with the ridge in the center of the building, consisting of tapered or straight columns and tapered rafters. Sidewall girts may be continuous, by-passing the columns or simple span, flush in the column line. Rafters may or may not have interior columns. A ridged (double slope) building in which the ridge is in the center of the building. All building types normally have Simple Span endwalls girts flush in the column line.

1.3 Building Nomenclature: Roof slope is expressed as inches of rise for each 12" of horizontal run.

Building "Width" is measured from outside to outside of sidewall girts. Building "Eave Height" is a nominal dimension measured from the bottom of the base plate on the column to the intersection of the inside of the roof and sidewall sheets. Building "Length" is measured from outside to outside of endwalls girts.

1.4 Structural Steel Design: The building manufacturer shall use standard, specifications, recommendations, findings and/or interpretations of professionally recognized groups such as AISC, AISI, AAMA, AWS, ASTM, MBMA, Federal Specifications, and unpublished research by MBMA as the basis for establishing design, drafting, fabrications, and quality criteria, practices, and tolerances. For convenience, one or more sources may be referenced in a particular portion of these specifications. In all instances, however, the manufacturer's design, drafting, fabrications and quality criteria, practices, and tolerances shall govern, unless specifically countermanded by the contract documents.

Structural mill sections or welded up plate sections will generally be designed in accordance with the 9th edition of AISC's "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings", ASD method.

Cold-Formed steel structural members will generally be designed in accordance with the latest edition of AISI's "Specification for the Design of Cold-Formed Steel Structural Members".

1.5 Design Loads: Design loads shall be as specified and set forth in the contract and shall be in accordance with the manufacturer's standard design practices. Design loads may include dead load, roof live loads, wind loads, seismic loads, collateral loads, auxiliary equipment loads, and/or other applied or specified loads.

Dead Load -the actual weight of the building system supported by a given member.

Roof Live Loads -loads produced by maintenance activities, rain, erection activities, and other movable or moving loads by not including wind, snow seismic, crane, or dead loads.

Roof Snow Loads -gravity load induced by the weight of the snow or ice on the roof, assumed to act on the horizontal projection of the roof.

Wind Loads -the loads on a structure induced by the forces of wind blowing from any horizontal direction.

Collateral Loads -the weight of any non-moving equipment or material, such as ceilings, electrical or mechanical equipment, sprinkler systems, plumbing, or ceilings.

Auxiliary Loads -dynamic loads induced by cranes, conveyors, or other material handling systems.

Seismic Loads -horizontal loads action in any direction a structural system due to action of any earthquake.

Floor Live Loads -loads induced on a floor system by occupants of a building and their furniture, equipment, etc.

2.0 MATERIALS

2.1 Primary Framing Steel: Steel for hot rolled shapes shall conform to the requirements of ASTM Specifications A-36, with minimum yield of 50 psi.

Steel for built-up sections shall generally conform to the physical requirements of ASTM D529, ASTM 572 or ASTM A36 as applicable, with minimum yield of 42,000, 50,000, or 55,000 psi as indicated by the design requirements.

Steel for endwall "C" sections shall generally conform to the physical requirements of ASTM A607 GR55M or equivalent and have a minimum yield of 55,000 psi.

2.2 Secondary Framing Steel: Steel used to form purlins, girts, eave struts and “C” sections shall be Republic Steel P-55 or equivalent, comparable to the requirements of ASTM A607 Grade 55. Minimum yield shall be 55,000 psi.

2.3 Roof and Wall Panel Material: Panel material as specified shall be 26-gauge Galvalume® as manufactured by Bethlehem Steel Corporation, or equal, conforming to the requirements of ASTM A792 Grade 80 or Grade 50. Minimum yield stress shall be 80,000 ksi for Grade 80 and 50,000 for Grade 50.

Panel material as specified shall be 24-gauge Galvalume®, conforming to the requirements of ASTM A792 Grade 50 or Grade 80. Minimum yield stress shall be 50,000 ksi for Grade 50.

2.4 Structural Framing

2.4.1 General: All framing members shall be shop fabricated fro field bolted assembly. The surfaces of the bolted connections shall be smooth and free from burrs or distortions.

All shop connections shall be in accordance with the manufacturer’s standard design practices as specified in Paragraph 2.1. Certification of welder qualifications will be furnished when required and specified in advance.

All framing members, where necessary, shall carry an easily identifying mark.

2.4.2 Primary Framing:

Rigid Frame: All rigid frames shall be welded built-up “I” sections or hot-rolled sections. The columns and the rafters may be either uniform depth or tapered. Flanges shall be connected to webs by means of a continuous fillet weld on one side.

Endwall Frames: All endwall roof beams and endwall columns shall be cold-formed “C” sections, mill-rolled sections, or built-up “I” sections depending on design requirements.

Plates, Stiffeners, etc.: All base plates, splice plates, cap plates, and stiffeners shall be factory welded into place on the structural members.

Bolt Holes, etc.: All base plates, splice and flanges shall be sop fabricated to include bolt connections holes. Webs shall be shop fabricated in include bracing holes.

Connections for secondary structural (purlins and girts) shall be by means of welded clips.

2.4.3 Secondary Framing:

Purlins and Girts: Purlins and girts shall be cold formed “Z” sections with stiffened flanges. Flange stiffeners shall be sized to comply with the requirements of the latest edition of AISI. Purlin and girt flanges shall be unequal in width to allow for easier nesting during erection. They shall be prepunched at the factory to provide for field bolting to the rigid frames. They shall be simple or continuous span as required by design. Connection bolts will install through the webs, not flanges.

Eave Struts: Eave Struts shall be unequal flange cold-formed “C” sections.

Base Angle: A base member will be supplied by which the base of the wall covering may be attached to the perimeter of the slab. This member shall be secured to the concrete slab with ramsets, expansion bolts, or equivalent anchors as shown on the drawings.

2.4.4 Bracing:

Diagonal Bracing: Diagonal bracing in the roof and sidewalls shall be used to remove longitudinal loads (wind, crane, etc.) from the structure. This bracing will be furnished to length and equipped with bevel washers and nuts at each end. It may consist of rods threaded each end or galvanized cable with suitable treaded end anchors. If load requirements so dictate, bracing may be of structural angle and/or pipe, bolted in place.

Flange Braces: The compression flange of all primary framing shall be braced laterally with angles connecting to the webs of purlins or girts so that the flange compressive stress is within allowable limits for any combination of loading.

Special bracing: When diagonal bracing is not permitted in the sidewall, a rigid frame type portal or fixed base columns will be used. Wind bracing in the roof and/or walls need not be furnished where it can be shown that the diaphragm strength of the roof and/or wall covering is adequate to resist the applied wind forces.

2.4.5 Roof and Wall Covering

2.4.6 Wall Panel Description: “R” Panel shall have major ribs 1 1/4" high spaced 12" on center. In the flat area between the major ribs are two smaller minor ribs. Each panel shall provide 36" net coverage in width.

2.4.7 Standing Seam Roof: Standing Seam Roof Panels shall be UL-90 rated, rolled-formed, 24- or 22-gauge Galvalume®, whether Galvalume Plus® or pre-painted. Galvalume® sheet shall have a coating weight of .5 oz./sq. ft. with a minimum yield of 50,000 ksi and conform to ASTM-792.

Pre-painted finish shall be a premium Fluorpon coating produced with either Kynar 500® or Hylar 5000® resins and have a full 20-year warranty.

Panels shall be 24" wide with 2 minor ribs in between seams. Panel seam is 3" high.

One side of the panel shall be female in configuration, which will have factory applied hot-melt mastic (see 5.3.9) inside the female seam. The female side will snap over the male side. When using WeatherRoof® II Standing Seam, this procedure will form a self-locking snap system. If choosing WeatherRoof® III Standing Seam, the male and female seams will be continuously locked together by an electrically powered mechanical seamer, forming a 360-degree Pittsburgh Seam.

The panels shall be factory notched at both ends so that field installation can commence or terminate from either end of the building. Panels cannot start at both ends of the building and work towards each other.

Maximum panel length shall be no more than 45'-0" unless otherwise discussed and approved by the sales or manufacturing manager.

Endlaps: Enlaps shall have a 16-gauge backup plate. The panel shall have five pre-punched holes in the flat and dimples in the trapezoidal legs for proper placement of fasteners.

Mastic shall be applied between the panels and secured with 1/4"-#14 x 1 1/4 self drilling fasteners through the panels, and backup plate to form a compression joint.

Endlaps and eaves shall be the only places in the roof system where through the roof fasteners can be used inside the building envelope.

2.4.8 Fasteners:

Eave - 1/4"-#14 x 1 1/4" long life self drilling with sealing washer.

Endlaps - 1/4"-#14 x 1 1/4" long life self drilling with sealing washer.

Ridge - #14 x 7/8" Lap Tek long life self-drilling with sealing washer.

Clips/to purlin - 1/4"-#14 x 1" Tek 2 long life self-drilling with Hex Washer Head and 5/8" O.D. washer.

Clips/floating to bar joists - #12-24 x 1 1/4" Tek 4.5 self-drilling with Washer Head and 5/8" O.D. washer.

Long life fasteners, where exposed, are standard when using a Galvalume Plus® roof panel.

2.4.9 Clips: All clips shall have factory applied mastic and be designed so that movement between the panel and the clip does not occur.

Low fixed clips - shall be 3 3/8" in height providing a 3/8" clearance for insulation between the panel and the purlin or joist.

High fixed clips - shall be 4 3/8" in height to accommodate a thermal spacer for added insulation at the purlins.

Low or high floating clips - shall be either 3 3/8" or 4 3/8" in height. Floating clips shall provide a minimum of 2" travel to allow for expansion and contraction.

2.4.10 Sealants and Closures: Factory applied sealant used in panel sidelaps shall be a hot melt, foamable mastic - Q41A.

Field applied sealant used at the endlaps, eave, ridge assembly, and gable flashings shall be 100% solids butyl-based elastomeric tape sealant, furnished in roll form or pre-cut to length. See manual for application.

Outside closures shall be manufactured from the same materials as the roof panels.

2.5 Miscellaneous Material Specifications

2.5.1 Structural Bolts: All bolts used in connections of secondary framing to primary framing shall be zinc plated ASTM A307 or ASTM A325 as required by design.

2.5.2 Fasteners for Roof Panels: All panels shall be attached to the secondary framing members by means of self tapping screws shall be #14 x 3/4" type "A" or "AB", zinc plated, painted or plain head assembled with a bonded or separate EPDM washer. These fasteners are applicable for use with fiberglass blanket insulation from 1" to 3" thick. Longer lengths are available. Pre-drilling is required.

2.5.3 Fasteners for Roof Panel Sidelaps:

2.5.4 Fasteners for Wall Panels: All "R" panels shall be attached to the secondary framing members by means of self-drilling fasteners of carbon steel #12 x 1" without washers as herein described for fiberglass insulation up to 3" thick and #12 x 1 1/2" for fiberglass insulation 3" to 6" thick.

2.5.5 Sealants and Closures:

Closure Strips: the corrugations of the roof and wall panels shall be filled with solid or closed cell, performed rubber, neoprene or polyethylene closures along the eave, ridge rake or base when required for weather tightness. Closures must be ordered separately.

Sealants: Roof panels shall be sealed with 3/32" x 3.8" wide tape sealant. The material shall be a Butyl base elastic compound with a minimum solid content of 99%, Schnee-Moorehead #522 or equal. The sealant shall have good adhesion to metal and be non-staining, noncorrosive, non-shrinking, non-oxidizing, non-toxic and non-volatile. The service temperature shall be from -60°F to +300°F. Optional 3.32" x 1" tape is available.

Caulk: All gutter and downspout joints, rake flashing laps, ridge flashing laps, doors, windows, and louvers shall be sealed with white, burnished slate, or gray pigmented caulk of Butyl rubber base, or clear silicone.

2.5.6 Gutter, Flashing and Downspouts: All standard exterior gutters are 26-gauge Galvalume Plus® steel or with painted finish in standard colors. Standard rake flashing is 26-gauge Galvalume Plus® steel or with painted finish in standard colors.

Downspouts: All downspouts shall be 26-gauge Galvalume® steel, rectangular in shape.

2.5.7 Flashing and Trim: Flashing at the rake (parallel to roof panels) and high eave shall not compromise the integrity of the roof system by constricting movement due to thermal expansion and contraction.

All flashing shall be manufactured from Galvalume® steel, whether pre-painted or Galvalume Plus®.

2.6 Painting: All uncoated structural steel shall be cleaned of all foreign matter and loose scale in accordance with SSPC-2 and given a one mil coat of red oxide primer. Primer shall be applied by the use of airless handguns. Primer generally meets or exceeds the performance requirements of Federal Specification TT-P-636D.

Light gauge steel members shall be shot blasted and pre-coated with one coat of red oxide primer. Some hand sprayed shop touch-ups may be employed.

Abrasions caused by handling after painting are to be expected. Primer shall be furnished to touch-up or field painting as specified in the contract documents.

Painted Steel Panels: Base metal shall be 26-gauge Galvalume® steel.

Prime Coat: The base metal shall be pre-treated and then primed with an epoxy type primer for superior adhesion and superior resistance to corrosion. See paint film properties chart on following pages.

3.0 ERECTION AND INSTALLATION

3.1 Erection and Installation: The erection of the metal building components shall be performed by a qualified erector, using proper tools and equipment. Erector shall follow good, sound, safe procedures and guidelines and in accordance with any applicable federal, state or local laws.

Erection of the roof system shall be in complete accordance with Manufacturer's Safety and Erection manual. Any deviation from this manual could result in damage to the roof system, for which Manufacturer will not be liable for repair or replacement.

The erection manual shall include procedures and trim design variations to accommodate the out-of square and out-of plumb conditions that sometimes occur during the erection and construction process.

END OF SECTION 13100

END OF DIVISION