



Invitation to Bid (ITB) FM42417

**ITD Fairfield HUD Manufactured Home Units & Site Development
Fairfield, Idaho**

IDAHO TRANSPORTATION DEPARTMENT

**District 4
216 S Date Street
Shoshone, ID 83352**

Date of Issuance: April 2024

Administrative Information

ITB Title:	ITD Fairfield HUD Manufactured Home Units & Site Development
ITB Project Description:	<p>The project includes development of a vacant parcel of land for a total of (5) manufactured housing units. (4) of the units are for ITD staff and the 5th unit is for a future Idaho state police staff home. The property is located north of highway 20 near Fairfield, Idaho at the corner of 100 north and 200 east. The site will be developed with a water distribution system for (2) wells drilled as a separate contract. The project includes construction of a new well house with well equipment and full water distribution to each of the (5) (MHU)s. The project also includes all utilities for each MHU including new electrical power service from Idaho Power with pad mounted transformers, septic/drain fields, propane gas pads for owner supplied propane tanks, access driveways and paths to each home, and complete site grading and drainage improvements.</p> <p>As part of the project the contractor will be responsible for constructing permanent foundations for the (MHU)s along with purchasing and installing the (MHU)s on the permanent foundations. Contractor will also be responsible for providing covered porches for the entrances to the (MHU)s.</p>
ITB Lead:	<p>Jacob Jackson Facilities Management Contracting Officer Idaho Transportation Department 11331 W Chinden Blvd., Bld. 8 Boise, Idaho 83714</p> <p>E-mail: jacob.jackson@itd.idaho.gov Phone: (208) 334-8831</p>
<p>Submit sealed bid:</p> <p>BIDS MUST BE RECEIVED AT THE PHYSICAL ADDRESS DESIGNATED FOR COURIER SERVICE AND TIME/DATE STAMPED BY ITD PRIOR TO THE CLOSING DATE AND TIME.</p>	<p>Address for Couriers/Physical Address 11331 W Chinden Blvd., Bld. 8 Boise, Idaho 83714</p> <p>Mailing Address PO Box 11 Boise, Idaho 83707</p>
<p>Pre-Bid Conference: Pre-Bid Conference Location:</p>	<p>11:00 a.m. (MT) on May 15, 2024</p> <p>Idaho Transportation Department</p>

	Fairfield Maintenance Shed 57 US-20 Fairfield, ID 83327
Deadline To Receive Questions:	12:00 p.m. (MT) on May 16, 2024
ITB Closing Date:	1:59:59 p.m. (MT) on May 22, 2024
ITB Opening Date:	2:00 p.m. (MT) on May 22, 2024 Idaho Transportation Dept. 11331 W Chinden Blvd., Bld. 8 Boise, Idaho 83714
Initial Term of Contract and Renewals (service completion):	The service performed under the contract will begin upon ITD's written Notice to Proceed must be completed within 180 days .

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ADVERTISEMENT FOR BIDS

In accordance with Idaho Code 67-5711, The Idaho Transportation Department will accept sealed bids for Project # **FM42417 ITD Fairfield HUD Manufactured Home Units & Site Development, Fairfield, Idaho.** Bids packets will be accepted at the Idaho Transportation Department at 11331 W Chinden Blvd., Bld. 8, Boise, Idaho 83714, **until 1:59:59 p.m. local time on May 22, 2024**, according to the Bid Package Schedule deadline. A public bid opening will be held at the Idaho Transportation Department following the closing time for receipt of bids. Bidders and other interested parties are invited to be present at bid opening.

A description of the work of this project can be summarized to includes development of a vacant parcel of land for a total of (5) manufactured housing units. (4) of the units are for ITD staff and the 5th unit is for a future Idaho state police staff home. The property is located north of highway 20 near Fairfield, Idaho at the corner of 100 north and 200 east. The site will be developed with a water distribution system for (2) wells drilled as a separate contract. The project includes construction of a new well house with well equipment and full water distribution to each of the (5) (MHU)s. The project also includes all utilities for each MHU including new electrical power service from Idaho Power with pad mounted transformers, septic/drain fields, propane gas pads for owner supplied propane tanks, access driveways and paths to each home, and complete site grading and drainage improvements.

As part of the project the contractor will be responsible for constructing permanent foundations for the (MHU)s along with purchasing and installing the (MHU)s on the permanent foundations. Contractor will also be responsible for providing covered porches for the entrances to the (MHU)s.

The Invitation to Bid package can be found at the following address: <http://itd.idaho.gov/business/> "Facility Bids" tab.

Idaho Transportation Department, 11331 W Chinden Blvd. Bld. 8, Boise, ID 83714
Associated General Contractors, 1649 W Shoreline Dr., Ste. 100, Boise, ID 83702 (208) 344-2531
<https://www.idahoagc.org/plan-room>

A pre-bid conference will be held on May 15, 2024 at 11:00 a.m. Attendees will meet at the Fairfield Maintenance Shed located at 57 US-20, Fairfield, ID 83327 prior to visiting the project site. Bidders are encouraged to attend.

A bid bond or a certified or cashier's check in the amount of 5% of the total bid, including add alternates, is required.

Idaho Public Works license is required at the time of bid opening for all work on this project.

INSTRUCTIONS TO BIDDERS

GENERAL PROVISIONS

DEFINITIONS: Capitalized terms used in these Instructions to Bidders (“Instructions”) shall have the meaning given to them in the Idaho Transportation Department’s Fixed Price Construction Contract Between Owner and Contractor.

HEADINGS: Headings used in these Instructions are for convenience only.

REJECTION OF BIDS, WAIVER OF INFORMALITIES OR CANCELLATION: Prior to the effective date of a contract, the ITD Facility Program Manager of the Idaho Transportation Department shall have the right to accept or reject all bids, to waive any minor deviations/informalities or to cancel the bid.

CONTRACT TIME: The proposed scope of work is estimated to take no more than 180 consecutive calendar days. The contract time shall be 180 consecutive days unless modified by addendum. The owner reserves the right to modify contract time during contract negotiations if proper and reasonable evidence for contract modification has been presented to the owner. Proper and reasonable evidence may be material procurement delays, or anticipated weather delays. No other reasonable evidence may be accepted for contract time extension will be accepted, unless in the best interest of the Idaho Transportation Department.

LIQUIDATED DAMAGES: Liquidated damages of \$500.00 per day will be assessed if a contracted general contractor (prime) cannot perform the proposed scope of work within the listed contract time. The liquidated damages is based upon the owners inability to use the project site for future construction / use. The amount is based upon the anticipated cost incurred due to such delay.

BID RECEIPT DATE: All bid packets are to be received at the Idaho Transportation Department (ITD) (11331 W Chinden Blvd., Bld. 8, Boise, Idaho 83714,) in Boise, Idaho on or before 1:59:59 p.m. (MT) on Wednesday, May 22, 2024. Late bids will be rejected and considered invalid. It is the responsibility of the bidder to confirm receipt of bid prior to the bid date. Delays due to mail, traffic, unable to find the address, or delivery to the wrong address will not be reasons for acceptance. Contractor will be responsible for determining the exact location of bid receipt. Bids delivered to any other address or ITD office other than the one stated is not acceptable, and the bid will be determined as a non-conforming bid. Bids cannot be emailed. Bids will only be received in physical form by hand delivery, delivery service, or mail service. Bidder to note the bids due date time is Mountain Time Zone.

BID OPENING DATE: Idaho Transportation Department will open acceptable bids on Wednesday, May 22, 2022, at 2:00 p.m. (MT). at the Idaho Transportation Department Headquarters (11331 W Chinden Blvd., Bld. 8, Boise, Idaho 83714,).

ADVERTISEMENT FOR BID: The advertisement for bid will be posted on May 7th and 14th, 2024, in the Times-News.

BID DOCUMENT LOCATION: The bid documents can be found at Idaho Transportation Departments Digital Plan Room at the following address [HTTP://ITD.idaho.gov/business/](http://ITD.idaho.gov/business/) “Facility Bids” Tab. All bid documents including project manual, project documents, and addendums will be posted to this plan room under the project name & number. Bid results will be posted to this location as well. The responsibility is on the bidder to use a complete set of bid documents to prepare its bid and neither the Owner nor the Architect and or Owner shall incur any liability for the bidder’s failure to do so. Bidders obtain no ownership interest or any use rights, except to use in preparation of their bid, by issuance of the bid documents.

ORAL INFORMATION: Questions concerning a bid must be directed in writing to the designated Design Professional (architect or engineer) no less than ten (10) calendar days before bids are due unless provided otherwise via an addendum. Oral information is not binding and any reliance by a bidder on any oral information or representation is at the bidder’s sole risk. Any information given a prospective bidder in response to a written

question will be provided to all prospective bidders by an addendum, if such information is necessary for purposes of submitting a bid or if failure to give such information would be prejudicial to uninformed bidders.

PUBLIC RECORDS: The Idaho Public Records Law, Title 74, Chapter 1, Idaho Code, allows the open inspection and copying of public records. Public records include any writing containing information relating to the conduct or administration of the public's business prepared, owned, used or retained by a State or local agency regardless of the physical form or character. Unless exempted by the Public Records Law, your bid will be a public record subject to disclosure under the Public Records Law. Any questions regarding the applicability of the Public Records Law should be addressed to your legal counsel prior to submission.

FORM OF AGREEMENT: Unless otherwise specified in the bid documents, the agreement between the successful bidder and the Owner ("State of Idaho") shall be the Idaho Transportation Department's Fixed Price Construction Contract between Owner and Contractor.

PRE-BID CONFERENCE: A pre-bid conference will be held on Wednesday, May 15, 2024, at 11:00 am (MT) at the Fairfield Maintenance Shed followed by a site visit, and questions and answers about the project. Attendance is not mandatory, but strongly encouraged for bidders to understand the site and scope of the project. Failure to account for all subjects observed and discussed at the pre-bid meeting will not be a cause for a change order. If a bidder cannot attend the pre-bid conference it is encouraged to visit the site on their own time to get firsthand knowledge of the existing field conditions, topography, and constraints. The site is open to the public. The bid documents are meant to show the project intent and are not meant to be a comprehensive representation of the existing site conditions and application of design intent.

PERFORMANCE AND PAYMENT BONDS: Performance bonds are required for all contracts with an estimated value of \$50,000 or more. Payment bonds are required for all projects where subcontractors are utilized.

When required, performance bond and payment bond, each in an amount of not less than one hundred percent (100%) of the Contract Price. The performance and payment bonds shall be AIA Document A312, 1984 or the most recent Edition, or a standard surety form certified approved to be the same as the AIA A312 form and shall be executed by a surety or sureties reasonably acceptable to the Owner and authorized to do business in the State of Idaho. Bonds must be provided within ten (10) calendar days following receipt of a Notice of Intent to Award.

BID SUBMISSION PROCESS

BID DOCUMENTS: The bid documents are available from the Design Professional or as provided in the Invitation to Bid or advertisement for bids. The responsibility is on the bidder to use a complete set of bid documents to prepare its bid and neither the Owner nor the Design Professional shall incur any liability for the bidder's failure to do so. Bidders obtain no ownership interest or any use rights, except to use in preparation of their bid, by issuance of the bid documents.

Bidders and Sub-bidders shall field verify all dimensions pertaining to the Work and shall be responsible for the determination of all quantities of materials required for the completion of the Work. The bidder shall not rely on the scale drawings of the Bidding Documents in his determination of required materials quantities. No allowance shall be made for Bidder's failure to field-verify dimensions.

If a deposit is required, the deposit will be returned to a bidder returning the complete bid documents in good condition no more than twenty (20) days after a Notice of Intent is issued and the amount of any deposit returned may be reduced if the bid documents returned are not complete or are damaged. A bidder awarded a Contract may also keep the bid documents and any deposit will be returned.

ADDENDA: In the event it becomes necessary to revise any part of the bid documents, addenda will be issued. Information given to one bidder will be available to all other bidders if such information is necessary for purposes of submitting a bid or if failure to give such information would be prejudicial to uninformed bidders. It is the bidder's responsibility to check for addenda prior to submitting a bid. A bidder is required to acknowledge receipt of all

addenda by identifying the addenda numbers in the space provided on the bid proposal form. Failure to do so may result in the bid being declared non-responsive. No addenda will be issued less than four (4) calendar days before the closing date unless the bid closing date is extended.

REVIEW: It is the bidder's responsibility to review the bid documents and compare them as needed, including with regard to any other work that is or may be under construction that might affect the bidder or its work, to examine the site and local conditions and to report, in writing, any questions, errors, inconsistencies or ambiguities to the Design Professional.

All manufacturers of roofing systems, including those specifically named or listed as "approved" in the specifications, as well as those not specifically named or listed as "approved" shall submit to the Architect a fully executed MANUFACTURER'S CERTIFICATION from the manufacturer's authorized representative certifying that the manufacturer's representative has received the bidding documents for the project, that required guarantees can and will be issued for the specific installation, and that all specifications and detail as written and as shown are appropriate or that alternate specifications and/or details enclosed with the signed statement must be used, noting all exceptions, and listing approved applicators. THIS COMPLETED FORM SHALL BE RECEIVED BY THE ARCHITECT NO LATER THAN SEVEN (7) DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS.

THE MANUFACTURER'S CERTIFICATION FORM included in the Project Manual following these Instructions to Bidders shall be used for this purpose. Additional copies of this form may be obtained from the Architect.

The Roofing Manufacturer shall include all information required to complete the form.

PRODUCTS SPECIFIED AND PROPOSED SUBSTITUTIONS: Materials, products or equipment, if specified by name or manufacturer, establish the standard of quality required and that must be met by any proposed substitution. Requests for substitutions must be made in writing to the Design Professional no less than ten (10) calendar days prior to the bid closing unless provided otherwise via an addendum. Such requests must provide detailed information to allow the Design Professional to determine if the proposed substitution is acceptable, including drawings or performance or test data and a detailed statement of how the substitution would change any other part of the Work. It is the bidder's obligation to satisfy this requirement and the Design Professional's decision shall be final. To be allowed, substitutions must be approved in an addendum to the bid documents.

All requests for approval of roofing materials not specifically named or listed as "approved" in the specifications shall be accompanied by a fully executed ROOFING MATERIALS SUBSTITUTION REQUEST FORM from the manufacturer. THIS COMPLETED FORM SHALL BE RECEIVED BY THE ARCHITECT NO LATER THAN TEN (10) DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS.

The ROOFING MATERIALS SUBSTITUTION REQUEST FORM included in the Project Manual following these Instructions to Bidders shall be used for this purpose. Additional copies of this FORM may be obtained from the Architect.

BID FORM: Bids must be submitted on the bid proposal forms, or copies of forms, furnished by the Owner or the design professional. Bids submitted must contain all original signatures in ink on the following forms:

- Bid Proposal Form
- Contractor's Affidavit Concerning Alcohol and Drug-Free Workplace
- Bidder's Acknowledgment Statement
- Bid Bond (bid security)

The person signing the Bid Proposal Form must initial any and all changes appearing on any of the bid forms. If the bidder is a corporation or other legal entity, the bid forms must be signed by an authorized designee. Oral, telephonic, telegraphic, facsimile or other electronically transmitted bid forms and/or signatures will not be considered.

BID PRICES: The bid form may require bidders to submit bid prices for one (1) or more items on various bases, including lump sum base bid, lump sum bid alternate prices, unit prices or any combination thereof. Bid amounts shall be expressed in words and numbers. The amount in words shall prevail if there is a discrepancy.

ALTERNATES: If the solicitation includes alternate bid items or unit prices, failure to bid on the alternates or unit prices may disqualify the bid. If bidding on an alternate does not change the base bid, indicate by "No Change." If bidding on all items is not required by the Contract Documents, bidders must affirmatively indicate that they are not bidding on those items.

TIME FOR SUBMISSION: Bids must be submitted on or before the time specified in the advertisement for bids. Any bid submitted late will be rejected.

SEALED ENVELOPE: Bids shall be submitted in a sealed envelope with the following clearly printed on the outside of the envelope: the Project number and Project name; the name and address of the bidder; and a statement, such as "BID ENCLOSED" to indicate that it is a bid.

MAILED BIDS: When bids are mailed or shipped, the sealed envelope containing the bid shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof. If mailed, the mailing envelope shall be addressed as follows:

**Idaho Transportation Department
Jacob Jackson/Facility Management
11331 W Chinden Blvd.,
Bid. 8, Boise, Idaho 83714**

It is the bidder's responsibility to ensure that its bid is delivered to the place designated for receipt on or before the specified closing time. The Owner assumes no responsibility for delays in the delivery of mail by the U.S. Post Office or private couriers. Bidders should be advised the intra-state mail system may increase delivery time from arrival at Central Postal to the place designated for receipt and should plan accordingly. **LATE SUBMISSIONS WILL BE REJECTED, WILL NOT BE OPENED AND WILL BE RETURNED TO THE BIDDER. NO DEVIATIONS WILL BE ALLOWED.**

BID CLOSING DECLARED: Immediately prior to the bid opening, the Owner's representative will declare the official bid closing. Any part of a bid not received prior to the bid closing declared by the designated representative will not be considered and will be returned to the bidder unopened. All bids shall be taken under advisement.

DRUG-FREE WORKPLACE: Along with its bid, the bidder shall submit an affidavit certifying compliance with Title 72, Chapter 17, Idaho Code, requiring the Contractor and its subcontractors at the time of bid to provide a drug-free workplace program and to maintain such program throughout the duration of the Contract. The form of affidavit is attached.

ILLEGAL ALIENS: Bidder shall warrant that the bidder does not knowingly hire or engage any illegal aliens or persons not authorized to work in the United States; bidder shall take steps to verify that it does not hire or engage any illegal aliens or persons not authorized to work in the United States; and that any misrepresentation in this regard or any employment of persons not authorized to work in the United States constitutes a material breach and shall be cause for the imposition of monetary penalties and/or termination of any Contract resulting from this bid.

LEGAL RESIDENCY REQUIREMENT: By submitting a bid, the bidder attests, under penalty of perjury, that he (the bidder) is a United States citizen or legal permanent resident or that it is otherwise lawfully present in the United States pursuant to federal law. Prior to being issued a contract, the bidder will be required to submit proof of lawful presence in the United States in accordance with §67-7903, Idaho Code.

BIDDER'S ACKNOWLEDGEMENT STATEMENT: The attached Bidder's Acknowledgement Statement must be completed and included or the bid may be found non-responsive.

PUBLIC WORKS CONTRACTOR'S LICENSE: This Project is not financed in whole or in part by federal funds. Bids will be accepted from those Contractors only (prime contractors, subcontractors and/or specialty contractors) who hold current licenses as public works contractors in the State of Idaho at the time of bid opening.

IDAHO PREFERENCE LAW: Section 67-2348, Idaho Code, requires the Idaho Transportation Department to apply a preference in determining which Contractor submitted the lowest responsible bid. If the Contractor who submitted the lowest dollar bid is domiciled in a state with a preference law that penalizes Idaho domiciled contractors, the Idaho Transportation Department must apply the preference law (percentage amount) of that domiciliary state to that Contractor's bid.

NAMING OF SUBCONTRACTORS: Section 67-2310, Idaho Code, requires general (prime) Contractors to include in their bid the name of the subcontractors who shall, in the event the Contractor secures the Contract, subcontract the plumbing, HVAC, and electrical work under the general (prime) Contract. Failure to name subcontractors as required by this section shall render any bid submitted by a general (prime) Contractor nonresponsive and void. Subcontractors named in accordance with the provisions of this section must possess an appropriate license or certificate of competency issued by the State of Idaho covering the Contractor work classification in which the subcontractor is named.

The Idaho Transportation Department interprets Section 67-2310, Idaho Code, to mean three (3) separate areas of work: plumbing work, HVAC, and electrical work. The Idaho Transportation Department also requires that the general (prime) Contractor name the entity that will perform the Work, including if the entity is a subcontractor, a sub-subcontractor or the general (prime) Contractor submitting the bid. Failure to complete the Bid Proposal in full shall render a bid nonresponsive and void.

With regard to possessing an appropriate license or certificate of competency, all subcontractors listed by the general (prime) Contractor must have at the time of the bid opening a current license in the appropriate category (class, type and specialty category) as issued by the Public Works Contractors State License Board. In addition, plumbing, HVAC and electrical subcontractors shall have at the time of the bid opening a valid plumbing contractor's license, HVAC contractor's license or electrical contractor's license, respectively, as issued by the Idaho Division of Building Safety.

In determining if the above listed subcontractors are required on the Project, the Idaho Transportation Department will refer to the plans and specifications. If doubt exists prior to bid closing, potential bidders should contact the Idaho Transportation Department and the Design Professional who prepared the plans and specifications will be requested to make the determination. If plumbing, HVAC or electrical work are not shown on the plans and specifications but are discovered by the bidder prior to the date of bid opening, then the bidder must request clarification from the Design Professional. Absent such clarification, Work will be considered incidental and naming of a subcontractor will not be required.

BID SECURITY

AMOUNT AND FORM OF SECURITY: To be considered, bids must be accompanied by an acceptable bid security in an amount not less than five percent (5%) of the total amount of the bid, including additive alternates. The security may be in the form of a bond or a certified or cashier's check. A standard surety bid bond form meeting all the conditions of AIA Document A310 is acceptable and, if used, must include a certified and current copy of the power of attorney if the bond is executed by the attorney-in-fact on behalf of the surety.

FORFEITURE: A successful bidder who fails to sign the Contract for the Work or furnish the required bonds within ten (10) calendar days following the receipt of notice of intent to award a Contract is subject to forfeiture in accordance with Section 54-1904E, Idaho Code.

RETENTION OF SECURITY: Bid security shall be retained for no more than forty-five (45) calendar days after the opening of bids, so long as the bidder has not been notified of the acceptance of the bid.

BID WITHDRAWAL

PRIOR TO BID CLOSING: If a bid has been submitted, it may be withdrawn in person by a bidder's authorized representative before the opening of the bids. A bidder's representative will be required to show identification and sign on a bid summary sheet before it will be released. After bid closing, no bid may be withdrawn except in strict accordance with these Instructions or applicable law.

BID MODIFICATION

PRIOR TO BID CLOSING: If a bid has been submitted, it may be modified by the submission of a written document contained in a separate sealed envelope marked "Bid Modification from [Name of Bidder] for ITD Project No: FM42417, ITD Fairfield HUD Manufactured Home Units & Site Development." **THE DOCUMENT MODIFYING THE BID MUST BE SIGNED IN INK BY AN AUTHORIZED REPRESENTATIVE OF THE SUBMITTING BIDDER. THE IDAHO TRANSPORTATION DEPARTMENT RESERVES THE RIGHT TO REQUIRE PRESENTATION OF EVIDENCE SATISFACTORY TO IT TO ESTABLISH THE AUTHORITY TO ACT ON BEHALF OF THE SUBMITTING BIDDER. NO OTHER FORM OF MODIFICATION (INCLUDING TELEPHONE, FACSIMILE OR ELECTRONIC MAIL) WILL BE ACCEPTED. AFTER BID CLOSING, NO BID MAY BE MODIFIED EXCEPT IN STRICT ACCORDANCE WITH THESE INSTRUCTIONS OR APPLICABLE LAW.**

RELIEF FROM BIDS

CONDITIONS FOR RELIEF: Relief from bids is subject to Sections 54-1904B through 54-1904E, Idaho Code. In the event a bidder discovers a mistake in its bid following the bid opening and wishes to withdraw its bid, the bidder shall establish to the satisfaction of the Owner, pursuant to Section 54-1904C, Idaho Code, that a clerical or mathematical mistake was made; the bidder gave the public entity (Owner) written notice within five (5) calendar days after the opening of the bid of the mistake, specifying in the notice in detail how the mistake occurred; and the mistake was material.

DETERMINATION: If the Owner determines that the bidder has satisfied the requirements of Section 54-1904C, Idaho Code, to entitle it to relief from a bid because of a mistake, it shall prepare a report in writing to document the facts establishing the existence of each required element. The report shall be available for inspection as a public record and shall be filed with the public entity soliciting bids. A bidder claiming a mistake and satisfying all the required conditions of Section 54-1904C, Idaho Code, shall be entitled to relief from the bid and have any bid security returned by the Owner. Bidders not satisfying the conditions of Section 54-1904C, Idaho Code shall be subject to forfeiture in accordance with Section 54-1904B, Idaho Code. A bidder who claims a mistake or who forfeits its bid security shall be prohibited from participating in any re-bidding of that project on which the mistake was claimed or security forfeited and the Owner may award the Contract to the next lowest responsive and responsible bidder.

BIDDER'S REPRESENTATIONS

REPRESENTATIONS UPON SUBMITTING A BID: By submitting its bid, a bidder represents and warrants the following:

1. The person signing the bid is authorized to bind the bidder;
2. It has all required licenses, permits or other authorizations necessary to submit its bid;
3. It has taken steps necessary to ascertain the nature and location of the Work and has investigated and satisfied itself as to the general and local conditions which can affect the Work or its cost, including but not limited to: (i) conditions bearing upon transportation, disposal, handling and storage of materials; (ii) the availability of labor, water, natural gas, electric power and roads; (iii) uncertainties of weather, river stages or similar physical conditions at the site; (iv) the conformation and conditions of the ground; and (v) the character of equipment and facilities needed preliminary to and during the Work;

4. It has satisfied itself as to character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including exploratory work done by the Owner as well as from the drawings and specifications provided as part of the bid package, and that any failure of the bidder to take such actions will not relieve the bidder from responsibility for estimating properly the difficulty and cost of successfully performing the Work;
5. It has received, read and reviewed the Contract, has submitted any questions in writing regarding the same and has received an answer to such questions;
6. Its bid is based upon the requirements of the Contract without exception;
7. It is in compliance with Title 72, Chapter 17, Idaho Code, regarding a drug-free workplace and has included the required affidavit regarding the same;
8. Its bid is in compliance with employment of persons authorized to work in the United States;
9. It will retain bid security and hold and honor all base bid prices for forty-five (45) calendar days from the date of bid opening, and cannot be withdrawn after the bid opening;
10. Its bid prices shown for each item on the bid proposal form include all labor, material, equipment, overhead and compensation to complete all of the Work for that item; and
11. It has included in its bid amount Idaho sales and/or use taxes on all materials and equipment and all other taxes imposed by law.

BID AWARD

AWARD METHOD: Public works construction contracts for the State of Idaho are awarded to the "lowest responsible and responsive bidder." The low bidder, for purposes of award, shall be the responsible and responsive bidder offering the low aggregate amount for the base bid item, plus any additive or deductive bid alternates selected by the Owner, and within funds available as determined by the Owner. Award is also subject to the requirements of Idaho Code, including without limitation: Title 67, Chapter 57; Title 67, Chapter 23; Title 54, Chapter 19; and Title 44, Chapter 10. It is the bidder's responsibility to conform to **ALL** applicable federal, state and local statutes or other applicable legal requirements. The information provided herein is intended to assist bidders in meeting applicable requirements but is not exhaustive and the Owner will not be responsible for any failure by any bidder to meet applicable requirements.

DETERMINATION OF RESPONSIBILITY: The Owner reserves the right to make reasonable inquiry about or from the submitting bidder or from third parties to determine the responsibility of a submitting bidder. Such inquiry may include, but not be limited to, inquiry regarding experience and expertise related to the Project, manpower and other resources, financial stability, credit ratings, references, potential subcontractors and past performance. The unreasonable failure of a submitting bidder to promptly supply any requested information may result in a finding of non-responsibility.

NOTICE OF EFFECTIVENESS: No Contract is effective until the authorized Owner's official has signed the Contract and the Notice to Proceed has been issued. The bidder shall not provide any goods or render services until the Contract has been signed by the Administrator of the Idaho Transportation Department and the Contract has become effective. Furthermore, the Owner is in no way responsible for reimbursing the bidder for goods provided or services rendered prior to the signature of the authorized Division of Public Work's official and the arrival of the Notice to Proceed.

INCURRING COSTS: The Owner is not liable for any cost incurred by bidders prior to the Notice to Proceed.

PRIOR ACCEPTANCE OF DEFECTIVE BIDS OR PROPOSALS: The Owner generally will not completely review or analyze bids that appear to fail to comply with the requirements of the bid documents, nor will the Owner generally investigate the references or qualifications of those who submit such bids. Therefore, any acknowledgment that the selection is complete shall not operate as a representation by the Owner that an unsuccessful bid was responsive, complete, sufficient or lawful in any respect.

POST-AWARD SUBMITTALS: Upon receipt of a Notice of Intent to Award, the apparent low responsive and responsible bidder shall provide documentation required in such Notice. Such Notice of Intent to Award shall

generally require the bidder to return to the Owner, within ten (10) days of receipt, a signed Contract, all required bonds, proof of insurance and documentation required by the Idaho State Tax Commission (report and affidavit).

OWNER'S RIGHT TO REJECT: Prior to execution of the Contract, the Owner or Design Professional shall provide written notice of any reasonable objection to any person or entity proposed by the bidder. Upon receipt of such notice, the bidder may withdraw its bid, without forfeiture, or propose a substitute and identify any change in any bid amount caused by such substitution. The Owner may accept or reject the substitution or the adjusted price. If the Owner rejects the substitution or the adjusted price, it will return the bidder's bid guarantee.

BUILDING PERMIT

BUILDING PERMIT FEE: Building permit fees are to be included in the project bid cost. The contractor is responsible for all permits. The only Permitting Jurisdiction for this project is: The State of Idaho Division of Building Safety (DBS). The owner has submitted the project to DBS and the plan check fee has been paid. It is the contractor's responsibility to include the cost in the bid to pick up and pay for all building permit fees, including, building, electrical, and site disturbance.

PROPERTY INSURANCE

"ALL RISK" BUILDERS INSURANCE: The contractor shall include in their bid costs a Builders "All-risk" Insurance policy. The policy is to be held by the General Contractor with the owner and the property listed as additionally insured. The policy shall be in place for the duration of the project.

MATERIAL COST INCREASE & MATERIAL SCHEDULE DELAYS

MATERIAL DELAYS: Delays as a result of unavoidable production or delivery times shall be cause for contract time extensions. Contract price will not be adjusted because of delayed material delivery. To extend the contract time, contractor shall submit documentation from the manufacture as proof of material lead times. Such documentation shall include but not be limited to, order receipt & confirmation with date, confirmation of shipment date, receipt of material receival.

MATERIAL PRICES: Material price increases because of unavoidable vendor supply cost increases shall be cause for contract amount increases. Contractor must prove to the owner that a material price had increased out of their control between the time of bid and the time of ordering the material. Evidence of such increases must be submitted to the owner and shall include but not limited to the following: original vendor bid with a date of on or before date of bid, order information with material cost at the time of ordering.

END OF INSTRUCTIONS

MANUFACTURER'S CERTIFICATION

The undersigned roofing manufacturer hereby certifies that he has reviewed the drawings, specifications and conditions of the site and the terms of the roofing guarantee included in the specification and find them acceptable, and if the manufacturer's materials are installed on the project in accordance with the drawings and specifications and upon inspection by the manufacturer's technical representative, manufacturer will issue the guarantee in the form specified.

DATED THIS _____ DAY OF _____ 20____

(MANUFACTURER)

(AUTHORIZED REPRESENTATIVE)

EXCEPTIONS: Subject to the following exceptions and or modification, (attach any details or added verbiage that is required) the undersigned roofing manufacturer will certify to the conditions stated above:

DATED THIS _____ Day of _____ 20____

(MANUFACTURER)

(AUTHORIZED REPRESENTATIVE)

APPROVED APPLICATORS: The following roofing contractors are approved applicators of the roofing system specified (or approved) and as manufactured by the above named manufacturer:

NAME	ADDRESS
_____	_____
_____	_____
_____	_____
_____	_____

ROOFING MATERIALS SUBSTITUTION REQUEST FORM

(Submit not less than ten (10) days prior to bid date)

DPW Project No. _____

TO: (Architect)

We hereby submit for your consideration the following products in lieu of those specified for the above referenced project:

<u>MATERIAL</u>	<u>SPECIFIED</u>	<u>PROPOSED SUBSTITUTION</u>
Vapor Barrier	_____	_____
Roof Insulation	_____	_____
Roofing Membrane	_____	_____
Surfacing	_____	_____

Description of Proposed Components: _____

Differences between specified and proposed components including type of insulation, method of anchoring, details, surfacing, application methods, etc. _____

Attach complete technical data, including manufacturer's published specifications, standard details, laboratory tests and certifications, material samples and similar information to fully describe the products and methods of application.

If changes are required in specifications, drawings or details, provide revised specifications and details for consideration.

Answer the following:

BID PROPOSAL

TO: STATE OF IDAHO
IDAHO TRANSPORTATION DEPARTMENT

To Whom it May Concern:

The Bidder, in compliance with your Invitation for Bids for the construction of FM42417, ITD Fairfield HUD Manufactured Home Units & Site Development, having examined the bidding and Contract Documents and the site of the proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies and to provide the service and insurance in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents.

Bidder hereby agrees to commence Work under this Contract on a date to be specified in the written "Notice to Proceed" of the Owner and to substantially complete the Project within one hundred eighty (180) consecutive calendar days thereafter, as stipulated in the specifications. Bidder further agrees to pay as liquidated damages, the sum of \$500.00 for each consecutive calendar day after the established substantial completion date or adjusted date as established by change order.

Bidder acknowledges receipt of Addenda No. _____.
(List all Addenda)

BASE PROPOSAL: Bidder agrees to perform all of the base proposal Work described in the specifications and shown on the plans for the sum of:

_____ Dollars (\$ _____)
(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

Alternate No. 1: Concrete Apron & Sidewalk for MHU #1 & 2

Add the sum of _____ Dollars (\$ _____)

Alternate No. 2: Construct & Install MHU #3

Add the sum of _____ Dollars (\$ _____)

Alternate No. 3: Concrete Apron & Sidewalk for MHU #3

Add the sum of _____ Dollars (\$ _____)

Alternate No. 4: Construct & Install MHU #4

Add the sum of _____ Dollars (\$ _____)

Alternate No. 5: Concrete Apron & Sidewalk for MHU #4

Add the sum of _____ Dollars (\$ _____)

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informality in the bidding.

The bidder agrees that this bid shall be good for a period of forty-five (45) calendar days after the scheduled opening time for receiving bids.

Upon receipt of written Notice of Intent to Award of this bid, Bidder will execute the formal Contract within ten (10) calendar days and deliver a Surety Bond or Bonds as required by paragraph "Performance and Payment Bonds" first page (ITB-1) of the Instructions to Bidders.

The bid security in the amount of five percent (5%) of the bid amount is to become the property of the Owner, in the event the Contract and bond are not executed within the time set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

The names and addresses of the entities who will perform the Work identified below, subject to approval of Owner and Architect, if Undersigned is awarded the Contract, are as follows:

If Plumbing, Electrical, or HVAC is to be self-performed, provide bidder's information below. If work is to be performed by Subcontractor(s), their information shall be provided below.

Plumbing (PWCL Category 15400)

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho Plumbing Contractors License No. _____

Heating, Ventilating & Air Conditioning (PWCL Category 15700-HVAC)

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho HVAC Contractors License No. _____

Electrical (PWCL Category 16000)

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho Electrical Contractors License No. _____

FAILURE TO NAME A PROPERLY LICENSED SUBCONTRACTOR IN EACH OF THE ABOVE CATEGORIES WILL RENDER THE BID UNRESPONSIVE AND VOID.

Should the listing of subcontractors change due to selection of alternates or other similar circumstances, attach explanation.

Bidder warrants that bid has been prepared and that any contract resulting from acceptance of this bid is subject to the Fixed Price Construction Contract.

The undersigned notifies that it is of this date duly licensed as an Idaho Public Works Contractor and further that it possesses Idaho Public Works Contractor's License No. _____, and is domiciled in the State of _____.

Dated this _____ day of _____, _____.
(date) (month) (year)

Respectfully submitted by:

(Contractor's Name- Typed)

SEAL
(Seal - if bid is by a corporation)

(Street or PO Address)

(City, State and zip code)

(Authorized Signature)

(Title)

(Telephone Number)

(FAX Number)

(Email Address)

Have you remembered to include bid security (bid bond or a certified or cashier's check), Contractor's Affidavit Concerning Alcohol and Drug-Free Workplace and a signed copy of the Bidder's Acknowledgment Statement with your bid?

Execute and Submit with Bid

**CONTRACTOR'S AFFIDAVIT
CONCERNING ALCOHOL AND DRUG-FREE WORKPLACE**

STATE OF _____

COUNTY OF _____

Pursuant to the Section 72-1717, Idaho Code, I, the undersigned, being duly sworn, depose and certify that _____ is in compliance with the provisions of Section 72-1717, Idaho Code; that _____ provides a drug-free workplace program that complies with the provisions of Title 72, Chapter 17, Idaho Code, and will maintain such program throughout the life of a state construction contract; and that _____ shall subcontract Work only to subcontractors meeting the requirements of Section 72-1717(1)(a), Idaho Code.

Name of Contractor

Address

City and State

By: _____
(Signature)

Subscribed and sworn to before me this _____ day of _____, _____.

NOTARY PUBLIC
Residing at: _____
Commission expires: _____

FAILURE TO EXECUTE THIS AFFIDAVIT AND SUBMIT IT ALONG WITH YOUR BID SHALL MAKE YOUR BID NON-RESPONSIVE.

Execute and Submit with Bid

BIDDER'S ACKNOWLEDGMENT STATEMENT

NOTE: THE INFORMATION CONTAINED HEREIN IS A SUMMARY OF VITAL CONTRACT PROVISIONS AND DOES NOT CHANGE THE CONTRACT DOCUMENTS THAT WILL GOVERN THIS PROJECT.

Project number: FM42417, ITD Fairfield HUD Manufactured Home Units & Site Development

By submitting a bid for this Project, the undersigned bidder agrees that, if awarded the Contract for construction, Contractor will conform to all conditions and requirements of the Contract, including but not limited to:

- Contractor agrees to comply with conditions pertaining to Sections 44-1001 and 44-1002, Idaho Code, requiring the employment of ninety-five percent (95%) bona fide Idaho residents and providing for a preference in the employment of bona fide Idaho residents and regarding the employment of persons not authorized to work in the United States.
- Contractor will substantially complete the Work within the time stated in the Contract Documents, or as modified by Change Order(s).
- If the Contractor fails to substantially complete the Project within the time stated in the Contract Documents, or as modified by Change Order, the Contractor agrees that the Owner may deduct from the Contract amount liquidated damages in the amount per calendar day, indicated in the Contract Documents, times the number of calendar days until the Project is Substantially Complete, as defined in the Contract Documents and as determined by the Design Professional.
- The Contractor agrees that the amount allowed for overhead and profit on any Change Order is limited to the amounts indicated in subparagraph 16.3.11 of the Fixed Price Construction Contract between Owner and Contractor.
 1. For total changes the amount allowed for overhead, profit, bonds and insurance for the Contractor and all subcontractors of any tier combined shall not exceed fifteen percent (15%) of direct costs; or
 2. The Contractor will determine the amount of overhead and profit to be apportioned between the Contractor and its subcontractor of allowable amounts of overhead, profit, bonds and insurance.
- The Contractor agrees that Change Orders are governed by the Fixed Price Construction Contract between Owner and Contractor General Conditions of the Contract for Construction including as follows:
 1. By the execution of a Change Order, the Contractor agrees and acknowledges that it has had sufficient time and opportunity to examine the change in Work which is the subject of the Change Order and that it has undertaken all reasonable efforts to discover and disclose any concealed or unknown conditions which may, to any extent, affect the Contractor's ability to perform in accordance with the Change Order. Aside from those matters specifically set forth in the Change Order, the Owner shall not be obligated to make any adjustments to either the Contract Sum or Contract Time by reason of any conditions affecting the change in Work addressed by the Change Order that could have reasonably been discovered or disclosed by the Contractor's examination.
 2. Any Change Order fully executed by the Owner, Contractor and Design Professional, including but not limited to, a Change Order arising by reason of the parties' mutual agreement or by mediation, shall constitute a final and full settlement of all matters relating to or affected by the change in the Work, including but not limited to, all direct and consequential costs associated with such change and any and all adjustments to the Contract Price and Contract Time. In the event a Change Order increases the Contract Price, the Contractor shall include the Work covered by such Change Order in the Application for Payment as if such Work was originally part of the Project and Contract Documents.

- **Certification Concerning Boycott of Israel.** Pursuant to Idaho Code section 67-2346, if payments under the Contract exceed one hundred thousand dollars (\$100,000) and Contractor employs ten or more persons, Contractor certifies that it is not currently engaged in, and will not for the duration of the Contract engage in, a boycott of goods or services from Israel or territories under its control. The terms in this section defined in Idaho Code section 67-2346 shall have the meaning defined therein.

FAILURE TO EXECUTE THIS ACKNOWLEDGMENT MAY MAKE YOUR BID NON-RESPONSIVE.

I, _____, being duly authorized to bind the (type or print name of individual)

bidder, _____, does hereby certify that I have fully read (type or print name of company) and understand this document and that it highlights certain parts of the Contract that will be entered between the parties and that will govern this Project.

Authorized Signature: _____

Title: _____

Date: _____

END OF BIDDER'S ACKNOWLEDGMENT STATEMENT

**IDAHO TRANSPORTATION DEPARTMENT
FIXED PRICE CONSTRUCTION CONTRACT
BETWEEN OWNER AND CONTRACTOR**

**ITD PROJECT NO. FM42417
ITD Fairfield HUD Manufactured Home Units & Site Development
Fairfield, Idaho**

**Idaho Transportation Department
District 4
216 S Date Street
Shoshone, ID 83352**

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FIXED PRICE CONSTRUCTION CONTRACT BETWEEN OWNER AND CONTRACTOR

THIS FIXED PRICE CONSTRUCTION CONTRACT BETWEEN OWNER AND CONTRACTOR (the "Contract") is by and between the State of Idaho, Idaho Transportation Department ("ITD" or the "Owner") and (insert name of contractor) (the "Contractor") and is for the construction of the project (the "Project") identified as ITD Project No. FM42417, as more fully described in Exhibit A, and incorporated herein by reference. This Contract shall be effective on day of month, 2024, when executed by both parties.

In consideration of the mutual promises, covenants, and agreements stated herein, and for other good and valuable consideration, the sufficiency of which is hereby acknowledged, the Owner and the Contractor agree:

ARTICLE 1 CONTRACT DOCUMENTS

1.1 The Contract Documents consist of this Contract, the drawings and specifications for the Project (the "Drawings and Specifications") identified in Exhibit C and any Addenda thereto issued prior to execution of this Contract, written amendments signed by both the Owner and the Contractor, Change Orders signed by both the Owner and the Contractor, Construction Change Directives and any written orders by the Design Professional for minor changes in the Work (the "Contract Documents"). Documents not included or expressly contemplated in this Article 1 do not, and shall not, form any part of the Contract Documents.

1.2 The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations.

ARTICLE 2 REPRESENTATIONS AND WARRANTIES OF THE CONTRACTOR

In order to induce the Owner to execute this Contract and recognizing that the Owner is relying thereon, the Contractor, by executing this Contract, makes the following express representations to the Owner:

2.1 The Contractor is fully qualified to act as the Contractor for the Project and has, and shall maintain, any and all licenses, permits or other authorizations necessary to act as the Contractor for, and to construct, the Project.

2.2 The Contractor has become familiar with the Project site and the local conditions under which the Project is to be constructed and operated particularly in correlation to the requirements of the Contract.

2.3 The Contractor has received, reviewed, compared, studied and carefully examined all of the documents which make up the Contract Documents, including the Drawings and Specifications, and any Addenda, and has found them in all respects to be complete, accurate, adequate, consistent, coordinated and sufficient for construction. Such review, comparison, study and examination shall be a warranty that the contractor believes that the documents are complete and the Project is buildable as described except as reported.

2.4 The Contractor warrants that the Contract Time is a reasonable period for performing the Work.

2.5 The Contractor warrants to the Owner and Design Professional that all labor furnished on this Project shall be competent to perform the tasks undertaken; materials and equipment furnished under the Contract will be new and of high quality unless otherwise required or permitted by the Contract Documents; that the Work will be complete, of high quality and free from defects not inherent in the quality required or permitted; and that the Work will strictly conform to the requirements of the Contract Documents. Any Work not strictly conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse by Owner or its representatives, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty shall survive the completion of the Contract and final payment to the Contractor.

- a. **Certification Concerning Boycott of Israel.** Pursuant to Idaho Code section 67-2346, if payments under the Contract exceed one hundred thousand dollars (\$100,000) and Contractor employs ten or more persons, Contractor certifies that it is not currently engaged in, and will not for the duration of the Contract engage in, a boycott of goods or services from Israel or territories under its control. The terms in this section defined in Idaho Code section 67-2346 shall have the meaning defined therein

ARTICLE 3 INTENT AND INTERPRETATION

With respect to the intent and interpretation of this Contract, the Owner and the Contractor agree as follows:

3.1 This Contract constitutes the entire and exclusive agreement between the parties with reference to the Project, and supersedes any and all prior discussions, communications, representations, understandings, negotiations or agreements. This Contract also supersedes any bid documents.

3.2 The intent of the Contract is to include all items necessary for the proper execution and completion of the Project and anything that may be required, implied or inferred by the documents which make up this Contract, or any one or more of them, shall be provided by the Contractor for the Fixed Price Contract Amount. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all.

3.3 Nothing contained in this Contract shall create, nor be interpreted to create, privity or any other relationship whatsoever between the Owner and any person or entity except the Contractor; provided, however, that the Design Professional is entitled to performance and enforcement of obligations under the Contract intended or necessary to facilitate its duties. Any reference to the Owner, the Contractor or the Design Professional shall be deemed to include authorized representatives.

3.4 When a word, term or phrase is used in this Contract, it shall be interpreted or construed first as defined herein; second, if not defined, according to its generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage.

3.5 The words "include," "includes," or "including," as used in this Contract, shall be deemed to be followed by the phrase "without limitation."

3.6 The specification herein of any act, failure, refusal, omission, event, occurrence or condition as constituting a material breach of this Contract shall not imply that any other, non-specified act, failure, refusal, omission, event, occurrence or condition shall be deemed not to constitute a material breach of this Contract.

3.7 The Contractor shall have a continuing duty to read, examine, review, compare and contrast each of the documents which make up this Contract, shop drawings and other submittals, and shall give timely written notice to the Owner and the Design Professional of any conflict, ambiguity, error or omission which the Contractor may find with respect to these documents before proceeding with the affected Work.

3.8 The express or implied approval by the Owner or the Design Professional of any shop drawings or other submittals shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract. The Owner has requested that the Design Professional prepare documents for the Project, including the Drawings and Specifications for the Project, which are accurate, adequate, consistent, coordinated and sufficient for construction. **HOWEVER, THE OWNER MAKES NO REPRESENTATION OR WARRANTY OF ANY NATURE WHATSOEVER TO THE CONTRACTOR CONCERNING SUCH DOCUMENTS.** The Contractor again hereby acknowledges and represents that it has received, reviewed and carefully examined such documents; has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction; and that the Contractor has not, does not and will not rely upon any representations or warranties by the Owner concerning such documents, as no such representations or warranties have been or are hereby made.

3.9 In the event of any conflict among any of the documents which make up this Contract, the Design Professional shall interpret the documents, and the interpretation shall be binding on both the Owner and Contractor; provided, however, that this does not change the Owner's right to make decisions regarding Claims in accordance with Article 13 and Article 14. If no interpretation is provided by the Design Professional, the most stringent requirement in the Contract Documents will apply.

**ARTICLE 4
OWNERSHIP OF DOCUMENTS**

4.1 Unless otherwise agreed by the Design Professional and its consultants, the party that prepared the drawings, specifications and other documents is the author of such with all copyright, common law, statutory and other reserved rights. The Contractor may retain one (1) record set of the Drawings and Specifications and other documents but shall not own or claim any copyright in them.

The Drawings and Specifications and other documents, and any copies, are to be used solely for this Project, and not on any other project, or additions to this Project outside this Contract, without written consent of the Owner, the Design Professional and the Design Professional's consultants; provided, however, that copies may be made of applicable portions as necessary for completion of the Work. Such copies shall include any copyright notice on the Drawings and Specifications and other documents.

Submission to or use by a regulatory body related to this Project is an acceptable use.

**ARTICLE 5
CONTRACTOR'S PERFORMANCE**

The Contractor shall perform all of the Work required, implied or reasonably inferable from this Contract, including the following:

5.1 Construction of the Project.

5.2 The furnishing of any required surety bonds and insurance.

5.3 The provision or furnishing, and prompt payment therefore, of labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, power, fuel, heat, light, cooling or other utilities required for construction and all necessary permits, including any required elevator permits, required for the construction of the Project. Construction projects for the State of Idaho require a building permit issued by the Division of Building Safety.

5.4 The creation and submission of a detailed and comprehensive set of marked up blue or black-lined record drawings. Said record drawings shall be submitted to and approved by the Design Professional as a condition precedent to final payment to the Contractor.

ARTICLE 6 TIME FOR CONTRACTOR'S PERFORMANCE

6.1 The Contractor shall commence the performance of this Contract in accordance with the "Notice to Proceed" (Exhibit F) issued by the Owner and shall diligently continue its performance to and until final completion of the Project. The Contractor shall accomplish Substantial Completion of the Project on or before the time indicated in Exhibit A. The period of time, including any adjustments made under this Contract, for the Contractor to reach Substantial Completion is the "Contract Time."

6.2 The Contractor may be assessed by and be responsible to the Owner for the amount indicated in Exhibit A per day for each and every calendar day of unexcused delay in achieving Substantial Completion beyond the date set forth for Substantial Completion. Any sums owed hereunder by the Contractor shall be payable not as a penalty but as liquidated damages, representing an estimate of delay damages likely to be sustained by the Owner estimated at the time of this Contract. When the Owner reasonably believes that Substantial Completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Substantial Completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages. The Owner's right to liquidated damages is not, and shall not be deemed to be, an exclusive remedy for delay and the Owner shall retain all remedies at law or in equity for delay or other breach.

6.3 The term "Substantial Completion," as used herein, shall mean that point at which, as certified in writing by the Design Professional, or if there is no Design Professional, as certified by the Owner, the entire Project is at a level of completion in strict compliance with the Contract Documents, such that the Owner or its designee can enjoy beneficial use or occupancy and can use or operate it in all respects for its intended purpose. If, in the reasonable determination of the Owner, receipt of operation and maintenance manuals or completion of training is necessary for such beneficial use or occupancy, then there shall be no Substantial Completion until such manuals are provided or such training is completed. Partial use or occupancy of the Project shall not result in the Project being deemed substantially complete, or accepted as substantially complete, and such partial use or occupancy shall not be evidence of Substantial Completion. The Project shall not be deemed accepted until it is finally complete.

.1 The following are prerequisites for Substantial Completion of any roofing:

.1 All roofing materials complete, in place, and watertight.

- .2 All flashings and counter-flashings complete, in place and watertight, with all anchors, connections, and sealants, etc. installed.
- .3 All roofing accessories required by the Contract Documents complete, in place, and operable together with all anchors, fastening devices, etc.
- .4 All excess materials, debris, equipment, tools, etc. removed from site and roof surface cleaned of all debris.
- .5 All roof drains and piping cleaned and fully functional.
- .6 All mechanical and electrical equipment connected and fully operable.

6.4 Any request by the Contractor for an extension of the Contract Time must be made in accordance with, and is subject to, Article 13 and Article 14 related to Claims.

6.5 The Owner shall have no liability of any kind to the Contractor if a schedule or other document submitted by the Contractor shows an intention to complete the Work prior to the scheduled completion date and for any reason other than Owner caused delay, the Contractor is not able to achieve such early completion.

ARTICLE 7

FIXED PRICE AND CONTRACT PAYMENTS

7.1 The Owner shall pay, and the Contractor shall accept, as full and complete payment for the Contractor's timely performance of its obligations hereunder, the Fixed Price Contract Amount indicated in Exhibit A. The Fixed Price Contract Amount shall not be modified except as provided in this Contract.

7.2 Prior to approval of the contract, the Contractor shall prepare and present to the Owner and the Design Professional the Contractor's Schedule of Values apportioning the Fixed Price Contract Amount among the different elements of the Project for purposes of periodic and final payment. The Contractor's Schedule of Values shall be presented in the Owner's web-based construction management software. The Contractor shall not imbalance its Schedule of Values nor artificially inflate any element thereof. The violation of this provision by the Contractor shall constitute a material breach of this Contract. The Contractor's Schedule of Values will be utilized for the Contractor's requests for payment but shall only be so utilized after it has been approved in writing by the Design Professional.

7.3 The Owner shall pay the Fixed Price Contract Amount to the Contractor in accordance with the procedures set forth in this Article. The Contractor shall submit a Contractor's Request for Payment, on or before the day of each month indicated in Exhibit A or otherwise agreed to, after commencement of performance, but no more frequently than once monthly. Said payment request shall be made in the Owner's web-based construction management software, and shall include whatever supporting information as may be required by the Design Professional, the Owner or both. Therein, the Contractor may request payment for one hundred percent (100%) of the Work satisfactorily completed to the date of the Contractor's Request for Payment, less five percent (5%) retainage, based on the Fixed Price Contract Amount allocated on the Schedule of Values. The Contractor's Request for Payment may include only: properly provided labor, materials or equipment properly incorporated into the Project, and time and materials or equipment necessary for the Project or that will be incorporated into the Project and are properly stored at the Project site (or elsewhere if off-site storage is approved in writing by the Owner). The Contractor's Request for Payment must exclude the total amount of previous payments received from the Owner. Any payment on account of stored materials or equipment will be subject to the Contractor providing written proof that the Owner has title to such materials or equipment and that they are fully insured against loss or damage. Each such Contractor's Request for Payment shall be signed

by the Contractor and its submission shall constitute the Contractor's affirmative representation that the quantity of Work has reached the level for which payment is requested; that the Work has been properly installed or performed in strict compliance with the Contract; that all Work for which the Owner has previously paid is free and clear of any lien, claim or other encumbrance of any person whatsoever; and that the Contractor knows of no reason why payment should not be made as requested. As a condition precedent to payment, the Contractor shall, if required by the Owner, furnish to the Owner properly executed waivers or releases, in a form acceptable to the Owner, from all subcontractors, materialmen, suppliers or others having any claims or alleged claims, wherein said subcontractors, materialmen, suppliers or others shall acknowledge receipt of all sums due pursuant to all prior Contractor's Requests for Payment, and waive and relinquish any rights or other claims relating to the Project or Project site. The submission by the Contractor of the Contractor's Request for Payment also constitutes the Contractor's affirmative representation that, upon payment of the Contractor's Request for Payment submitted, title to all Work included in such payment shall be vested in the Owner.

Thereafter, the Design Professional shall review the Contractor's Request for Payment and may also review the Work at the Project site or elsewhere to determine whether the quantity and quality of the Work are as represented in the Contractor's Request for Payment and as required by this Contract. The Design Professional shall approve in writing the amount which, in the opinion of the Design Professional, is properly owing to the Contractor and such approval is required before the Owner shall have any payment obligation. The Design Professional may withhold such approval, in whole or in part, as necessary to protect the Owner if it reasonably believes that the quantity or quality of the Work is not as represented in the Contractor's Request for Payment or is not in strict conformance to the Contract Documents.

7.4 The Owner shall make payment to the Contractor no more than twenty-one (21) days following receipt by the Owner of the Design Professional's written approval of each Contractor's Request for Payment. The amount of each such payment shall be the amount approved for payment by the Design Professional less such amounts, if any, otherwise owing by the Contractor to the Owner or which the Owner shall have the right to withhold as authorized by this Contract. The Design Professional's approval of the Contractor's Request for Payment shall not preclude the Owner from the exercise of any of its rights it may have in this Contract, at law or in equity, as set forth in Paragraph 7.8 hereinafter.

7.5 Off-site storage will not be approved at locations more than thirty (30) miles from the Project site or outside the State of Idaho and any payment for any off-site storage is subject to the following:

.1 The Contractor must provide at least thirty (30) days' advance written notice of its request to store off-site. Such notice must include a description of the type, quantities, locations and values of materials involved for the next billing cycle. All invoices must indicate the type, quantities and value of materials or equipment for which payment is requested;

.2 All materials stored off-site must be segregated and clearly marked with the DPW Project number and as being the "Property of the State of Idaho;"

.3 The Design Professional and/or the Owner's Field Representative must have unrestricted access to the stored materials during all business hours and may physically inventory all invoiced materials and equipment and may physically inspect the storage conditions;

.4 The Contractor must provide written Consent of Surety to off-site storage of materials and equipment and to payment for such materials and equipment prior to incorporation in the Work. Consent must be from the Surety. Consent of local broker or agent is not acceptable;

.5 The Contractor must maintain and must provide to the Design Professional, upon request, a current log of stored materials and equipment, which reflects when materials and equipment are used or added; and

.6 The Contractor must obtain and maintain all risk property insurance at replacement cost, with the State of Idaho listed as loss payee on all materials and equipment stored off-site and in transit.

7.6 When payment is received from the Owner, the Contractor shall immediately pay all subcontractors, materialmen, laborer and suppliers the amounts they are due for the Work covered by such payment. The Contractor shall not withhold from a subcontractor or supplier more than the percentage withheld from a payment certificate for the subcontractor's or supplier's portion of the Work. In the event the Owner becomes informed that the Contractor has not paid a subcontractor, materialmen, laborer or supplier as provided herein, the Owner shall have the right, but not the duty, to issue future checks and payment to the Contractor of amounts otherwise due hereunder naming the Contractor and any such subcontractor, materialmen, laborer or supplier as joint payees. Such joint check procedure, if employed by the Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the Owner to repeat the procedure in the future.

7.7 Payment to the Contractor, utilization of the Project for any purpose by the Owner, or any other act or omission by the Owner shall not be interpreted or construed as an acceptance of any Work of the Contractor not strictly in compliance with this Contract.

7.8 The Owner shall have and be entitled to the right to refuse to make any payment, including by reducing payment under any Contractor's Request for Payment, and, if necessary, may demand the return of a portion or all of an amount previously paid to the Contractor for reasons that include the following:

.1 The quality of the Contractor's work, in whole or part, is not in strict accordance with the requirements of this Contract or identified defective work, including punch list work, is not remedied as required by the Contract Documents;

.2 The quantity of the Contractor's work, in whole or in part, is not as represented in the Contractor's Request for Payment or otherwise;

.3 The Contractor's rate of progress is such that, in the Owner's opinion, Substantial Completion or final completion, or both, may be inexcusably delayed or that the Owner will incur additional costs or expense related to repeated Substantial Completion or final completion inspections through no fault of the Owner;

.4 The Owner reasonably believes that the Contractor has failed to use Contract funds, previously paid the Contractor by the Owner, to pay Contractor's project-related obligations, including subcontractors, laborers and material and equipment suppliers;

.5 There are claims made or it seems reasonably likely that claims will be made, against the Owner;

.6 The Contractor has caused a loss or damage to the Owner, the Design Professional or another contractor;

.7 The Owner reasonably believes that the Project cannot be completed for the unpaid balance of the Fixed Price Contract Amount or the Owner reasonably believes that the Project cannot be completed within the Contract Time and that the unpaid balance of the Fixed Price Contract Amount would be inadequate to cover the cost of actual or liquidated damages for the anticipated delay;

.8 The Contractor fails or refuses to perform any of its obligations to the Owner; or

.9 The Contractor fails to pay taxes as required by Title 63, Chapter 15, Idaho Code.

In the event that the Owner makes written demand upon the Contractor for amounts previously paid by the Owner as contemplated in Paragraph 7.8, the Contractor shall promptly comply with such demand.

7.9 If the Owner, without cause, fails to pay the Contractor any amounts due and payable thirty (30) days after those amounts are due pursuant to Paragraph 7.4, the Contractor shall have the right to cease the Work until receipt of proper payment. Contractor must first provide written notice to the Owner of the Contractor's intent to cease the Work ten (10) days prior to stopping the Work under this Paragraph. If any amounts remain unpaid after fifty-one (51) days after the Design Professional approves the Contractor's Request for Payment under Paragraph 7.4, interest at the rate of four percent (4%) per annum shall accrue on those unpaid amounts.

7.10 When Contractor considers Substantial Completion has been achieved, the Contractor shall notify the Owner and the Design Professional in writing and shall furnish to the Design Professional a listing of those matters yet to be finished. The Design Professional will thereupon conduct an inspection to confirm that the Work is, in fact, substantially complete. Upon its confirmation that the Contractor's work is substantially complete, the Design Professional will so notify the Owner and Contractor in writing and will therein set forth the date of Substantial Completion. The Owner and the Contractor must accept the date of Substantial Completion in writing. Guarantees and warranties required by this Contract shall commence on the date of Substantial Completion. At the Contractor's Request for Payment following Substantial Completion, the Owner shall pay the Contractor an amount sufficient to increase total payments to the Contractor to ninety-five percent (95%) of the Fixed Price Contract Amount, less any liquidated damages, less the reasonable costs as determined by the Design Professional for completing all incomplete work, correcting and bringing into conformance all defective and nonconforming work, and handling any outstanding or potential claims. If the Design Professional determines that the Contractor has made or is making satisfactory progress on any uncompleted portions of the Work, the Owner may, at its discretion, release a portion of the retainage to the Contractor prior to the actual final completion of the conditions set forth in Paragraph 7.13. It is the intent of the parties that the Project will be accepted only in total (at Substantial Completion and final completion) and not in phases unless provided for in Exhibit A. Any acceptance other than in total shall require written agreement of Owner and Design Professional.

7.11 When Contractor considers the Project is at final completion, it shall notify the Owner and the Design Professional thereof in writing. Thereupon, the Design Professional will perform a final inspection of the Project. If the Design Professional confirms that the Project is complete in full accordance with the Contract Documents and that the Contractor has performed all of its obligations to the Owner, the Design Professional will furnish a final approval for payment to the Owner certifying to the Owner that the Project is complete and the Contractor is entitled to the remainder of the unpaid Fixed Price Contract Amount, less any amount withheld pursuant to this Contract.

7.12 If the Contractor fails to achieve final completion within a reasonable number of days as established by the Design Professional from the date of Substantial Completion, the Contractor may be assessed and be responsible to the Owner for fifty percent (50%) of the daily amount of liquidated damages as established pursuant to Paragraph 6.2 and Exhibit A, per day for each and every calendar day of unexcused delay in achieving final completion beyond the date established for final completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable not as a penalty but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that final completion will be inexcusably delayed, the Owner may withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving final completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages. The Owner's right to liquidated damages is not, and shall not be deemed to be, an exclusive remedy for delay and the Owner shall retain all remedies at law or in equity for delay or other breach.

7.13 As a condition precedent to final payment, the Contractor must furnish the Owner, in the form and manner required by Owner, and with a copy to the Design Professional of the following:

- .1 An affidavit that all of the Contractor's obligations to subcontractors, laborers, equipment or material suppliers or other third parties in connection with the Project have been paid or otherwise satisfied;
- .2 A release by the Contractor of all Claims it has or might have against the Owner or the Owner's property (DPW's form, Exhibit H);
- .3 Contractor's Affidavit of Debts and Claims (AIA Document G706);
- .4 Consent of Surety to final payment (AIA Document G707);
- .5 Confirmation of all required training, product warranties, operating manuals, instruction manuals and other record documents, drawings and things customarily required of the Contractor; and
- .6 A Public Works Contract Tax Release issued by the Idaho Tax Commission (See "Request for Tax Release" form, Exhibit G, to be submitted by Contractor to the Idaho Tax Commission).

7.14 The Owner shall, subject to its rights set forth in this Contract, make final payment of all sums due the Contractor within thirty (30) days of the Design Professional's execution of a final approval for payment and receipt of documentation required by Paragraph 7.13, whichever is received later.

ARTICLE 8 INFORMATION AND MATERIAL SUPPLIED BY THE OWNER

8.1 The ITD Facility Program Manager or his designee shall be the sole representative of the State of Idaho. The Design Professional shall have authority to bind Owner only as specifically set forth in this Contract.

8.2 The Owner will assign a Project Manager and a Field Representative to represent the Owner, identified in Exhibit B. The Owner's Field Representative's duties, responsibilities and limitations of authority are in accordance with ITD's policies and procedures.

8.3 The Owner shall furnish to the Contractor, prior to the execution of this Contract, any and all written and tangible material in its possession concerning conditions below ground at the site of the Project. Such written and tangible material is furnished to the Contractor only in order to make complete disclosure of such material as being in the possession of the Owner and for no other purpose. By furnishing such material, the Owner does not represent, warrant or guarantee its accuracy, either in whole in part, implicitly or explicitly.

8.4 The Owner will secure and pay for all required easements, the plan check fee required by the Division of Building Safety, conditional use permits and any other permits and fees specifically indicated in the Contract Documents to be secured and paid for by the Owner.

8.5 The Owner will provide the Contractor one (1) copy of this complete Contract and the number of sets of Drawings and Project Manuals (including Specifications) as indicated in Exhibit A. The Contractor may purchase additional copies, at its expense, from the Design Professional.

ARTICLE 9

STOP WORK ORDER

9.1 In the event the Contractor fails or refuses to perform the Work as required or fails or refuses to correct nonconforming Work, the Owner may instruct the Contractor to stop Work in whole or in part. Upon receipt of such instruction, the Contractor shall immediately stop as instructed by the Owner and shall not proceed further until the cause for the Owner's instructions has been corrected, no longer exists or the Owner instructs that the Work may resume. In the event the Owner issues such instructions to stop, and in the further event that the Contractor fails and refuses within seven (7) days of receipt of same to provide adequate assurance to the Owner that the cause of such instructions will be eliminated or corrected, then the Owner shall have the right, but not the obligation, to carry out the Work with its own forces or with the forces of another contractor, and the Contractor shall be fully responsible and liable for the costs of performing such Work by the Owner. Without limiting what else might constitute nonconforming Work, the existence of a gross safety violation or other situation or condition that creates, or could imminently create, a threat of serious harm to persons or property, shall constitute nonconforming Work and any order to stop the Work issued for such reason shall not be considered an interference with the Contractor's performance of the Work or its means and methods. The rights set forth herein are in addition to, and without prejudice to, any other rights or remedies the Owner may have against the Contractor.

9.2 Any order to stop the Work issued pursuant to Paragraph 9.1 shall not be used to justify any Claim by the Contractor for additional time or money.

ARTICLE 10

DUTIES, OBLIGATIONS AND RESPONSIBILITIES OF THE CONTRACTOR

In addition to any and all other duties, obligations and responsibilities of the Contractor set forth in this Contract, the Contractor shall have and perform the following duties, obligations and responsibilities to the Owner:

10.1 The Contractor's continuing duties set forth in Paragraph 3.7 are by reference hereby incorporated in this Paragraph 10.1. The Contractor shall not perform Work without adequate plans and specifications or, as appropriate, approved shop drawings or other submittals. If the Contractor performs Work knowing or believing it involves an error, inconsistency or omission in the Contract without first providing written notice to the Design Professional and Owner, the Contractor shall be responsible for such Work and shall pay the cost of correcting same.

10.2 The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing Work. Errors, inconsistencies or omissions discovered shall be reported to the Design Professional, the Owner and the Owner's Field Representative immediately. Such examination, review and comparison shall be a warranty that the Contract Documents are complete and the Project is buildable as described except as reported. Reported errors, inconsistencies or omissions will constitute a request for an interpretation by the Design Professional and may constitute a claim pursuant to Article 13 hereof where appropriate.

10.3 The Contractor shall ensure that all Work shall strictly conform to the requirements of this Contract.

10.4 The Work shall be strictly supervised, the Contractor bearing full responsibility for any and all acts or omissions of those engaged in the Work on behalf of the Contractor.

10.5 All labor furnished on this Project shall be competent to perform the tasks undertaken; materials and equipment furnished under the Contract will be new and of high quality unless otherwise required or permitted by the Contract Documents; the Work will be complete, of high quality and free from defects not inherent in the quality required or permitted; and the Work will strictly conform to the requirements of the Contract Documents. Any Work not strictly conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective.

10.6 Except as provided in Paragraph 8.4, the Contractor shall secure or provide and pay for all licenses, permits required by the Idaho Division of Building Safety, governmental approvals and inspections, connections for outside services for the use of municipal or private property for storage of materials, parking, utility services, temporary obstructions, enclosures or opening and patching of streets, and for all other facilities and services necessary for proper execution and completion of the Project.

10.7 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities bearing on performance of the Work.

10.8 The Contractor shall employ and maintain at the Project site only competent supervisory personnel. Key supervisory personnel assigned by the Contractor to this Project are as listed in Exhibit B.

10.9 The Contractor shall employ a competent superintendent and necessary assistants, as needed, to oversee execution of the Work. The superintendent shall be in attendance at the Project site during the progress of the Work. The superintendent and any project manager, if the Contractor utilizes a project manager, shall be reviewed and must be approved by the Design Professional and Owner, and neither shall be changed except with the consent of the Design Professional and Owner, unless the superintendent and/or project manager cease to be employed by the Contractor. Under this circumstance, any new superintendent or new project manager must be satisfactory to the Design Professional and Owner. Such approval shall not be unreasonably withheld. The superintendent and any project manager shall represent the Contractor and all communications given to the superintendent or project manager are deemed given to the Contractor.

10.10 So long as the individuals named above remain actively employed or retained by the Contractor, they shall perform the functions indicated next to their names unless the Owner agrees to the contrary in writing. In the event one or more individuals not listed in Paragraph 10.9 subsequently assumes one or more of those functions listed in Paragraph 10.9, the Contractor shall be bound by the provisions of this paragraph as though such individuals had been listed in Paragraph 10.9.

10.11 The Contractor shall provide to the Owner and the Design Professional a milestone schedule for completing the Work within the Contract Time. Such schedule shall be in a form specified in Division 1 of the Specifications and be acceptable to the Owner and to the Design Professional. The schedule must be submitted to and accepted by the Design Professional prior to the first request for payment unless required earlier by Division 1 of the Specifications. The Contractor's milestone schedule must be updated as required by the Design Professional and/or the Owner to reflect conditions encountered and shall apply to the total Project. The Contractor's revisions to the schedule shall not constitute a waiver of the requirement to complete the Project in the time allowed by the Contract, unless additional time for performance has been allowed pursuant to a Change Order. Any changes in milestone begin or end dates must be furnished to the Owner and the Design Professional. Strict compliance with the requirements of this Paragraph shall be a condition precedent to the payment to the Contractor and failure by the Contractor to strictly comply with said requirements shall constitute a material breach of this Contract.

10.12 Unless otherwise provided in the Construction Documents, on all projects where the Fixed Price Contract Amount is over \$1,000,000, the Contractor shall schedule and perform the Work in accordance with a Critical Path Method ("CPM") to indicate the rate of progress and practical order of the Project. The purpose of this scheduling requirement is to assure adequate planning, coordination and execution of the

Work. The schedule shall indicate the dates for starting and completing major work activities, project events, major equipment, material and equipment submittals and delivery of major items. Project activities having critical time restraints on action, required by the Owner, shall be shown as scheduled milestones. The Contractor's schedule shall demonstrate the order, interdependence and sequence of activities. Critical paths shall be highlighted or distinguished. The schedule shall include all the dates specified in the Contract for Substantial Completion and final completion of the Work. The time limit set forth in the Contract for Substantial Completion and final completion must govern; the schedule must be adjusted to meet these dates. Schedule float shall belong to the Project. The Contractor shall submit to the Owner and Design Professional a CPM schedule within three (3) weeks after award of the Contract and maintain such schedule on a current basis in accordance with the Contract Documents.

10.13 Once a month, or at intervals as required by the Design Professional, the Contractor shall advise the Owner and the Design Professional of the status of the Work (in duplicate) on the current milestone schedule. If any project milestone dates are not met on schedule, the Contractor shall immediately advise the Owner and Design Professional in writing of the proposed action to bring the Work on schedule. The Contractor shall also submit a detailed short term schedule, as required by Division 1 of the Specifications, each month. This short term schedule shall include a description of current and anticipated problem areas, delaying factors and their impact, and explanation of corrective action taken or proposed. If the Work is behind schedule, the Contractor shall indicate what measures it will take to put the Work back on schedule.

10.14 If the Work is not progressing through no fault of the Owner or the Design Professional, as shown on the milestone schedule, as determined by the Design Professional, and the Owner and the Design Professional do not believe the Contractor's proposed action to bring the Work on schedule is adequate, then the Contractor shall be deemed in default under this Contract and the progress of the Work shall be deemed unsatisfactory. In such event, the Owner, at its discretion, may require the Contractor to work such additional time over regular hours, including Saturdays, Sundays and holidays, without additional cost to the Owner to bring the Work on schedule.

10.15 The Contractor shall keep an updated copy of the Drawings and Project Manual (including Specifications) and Addenda at the site. Additionally, the Contractor shall keep a current submittal schedule and a copy of approved shop drawings and other submittals. All of these items shall be available to the Owner and the Design Professional at all regular business hours. Upon final completion of the Work, all of these items must be updated by the Contractor and provided to the Design Professional and shall become the property of the Owner.

10.16 The Contractor shall carefully review and inspect for compliance with the Contract Documents, the shop drawings and other submittals (including product data and samples) required by the Contract Documents and shall submit to the Design Professional only submittals approved in accordance with this section. Such review and submittal shall be done promptly and in a sequence that will not delay its Work under this Contract or the activities of the Owner or of separate contractors. Shop drawings and other submittals from the Contractor do not constitute a part of the Contract. The Contractor shall not do any work requiring shop drawings or other submittals unless the Design Professional has verified compliance in writing. All Work requiring verified shop drawings or other submittals shall be done in strict compliance with such approved documents. However, verification of compliance by the Design Professional shall not be evidence that Work installed pursuant thereto conforms with the requirements of this Contract. The Design Professional shall have no duty to review submittals that are not Contractor approved, partial submittals or incomplete submittals. The Contractor shall maintain a submittal log which shall include, at a minimum, the date of each submittal, the date of any re-submittal, the date of any approval or rejection and the reason for any rejection.

10.17 The Contractor shall maintain the Project site in a reasonably clean condition during performance of the Work. Upon final completion, the Contractor shall thoroughly clean the Project site of all debris, trash and excess materials or equipment.

10.18 At all times relevant to this Contract, the Owner and the Design Professional shall have a right to enter the Project site and the Contractor shall allow the Owner and/or the Design Professional to review or inspect the work without formality or other procedure.

10.19 The presence or duties of the Design Professional's or the Owner's personnel or representatives at the construction site, does not make any of them responsible for those duties that belong to the Contractor or other entities and does not relieve the Contractor or any other entities of their obligations, duties and responsibilities, including any obligation or requirement to have or to implement any health or safety plans or precautions. Except as provided in Paragraph 10.9, Design Professional's and Owner's personnel have no authority to exercise any control over any Contractor or other entities or their employees in connection with their work or any health or safety precautions and have no duty for inspecting, noting, observing, correcting or reporting on health or safety deficiencies of the Contractor or other entities or any other persons at the site except their own personnel. The presence of Design Professional's or Owner's personnel at a construction site is for the purpose of providing to Owner a greater degree of confidence that the completed Work will conform to the Contract Documents and that the integrity of the design concept as reflected in the Contract Documents has been implemented and preserved by the Contractor. For this Contract only, construction sites include places of manufacture for materials incorporated into the construction Work and Contractor includes manufacturers of materials incorporated into the construction Work.

ARTICLE 11 INDEMNITY

11.1 The Contractor shall defend, indemnify and hold harmless the Owner, Design Professional, and their employees, officers and agents harmless from any and all claims, liabilities, damages, losses, costs and expenses of every type whatsoever, including attorney fees and expenses, arising out of or resulting from the Contractor's work, acts or omissions under or related to the Contract Documents, to the extent caused by the Contractor, or anyone for whose acts the Contractor may be liable, regardless of whether such liability, claim, damage, loss, cost or expense is caused in part by the Owner.

11.2 The limits of any insurance of the Contractor shall not be, and shall not be deemed to be, a limitation of the Contractor's defense and indemnity obligations contained in this Article.

11.3 In claims against any person or entity indemnified under this Article by an employee of the Contractor, a subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under this Article shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 12 THE DESIGN PROFESSIONAL

The Design Professional for this Project is identified in Exhibit B, incorporated herein by reference, along with any authorized representatives and any limitations of responsibility. For the purpose of this Contract, the "Design Professional" means the properly licensed architect, properly registered professional engineer or other professional licensed in the State of Idaho who prepared the Drawings and Specifications for this Project. If the employment of the Design Professional is terminated, the Owner may retain a replacement professional and the role of the replacement professional shall be the same as the role of the Design Professional. Unless otherwise directed by the Owner in writing, the Design Professional will perform those duties and discharge those responsibilities allocated to the Design Professional in this Contract. The duties, obligations and responsibilities of the Design Professional shall be for contract administration and include the following:

12.1 Unless otherwise directed by the Owner in writing, the Design Professional shall not act as the Owner's agent.

12.2 Unless otherwise directed by the Owner in writing, the Owner and the Contractor shall communicate with each other through the Design Professional.

12.3 When requested by the Owner or Contractor in writing, the Design Professional shall within seven (7) days render written interpretations necessary for the proper execution or progress of the Work or shall provide a written explanation as to why more time is needed and provide a date by which it will be provided.

12.4 The Design Professional shall draft proposed change authorization(s).

12.5 The Design Professional shall review and verify compliance or respond otherwise as necessary concerning shop drawings or other submittals received from the Contractor.

12.6 The Design Professional shall be authorized to refuse to accept Work that is defective or otherwise fails to comply with the requirements of this Contract. If the Design Professional deems it appropriate, the Design Professional may, with the Owner's consent, require extra inspections or testing of the Work for compliance with the requirements of this Contract.

12.7 The Design Professional shall review the Contractor's Request for Payment and shall verify in writing those amounts which, in the opinion of the Design Professional, are properly owing to the Contractor as provided in this Contract.

12.8 The Design Professional shall, upon written request from the Contractor, perform Substantial Completion and final completion inspections contemplated by Article 6.

12.9 The Design Professional may require the Contractor to make changes which do not involve a change in the Fixed Price Contract Amount or in the Contract Time consistent with the intent of this Contract. Such changes shall be given to the Contractor in writing under signature of the Design Professional, with a copy to the Owner, and may be in the form of a supplemental instruction.

12.10 The Design Professional shall review and evaluate Claims and take other actions related to Claims in accordance with Articles 13 and 14.

12.11 The duties, obligations and responsibilities of the Contractor under this Contract shall in no manner whatsoever be changed, altered, discharged, released or satisfied by any duty, obligation or responsibility of the Design Professional. The Contractor is not a third-party beneficiary of any Contract by and between the Owner and the Design Professional. It is expressly acknowledged and agreed that the duties of the Contractor to the Owner are independent of, and are not diminished by, any duties of the Design Professional to the Owner.

ARTICLE 13 CLAIMS

13.1 For purposes of this Contract, a "Claim" means a demand by the Contractor to the Owner, or by the Owner to the Contractor, for a change in the Fixed Price Contract Amount, an extension of the Contract Time, an adjustment to or interpretation of the Contract terms, or other relief with respect to the terms of the Contract, which demand the Contractor or Owner asserts is required or allowed under the Contract Documents and which the Contractor and the Owner have previously discussed and failed to agree upon.

13.2 For the Claim to be considered, it must meet the following requirements:

- .1 The Claim must be in writing;
- .2 The Claim by the Contractor must be signed by an authorized representative of the Contractor, and the Claim by the Owner must be signed by an authorized representative of the Owner;
- .3 The Claim by the Contractor must be provided to the Owner and to the Design Professional and the Claim by the Owner must be provided to the Contractor and to the Design Professional;
- .4 The Claim must be made no later than ten (10) days after the event or first appearance of the circumstance giving rise to the Claim;
- .5 The Claim must describe in detail all known facts and circumstances that the Contractor or Owner asserts support the Claim;
- .6 The Claim must refer to the provision(s) of the Contract Documents that the Contractor or Owner asserts support the Claim;
- .7 The Contractor or Owner must provide all documentation or other information to substantiate the Claim; and
- .8 The Contractor or Owner must continue its performance under this Contract pending the resolution of any Claim; provided, however, that the Contractor shall not perform any additional or changed work not otherwise authorized in accordance with the Contract Documents.

13.3 The failure by the Contractor to meet any of the requirements of Paragraph 13.2 shall constitute a complete waiver by the Contractor of any rights arising from or related to the Claim. Similarly, the failure by the Owner to meet any of the requirements of Paragraph 13.2 shall constitute a complete waiver by the Owner of any rights arising from or related to the Claim.

13.4 If the Claim is made based on concealed or unknown site conditions, the following shall apply in addition to all other provisions applicable to the Claim:

- .1 The condition must have been previously concealed and unknown or of a type not ordinarily encountered in the general geographic location of the Project and must not have been reasonably susceptible to discovery; and
- .2 The Contractor shall notify the Design Professional and the Owner of the condition and shall not disturb the condition until the Design Professional and Owner have observed it or have waived in writing the right to observe it.

13.5 If the Claim by the Contractor is for an increase in the Fixed Price Contract Amount, the following shall apply in addition to all other provisions applicable to the Claim:

- .1 Any increase in the Fixed Price Contract Amount shall be strictly limited to the direct costs incurred by the Contractor and shall not include any other costs, indirect or other, including any costs for or related to lost productivity, profit, home office overhead and any other overhead, legal fees, claim preparation, any matter previously resolved by a change order, equipment costs, costs related to the services of a project manager unless the project manager was required full time by the Owner or the Contract Documents, any costs associated with the failure to complete the Work early or in advance of the date required by the Contract Documents, it being specifically agreed to by the parties that there is no intention to have the Eichleay or other similar formula applicable to this Contract nor shall this Contract be deemed to be subject to any such formula; and

.2 The Owner shall have no liability for, and the Fixed Price Contract Amount shall not be increased related to, any claims of third parties, including subcontractors, unless and until the liability of the Contractor for such has been established in a court of competent jurisdiction and any such liability of the Owner shall be limited in the same manner as described in subparagraph 13.5.1.

13.6 If the Claim by the Owner is for a change in the Fixed Price Contract Amount, all other applicable provisions to the Claim apply.

13.7 If the Claim by the Contractor is for an extension of the Contract Time, the following shall apply in addition to all other provisions applicable to the Claim:

.1 The Contractor has been delayed in its performance by an act or omission of the Owner and through no fault of the Contractor;

.2 The Contractor has been delayed in its performance by unusually severe weather that could not reasonably have been anticipated or by another event not within its reasonable control;

.3 At the time it occurs or during its occurrence, the delay will preclude completion of the Project in the time required by the Contract Documents; and

.4 Any extension of the Contract Time shall be the Contractor's sole and exclusive remedy for any delay except a delay caused by the active interference of the Owner with the Contractor's performance which active interference continues after written notice to the Owner. The Owner's exercise of any of its rights or remedies under this Contract, including ordering changes in the Work, directing suspension, rescheduling or correction of the Work, do not constitute active interference.

13.8 If a Claim is made based on an error, inconsistency or omission in the Contract that was reasonably susceptible to discovery by the Contractor and was not reported in accordance with Paragraph 2.3, that Claim shall be denied.

ARTICLE 14 RESOLUTION OF CLAIMS

14.1 All Claims made in accordance with Article 13 shall be reviewed and evaluated by the Design Professional. If the Claim is not made in strict accordance with Article 13, it shall be rejected as waived. Any failure by the Design Professional to reject the Claim for failure to meet the requirements of Article 13 is not binding on the Owner and the Owner may reject the Claim for such failure.

14.2 No later than seven (7) days from receipt of the Claim by the Design Professional, it shall:

.1 Make a written request to the Contractor or Owner for more data to support the Claim;

.2 Attempt to facilitate resolution of the Claim through informal negotiations; or

.3 If the Claim is by the Contractor, make a written recommendation to the Owner, with a copy to the Contractor, that the Owner reject or approve all or part of the Claim and state the reasons for the Design Professional's recommendation. If the Claim is by the Owner, make a written recommendation to the Contractor, with a copy to the Owner, that the Contractor reject or approve all or part of the Claim and state the reasons for the Design Professional's recommendation.

14.3 If the Design Professional requests more data from the Contractor or the Owner under subparagraph 14.2.1, the Contractor or Owner shall respond no later than seven (7) days from receipt of such request, and provide additional data, provide a date certain by which additional data will be provided, or state that it will not provide additional data. Upon receipt of data, if any, in accordance with this section, the Design Professional will complete the evaluation of the Claim. Failure to respond at all or failure to provide data by the date specified in the response to the request shall result in the Claim being evaluated based on the information in the Design Professional's possession.

14.4 In evaluating the Claim, the Design Professional may consult with the Contractor, the Owner or other persons with knowledge or expertise that may assist the Design Professional in its evaluation.

14.5 No later than fourteen (14) days after receipt by the Owner of the Design Professional's recommendation regarding the Contractor's Claim, the Owner shall, in writing, notify the Contractor and the Design Professional of its decision regarding the Claim. No later than fourteen (14) days after receipt by the Contractor of the Design Professional's recommendation regarding the Owner's Claim, the Contractor shall, in writing, notify the Owner and the Design Professional of its decision regarding the Claim.

14.6 The Owner's decision regarding the Contractor's Claim is binding on the Owner and the Contractor but is subject to mediation in accordance with this Contract, and the Contractor's decision regarding the Owner's Claim is binding on the Owner and the Contractor but is subject to mediation in accordance with this Contract.

**ARTICLE 15
SUBCONTRACTORS**

15.1 A document in the form of Exhibit E shall be completed and submitted upon execution of this Contract and those subcontractors named therein shall match those subcontractors named in the Contractor's bid unless otherwise agreed to in writing by the Owner. Also upon execution of this Contract by the Contractor, the Contractor shall identify to the Owner and the Design Professional, in writing, those parties intended as subcontractors on the Project not otherwise named in Exhibit E. The Owner shall, in writing, state any objections the Owner may have to one or more of such subcontractors. The Contractor shall not enter into a subcontract with an intended subcontractor with reference to whom the Owner objects. All subcontracts shall afford the Contractor rights against the subcontractor which correspond to those rights afforded to the Owner against the Contractor herein, including those rights of Contract Termination as set forth in this Contract. All subcontractors shall, throughout the duration of this Contract, be properly licensed as Idaho Public Works Contractors.

15.2 The Contractor conditionally assigns each of its subcontracts related to the Project to the Owner. All subcontracts between the Contractor and the subcontractors shall obligate the subcontractor to such conditional assignment. Upon a Termination by the Owner for cause under Paragraph 20.1, the Owner may accept such conditional assignment by written notification to the applicable subcontractor and to the Contractor. Such acceptance is subject to the rights of the Surety, if any, relating to the Contract.

**ARTICLE 16
CHANGES IN THE WORK**

16.1 General

.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor

change in the Work, subject to the limitations stated in this Article and elsewhere in the Contract Documents; and

.2 Changes in the Work shall be performed under applicable provisions of the Contract Documents and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

16.2 Change Orders

.1 A "Change Order" is a written instrument prepared by the Design Professional and signed by the Owner, Contractor and Design Professional, stating their agreement upon: a change in the work, any adjustment in the Fixed Price Contract Amount and any adjustment in the Contract Time;

.2 Methods used in determining adjustments to the Fixed Price Contract Amount may include those listed in subparagraph 16.3.4;

.3 The amount allowed for overhead and profit on any Change Order is limited to the amounts indicated in subparagraph 16.3.11;

.4 Any Change Order prepared, including those arising by reason of the parties' mutual agreement or by mediation, shall constitute a final and full settlement of all matters relating to or affected by the change in the Work, including all direct, indirect and consequential costs associated with such change and any and all adjustments to the Fixed Price Contract Amount and Contract Time. In the event a Change Order increases the Fixed Price Contract Amount, the Contractor shall include the Work covered by such Change Order in the Contractor's Request for Payment as if such Work were originally part of the Project and Contract Documents; and

.5 By the execution of a Change Order, the Contractor agrees and acknowledges that it has had sufficient time and opportunity to examine the change in Work which is the subject of the Change Order and that it has undertaken all reasonable efforts to discover and disclose any concealed or unknown conditions which may to any extent affect the Contractor's ability to perform in accordance with the Change Order. Aside from those matters specifically set forth in the Change Order, the Owner shall not be obligated to make any adjustments to either the Fixed Price Contract Amount or Contract Time by reason of any conditions affecting the change in Work addressed by the Change Order, which could have reasonably been discovered or disclosed by the Contractor's examination.

16.3 Construction Change Directive (CCD)

.1 A "Construction Change Directive" is a written order prepared by the Design Professional and signed by the Owner and Design Professional directing a change in the Work prior to agreement on adjustment, if any, in the Fixed Price Contract Amount or Contract Time or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract, consisting of additions, deletions or other revisions, the Fixed Price Contract Amount and Contract Time being adjusted accordingly;

.2 A Construction Change Directive, within limitations, may also be used to incorporate minor changes in the Work agreed to by the Design Professional's representative, the Owner's Field Representative and the Contractor's superintendent or project manager. The limits of these representatives' authority with regard to Construction Change Directives shall be documented in writing by the Design Professional, Owner and Contractor;

.3 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order;

.4 If the Construction Change Directive provides for an adjustment to the Fixed Price Contract Amount, the adjustment shall be based on one (1) of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

.2 Unit prices stated in the Contract Documents or subsequently agreed upon;

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in subparagraph 16.3.7;

.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Design Professional in writing within forty-eight (48) hours of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Fixed Price Contract Amount or Contract Time;

.6 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Fixed Price Contract Amount and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be incorporated into a future Change Order;

.7 If the Contractor does not respond promptly or disagrees with the method for adjustments in the Fixed Price Contract Amount or Contract Time, the method and the adjustment shall be determined by the Design Professional on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Fixed Price Contract Amount, an allowance for overhead and profit in accordance with subparagraph 16.3.11. In such case of an increase in Fixed Price Contract Amount, and also under subparagraph 16.3.4, the Contractor shall keep and present, in such form as the Design Professional may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this subsection shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of permit fees and sales, use or similar taxes related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change;

.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Fixed Price Contract Amount shall be for the actual net cost of the decrease, confirmed by the Design Professional. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change;

.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in the Contractor's

Request for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs;

.10 When the Owner and Contractor agree with the determination by the Design Professional concerning the adjustments in the Fixed Price Contract Amount and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order; and

.11 For purposes of subparagraphs 16.2.3 and 16.3.7, the allowance for combined overhead, profit, bonds and insurance shall be limited as follows, unless otherwise provided in the Contract Documents:

.1 For changes, the amount allowed for overhead, profit, bonds and insurance for the Contractor and all subcontractors of any tier combined shall not exceed fifteen percent (15%) of direct costs; or

.2 The Contractor will determine the apportionment between the Contractor and its subcontractors of allowable amounts of overhead, profit, bonds and insurance.

16.4 The Design Professional will have authority to order minor changes in the Work not involving adjustment in the Fixed Price Contract Amount or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 17

DISCOVERING AND CORRECTING DEFECTIVE OR INCOMPLETE WORK

17.1 If the Contractor covers, conceals or obscures its Work in violation of this Contract or in violation of a directive or request from the Owner or the Design Professional, such Work shall be uncovered and displayed for the Owner's or Design Professional's inspection upon request and shall be reworked at no cost in time or money to the Owner.

17.2 If any of the Work is covered, concealed or obscured in a manner not addressed by Paragraph 17.1, it shall, if directed by the Owner or the Design Professional, be uncovered and displayed for the Owner's or Design Professional's inspection. If the uncovered Work conforms strictly with this Contract, the costs incurred by the Contractor to uncover and subsequently replace such Work shall be borne by the Owner. Otherwise, such costs shall be borne by the Contractor.

17.3 The Contractor shall, at no cost in time or money to the Owner, promptly correct Work (fabricated, installed or completed) rejected by the Owner or by the Design Professional as defective or that fails to conform to this Contract whether discovered before or after Substantial Completion. Additionally, the Contractor shall reimburse the Owner for all testing, inspections and other expenses incurred as a result thereof.

17.4 In addition to any other warranty obligations in this Contract, the Contractor shall be specifically obligated to correct, upon written direction from the Owner, any and all defective or nonconforming Work for a period of twelve (12) months following Substantial Completion.

17.5 The Owner may, but shall in no event be required to, choose to accept defective or nonconforming Work. In such event, the Fixed Price Contract Amount shall be reduced by the lesser of: (i) the reasonable costs of removing and correcting the defective or nonconforming Work; or (ii) the difference between the fair market value of the Project as constructed and the fair market value of the Project had it not been constructed in such a manner as to include defective or nonconforming Work. If the remaining portion of the unpaid Fixed Price Contract Amount, if any, is insufficient to compensate the

Owner for the acceptance of defective or nonconforming Work, the Contractor shall, upon written demand from the Owner, pay the Owner such remaining compensation for accepting defective or nonconforming work.

ARTICLE 18 TERMINATION BY THE CONTRACTOR

18.1 The Contractor may terminate the Contract if the Work is stopped for a period of ninety (90) consecutive days through no act or fault of the Contractor or a subcontractor, sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order by a court or by another public authority having jurisdiction and authority which requires all Work to be stopped; or
- .2 An act of government, such as a declaration of national emergency, which requires all Work to be stopped.

18.2 In such event, the Contractor shall be entitled to recover from the Owner as though the Owner had terminated the Contractor's performance under this Contract pursuant to Paragraph 20.3.

ARTICLE 19 OWNER'S RIGHT TO SUSPEND CONTRACTOR'S PERFORMANCE

19.1 The Owner may, at any time and without cause, order the Contractor, in writing, to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine. If the Owner directs any such suspension, the Contractor must immediately comply with same.

19.2 In the event the Owner directs a suspension of performance under this Article, and such suspension is through no fault of the Contractor, the Fixed Price Contract Amount and Contract Time shall be adjusted for increases in the cost and time caused by such suspension, delay or interruption to cover the Contractor's reasonable costs, actually incurred and paid, of:

- .1 Demobilization and remobilization, including such costs paid to subcontractors;
- .2 Preserving and protecting Work in place;
- .3 Storage of materials or equipment purchased for the Project, including insurance thereon; and
- .4 Performing in a later, or during a longer, time frame than that provided by this Contract.

19.3 The adjustment of the Fixed Price Contract Amount shall include an amount for a reasonable profit. The adjustment of the Fixed Price Contract Amount shall not include any amount not otherwise allowed under this Contract, including any limitations applicable to Claims. The Contractor shall provide supporting documentation related to any increase upon request of the Owner. No adjustment shall be made to the extent:

- .1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 That an equitable adjustment is made or denied under another provision of the Contract.

ARTICLE 20

TERMINATION BY THE OWNER

The Owner may terminate this Contract in accordance with the following terms and conditions:

20.1 If the Contractor does not perform the Work, or any part thereof, in accordance with the Contract Documents, or in a timely manner; does not supply adequate labor, supervisory personnel, or proper equipment or materials; fails to pay subcontractors; fails to timely discharge its obligations for labor, equipment, and materials; proceeds to disobey applicable law; or otherwise breaches this Contract, then the Owner, in addition to any other rights it may have against the Contractor, may terminate the Contract and assume control of the Project site and of all materials and equipment at the site and may complete the Work. In such case, the Contractor shall not be paid further until the Work is complete. Upon such Termination, the Owner may, subject to any superior rights of the Surety, take possession of the site and of all materials, equipment, tools and construction equipment and machinery thereon owned by the Contractor; accept assignment of those subcontracts conditionally assigned under Paragraph 15.2; and finish the Work by whatever reasonable method the Owner may deem expedient.

20.2 When the Owner terminates the Contract for cause as provided in Paragraph 20.1, the Contractor shall not be entitled to receive further payment until the Work is finished and shall only be entitled to payment for Work satisfactorily performed by the Contractor in accordance with the Contract Documents. If the costs of finishing the Work, including compensation for the Design Professional's services and expenses made necessary thereby, exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. In the event the employment of the Contractor is terminated by the Owner for cause pursuant to Paragraph 20.1 and it is subsequently determined by a court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination under Paragraph 20.3 and the provisions of Paragraph 20.3 shall apply.

20.3 The Owner may, at any time and for any reason, terminate this Contract. The Owner shall give no less than seven (7) days' written notice of such Termination to the Contractor specifying when termination becomes effective. The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop Work when such Termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The Owner may direct the Contractor to assign the Contractor's right, title and interest under termination orders or subcontracts to the Owner or its designee. The Contractor shall transfer title and deliver to the Owner such completed or partially completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has. When terminated pursuant to this section, the following shall apply:

.1 The Contractor shall submit a Termination Claim to the Owner and the Design Professional specifying the amounts claimed due because of the Termination, together with costs, pricing or other supporting data required by the Owner or the Design Professional. Failure by the Contractor to file a Termination Claim within ninety (90) days from the effective date of termination shall be deemed a complete waiver by the Contractor of any right to any payment;

.2 Before or after receipt of the Termination Claim, the Owner and the Contractor may agree to the compensation, if any, due to the Contractor hereunder; and

.3 If the Contractor has filed the Termination Claim but the Contractor and the Owner do not agree on an amount due to the Contractor, the Owner shall pay the Contractor the following amounts:

.1 Unpaid Contract prices for labor, materials, equipment and other services provided or perfected prior to termination and acceptable to or accepted by the Owner;

.2 Reasonable costs incurred in preparing to perform the terminated portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for direct job-site overhead and profit related to such preparation (such profit shall not include anticipated profit or consequential damages); provided, however, that if it appears that the Contractor would have not profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated loss, if any; and

.3 Reasonable costs of settling and paying claims arising out of the Termination of subcontracts or orders pursuant to this Paragraph 20.3.

20.4 Costs described in subparagraphs 20.3.3.2 or 20.3.3.3 above shall not include amounts paid in accordance with other provisions hereof. In no event shall the total sum to be paid the Contractor under subparagraph 20.3.3 exceed the total Fixed Price Contract Amount, as properly adjusted, reduced by the amount of payments previously or otherwise made and by any other deductions permitted under this Contract and shall in no event include duplication of payment.

ARTICLE 21 CONTRACTOR'S LIABILITY INSURANCE

21.1 The Contractor, subcontractor and sub-subcontractor shall purchase and maintain in full force and effect from a company or companies lawfully authorized to do business in the State of Idaho such insurance as will protect the Contractor, subcontractor and sub-subcontractor from claims set forth below which may arise out of or result from the Contractor's or subcontractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable:

.1 Claims under workers' or workmen's compensation, disability benefits and other similar employee benefit acts which are applicable to the work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage which are sustained: (i) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor; or (ii) by another person;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Claims for bodily injury or property damage arising out of completed operations; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Article 11.

21.2 The insurance required by Paragraph 21.1 above shall be written for not less than limits of liability specified in this Contract or as required by law, whichever is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment. In addition, for any insurance required that is obtained on a claims-made basis, "tail coverage" is required at the completion of the Work for twenty-four (24) months. Continuous claims-made coverage will be acceptable in lieu of "tail coverage" provided the retroactive date is on or before the effective date of this Contract or twenty-four (24) months "prior acts" coverage is provided.

.1 The insurance required by Paragraph 21.1 above shall be written for not less than the following limits:

.1 Workers' Compensation and Employer's Liability

- (a) State Workers Compensation: Statutory
- (b) Employer's Liability: \$100,000 per Accident
\$500,000 Disease, Policy Limit
\$100,000 Disease, Each Employee

.2 Comprehensive Commercial General Liability and Umbrella Liability Insurance. Contractor shall maintain Commercial General Liability ("CGL") and, if necessary, commercial umbrella insurance with a limit of not less than \$2,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project location;

CGL insurance shall be written on Insurance Services Office ("ISO") occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operation, independent contractors, products-completed operations, personal (including employee acts) and advertising injury and liability assumed under an insured contract (including the tort liability of another assumed in a business contract). As applicable, coverage must also include a broad form CGL endorsement if the substitute insurance is a 1973 edition CGL or its equivalent;

Owner shall be included as an additional insured under the CGL, using ISO additional insured endorsement CG 20 10 and CG 20 37 or their equivalent, which endorsement shall include coverage for the Owner with respect to liability arising out of the Work, including completed operations of Contractor, and which coverage shall be maintained in effect for the benefit of Owner for a period of two (2) years following the completion of the work specified in this Contract. Additional insured coverage as required in this subparagraph shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to the Owner;

- (a) For the hazards of explosion, collapse, and damage to underground property, commonly referred to as XCU, coverage shall be required if the exposures exist; and

This coverage may be provided by the subcontractor if the Owner and prime Contractor are named as additional insureds;

.3 Business Auto and Umbrella Liability Insurance: Contractor shall maintain business, auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than \$1,000,000 each accident;

Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos);

Business auto coverage shall be written on ISO form CA 00 01, CA 00 05, CA 00 12, CA 00 20 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in the 1990 and later editions of CA 00 01;

If hazardous waste will be hauled, Contractor shall obtain pollution liability coverage equivalent to that provided under the ISO pollution liability-broadened coverage for covered autos endorsement (CA 99 48) and the Motor Carrier Act endorsement (MCS 90) shall be attached;

.4 If the General Liability coverages are provided by Commercial Liability policies the:

.1 General Aggregate shall be not less than \$4,000,000; and

.2 Fire legal liability shall be provided in an amount not less than \$100,000 per occurrence; and

.5 Umbrella Excess Liability. An umbrella policy may be used in combination with other policies to provide the required coverage.

21.3 The Owner shall be named as additional insured or loss payee, as applicable, on the insurance required in subparagraphs 21.2.1.2, 21.2.1.3 and 21.2.1.5 above, and the insurance shall contain the severability of interest clause as follows:

"The insurance afforded herein applies separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the company's 'liability.' "

21.4 The Contractor may include all subcontractors as insureds under the Contractor's policies in lieu of separate policies by each subcontractor. The Contractor must furnish the State of Idaho, Idaho Transportation Department, with the required endorsements or certificates of insurance from each subcontractor which names the subcontractor, its officials, employees and volunteers as insureds.

21.5 Certificates of Insurance for Workers' Compensation shall be on the standard form. Certificates of Insurance for Commercial or Comprehensive General Liability shall be the most current ACORD Form 25 or 28, must be acceptable to the Owner and shall be filed with the Owner prior to commencement of the Work. The Owner may require proof of coverage by an endorsement. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Contractor's Request for Payment as required by Article 7. Information concerning reduction of coverage shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

ARTICLE 22 OWNER'S LIABILITY INSURANCE

The Owner, at its option, may purchase or maintain insurance for protection against claims which may arise from operations under the Contract.

ARTICLE 23 PROPERTY INSURANCE

23.1 Unless otherwise provided, the Owner shall purchase or maintain, from a company or companies lawfully authorized to do business in the State of Idaho, property insurance written on a builders risk "all-risk" or equivalent policy form in an amount not less than the initial Fixed Price Contract Amount. Such property insurance shall be maintained until final payment to the Contractor has been made. This insurance shall include interests of the Owner, the Contractor, subcontractors and sub-subcontractors.

23.2 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, but not necessarily be limited to insurance against the perils of fire (with extended coverage) and mischief, collapse, earthquake, flood, windstorm, temporary buildings and debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and shall cover necessary and reasonable expenses for the Design Professional's expenses required as a result of such insured loss.

23.3 If the property insurance requires deductibles, the Owner shall pay costs of such deductibles.

23.4 Boiler and Machinery Insurance. The Owner will purchase and maintain boiler and machinery insurance, which shall specifically cover such insured objects during installation and testing.

23.5 Loss of Use Insurance. The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of the Owner's property due to fire or other hazards, however caused.

23.6 Waivers of Subrogation. The Owner and Contractor waive all rights against: (i) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other; and (ii) the Design Professional, Design Professional's consultants, separate contractors, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages to the Work caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Article or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner. The Owner or Contractor, as appropriate, shall require of the Design Professional, Design Professional's consultants, separate contractors, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged. The Owner does not waive its subrogation rights to the extent of its property insurance on structures or portions of structures that do not comprise the Work.

23.7 The Contractor authorizes the Owner to negotiate and agree on the value and extent of, and to collect the proceeds payable with respect to, any loss under a policy of insurance carried by the Owner pursuant to any of the provisions of this Article. The Owner shall have full right and authority to compromise any claim, or to enforce any claim by legal action or otherwise, or to release and discharge any insurer, by and on behalf of the Owner and Contractor. The Owner shall provide written notice to Contractor of: (i) its having reached any such settlement or adjustment with an insurer; and (ii) the receipt of any funds pursuant to this Article. Any objection by the Contractor to a settlement or adjustment made under this Article must be made in writing to the Owner within five (5) business days of the notice from the Owner. The Owner and the Contractor agree to attempt to resolve the dispute by mutual agreement.

23.8 A loss under the Owner's property insurance shall be adjusted by the Owner and made payable to the Owner for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause.

23.9 The Owner shall deposit proceeds so received, in a manner in which such proceeds can be separately accounted for, which proceeds the Owner shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made and unless the Owner terminates the Contract pursuant to Article 20, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 16.

23.10 The Contractor shall pay subcontractors their shares of the insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require subcontractors to acknowledge the Owner's authority under this Article 23 and make payments to their sub-subcontractors in similar manner.

23.11 Nothing contained in this Article 23 shall preclude the Contractor from obtaining, solely at its own expense, additional insurance not otherwise required.

ARTICLE 24

PERFORMANCE AND PAYMENT BONDS

24.1 The Contractor shall furnish separate performance and payment bonds to the Owner. Each bond shall set forth a penal sum in an amount not less than the Fixed Price Contract Amount and shall include a power of attorney attached to each bond. The signature of both the Contractor (principal) and the Surety are required. If the Surety is incorporated, both bonds must have the corporate seal. Each bond furnished by the Contractor shall incorporate by reference the terms of this Contract as fully as though they were set forth verbatim in such bonds. In the event the Fixed Price Contract Amount is adjusted by Change Order executed by the Contractor, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount. The performance and payment bonds furnished by the Contractor shall be AIA Document A312, or a standard surety form certified approved to be the same as the AIA Document A312, and shall be executed by a Surety, or Sureties, reasonably acceptable to the Owner and authorized to do business in the State of Idaho.

24.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

24.3 It is the Contractor's obligation to notify the Surety in the event of changes in the Contract Documents, which in the absence of notification might serve to discharge the Surety's obligations, duties or liability under bonds or the Contract.

ARTICLE 25

PROJECT RECORDS

25.1 All documents relating in any manner whatsoever to the Project, or any designated portion thereof, which are in the possession of the Contractor or any subcontractor of the Contractor, shall be made available to the Owner or the Design Professional for inspection and copying upon written request. Furthermore, said documents shall be made available, upon request by the Owner, to any state, federal or other regulatory authority and any such authority may review, inspect and copy such records. Said records include all drawings, plans, specifications, submittals, correspondence, minutes, memoranda, tape recordings, videos or other writings or things which document the Project, its design and its construction. Said records expressly include those documents reflecting the cost of construction to the Contractor. The Contractor shall maintain and protect these documents for no less than four (4) years after final completion or termination of the Contract or for any longer period of time as may be required by law or good construction practice.

ARTICLE 26

MISCELLANEOUS PROVISIONS

26.1 The law is hereby agreed to be the law of the State of Idaho. The parties further agree that venue for any proceeding related to this Contract shall be in Boise, Ada County, Idaho, unless otherwise mutually agreed by the parties.

26.2 Pursuant to Section 54-1904A, Idaho Code, within thirty (30) days after award of this Contract, the Contractor shall file with the Idaho State Tax Commission, with a copy to the Owner, a signed statement showing the date of Contract award, the names and addresses of the home offices of contracting parties, including all subcontractors, the state of incorporation, the Project Number and a general description of the type and location of the Work, the amount of the prime contracts and all subcontracts and all other relevant information which may be required on forms which may be prescribed by the Idaho State Tax Commission.

26.3 The Contractor, in consideration of securing the business of erecting or constructing public works in the State of Idaho, recognizing that the business in which it is engaged is of a transitory character, and that in the pursuit thereof, its property used therein may be without the state when taxes, excises or license fees to which it is liable become payable, agrees:

.1 To pay promptly when due all taxes (other than on real property), excises and license fees due to the State of Idaho, its sub-divisions, and municipal and quasi-municipal corporations therein, accrued or accruing during the term of this Contract, whether or not the same shall be payable at the end of such term;

.2 That if the said taxes, excises and license fees are not payable at the end of said term, but liability for the payment thereof exists even though the same constitute liens upon its property, to secure the same to the satisfaction of the respective officers charged with the collection thereof; and

.3 That, in the event of its default in the payment or securing of such taxes, excises and license fees, to consent that the department, officer, board or taxing unit entering into this Contract may withhold from any payment due it hereunder the estimated amount of such accrued and accruing taxes, excises and license fees for the benefit of all taxing units to which said Contractor is liable.

26.4 Before entering into a Contract, the Contractor shall be authorized to do business in the State of Idaho and shall submit a properly executed Contractor's Affidavit Concerning Taxes (Exhibit D).

26.5 Pursuant to Section 44-1002, Idaho Code, it is provided that each Contractor "must employ ninety-five percent (95%) bona fide Idaho residents as employees on any job under any such contract except where under such contracts fifty (50) or less persons are employed the contractor may employ ten percent (10%) nonresidents, provided, however, in all cases employers must give preference to the employment of bona fide residents in the performance of said work, and no contract shall be let to any person, firm, association, or corporation refusing to execute an agreement with the above mentioned provisions in it; provided, that, in contracts involving the expenditure of federal aid funds this act shall not be enforced in such a manner as to conflict with or be contrary to the federal statutes prescribing a labor preference to honorably discharged soldiers, sailors, and marines, prohibiting as unlawful any other preference or discrimination among citizens of the United States." (Ref. Section 44-1001, Idaho Code)

26.6 The Contractor shall maintain, in compliance with Title 72, Chapter 17, Idaho Code, a drug-free workplace program throughout the duration of this Contract and shall only subcontract work to subcontractors who have programs that comply with Title 72, Chapter 17, Idaho Code.

26.7 As between the Owner and Contractor as to acts or failures to act, any applicable statute of limitations shall commence to run and any legal cause of action shall be deemed to have accrued in any and all events in accordance with Idaho law.

26.8 The Contractor and its subcontractors and sub-subcontractors shall comply with all applicable Idaho statutes with specific reference to Idaho Public Works Contractors' licensing laws in the State of Idaho, Title 54, Chapter 19, Idaho Code, as amended.

26.9 The Contractor shall not knowingly hire or engage any illegal aliens or persons not authorized to work in the United States and take steps to verify that it does not hire or engage any illegal aliens or persons not authorized to work in the United States. Any misrepresentation in this regard or any employment of persons not authorized to work in the United States constitutes a material breach and shall be cause for the imposition of monetary penalties not to exceed five percent (5%) of the Fixed Price Contract Amount per violation and/or Termination of this Contract. The Contractor also acknowledges that, if it is a natural person, it is subject to Title 67, Chapter 79, Idaho Code regarding verification of lawful presence in the United States.

ARTICLE 27 EQUAL OPPORTUNITY

The Contractor shall maintain policies of employment as follows:

27.1 The Contractor and the Contractor's subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age or national origin. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, color, sex, age or national origin. Such action shall include the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

27.2 The Contractor and the Contractor's subcontractors shall, in all solicitation or advertisements for employees placed by them or on their behalf; state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, age or national origin.

ARTICLE 28 SUCCESSORS AND ASSIGNS

28.1 Each party binds itself, its successors, assigns, executors, administrators or other representatives to the other party hereto and to successors, assigns, executors, administrators or other representatives of such other party in connection with all terms and conditions of this Contract. The Contractor shall not assign this Contract or any part of it or right or obligation pursuant to it without prior written consent of the Owner. If Contractor attempts to make assignment without consent of Owner, Contractor shall remain legally responsible for all obligations under this Contract.

ARTICLE 29 SEVERABILITY

29.1 In the event any provision or section of this Contract conflicts with applicable law or is otherwise held to be unenforceable, the remaining provisions shall nevertheless be enforceable and shall be carried into effect.

ARTICLE 30 MEDIATION

30.1 Contractor Claims for additional cost or time are subject to Article 13, shall be reviewed as provided in accordance with that Article and, as a condition precedent to litigation, are subject to dispute resolution attempts and mediation in accordance with this Article. All other issues and disputes arising from this contract are also subject to dispute resolution attempts & mediation in accordance with this Article, as a condition precedent to litigation.

30.2 The parties agree that resolution of any dispute or disagreement without formal legal proceedings is to their mutual benefit and to the benefit of the Project.

30.3 The parties agree to make every reasonable attempt to resolve any issues or disputes informally. The parties further agree that prior to the institution by either of legal or equitable proceedings of any kind, and as a condition precedent thereto, any dispute between the Contractor and the Owner related to the Contract, including a dispute over the Owner's decision regarding a Claim, shall be subject to mediation as follows:

.1 If the issue to be mediated involves only a dispute regarding the Contract Time, no request to mediate shall be made unless liquidated damages have been assessed by the Owner. If the issue to be mediated involves a Claim or other financial dispute, no request to mediate shall be made unless the amount is \$50,000 or more or until there are cumulative Claims or disputes amounting to \$50,000 or more; provided, however, that a mediation request can be made as to any Claim or financial matter at any time after Substantial Completion;

.2 The party seeking mediation shall notify the other party in writing of its mediation request. In such written request, the requesting party must clearly describe the issues it believes are subject to mediation;

.3 Within fifteen (15) days of receipt of the mediation request, the non-requesting party shall respond in writing to the request;

.4 Unless the Owner and the Contractor agree to other rules for mediation, mediation shall be in accordance with the Construction Industry Rules of Arbitration and Mediation Procedures in effect at the time of the mediation;

.5 The parties shall share the mediator's fee and any filing fees equally; provided, however, that if a party makes a written request to the mediator without satisfying the requirements of this section and by doing so incurs any costs or fees, that party shall be solely responsible for the costs or fees;

.6 Unless otherwise mutually agreed to by the parties, the mediation shall be in Boise, Ada County, Idaho;

.7 The parties shall cooperate in arranging the other details of mediation, such as selection of the mediator, mediation dates and times;

.8 The parties agree that all parties necessary to resolve the matter shall be parties to the same mediation proceeding; provided, however, that no subcontractor or sub-subcontractor shall attend the mediation absent advance notice and consent from the Owner;

.9 Agreements reached in mediation shall be enforceable as settlement agreements in any court having proper jurisdiction; and

.10 Unless otherwise agreed in writing, the Contractor shall continue the Work and maintain the approved schedules during any mediation proceedings. If the Contractor continues to perform, the Owner shall continue to make payments in accordance with the Contract Documents.

30.4 If mediation fails to resolve the dispute, either party may file an action in the courts of Idaho in accordance with the venue provision contained in this Contract.

ARTICLE 31

WAIVER OF CONSEQUENTIAL DAMAGES

31.1 The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

.1 Damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation and for loss of management or employee productivity or of the services of such persons.

.2 Damages incurred by the Contractor for principal office expenses, including the compensation of personnel stationed there; for losses of income, financing, business and reputation; loss of management or employee productivity or of the services of such persons; and for loss of profit except profit arising directly from the Work.

31.2 This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Articles 18 and 20. Nothing contained in this paragraph shall be deemed to preclude an award of the assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

IN WITNESS WHEREOF, the parties have executed this Contract on the dates set forth below.

OWNER

State of Idaho
Idaho Transportation Department

Date Executed

By: _____
Travis Frei,
Facilities Management Contracting Officer

CONTRACTOR

(Contractor's Name- Typed)

SEAL

Date Executed

By: _____
Signature

Printed Name

Title

EXHIBIT A

OWNER'S PROJECT IDENTIFICATION INFORMATION:

Name of Project
ITD Project No. FM42417
ITD Fairfield HUD Manufactured Home Units & Site Development Fairfield, Idaho

General Project Description: The project includes development of a vacant parcel of land for a total of (5) manufactured housing units. (4) of the units are for ITD staff and the 5th unit is for a future Idaho state police staff home. The property is located north of highway 20 near Fairfield, Idaho at the corner of 100 north and 200 east. The site will be developed with a water distribution system for (2) wells drilled as a separate contract. The project includes construction of a new well house with well equipment and full water distribution to each of the (5) (MHU)s. The project also includes all utilities for each MHU including new electrical power service from Idaho Power with pad mounted transformers, septic/drain fields, propane gas pads for owner supplied propane tanks, access driveways and paths to each home, and complete site grading and drainage improvements.

As part of the project the contractor will be responsible for constructing permanent foundations for the (MHU)s along with purchasing and installing the (MHU)s on the permanent foundations. Contractor will also be responsible for providing covered porches for the entrances to the (MHU)s.

ADDENDA: Addenda applicable to the Contract and made a part of are as follows:

Addendum No. _ Dated _____
Addendum No. _ Dated _____
Addendum No. _ Dated _____

FIXED PRICE CONTRACT AMOUNT AND ACCEPTED ALTERNATES:

Base Bid Amount:				\$.00
Alternate No. ___	(_____)	add	\$.00	
Alternate No. ___	(_____)	add	\$.00	
Alternate No. ___	(_____)	add	\$.00	
Alternate No. ___	(_____)	add	\$.00	
Alternate No. ___	(_____)	add	\$.00	
Total Fixed Price Contract Amount	(_____)	Dollars		\$.00

Contractor's Requests for Payment are to be submitted for Work accomplished through the ____ day of each month as described in Paragraph 7.3.

TIME FOR PERFORMANCE AND LIQUIDATED DAMAGES:

- A. The Contractor shall commence construction of its scope of the Work in accordance with the Notice to Proceed issued by the Owner, and which will become Exhibit F to this Contract.
- B. The Contractor shall accomplish Substantial Completion as defined in Article 6 of the Contract within one hundred eighty (180) consecutive calendar days from the date authorized to proceed in the Notice to Proceed.
- C. The amount of liquidated damages per day for each and every day of unexcused delay as outlined in Article 6 on the Contract is: Five Hundred Dollars (\$500.00)

DRAWINGS AND SPECIFICATIONS

The Owner shall furnish the Contractor 1 set of Drawings and Project Manuals.

EXHIBIT B

ADDRESSES and AUTHORIZED REPRESENTATIVES: The names, addresses and authorized representatives of the Owner, the Contractor and the Design Professional are:

OWNER: State of Idaho Transportation Department
Tony Pirc, Facilities Manager
11331 W Chinden Blvd., Bld. 8
Boise, Idaho 83714
208-334-8600
tony.pirc@itd.idaho.gov

Contracting Officer: Idaho Transportation Department
Jacob Jackson, Facilities Management Contracting Officer
11331 W Chinden Blvd., Bld. 8
Boise, Idaho 83714
208-334-8831
jacob.jackson@itd.idaho.gov
May sign for Owner: Yes [X] No []

Field Representative: Idaho Transportation Department
Mike Stowell, District Field Representative
216 S Date Street
Shoshone, ID 83352
208-886-7888
mike.stowell@itd.idaho.gov
May sign for Owner: Yes [] No [X]

CONTRACTOR: _____ (company name)
_____ (address)
_____ (city, state, zip)
_____ (telephone and FAX)
Public Works Contractors License No. _____

Officer: _____ (name and title)
_____ (telephone)
_____ (E-mail)

Contractor's
Project Manager: _____ (name)
_____ (telephone and FAX)
_____ (E-mail)

May sign for Contractor: Yes [] No []
Change Orders: up to: \$____.00
Construction Change Authorizations: up to: \$____.00
Contractor's Request for Payment

Contractor's
Superintendent: _____ (name)
_____ (telephone and FAX)
_____ (E-mail)

May sign for Contractor: Yes [] No []
Construction Change Authorizations: up to \$_____.00

**DESIGN
PROFESSIONAL:**

Myers Anderson Architects
122 South Main Street, Suite 1
Pocatello, Idaho 83204
(208) 232-3741
(208) 232-3782

Professional's
Project Manager:

Matthew Frankel
Professional License No. AR-987379
(208) 232-3741
(208) 232-3782
matt@myersanderson.com

Professional's
Field Representative:

Matthew Frankel
(208) 232-3741
(208) 232-3782
matt@myersanderson.com

May sign for Design Professional:

Field Reports	Yes [X]	No []
Change Order Proposal Requests	Yes [X]	No []
Construction Change Authorization:	Yes [X]	No []
Construction Change Order	Yes [X]	No []
Design Professional's Supplemental Instructions	Yes [X]	No []
Interpretations of the Contract Documents	Yes [X]	No []
Contractor's Request for Payment	Yes [X]	No []
Acceptance of Substantial Completion	Yes [X]	No []
Acceptance of final completion	Yes [X]	No []

EXHIBIT C

LIST OF DRAWINGS:

General Sheets
G100 Cover Sheet

Site Plans
SP100 Site Plan

Civil
C0.0 Titlesheet
C1.0 Notes & Legend
C2.0 Existing Conditions
C3.0 Site Layout
C4.0 Grading Plan
C5.0 Utility Plan
C6.0 Drainage Plan
C7.0 Well Details

Architectural
A100 Main Floor Plan
A101 Pump House Plans
A102 Pump House Details

Structural
S0.0 Structural Notes
S1.0 Typ. Mobile Home Foundation Plan
S1.1 Pump House Foundation Plan
S5.0 Mobile Home Foundation Details
S5.1 Pump Home Foundation Details

Mechanical
M0.0 Basic Mechanical Requirements
Specification Section 15010
M0.1 Basic Mechanical Requirements
Specification Section 15010
M0.2 Plumbing Specifications Section
15400
M0.2 Plumbing Specifications Section
15400
M2.0 Plumbing New Site Plan
M5.0 Plumbing Details

Electrical
E0.0 Electrical Cover
E0.1 Electrical Specifications
E1.0 Electrical Site Plan

TECHNICAL SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

01 10 00 Summary
01 23 00 Alternates
01 25 00 Substitution Procedures

01 26 00 Contract Modification Procedures
01 29 00 Payment Procedures
01 31 00 Project Management and Coordination
01 33 00 Submittal Procedures
01 40 00 Quality Requirements
01 50 00 Temporary Facilities and Controls
01 60 00 Product Requirements
01 73 00 Execution
01 77 00 Closeout Procedures
01 78 23 Operation and Maintenance Data
01 78 39 Project Record Documents
01 79 00 Demonstration and Training
Copyright Release Agreement
Request for Interpretation
Substitution Request

DIVISION 3 – CONCRETE

03 10 00 Concrete Forming and Accessories
03 20 00 Concrete Reinforcing
03 30 00 Cast-in-Place Concrete
03 35 00 Concrete Finishing
03 39 00 Concrete Curing
03 60 00 Grouting

DIVISION 5 – METALS

05 50 00 Metal Fabrications

DIVISION 6 – WOOD PLASTICS AND COMPOSITES

06 10 00 Rough Carpentry
06 10 53 Miscellaneous Rough Carpentry
06 20 13 Exterior Carpentry

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

07 21 13 Board Insulation
07 21 16 Blanket Insulation
07 25 00 Weather Barriers
07 26 00 Vapor Retarders
07 42 13 Metal Wall Panels/Siding
07 61 00 Sheet Metal Roofing
07 62 00 Sheet Metal Flashing and Trim
07 71 00 Roof Specialties
07 90 00 Joint Protection
5-yr-Roofing-Warranty

DIVISION 8 - OPENINGS

08 12 14 Standard Steel Frames
08 13 14 Standard Steel Doors
08 71 00 Door Hardware

SITE AND INFRASTRUCTURE SPECIFICATIONS

DIVISION 31 – EARTHWORK

31 10 00 Clearing and Grubbing
31 20 00 Earthwork
31 20 15 Trenching and Backfill

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 13 13 Site Concrete

EXHIBIT D

CONTRACTOR'S AFFIDAVIT CONCERNING TAXES

STATE OF _____)

COUNTY OF _____)

Pursuant to the Title 63, Chapter 15, Idaho Code I, the undersigned, being duly sworn, depose and certify that all taxes, excises and license fees due to the State or its taxing units, for which I or my property is liable then due or delinquent, has been paid, or arrangements have been made, before entering into a Contract for construction of any public works in the State of Idaho.

Name of Contractor

Address

City and State

SEAL

By:

(Signature)

Subscribed and sworn to before me this _____ day of _____, _____.

NOTARY PUBLIC

Residing at: _____

Commission expires: _____

EXHIBIT E

NAMED SUBCONTRACTORS:

Pursuant to Section 67-2310, Idaho Code, commonly known as the naming law, the names and addresses of the entities who will perform the plumbing, heating and air conditioning and electrical work were named in the bid and are as follows:

Plumbing (PWCL Category 15400)

(Name) _____
(Address) _____

Idaho Public Works Contractors License No. _____

Idaho Plumbing Contractors License No. _____

Heating Ventilating & Air Conditioning (PWCL Category 15700-HVAC)

(Name) _____
(Address) _____

Idaho Public Works Contractors License No. _____

Idaho HVAC Contractors License No. _____

Electrical (PWCL Category 1600)

(Name) _____
(Address) _____

Idaho Public Works Contractors License No. _____

Idaho Electrical Contractors License No. _____

EXHIBIT F

NOTICE TO PROCEED

TO CONTRACTOR:

DPW NUMBER:

CONTRACT DATE

We :

ARCHITECT:

Myers Anderson Architects
122 S. Main St., Ste 1
Pocatello, ID 83204

CONTRACT AMOUNT: \$

DATE OF ISSUANCE:

OWNER:

State of Idaho

You are hereby notified to commence work on the above referenced contract on/or before _____ and are to substantially complete the work within _____ consecutive calendar days thereafter; therefore your contract completion date is _____.

The contract provides for the sum of \$ _____ as liquidated damages for each consecutive calendar day after the above established substantial completion date that the work remains incomplete. Completion date will be established by "Certificate of Substantial Completion."

You are reminded that any changes to the original contract document regarding either cost or completion date must be effected by a change order approved by this department.

Your payment estimates must be submitted on Division of Public Works forms included herein. We will be most happy to assist you in preparing the payment estimate forms.

_____ has been appointed Field Representative for this project. Please contact him at 332-_____ prior to beginning work. A pre-construction meeting will be held _____, at _____, at _____ (location)

Sincerely,

PAT DONALDSON
ADMINISTRATOR

PD:pb

DISTRIBUTION: Tax Commission
Division of Building Safety
Risk Management (w/ Builder's Risk Application, if applicable)
(Project Manager)
Fiscal Office TAX ID xx-xxxxxxx

EXHIBIT G
Idaho State Tax Commission
REQUEST FOR TAX RELEASE

Date: _____

PART I -- AWARDING AGENCY INFORMATION:			
Name of agency		Mailing address	City, state, and ZIP Code
Contact name		Phone number	Email address

PART II -- CONTRACTOR INFORMATION:			
Name of contractor		Mailing address	City, state, and ZIP Code
Federal EIN	Contact name	Phone number	Email address

PART III -- CONSTRUCTION/CONTRACT MANAGER INFORMATION (if applicable):			
Name of business		Mailing address	City, state, and ZIP Code
Federal EIN	Contact name	Phone number	Email address

Send a copy of the approved Tax Release to: Awarding Agency Contractor Construction Manager

NOTE: We will email all copies unless otherwise requested

PART IV -- PROJECT INFORMATION:	
Name of project	Location of project
Description of project	

Project number assigned by awarding agency	Project start date	Project completion date	Final/closing contract amount (includes all change orders)
--	--------------------	-------------------------	--

Did any government entities supply materials which were installed by this contractor or its subs?: Yes No
 If YES, list these materials and their dollar values. (Attach additional information if needed)

List Materials	List Dollar Values of Materials
	\$
	\$
	\$

Send to: Contract Desk/Sales Tax Audit
 Idaho State Tax
 Commission PO Box 36
 Boise ID 83722-0410
 Phone: (208) 334-7618 • Fax: (208) 332-6619 • Email: contractdesk@tax.idaho.gov

NOTE: Please allow 30 days to process a Tax Release Request. You must send a complete, signed Form WH-5 Public Works Contract. Report to the Idaho State Tax Commission to complete this request.

EXHIBIT H

RELEASE OF CLAIMS

(TO BE COMPLETED FOR FINAL PAYMENT)

I, _____, do hereby release the State of Idaho from any and all claims of any character whatsoever arising under and by virtue of contract number _____ Dated _ as amended, except as herein stated.

Dated _____

Contractor _____

EXHIBIT J

Conditions Precedent to Final Payment

Date: _____

ITD Project No. _____

Project Title: _____

Location: _____

Send to:
State of Idaho
Idaho Transportation Department
3311 W State St
Boise, Idaho 83702

Copy to:
Design Professional

Contractor's Responsibilities:

Per Paragraph 7:13 of the Fixed Price Contract: As a condition precedent to final payment, the Contractor must furnish the owner, in the form and manner required by Owner, to be submitted to the Design Professional for approval, the following:

- Contractor's Final Request for Payment Form has been provided;
- Release of Claims form has been form, Exhibit H);
- Contractor's Affidavit of Payment of Debts and Claims Form has been provided (AIA G706);
- Consent of Surety to Final Payment has been provided (AIA G707);
- Confirmation of all required training (DPW's Training Confirmation Exhibit K), product warranties, operating manuals, instruction manuals and other record documents, drawings and items customarily required of the Contractor has been provided.
- Public Works Contract Tax Release from the Idaho Tax Commission has been provided;
- ITD's Letter of Completion/Final Inspection Sign-Off (as required);
- Project Finalization and Start Up has been provided (as required, Exhibit L);

Contractor's Signature

Date

Design Professional's Approval for Payment:

- All Documents Required per Paragraph 7.13 of the Fixed Price Contract
- All Warranties, Guarantees, etc. have been received, approved and have been provided.
- Contractor's As-Built Drawings, have been received, reviewed, approved.
- Final punch list with AE's verification that all items have been completed.
- Record Drawings have been completed by AE. All required copies of the Record Documents and electronic media are attached and signed off as complete.

To the best of my knowledge, information, and belief, and on the basis of my observations and inspections, I certify the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the

required documentation required by Paragraph 7.13 of the fixed priced contract has been received. The entire balance, as shown on the attached Final Request for Payment, is due and payable.

Design Professional's Signature

Date

EXHIBIT L

PROJECT FINALIZATION AND START-UP

Upon completion of the equipment and systems installation and connections, the contractor shall assemble all equipment factory representative and subcontractors together for system start-up.

These people shall assist in start-up and check out their system(s) and remain at the site until the total system operation is acceptable and understood by the agency's representative(s). The factory representative and system subcontractor shall also give instructions on operation and maintenance of their equipment to the agency's maintenance and/or operation personnel. To prove acceptance of operation and instruction by the agency's representative(s), this written statement of acceptance shall be signed below.

"I, the Contractor, associated factory representative and subcontractors, have started each system and the total system; and have proven their normal operation to the agency's representative(s) and maintenance/operation personnel and have instructed him/them in the operation and maintenance thereof."

Agency's Representative

Contractor

Signature

Signature

Date

Date

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Technical Specifications

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Fixed Price Construction Contract and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Work covered by Contract Documents.
 - 2. Work by Owner.
 - 3. Work under separate contracts.
 - 4. Owner-furnished products.
 - 5. Contractor-furnished, Owner-installed products.
 - 6. Access to site.
 - 7. Coordination with occupants.
 - 8. Work restrictions.
 - 9. Permits.
 - 10. Waste Disposal.
 - 11. Testing and Inspection.
 - 12. Specification and drawing conventions.
- B. Related Requirements:
 - 1. Section 01 50 00 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The project includes development of a vacant parcel of land for a total of (5) manufactured housing units. (4) of the units are for ITD staff and the 5th unit is for a future Idaho state police staff home. The property is located north of highway 20 near Fairfield, Idaho at the corner of 100 north and 200 east. The site will be developed with a water distribution system for (2) wells drilled as a separate contract. The project includes construction of a new well house with well equipment and full water distribution to each of the (5) (MHU)s. The project also includes all utilities for each MHU including new electrical power service from Idaho Power with pad mounted transformers, septic/drain fields, propane gas pads for owner supplied propane tanks, access driveways and paths to each home, and complete site grading and drainage improvements.

As part of the project the contractor will be responsible for constructing permanent foundations for the (MHU)s along with purchasing and installing the (MHU)s on the permanent foundations. Contractor will also be responsible for providing covered porches for the entrances to the (MHU)s.

1.4 WORK BY OWNER

- A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.
- B. Items noted NIC (Not in Contract), will be furnished and installed by the Owner/Agency.

1.5 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.6 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project, and by use of facility by building tenants in existing tenant improvement Projects.
- B. Use of Site: Limit use of Project site to the work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine construction operations to the areas of work indicated on and in the drawings and specifications.
 - 2. Driveways, Walkways and Entrances: Keep driveways loading areas, etc. and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - c. Contractor parking shall be limited to those areas indicated on the Contract Document and as designed by the Owner.
 - d. Maintain clear access to project at all times for firefighting equipment. Maintain exit ways from existing building required by authorities having jurisdiction.
 - e. Signs: Provide signs adequate to direct visitors.
 - 1) Do not install, or allow to be installed, signs other than specified sign(s) and signs identifying the principal entities involved in the project.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Any damage to the building, due to negligence on behalf of the contractor to not maintain a weather-tight condition, shall be the responsibility of contractors and they shall bear the burden for correction and/or repairs for any damage. Repair damage caused by construction operations.
- D. Security: The contractor shall maintain security of the building and any staging areas throughout the project.

1.7 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 - 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.
 - 3. The Owner will take special care not to damage materials or work completed by the contractor prior to final acceptance. If the contractor occurs any damages, prior to final acceptance, they need to notify the Owner and Architect immediately for verification of damages. If the contractor fails to notify the Owner and Architect within 24 hours of the incident, the contractor shall be responsible for the performance and shall bear the cost of correction.

1.8 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, unless otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than 3 days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than 2 days in advance of proposed disruptive operations.
- E. Hazardous Materials: Notify the Design Professional and Owner immediately upon discovery of existing hazardous materials.
- F. Nonsmoking Building: Smoking is not permitted within the building or on Idaho Transportation Department property.
- G. Controlled Substances: Use of tobacco products and other controlled substances is not permitted per Section 72-1717, Idaho Code.
- H. Contractor Parking: Coordinate with Idaho Transportation Department for Contractor parking.
- I. On Owner/Tenant occupied projects, maintain cleanliness in areas adjacent to and surrounding the construction area to the satisfaction of the Owner at all times.

- J. On Owner/Tenant occupied projects, ensure deliveries and contractor work access are in accordance with previous agreement with Owner and/or as indicated in the Contract Documents.

1.9 PERMITS

- A. Furnish all necessary permits for construction of the Work.

1.10 WASTE DISPOSAL

- A. The contractor is responsible for any and all demolition and/or removal as necessary and required to fulfill the requirements of the Contract Documents.

1.11 TESTING AND INSPECTION

- A. Notify Owner/Engineer at least 24 hours prior to commencement of Work requiring special inspection.

1.12 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Add Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost for each alternate is the net addition to the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Execute accepted alternates under the same conditions as other work of the Contract.
- C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. **Alternate No. 1:** Concrete Apron & Sidewalk for MHU #1 & 2
 - 1. **Base Bid:** Includes construction of new well house, site water distribution system, site drain system, site grading, site access drive, and site electrical distribution system including all transformers. Base bid also includes complete construction & installation of MHU #1 & 2 including home foundations, home front and side porches, full water connections, complete septic tank/drain field system, concrete pads for

owner supplied propane tanks, and complete electrical connection. Base bid includes gravel driveway and gravel walkways to homes in lieu of concrete (see base bid gravel driveway & sidewalk section detail). Base bid excludes installation of MHU #'s 3, 4, & 5 and associated driveway, electrical from transformer to home including meter, septic/drain fields, and concrete propane pads.

2. **Alternate:** All work associated with installing concrete aprons, sidewalks, and concrete driveway for MHU #1 & 2. Include in cost, credit for gravel sideways, aprons, and driveway called out in base bid.

B. Alternate No. 2: Construct & Install MHU #3

1. **Base Bid:** Includes construction of new well house, site water distribution system, site drain system, site grading, site access drive, and site electrical distribution system including all transformers. Base bid also includes complete construction & installation of MHU #1 & 2 including home foundations, home front and side porches, full water connections, complete septic tank/drain field system, concrete pads for owner supplied propane tanks, and complete electrical connection. Base bid includes gravel driveway and gravel walkways to homes in lieu of concrete (see base bid gravel driveway & sidewalk section detail). Base bid excludes installation of MHU #'s 3, 4, & 5 and associated driveway, electrical from transformer to home including meter, septic/drain fields, and concrete propane pads.
2. **Alternate:** Includes complete construction & installation of MHU #3 including home foundations, home front and side porches, connection to site water, complete septic tank/drain field system, concrete pads for owner supplied propane tank, and complete electrical connection from transformer to unit. Alternate includes gravel driveway and gravel walkways to home in lieu of concrete (see base bid gravel & sidewalk section detail).

C. Alternate No. 3: Concrete Apron & Sidewalk for MHU #3

1. **Base Bid:** Includes construction of new well house, site water distribution system, site drain system, site grading, site access drive, and site electrical distribution system including all transformers. Base bid also includes complete construction & installation of MHU #1 & 2 including home foundations, home front and side porches, full water connections, complete septic tank/drain field system, concrete pads for owner supplied propane tanks, and complete electrical connection. Base bid includes gravel driveway and gravel walkways to homes in lieu of concrete (see base bid gravel driveway & sidewalk section detail). Base bid excludes installation of MHU #'s 3, 4, & 5 and associated driveway, electrical from transformer to home including meter, septic/drain fields, and concrete propane pads.
2. **Alternate:** All work associated with installing concrete aprons, sidewalks, and driveway for MHU #3. Include in cost, credit for gravel sidewalks, aprons, and driveway called out in base bid.

D. Alternate No. 4: Concrete & Install MHU #4

1. **Base Bid:** Includes construction of new well house, site water distribution system, site drain system, site grading, site access drive, and site electrical distribution system including all transformers. Base bid also includes complete construction & installation of MHU #1 & 2 including home foundations, home front and side porches, full water connections, complete septic tank/drain field system, concrete pads for owner supplied propane tanks, and complete electrical connection. Base bid includes gravel driveway and gravel walkways to homes in lieu of concrete (see base bid gravel driveway & sidewalk section detail). Base bid excludes installation of MHU #'s 3, 4, & 5 and associated driveway, electrical from transformer to home including meter, septic/drain fields, and concrete propane pads.
2. **Alternate:** Includes complete construction & installation of MHU #4 including home foundation, home front and side porches, connection to site water, complete septic

tank/drain field system, concrete pads for owner supplied propane tank, and complete electrical connection from transformer to unit. Alternate includes gravel driveway and gravel walkways to homes in lieu of concrete (see base bid gravel driveway & sidewalk section detail).

E. **Alternate No. 3: Concrete Apron & Sidewalk for MHU #4**

1. **Base Bid:** Includes construction of new well house, site water distribution system, site drain system, site grading, site access drive, and site electrical distribution system including all transformers. Base bid also includes complete construction & installation of MHU #1 & 2 including home foundations, home front and side porches, full water connections, complete septic tank/drain field system, concrete pads for owner supplied propane tanks, and complete electrical connection. Base bid includes gravel driveway and gravel walkways to homes in lieu of concrete (see base bid gravel driveway & sidewalk section detail). Base bid excludes installation of MHU #'s 3, 4, & 5 and associated driveway, electrical from transformer to home including meter, septic/drain fields, and concrete propane pads.
2. **Alternate:** All work associated with installing concrete aprons, sidewalks, and driveway for MHU #4. Include in cost, credit for gravel sidewalks, aprons, and driveway called out in base bid.

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 01 60 00 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.

- i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.6 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.

- e. Requested substitution is compatible with other portions of the Work.
- f. Requested substitution has been coordinated with other portions of the Work.
- g. Requested substitution provides specified warranty.
- h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Fixed Price Construction Contract and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

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

1.4 PROPOSAL REQUESTS

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

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 01 25 00 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Work Change Proposal Request Form: Use form acceptable to Architect.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, the Architect will complete the Owner's Change Order Form and attach the Proposal Request and back-up. The Architect will then forward this documentation to the Owner's Project Manager who will create a Change Order for approval of the Owner and Contractor.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Owner's Representative may issue a Construction Change Directive. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 SCHEDULE OF VALUES

- A. Submit printed schedule on AIA G703 - Continuation Sheet for G702 Contractor's standard form or electronic media printout will be considered for this use.
- B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement
- C. Format: Use Table of Contents of this Project Manual
 1. Identify each line item with number and title of major Specification Section
 2. Identify line item for site mobilization, bonds and insurance, and project closeout.
 3. Include the following Project identification of the Schedule of Values:
 - a. Project name and location
 - b. Name of General Contractor
 - c. Name of Architect
 - d. Owner's project number
 - e. Date of submittal.
 4. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division
 - b. Description of the Work
 - c. Change Orders (numbers) that affect value.
 - d. Dollar value
 5. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluations of Applications of Payment and progress reports.
 6. Coordinate with the Project Manual table of contents.
 7. Provide several line items for principal subcontract amounts, where appropriate
 8. Round amounts to nearest whole dollar; total shall equal the Contract.
 9. 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 installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 - b. Include evidence of insurance or bonded warehousing if required.
 10. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 11. Each item in the Schedule of Values and Applications for Payment shall be complete.

- a. Include total cost and proportionate share of general overhead and profit for each item.
 - b. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
- D. Include within each line item, direct proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list approved Change Orders with each Application for Payment

1.2 APPLICATION FOR PAYMENT

- A. Submit one copies of each Application for Payment on AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702
- B. Content and Format: Use Schedule of Values for listing items in Application for Payment
- C. Complete every entry on form.
 - 1. Execute by a person authorized to sign legal documents on behalf of Contractor.
 - 2. Architect will return incomplete applications without action.
 - 3. Entries shall match data on the Schedule of Values.
 - 4. Include amounts of Change Orders approved before last day of construction period covered by application.
- D. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
- E. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor
 - 1. The period of construction work covered by each Application of Payment is the period indicated in the Agreement.
- F. Administrative actions and submittals that must precede or coincide with submittal of first Application of Payment include the following:
 - 1. List of subcontractors (if applicable)
 - 2. Schedule of Values
 - 3. Submittals Schedule (preliminary if not final).
 - 4. List of Contractor's staff assignments
 - 5. Copies of permits (if applicable)
 - 6. Copies of authorizations and licenses form authorities having jurisdiction for performance of the Work.
 - 7. Initial progress report
- G. Submit with transmittal letter as specified for Submittals in Section 01 33 00 - Submittal Procedures
 - 1. One signed original copy of Application for Payment to the Architect
- H. Submit updated construction schedule with each Application for Payment
- I. After issuing the Certificate of Substantial Completion, submit an Application of Payment showing 95 percent completion of portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

- J. Submit final Application for Payment showing 100 percent completion with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. As-Built Drawings
 2. Operation and Maintenance Manual
 3. All Warranties and Guarantees
 4. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 5. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims"
 6. AIA Document G707, "Consent of Surety to Final Payment"
 7. Letter stating all punch list items are completed and accepted.
 8. Release of Claims form
 9. Project Finalization and Start-Up Form

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Fixed Price Construction Contract and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Digital project management procedures.
 - 5. Project meetings.
- B. Related Requirements:
 - 1. Section 01 73 00 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.3 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Key Personnel Names: Within seven (7) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
 - 1. Post copies of list in project meeting room, in temporary field office. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.

- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and scheduled activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 - 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance

requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 6. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
 7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
 8. Fire-Protection System: Show the following:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
 9. Review: Design Professional will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Design Professional determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Design Professional will so inform Contractor, who shall make changes as directed and resubmit.
 10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 01 33 00 "Submittal Procedures."
 11. Review: Architect will review coordination drawings to confirm that in general the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility.

- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
 2. File Submittal Format: Submit or post coordination drawing files using PDF format.
 3. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
 - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Digital Data Software Program: Drawings are available in AutoCad 2013.
 - c. Contractor shall execute a data licensing agreement in the form of Agreement included in this Project Manual.

1.7 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI.
1. Design Professional will approve RFIs with any comments.
 2. Design Professional shall notify Owner of the Design Professional's Representative who will receive and respond to RFIs.
 3. Contractor shall submit RFIs in a prompt manner to avoid delays in the work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. RFI subject.
 2. Specification Section number and title and related paragraphs, as appropriate.
 3. Drawing number and detail references, as appropriate.
 4. Field dimensions and conditions, as appropriate.
 5. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 6. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven (7) working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor's proposed change order according to Section 01 26 00 "Contract Modification Procedures".
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within seven (7) days of receipt of the RFI response.
- D. On receipt of Architect's action: Review response and notify Architect within seven (7) days if Contractor disagrees with response.

1.8 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Architect's Data Files Not Available: Architect will provide Architect's CAD drawing digital data files for Contractor's use during construction.
- B. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.
 1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 3. Digital Drawing Software Program: Contract Drawings are available in AutoCad 2013.
 4. Contractor shall execute a data licensing agreement in the form of Agreement included in Project Manual.
 - a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement included in this Project Manual.
 5. At Contractor's written request, copies of Architect's Electronic CAD files will be provided to Contractor for Contractor's use in connection with the Project, subject to the following conditions:
 - a. Electronic CAD Files of Project Drawings may only be used to expedite production of Shop Drawings for the Project. Use for other Projects or purposes is not allowed.
 - b. The drawings cannot be used for any other project.
 - c. The Architect's title block must be removed by the Contractor. The Contractor becomes responsible for the content of the drawings.
 - 1) The user is responsible for removing information not normally provided on Shop Drawings and removing references to Contract Documents. Shop Drawings submitted with information associated with other trades or with references to Contract Documents will not be reviewed and will be immediately returned.
 - d. Use of files is solely at receiver's risk. Architect does not warrant accuracy of files. Receiving files in electronic form does not relieve receiver of responsibilities for measurements, dimensions, and quantities set forth in Contract Documents. In the event of ambiguity, discrepancy, or conflict between information on electronic media and that in Contract Documents, notify Architect of discrepancy and use information in hard-copy Drawings and Specifications.

- 1) CAD files may not necessarily represent the latest Contract Documents, existing conditions, and as-built conditions. Receiver is responsible for determining and complying with these conditions and for incorporating addenda and modifications.
 - 2) Receiver shall not hold Architect/Engineer responsible for data or file clean-up required to make files usable, nor for error or malfunction in translation, interpretation, or use of this electronic information.
 - 3) Receiver shall understand that even though Architect/Engineer has computer virus scanning software to detect presence of computer viruses, there is no guarantee that computer viruses are not present in files or in electronic media.
 - 4) Receiver shall not hold Architect/Engineer responsible for such viruses or their consequences, and shall hold Architect/Engineer harmless against costs, losses, or damage caused by presence of computer virus in files or media.
- C. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.9 PROJECT MEETINGS

- A. General: The Design Professional will schedule and conduct meetings and conferences at Project site unless otherwise indicated.
- B. Preconstruction Conference: The Owner will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect.
1. Minutes: The Design Professional will be responsible for the meeting minutes and will record and distribute to all parties.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Sustainable design requirements.

- i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written instructions.
 - o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Regulations of authorities having jurisdiction.
 - u. Testing and inspecting requirements.
 - v. Installation procedures.
 - w. Coordination with other work.
 - x. Required performance results.
 - y. Protection of adjacent work.
 - z. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: The Design Professional will conduct progress meetings at monthly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner, Agency, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Resolution of BIM component conflicts.
 - 4) Status of submittals.
 - 5) Status of sustainable design documentation.
 - 6) Deliveries.

- 7) Off-site fabrication.
 - 8) Access.
 - 9) Site use.
 - 10) Temporary facilities and controls.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) Status of RFIs.
 - 16) Status of Proposal Requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) As-Built Updates.
 - 20) Pending claims and disputes.
 - 21) Documentation of information for payment requests.
4. Minutes: Design Professional responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

1.2 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.3 SUBMITTAL PROCEDURES

- A. All submittals will be submitted to the General Contractor for review. General Contractor will then transmit the submittal to the architect for approval.
- B. Transmit each submittal with AIA G810 - Transmittal Letter or Contractor similar form.
- C. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- D. Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name
 - b. Owner's Project Number
 - c. Date
 - d. Name and address of Architect
 - e. Name and address of Contractor
 - f. Name and address of subcontractor, if any
 - g. Name and address of supplier
 - h. Name and address of Manufacturer
 - i. Unique identifier, including revision number
 - j. Number and title of appropriate Specification Section
 - k. Drawing number and detail references, as appropriate
 - l. Other necessary identification
- E. Apply Contractor's stamp, signed or initialed, certifying that review, approval,

verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of the Work and Contract Documents

- F. Transmit each package with transmittal form individually and appropriately for transmittal and handling.
 - 1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations.
 - a. Include the same label information as the related submittal.
 - 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents
 - 3. Provide locations on transmittal form for the following information.
 - a. Project Name
 - b. Owner's Project Number
 - c. Date
 - d. Destination (To :)
 - e. Source (From :)
 - f. Names of subcontractor, manufacturer, and supplier
 - g. Category and type of submittal
 - h. Submittal purpose and description
 - i. Submittal and transmittal distribution record
 - j. Remarks
 - k. Signature of transmitter
- G. Schedule submittals to expedite Project and deliver to Architect at business address. Coordinate submission of related items
 - 1. For each submittal for review, allow 10 days excluding delivery time to and from Contractor.
- H. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.
- I. Allow space on submittals for Contractor and Architect review stamps.
- J. When revised for resubmission, identify changes made since previous submission.
- K. Distribute copies of reviewed submittals as appropriate
 - 1. Instruct parties to promptly report inability to comply with requirements.
- L. Submittals not requested will not be recognized nor processed.
- M. Complete submittals for each item are required.
- N. Incomplete Submittals:
 - 1. Architect/Engineer will not review.
 - 2. Delays resulting from incomplete submittals are not the responsibility of Architect.
- O. Architect will not review submittal:
 - 1. Received from sources other than General Contractor
 - 2. Without General Contractor's reviewed stamp
 - 3. Without a completed transmittal form
 - 4. Instruct parties to promptly report inability to comply with requirements.
- P. Use only final submittals with mark indicating action taken by Architect in connection with construction.

1.2 ELECTRONIC SUBMITTAL PROCEDURES

- A. At Contractor's written request, the use of electronic submittals may be approved by the architect.
- B. All submittals will be submitted to the General Contractor for review. General Contractor will then transmit the submittal to the architect for approval. Submit each submittal in PDF format.
- C. Transmit each submittal with electronic equivalent of AIA Form G810
 1. Allow space on submittals for Contractor's review and approval markings.
 2. Allow space on submittals for Contractor and Architect/Engineer review stamps.
 3. Include the following information for processing and recording action:
 - a. Name and address of General Contractor
 - b. Project name
 - c. Owner's/Architects Project Number
 - d. Date
 - e. Name and address of Architect
 - f. Name and address of Contractor
 - g. Name and address of subcontractor, if any
 - h. Name and address of supplier
 - i. Name and address of Manufacturer
 - j. Unique identifier, including revision number
 - k. Number and title of appropriate Specification Section
 - l. Drawing number and detail references, as appropriate
 - m. Other necessary identification
 - n. Indicate name of firm or entity that prepared each submittal.
- D. Email all electronic submittals to the Architect's Project Manager with a copy to maa@myersanderson.com
- E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.
- F. Transmit each package with transmittal form individually and appropriately for transmittal and handling.
- G. Complete submittals for each item are required.
- H. Incomplete Submittals:
 1. Architect/Engineer will not review.
 2. Delays resulting from incomplete submittals are not the responsibility of Architect.
- I. Use only final submittals with mark indicating action taken by Architect in connection with construction.
- J. Architect will not review submittal:
 1. Received from sources other than General Contractor
 2. Without General Contractor's reviewed stamp
 3. Without a completed transmittal form
 4. Not in PDF format
- K. Schedule submittals to expedite Project and deliver to Architect at business address. Coordinate submission of related items

1. For each submittal for review, allow 10 days.
- L. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.
- M. When revised for resubmission, identify changes made since previous submission.
- N. Distribute copies of reviewed submittals as appropriate
 1. Instruct parties to promptly report inability to comply with requirements.
- O. Submittals not requested will not be recognized or processed.
- P. Use only final submittals with mark indicating action taken by Architect in connection with construction.
- Q. Electronic submittals shall comply with the same requirements contain elsewhere in this section for paper submittals.

1.4 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.
 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

- a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit two (2) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three (3) sets of Samples. Architect will retain one sample set; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

- 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- H. Test and Research Reports:
1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
 2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is

installed in its final location, for compliance with requirements in the Contract Documents.

3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.5 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.6 ARCHITECT'S REVIEW

- A. Do not make "mass submittals" to Architect
 1. "Mass submittals" are defined as six or more submittals or items in one day or 15 or more submittals or items in one week
 2. If "mass submittals" are received, Architect's review time stated above will be extended as necessary to perform proper review
 3. Architect will review "mass submittals" based on priority determined by Architect after consultation with Owner and Contractor
- B. Architect will review each submittal, make marks to indicate corrections or modifications required, and return it.

1. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.
- C. Informational submittals and other similar data are for Architect information, do not require Architect responsive action, and will not be reviewed or returned with comment.
- D. Submittals made by Contractor that are not required by Contract Documents will not be reviewed and may be discarded.
- E. Submittals approval does not authorize change to Contract requirements unless accompanied by Change Order or Architect's Supplemental Instructions.
- F. Architect will review submittals twice.
 1. All additional reviews shall be paid for by the Contractor at an established fee.
 2. Owner may withhold monies due to Contractor to cover additional costs beyond the second submittal review.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Fixed Price Construction Contract and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and 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 tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Design Professional, or Owner, or authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by the Design Professional.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 - 1. Laboratory Mockups: Full-size physical assemblies constructed at testing facility to verify performance characteristics.

2. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
 3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
 - E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
 - F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
 - G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
 - H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
 - I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
 - J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Design Professional for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Design Professional for a decision before proceeding.

1.5 ACTION SUBMITTALS

- A. Shop Drawings: For mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
 - 1. Indicate manufacturer and model number of individual components.
 - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Design Professional.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Design Professional.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 15 days of Notice to Proceed and not less than 2 days prior to preconstruction conference. Submit in format acceptable to Design Professional. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as Project superintendent.

- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
 - 3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Commissioning Authority.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Design Professional has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.8 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and re-inspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of technical representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Statement that products at Project site comply with requirements.
 - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.9 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, and mock-ups; do not reuse products on Project unless authorized by the Design Professional.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Design Professional and Commissioning Authority with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.10 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services. These services, or special inspections, provided to the Owner are for the express purpose of meeting the testing requirements required under the authorities having jurisdiction and shall not in any way be considered to replace the Contractor's responsibility for quality assurance and control for the project.
 - 1. Contractor will coordinate and schedule all testing and special inspections with the Owner's testing agency.
 - 2. Under no circumstances will the Owner's testing agency perform quality control or quality assurance work for the Contractor.

3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
 4. Initial reports (handwritten as a minimum) will be given to the Contractor by the Owner's testing Agency before leaving the site the day of the inspection.
 5. Final reports will be issued later to the Contractor, Design Professional, and Owner.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Owner, Design Professional, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Owner, Design Professional, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service to Owner, Design Professional, and Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

6. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
 1. Distribution: Distribute schedule to Owner, Design Professional, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11 SPECIAL TESTS AND INSPECTIONS

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Owner and Design Professional's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 01 10 00 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: Agency will pay sewer-service use charges for sewer usage by all entities for construction operations.
- C. Water Service: Agency will pay water-service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Agency will pay electric-power-service use charges for electricity used by all entities for construction operations.
- E. Water and Sewer Service from Existing System: Water from Agency's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- F. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

- B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture-and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- E. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
 - 1. Locations of dust-control partitions at each phase of work.
 - 2. HVAC system isolation schematic drawing.
 - 3. Location of proposed air-filtration system discharge.
 - 4. Waste-handling procedures.
 - 5. Other dust-control measures.
 - 6. Noise control measures.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction and marked for intended location and application.
 - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction.
- C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures or facilities.
 1. Toilets: Use of Owner's existing toilet facilities may be permitted, if authorized, as long as facilities are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
- F. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
 - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 1. Install electric power service overhead unless otherwise indicated.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.4 SUPPORT FACILITIES INSTALLATION

- A. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 73 00 "Execution."
- D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- E. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- F. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- D. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- E. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
 2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 3. Provide walk-off mats at each entrance through temporary partition.
- F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
 3. Indicate methods to be used to avoid trapping water in finished work.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
 2. Protect stored and installed material from flowing or standing water.
 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 4. Remove standing water from decks.
 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.

2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.
 5. Do not install material that is wet.
 6. Discard and replace stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.
- D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

3.7 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been 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 temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 77 00 "Closeout Procedures."

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 01 25 00 "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved by Architect through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

- A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify basis-of-design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within seven (7) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
 - a. Form of Architect's Approval of Submittal: As specified in Section 01 33 00 "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 01 33 00 "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

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

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole product may be indicated by the phrase: "Subject to compliance with requirements, provide the following: ..."
2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole manufacturer/source may be indicated by the phrase: "Subject to compliance with requirements, provide products by the following: ..."
3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: ..."
4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, which complies with requirements.
 - a. Non-limited list of products is indicated by the phrase: "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following: ..."
5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: ..."
6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, which complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following: ..."
7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.

Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- a. For approval of products by unnamed manufacturers, comply with requirements in Section 01 25 00 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 25 00 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 2. Evidence that proposed product provides specified warranty.
 3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 4. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 73 00

EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.

- B. Related Requirements:
 - 1. Section 01 10 00 "Summary" for limits on use of Project site.
 - 2. Section 01 77 00 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.

1.2 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.

- d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.
 - g. Noise- and vibration-control elements and systems.
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
 - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
 - 6. Dates: Indicate on the contractor's schedule when cutting and patching will be performed.
- B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 01 31 00 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

- B. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- C. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of in occupied spaces and in unoccupied spaces, or as required by authorities having jurisdiction.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.

2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
 - J. Remove and replace damaged, defective, or non-conforming Work.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 01 10 00 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 AGENCY-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's and Agency construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner and Agency construction personnel.
 1. Construction Schedule: Inform Owner/Agency of Contractor's preferred construction schedule for Owner/Agency portion of the Work. Adjust construction

schedule based on a mutually agreeable timetable. Notify Owner/Agency in a timely manner if changes to schedule are required due to differences in actual construction progress.

2. Preinstallation Conferences: Include Owner/Agency construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner/Agency work. Attend preinstallation conferences conducted by Owner/Agency construction personnel if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls."

- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 01 40 00 "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Drawings and general provisions of the Contract, including Fixed Price Construction Contract and other Division 01 Specification Sections, apply to this Section.
- B. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- C. Related Requirements:
 - 1. Section 01 78 23 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 2. Section 01 79 00 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 ACTION SUBMITTALS

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

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Idaho Division of Public Works Close-Out requirements, including "Conditions Precedent to Final Payment" list. The "Project Finalization" form is required unless specifications indicate otherwise.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of seven (7) days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
 5. Submit sustainable design submittals not previously submitted.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 7. A final report of Special Inspections to be attached to the Substantial Completion. If no Special Inspections are required, Design Professional can initial as such on the Substantial Completion form.
 8. Submit O&M Manuals for compliance with the contract documents.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of seven (7) days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 79 00 "Demonstration and Training."
 6. Advise Owner of changeover in utility services.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements.
 10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of ten (10) days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.5 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
 1. Submit final Application for Payment according to Section 01 29 00 "Payment Procedures".
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Idaho Division of Public Works Close-Out requirements.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will approve/initial punch list after inspection or will notify Contractor of construction that must be completed or corrected before final documents will be signed.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 1. Organize list of spaces in sequential order.
 2. Retain the subparagraph below if default submittal format in Section 01 33 00 "Submittal Procedures" is not appropriate.
 3. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect will return annotated file.
 - b. PDF electronic file. Architect will return annotated file.

1.7 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within ten (10) days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

- D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 - 1. Submit on digital media acceptable to Architect.

- E. Warranties in Paper Form:
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

- F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

- b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
- c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
- d. Remove tools, construction equipment, machinery, and surplus material from Project site.
- e. Remove snow and ice to provide safe access to building.
- f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
- g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- h. Sweep concrete floors broom clean in unoccupied spaces.
- i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
- j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
- k. Remove labels that are not permanent.
- l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
- o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
- p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
- q. Leave Project clean and ready for occupancy.

- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations, as well as any damage to surrounding areas. Repair includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition before requesting inspection for determination of Substantial Completion.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

B. Repair, or remove and replace, defective construction

END OF SECTION

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 1. Operation and maintenance documentation directory manuals.
 2. Emergency manuals.
 3. Systems and equipment operation manuals.
 4. Systems and equipment maintenance manuals.
 5. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 1. Architect and Agency will comment on whether content of operation and maintenance submittals is acceptable.
 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:
 1. Submit on digital media acceptable to Architect.
 2. Submit three paper copies. Architect will return two copies.
- C. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 7 (seven) days before commencing demonstration and training. Architect will return copy with comments.
 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.
- D. Comply with Section 01 77 00 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

- A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 2. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
1. Title page.
 2. Table of contents.
 3. Manual contents.
- B. Title Page: Include the following information:
1. Subject matter included in manual.
 2. Name and address of Project.
 3. Name and address of Owner.
 4. Date of submittal.
 5. Name and contact information for Contractor.
 6. Name and contact information for Construction Manager.
 7. Name and contact information for Architect.
 8. Name and contact information for Commissioning Authority.
 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 EMERGENCY MANUALS

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- E. Emergency Procedures: Include the following, as applicable:
 1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

1.6 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 - 2. Performance and design criteria if Contractor has delegated design responsibility.
 - 3. Operating standards.
 - 4. Operating procedures.
 - 5. Operating logs.
 - 6. Wiring diagrams.
 - 7. Control diagrams.
 - 8. Piped system diagrams.
 - 9. Precautions against improper use.
 - 10. License requirements including inspection and renewal dates.

- C. Descriptions: Include the following:
 - 1. Product name and model number. Use designations for products indicated on Contract Documents.
 - 2. Manufacturer's name.
 - 3. Equipment identification with serial number of each component.
 - 4. Equipment function.
 - 5. Operating characteristics.
 - 6. Limiting conditions.
 - 7. Performance curves.
 - 8. Engineering data and tests.
 - 9. Complete nomenclature and number of replacement parts.

- D. Operating Procedures: Include the following, as applicable:
 - 1. Startup procedures.
 - 2. Equipment or system break-in procedures.
 - 3. Routine and normal operating instructions.
 - 4. Regulation and control procedures.
 - 5. Instructions on stopping.
 - 6. Normal shutdown instructions.
 - 7. Seasonal and weekend operating instructions.
 - 8. Required sequences for electric or electronic systems.
 - 9. Special operating instructions and procedures.

- E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

- F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.7 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

- B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds, as described below.
- C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.
- H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1.8 PRODUCT MAINTENANCE MANUALS

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Requirements:
 - 1. Section 01 73 00 "Execution" for final property survey.
 - 2. Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set(s) of marked-up record prints.
 - 2. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit one paper-copy set(s) of marked-up record prints.
 - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit one paper-copy set of marked-up record prints.
 - 2) Architect will review for completeness.
- B. Record Specifications: Submit one paper copy annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy annotated PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.3 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper or electronic copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

- a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record sets with colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
 2. Format: DWG, Version , Microsoft Windows operating system.
 3. Format: Annotated PDF electronic file with comment function enabled.
 4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 5. Refer instances of uncertainty to Architect for resolution.
 6. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
 - a. See Section 01 31 00 "Project Management and Coordination" for requirements related to use of Architect's digital data files.
 - b. Architect will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints into manageable sets. If required, bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.

3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

1.4 RECORD SPECIFICATIONS

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

1.5 RECORD PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- C. Format: Submit record Product Data as scanned PDF electronic file(s) of marked-up paper copy of Product Data.
 1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

1.6 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.3 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit one copy (1) within seven (7) days of end of each training module.
 - 1. At completion of training, submit complete training manual(s) for Owner's use prepared in same format required for operation and maintenance manuals specified in Section 01 78 23 "Operation and Maintenance Data."

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 01 40 00 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Preconstruction Conference: Conduct conference at Project site to comply with requirements in Section 01 31 00 "Project Management and Coordination."

1.5 COORDINATION

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

1.6 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Systems and equipment operation manuals.
 - c. Systems and equipment maintenance manuals.
 - d. Product maintenance manuals.
 - e. Project Record Documents.
 - f. Identification systems.
 - g. Warranties and bonds.
 - h. Maintenance service agreements and similar continuing commitments.
 - 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 - 4. Operations: Include the following, as applicable:

- a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
- 5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
 - 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
 - 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
 - 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 78 23 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner with at least ten (10) days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Cleanup: Collect used and leftover educational materials and remove from Project. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Digital Video Recordings: Provide high-resolution, digital video.
 - 1. Submit video recordings on USB thumb drive.
- C. Recording: Display continuous running time.
- D. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION

Copyright Release Agreement

Project: ITD Fairfield HUD Manufactured Home Units & Site Development

Myers Anderson Architects Project Number: 24626

In response to the Contractor's (Sub-Contractor's) request to obtain electronic copies of portions of the copyrighted documents produced by Myers Anderson Architects, PLLC for the above referenced project, Myers Anderson Architects, PLLC agrees to provide such electronic reproductions with the following conditions:

Contractor (Sub-Contractor) to initial each condition in the space provided.

- _____ 1. These electronically reproduced document copies are only for the use of this Contractor (Sub-Contractor); and only as an aid in the production of this Contractor's (Sub-Contractor's) portion of the Work.
- _____ 2. All title blocks and other references to Myers Anderson Architects, PLLC, the Architect of Record, the Consultant(s), and the Owner shall be removed.
- _____ 3. This Contractor (Sub-Contractor) shall remove all notes, text, and detail cuts from the electronic file prior to use.
- _____ 4. This Contractor (Sub-Contractor) agrees to the following indemnity clause:

In consideration of the Contractor's (Sub-Contractor's) use of Architect's copyrighted electronic file documents, the Contractor (Sub-Contractor) agrees that it shall make no claim against Myers Anderson Architects, PLLC and shall further hold harmless, indemnify, and defend Myer Anderson Architects, PLLC from and against any and all claims, costs and expenses resulting from the Contractor's (Sub-Contractor's) use of Architect's copyrighted electronic file documents contained therein.

Contractor (Sub-contractor) Company: _____

Officer & Title (Printed): _____

Officer & Title (Signed): _____

Date: _____

Myers Anderson Architects, PLLC

Representative & Title (Printed): _____

Representative & Title (Signed): _____

Date: _____

REQUEST FOR INTERPRETATION

R.F.I. No: _____

To: _____

Date: _____

Project Name: _____

Regarding: _____

Contract For: _____

From: _____

Project No: _____

Specification Section

Paragraph

Drawing No

Detail

Request:

Signed by: _____

Date: _____

Response:

Signed by: _____

Date: _____

Date Rec'd:

Date Ret'd:

Attachments

Copies: Architect

Contractor

Consultant

Owner

Others

SUBSTITUTION REQUEST

(During the Bidding Phase)

Project: _____ Substitution Request Number: _____

From: _____
To: _____ Date: _____

A/E Project Number: _____
Re: _____ Contract For: _____

Specification Title: _____ Description: _____
Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____ Address: _____ Phone: _____
Trade Name: _____ Model No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: _____
Signed by: _____
Firm: _____
Address: _____
Telephone: _____

A/E's REVIEW AND ACTION

- Substitution approved - Make submittals in accordance with Specification Section 01 33 00.
- Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00.
- Substitution rejected - Use specified materials.
- Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Supporting Data Attached Drawings Product Data Samples Tests Reports _____

DIVISION 03 CONCRETE

SECTION 03 10 00

CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Formwork for cast-in place concrete.
 - 2. Shoring, bracing, and anchorage.
 - 3. Form accessories.
 - 4. Form stripping.
- B. Related Sections:
 - 1. Section 03 20 00 - Concrete Reinforcing.
 - 2. Section 03 30 00 - Cast-In-Place Concrete.
 - 3. Section 32 13 13 – Site Concrete Paving: Forming for sidewalks.

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials.
 - 2. ACI 301 - Specifications for Structural Concrete.
 - 3. ACI 318 - Building Code Requirements for Structural Concrete.
 - 4. ACI 347 - Guide to Formwork for Concrete.

1.3 DESIGN REQUIREMENTS

- A. Design, engineer and construct formwork, shoring and bracing in accordance with ACI 301 and ACI 318 to conform to applicable code requirements to achieve concrete shape, line and dimension as indicated on Drawings.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 347, ACI 301, and ACI 318

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Products storage and handling requirements.
- B. Deliver void forms and installation instructions in manufacturer's packaging.
- C. Store off ground in ventilated and protected manner to prevent deterioration from moisture.

1.6 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination
- B. Coordinate this Section with other sections of work, requiring attachment of components to formwork.

PART 2 PRODUCTS

2.1 WOOD FORM MATERIALS

- A. Plywood: Douglas Fir species; select sheathing, tight face grade; sound undamaged sheets with clean, true edges.
- B. Lumber Forms:
 - 1. Application: Use for edge forms and unexposed finish concrete.
 - 2. Boards: nominal 2", "Standard" Grade Douglas Fir, conforming to WCLIB Standard Grading Rules for West Coast Lumber. Surface boards on four sides.
- C. Plywood Forms:
 - 1. Application: Use for exposed finish concrete.
 - 2. Forms: Conform to PS 1; full size 4 x 8 feet panels; each panel labeled with grade trademark of APA/EWA.
 - 3. Plywood for Surfaces to Receive Membrane Waterproofing: Minimum of 5/8 inch thick; APA/EWA "B-B Plyform Structural I Exterior" grade.
 - 4. Plywood where "Smooth Finish" is required, as indicated on Drawings: APA/EWA "HD Overlay Plyform Structural I Exterior" grade, minimum of 3/4 inch thick.

2.2 PREFABRICATED FORMS

- A. Preformed Steel Forms: Minimum 16 gage matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
- B. Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished concrete surfaces.
- C. Tubular Column Type: Round, spirally wound laminated fiber material; surface treated with release agent, non-reusable, sizes as indicated on Drawings.
- D. Steel Forms: Sheet steel, suitably reinforced, and designed for particular use indicated on Drawings.
- E. Framing, Studding and Bracing: Stud or No. 3 structural light framing grade.

2.3 FORMWORK ACCESSORIES

- A. Form Ties: type, metal, fixed length, cone type, free of defects capable of leaving holes larger than 1 inch in concrete surface.
- B. Spreaders: Standard, non-corrosive metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete face. Wire ties, wood spreaders or through bolts are not permitted. Form Release Agent: Colorless mineral oil that will not stain concrete, or absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.
 - 1. Manufacturers:
 - a. Arcal Chemical Corporation Arcal-80.
 - b. Industrial Synthetics Company Synthex.
 - c. Nox-Crete Company Nox-Crete Form Coating.
 - d. Substitutions: Section 01 60 00 - Product Requirements
- C. Bituminous Joint Filler: ASTM D1751.
- D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Size, strength and character to maintain formwork in place while placing concrete.
- E. Water Stops: Rubber, minimum 1,750 psi tensile strength, minimum 50 degrees F to plus 175 degrees F working temperature range, inch wide, maximum possible lengths, ribbed profile, preformed corner sections, heat welded jointing.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 - Execution
- B. Verify lines, levels, and centers before proceeding with formwork. Verify dimensions agree with Drawings.
- C. When formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement before proceeding, request instructions from Architect/Engineer.

3.2 INSTALLATION

- A. Earth Forms:
 - 1. Earth forms are not permitted.
- B. Formwork - General:
 - 1. Provide top form for sloped surfaces steeper than 1.5 horizontal to 1 vertical to hold shape of concrete during placement, unless it can be demonstrated that top forms can be omitted.
 - 2. Construct forms to correct shape and dimensions, mortar-tight, braced, and of sufficient strength to maintain shape and position under imposed loads from construction operations.
 - 3. Camber forms where necessary to produce level finished soffits unless otherwise shown on Drawings.
 - 4. Carefully verify horizontal and vertical positions of forms. Correct misaligned or misplaced forms before placing concrete.
 - 5. Complete wedging and bracing before placing concrete.
- C. Forms for Smooth Finish Concrete:
 - 1. Use steel, plywood or lined board forms.
 - 2. Use clean and smooth plywood, uniform in size, and free from surface and edge damage capable of affecting resulting concrete finish.
 - 3. Use full size sheets of form lines and plywood wherever possible.
 - 4. Use care in forming and stripping wood forms to protect corners and edges.
 - 5. Level and continue horizontal joints.
- D. Framing, Studding and Bracing:
 - 1. Size framing, bracing, centering, and supporting members with sufficient strength to maintain shape and position under imposed loads from construction operations.
 - 2. Construct beam soffits of material minimum of 2 inches thick.
 - 3. Distribute bracing loads over base area on which bracing is erected.
 - 4. When placed on ground, protect against undermining, settlement or accidental impact.
- E. Erect formwork, shoring, and bracing to achieve design requirements, in accordance with requirements of ACI 301 and ACI 318.
- F. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- G. Obtain Architect/Engineer's approval before framing openings in structural members not indicated on Drawings.
- H. Install chamfer strips on external corners of beams and columns.
- I. Install void forms in accordance with manufacturer's recommendations.

3.3 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces are indicated to receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.
- D. Reuse and Coating of Forms: Thoroughly clean forms and reapply form coating before each reuse. For exposed work, do not reuse forms with damaged faces or edges. Apply form coating to forms in accordance with manufacturer's specifications. Do not coat forms for concrete indicated to receive "scored finish". Apply form coatings before placing reinforcing steel.

3.4 INSTALLATION - INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Install formed openings for items to be embedded in or passing through concrete work.
- B. Locate and set in place items required to be cast directly into concrete.
- C. Coordinate with Work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.
- D. Install accessories straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- E. Install water stops continuous without displacing reinforcement.
- F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- G. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.
- H. Form Ties:
 1. Use sufficient strength and sufficient quantity to prevent spreading of forms.
 2. Place ties at least 1 inch away from finished surface of concrete.
 3. Leave inner rods in concrete when forms are stripped.
 4. Space form ties equidistant, symmetrical and aligned vertically and horizontally unless otherwise shown on Drawings.
- I. Arrangement: Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.
- J. Construction Joints:
 1. Install surfaced pouring strip where construction joints intersect exposed surfaces to provide straight line at joints.
 2. Just prior to subsequent concrete placement, remove strip and tighten forms to conceal shrinkage.
 3. Show no overlapping of construction joints. Construct joints to present same appearance as butted plywood joints.
 4. Arrange joints in continuous line straight, true and sharp.
- K. Embedded Items:
 1. Make provisions for pipes, sleeves, anchors, inserts, reglets, anchor slots, nailers, water stops, and other features.
 2. Do not embed wood or uncoated aluminum in concrete.
 3. Obtain installation and setting information for embedded items furnished under other Specification sections.
 4. Securely anchor embedded items in correct location and alignment prior to placing concrete.
 5. Verify conduits and pipes, including those made of coated aluminum, meet requirements of ACI 318 for size and location limitations.
- L. Openings for Items Passing Through Concrete:

1. Frame openings in concrete where indicated on Drawings. Establish exact locations, sizes, and other conditions required for openings and attachment of work specified under other sections.
 2. Coordinate work to avoid cutting and patching of concrete after placement.
 3. Perform cutting and repairing of concrete required as result of failure to provide required openings.
- M. Screeds:
1. Set screeds and establish levels for tops of concrete slabs and levels for finish on slabs.
 2. Slope slabs to drain where required or as shown on Drawings.
 3. Before depositing concrete, remove debris from space to be occupied by concrete and thoroughly wet forms. Remove freestanding water.
- N. Screed Supports:
1. For concrete over waterproof membranes and vapor retarder membranes, use cradle, pad or base type screed supports which will not puncture membrane.
 2. Staking through membrane is not permitted.
- O. Cleanouts and Access Panels:
1. Provide removable cleanout sections or access panels at bottoms of forms to permit inspection and effective cleaning of loose dirt, debris and waste material.
 2. Clean forms and surfaces against which concrete is to be placed. Remove chips, saw dust and other debris. Thoroughly blow out forms with compressed air just before concrete is placed.

3.5 FORM CLEANING

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.
- C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
- D. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.6 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads and removal has been approved by Architect/Engineer.
- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.
- D. Leave forms in place for minimum number of days as specified in ACI 347.

3.7 ERECTION TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI 301.

3.8 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.

- C. Notify Architect/Engineer after placement of reinforcing steel in forms, but prior to placing concrete.
- D. Schedule concrete placement to permit formwork inspection before placing concrete.

END OF SECTION

SECTION 03 20 00

CONCRETE REINFORCING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Reinforcing bars.
 - 2. Welded wire fabric.
 - 3. Reinforcement accessories.
- B. Related Sections:
 - 1. Section 03 10 00 - Concrete Forming and Accessories.
 - 2. Section 03 30 00 - Cast-In-Place Concrete.
 - 3. Section 03 35 00 - Concrete Finishing: Reinforcement for concrete floor.
 - 4. Section 32 13 13 – Site Concrete Paving

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 318 - Building Code Requirements for Structural Concrete.
 - 3. ACI 530.1 - Specifications for Masonry Structures.
 - 4. ACI SP-66 - ACI Detailing Manual.
- B. ASTM International:
 - 1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - 2. ASTM A185 - Standard Specification for Steel welded wire reinforcing plan for concrete.
 - 3. ASTM A496 - Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.
 - 4. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
 - 5. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- C. American Welding Society:
 - 1. AWS D1.4 - Structural Welding Code - Reinforcing Steel.
- D. Concrete Reinforcing Steel Institute:
 - 1. CRSI - Manual of Standard Practice.
 - 2. CRSI - Placing Reinforcing Bars.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate bar sizes, spacing, locations, and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, and supporting and spacing devices.
- C. Certificates: Submit AWS qualification certificate for welders employed on the Work.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
 - 1. Submit certified copies of mill test report of reinforcement materials analysis.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with CRSI - Manual of Standard Practice ACI 301 and ACI 318.
- B. Prepare shop drawings in accordance with ACI SP-66.

1.5 QUALIFICATIONS

- A. Welders: AWS qualified within the previous 12 months.

1.6 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination
- B. Coordinate with placement of formwork, formed openings and other Work.

PART 2 PRODUCTS

2.1 REINFORCEMENT

- A. Deformed Reinforcement: ASTM A615/A615M; 60 ksi yield strength, steel bars, unfinished.
- B. Plain Wire: ASTM A82; unfinished.

2.2 ACCESSORY MATERIALS

- A. Tie Wire: Minimum 16 gage annealed type
- B. Chairs, Bolsters, Bar Supports, and Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions.
- C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: type; size and shape to meet Project conditions.

2.3 FABRICATION

- A. Fabricate concrete reinforcement in accordance with CRSI Manual of Practice ACI 318 and applicable code.
- B. Form standard hooks for stirrup and tie hooks, and seismic hooks as indicated on Drawings.
- C. Form reinforcement bends with minimum diameters in accordance with ACI 318 applicable code.
- D. Fabricate column reinforcement with offset bends at reinforcement splices.
- E. Weld reinforcement in accordance with AWS D1.4.
- F. Locate reinforcement splices not indicated on Drawings, at point of minimum stress. Review location of splices with Architect/Engineer.

PART 3 EXECUTION

3.1 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position beyond specified tolerance.
 - 1. Do not weld crossing reinforcement bars for assembly except as permitted by Architect/Engineer.
- B. Do not displace or damage vapor retarder.

- C. Accommodate placement of formed openings.
- D. Space reinforcement bars with minimum clear spacing in accordance with ACI 318.
 - 1. Where bars are indicated in multiple layers, place upper bars directly above lower bars.
- E. Maintain concrete cover around reinforcement as follows:

Reinforcement Location		Minimum Concrete Cover
Footings and Concrete Formed Against Earth		3 inches
Concrete exposed to earth or weather	No. 6 bars and larger	2 inches
	No. 5 bars and smaller	1-1/2 inches

- F. Splice reinforcing where indicated on Drawings in accordance with splicing device manufacturer's instructions.

3.2 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.

3.3 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform field inspection and testing in accordance with ACI 318.
- C. Provide free access to Work and cooperate with appointed firm.
- D. Reinforcement Inspection:
 - 1. Placement Acceptance: Specified and ACI 318 material requirements and specified placement tolerances.
 - 2. Welding: Inspect welds in accordance with AWS D1.1.
 - 3. Periodic Placement Inspection: Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.
 - 4. Weldability Inspection: Inspect for reinforcement weldability when formed from steel other than ASTM A706/A706M.
 - 5. Periodic Weld Inspection: Other welded connections.

3.4 SCHEDULES

- A. See structural drawing and notes.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete for the following:
 - 1. Foundation walls.
 - 2. Slabs on grade.
 - 3. Control, expansion and contraction joint devices.
- B. Related Sections:
 - 1. Section 03 10 00 - Concrete Forming and Accessories: Formwork and accessories.
 - 2. Section 03 20 00 - Concrete Reinforcing.
 - 3. Section 03 35 00 - Concrete Finishing.
 - 4. Section 03 39 00 - Concrete Curing.
 - 5. Section 32 13 13 – Site Concrete Paving.

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 305 - Hot Weather Concreting.
 - 3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
 - 4. ACI 308.1 - Standard Specification for Curing Concrete.
 - 5. ACI 318 - Building Code Requirements for Structural Concrete.
- B. ASTM International:
 - 1. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - 2. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 3. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 4. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
 - 5. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
 - 6. ASTM C150 - Standard Specification for Portland cement.
 - 7. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
 - 8. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
 - 9. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - 10. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
 - 11. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
 - 12. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
 - 13. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
 - 14. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing.
 - 15. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
 - 16. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink).

17. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
18. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
19. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
20. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
21. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
22. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
23. ASTM E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.
24. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.3 PERFORMANCE REQUIREMENTS

- A. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96, Procedure A.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on joint devices, attachment accessories, and admixtures.
- C. Design Data:
 1. Submit a separate concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
 - a. Hot and cold weather concrete work.
 - b. Air entrained concrete work.
 2. Identify mix ingredients and proportions, including admixtures.
 3. Identify chloride content of admixtures and whether or not chloride was added during manufacture.
 4. Submit the aggregate sieve analysis per ASTM C-117.
- D. Manufacturer's Installation Instructions: Submit installation procedures and interface required with adjacent Work.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01 77 00 - Closeout Procedures: Closeout Submittals.
- B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. Conform to ACI 305 when concreting during hot weather.
- C. Conform to ACI 306.1 when concreting during cold weather.
- D. Acquire cement and aggregate from one source for Work

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

- B. Maintain concrete temperature after installation at minimum 50 degrees F for minimum 7 days.

1.8 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination
- B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type II - Moderate Portland type; manufactured. Normal Weight Aggregates: ASTM C33.
 - 1. Coarse Aggregate Maximum Size: In accordance with ACI 318.
- B. Water: ACI 318; potable.

2.2 ADMIXTURES

- A. Air Entrainment: ASTM C260.
- B. Chemical: Not allowed without prior written permission of the Architect. .
- C. Fly Ash, Calcined Pozzolan: Not allowed without prior written permission of the Architect.
- D. Silica Fume: ASTM C1240.
- E. Plasticizing: Not allowed without prior written permission of the Architect.

2.3 ACCESSORIES

- A. Non-Shrink Grout: ASTM C1107, premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days.
- B. Concrete Reinforcing Fibers: ASTM C1116, high strength industrial-grade fibers specifically engineered for secondary reinforcement of concrete. Tensile strength -130 ksi; toughness 15 ksi; fiber length to be graded, 34 million/lb fiber count.

2.4 JOINT DEVICES AND FILLER MATERIALS

- A. Joint Filler Type A: ASTM D1751; ASTM D994; Asphalt impregnated fiberboard or felt, 1/2 inch thick; tongue and groove profile. Construction Joint Devices: Integral galvanized steel or extruded plastic; 1/8 inch thick, formed to tongue and groove profile, with removable top strip exposing sealant trough, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge.

2.5 CONCRETE MIX

- A. Select proportions for concrete in accordance with ACI 318 field experience.
- B. Provide concrete to the following criteria:
 - 1. All exposed exterior slab on grade, stem wall, columns and beams.

Material and Property	Measurement
Compressive Strength (28 day)	4500 psi
Cement Type	ASTM C150

Minimum Cement	6.0 sacks per cubic yard
Glass Fiber Reinforcement (slab-on-grade as specified per plan)	1.5 pounds/cu yd
Water-Cement Ratio (maximum)	0.45 by weight (mass)
Air Content (Do not use with towel finish)	5 percent plus or minus 1 percent
Slump	3 inches plus or minus 1 inch

2. All footings

Material and Property	Measurement
Compressive Strength (28 day)	3500 psi
Cement Type	ASTM C150
Minimum Cement	5.75 sacks per cubic yard
Water-Cement Ratio (maximum)	0.50 by weight (mass)
Air Content (Do not use with towel finish)	5.5 percent plus or minus 1 percent
Slump	4 inches plus or minus 1 inch

3. All Interior slab-on-grade

Material and Property	Measurement
Compressive Strength (28 day)	3500 psi
Glass Fiber Reinforcement (slab-on-grade as specified per plan)	1.5 pounds/cu yd
Cement Type	ASTM C150
Minimum Cement	5.0 sacks per cubic yard
Water-Cement Ratio (maximum)	0.45 by weight (mass)
Air Content (Do not use with towel finish)	0 percent plus or minus 1.5 percent
Slump	3 inches plus or minus 1 inch

C. Admixtures: Include admixture types and quantities indicated in concrete mix designs only when approved by Architect/Engineer.

1. Use accelerating admixtures in cold weather. Use of admixtures will not relax cold weather placement requirements.
2. Do not use calcium chloride or admixtures containing calcium chloride.

3. Use set retarding admixtures during hot weather.
 4. Add air entrainment admixture to concrete mix for work exposed to freezing and thawing.
- D. Average Compressive Strength Reduction: Not permitted.
- E. Ready Mixed Concrete: Mix and deliver concrete in accordance with ASTM C94/C94M.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 - Execution
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.
- B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- C. Remove debris and ice from formwork, reinforcement, and concrete substrates.
- D. Remove water from areas receiving concrete before concrete is placed.

3.3 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301 and ACI 318.
- B. Notify testing laboratory and Architect minimum 24 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints, and are not disturbed during concrete placement. Separate exterior slabs on grade from vertical surfaces with 1/2 inch thick joint filler.
- D. Place joint filler in floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- E. Extend joint filler from bottom of slab to within 1/4 inch of finished slab surface.
- F. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- G. Deposit concrete at final position. Prevent segregation of mix.
- H. Place concrete in continuous operation for each panel or section determined by predetermined joints.
- I. Consolidate concrete.
- J. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- K. Place concrete continuously between predetermined expansion, control, and construction joints.
- L. Do not interrupt successive placement; do not permit cold joints to occur.
- M. Place floor slabs in long strip construction with saw cut pattern indicated.

- N. Saw cut joints within 12 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness (maximum 1" deep).
- O. Screed floors and slabs on grade level, maintaining surface flatness of maximum 1/8 inch in 10 ft.
- P. Slope floor to floor drains at minimum of 1/8 inch per one foot.

3.4 CONCRETE FINISHING

- A. Provide formed vertical concrete surfaces to be left exposed with sack rubbed finish.
- B. Finish concrete floor surfaces to requirements of Section 03 35 00.
- C. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1/8 inch per foot nominal as indicated on drawings.
- D. Provide control joint or saw cut at grade break line where floor slopes to floor drain.

3.5 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
 - 1. Protect concrete footings from freezing for minimum 5 days.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure concrete floor surfaces as specified in Section 03 39 00.

3.6 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform field inspection and testing in accordance with ACI 318 and applicable code.
- C. Provide free access to Work and cooperate with appointed firm.
- D. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.
- E. Strength Test Samples:
 - 1. Sampling Procedures: ASTM C172.
 - 2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, field cured.
 - 3. Sample concrete and make one set of three cylinders for every 25 cu yds or less of each class of concrete placed and one set of three cylinders or every 100 cu yd thereafter.
 - 4. Make one additional cylinder during cold weather concreting, and field cure.
- F. Field Testing:
 - 1. Slump Test Method: ASTM C143/C143M.
 - 2. Air Content Test Method: ASTM C173/C173M and ASTM C231.
 - 3. Temperature Test Method: ASTM C1064/C1064M.
 - 4. Measure slump and temperature for each compressive strength concrete sample.
 - 5. Measure air content in air entrained concrete for each compressive strength concrete sample.
- G. Cylinder Compressive Strength Testing:
 - 1. Test Method: ASTM C39.
 - 2. Test Acceptance: In accordance with ACI 318.
 - 3. Test one cylinder at 7 days.

4. Test two cylinders at 28 days.
 5. Dispose remaining cylinders when testing is not required.
- H. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

3.7 PATCHING

- A. Allow Architect/Engineer to inspect concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect/Engineer upon discovery.
- C. Patch imperfections as directed by Architect.

3.8 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by Architect/Engineer.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

3.9 SCHEDULE - CONCRETE TYPES AND FINISHES

- A. Refer to structural drawings.

END OF SECTION

SECTION 03 35 00

CONCRETE FINISHING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Finishing concrete floors.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete: Prepared concrete floors ready to receive finish; control and formed expansion and contraction joints and joint devices.
 - 2. Section 03 39 00 - Concrete Curing.

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 302.1 - Guide for Concrete Floor and Slab Construction.
- B. ASTM International:
 - 1. ASTM E1155 - Standard Test Method for Determining Floor Flatness and of Levelness Using the F-number System.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on concrete hardener, sealer, compatibilities, and limitations.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 77 00 - Closeout Procedures: Closeout submittals.
- B. Operation and Maintenance Data: Submit data on maintenance renewal of applied coatings.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301 and ACI 302.1.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.
- B. Applicator Installer: Company specializing in performing work of this section with minimum three years experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Deliver materials in manufacturer's packaging including application instructions.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

- B. Temporary Lighting: Minimum 200 W light source, placed 8 feet above floor surface, for each 425 sq ft of floor being finished.
- C. Do not finish floors until ambient temperature reaches of minimum 50 degrees F.
- D. Ventilation: Sufficient to prevent injurious gases from temporary heat or other sources affecting concrete.

1.9 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination.
- B. Coordinate the Work with concrete floor placement and concrete floor curing.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:
 - 1. Dayton Superior Corp.
 - 2. L & M Construction Chemicals.
 - 3. Master Builders Inc.
 - 4. Nox-Crete Chemicals.
 - 5. Sika Corp.
 - 6. Substitutions: Section 01 60 00 - Product Requirements.

2.2 COMPOUNDS - HARDENERS AND SEALERS

- A. Chemical Hardener: liquid type.
 - 1. Manufacturers:
 - a. Dayton Superior Corp. Model: Conspec Tough Seal
 - b. Substitutions: Section 01 60 00 - Product Requirements.
- B. Sealer: liquid type.
 - 1. Manufacturers:
 - a. Dayton Superior Corp. Model Conspec Tough Seal
 - b. Substitutions: Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 - Execution
- B. Verify floor surfaces are acceptable to receive the Work of this section.

3.2 FLOOR FINISHING

- A. Finish concrete floor surfaces in accordance with ACI 301 and ACI 302.1.
- B. Steel trowel finish on surfaces receiving carpeting, resilient flooring, seamless flooring, and thin set ceramic tile.
- C. Steel trowel finish on surfaces indicated to be exposed.
- D. Broom finish on surface indicated to be exposed, with broom finish texture as selected by architect.
- E. In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains at 1/8 inch per foot nominal as indicated on Drawings.

3.3 FLOOR SURFACE TREATMENT

- A. Apply liquid hardener on floor surfaces in accordance with manufacturer instructions.
- B. Apply sealer on floor surfaces in accordance with manufacturer instructions.

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation of Surface Flatness For Exposed Concrete Floors: 1/8 inch in 10 ft.
- C. Maximum Variation of Surface Flatness Under Seamless Resilient Flooring: 1/8 inch in 10 ft.
- D. Maximum Variation of Surface Flatness under Carpeting: 1/8 inch in 10 ft. Correct defects in defined traffic floor by grinding or removal and replacement of defective Work. Areas requiring corrective Work will be identified. Re-measure corrected areas by same process.

3.5 SCHEDULES

- A. Exterior slab on grade to receive light broom finish.

END OF SECTION

SECTION 03 39 00

CONCRETE CURING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes initial and final curing of horizontal and vertical concrete surfaces.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete.
 - 2. Section 03 35 00 - Concrete Finishing.

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 302.1 - Guide for Concrete Floor and Slab Construction.
 - 3. ACI 308.1 - Standard Specification for Curing Concrete.
 - 4. ACI 318 - Building Code Requirements for Structural Concrete.
- B. ASTM International:
 - 1. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
 - 2. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
 - 3. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
 - 4. ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on curing compounds, compatibilities, and limitations.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301 or ACI 302.1 or ACI 318.
- B. Curing compound shall be compatible with concrete sealer specified in Section 03 35 00

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Deliver curing materials in manufacturer's packaging including application instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Membrane Curing Compound Type A: ASTM C309, Type 1, Class B.
 - 1. Manufacturers:
 - a. Dayton Superior: Conspec Conhard
 - b. L & M Construction Chemicals.
 - c. Master Builders Inc.

- d. Nox-Crete Chemicals.
 - e. Sika Corp.
 - f. Substitutions: Section 01 60 00 - Product Requirement:
- B. Water: Potable, not detrimental to concrete.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 - Execution
- B. Verify substrate surfaces are ready to be cured.

3.2 INSTALLATION - HORIZONTAL SURFACES

- A. Cure concrete in accordance with ACI 308.1.
- B. Membrane Curing Compound: Apply curing compound in two coats with second coat applied at right angles to first.

3.3 INSTALLATION - VERTICAL SURFACES

- A. Cure concrete in accordance with ACI 308.1.
- B. Membrane Curing Compound: Apply compound in two coats with second coat applied at right angles to first.

3.4 PROTECTION OF FINISHED WORK

- A. Section 01 73 00 - Execution: Protection of installed construction.
- B. Do not permit traffic over unprotected floor surface.

END OF SECTION

SECTION 03 60 00

GROUTING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Non-shrink cementitious grout.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete.

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 318 - Building Code Requirements for Structural Concrete.
- B. American Society of Testing and Materials:
 - 1. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 2. ASTM C40 - Test Method for Organic Impurities in Fine Aggregates for Concrete.
 - 3. ASTM C150 - Standard Specification for Portland Cement.
 - 4. ASTM C191 - Test Method for Time of Setting of Hydraulic Cement by Vicat Needle.
 - 5. ASTM C307 - Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing.
 - 6. ASTM C531 - Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - 7. ASTM C579 - Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, monolithic Surfacing and Polymer Concretes.
 - 8. ASTM C827 - Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures.
- C. U. S. Army Corps of Engineers Concrete Research Division (CRD):
 - 1. CRD C621 - Non-Shrink Grout.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit product data on grout.
- C. Manufacturer's Installation Instructions: Submit manufacturer's instructions for mixing, handling, surface preparation and placing epoxy type and non-shrink type grouts.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 DELIVERY, STORING, AND HANDLING

- A. Section 01 60 00 – Product Requirements: Requirements for transporting, handling, storing and protecting products.
- B. Deliver grout in manufacturer's unopened containers with proper labels intact.
- C. Store in a dry shelter, protect from moisture.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

- B. Maintain minimum temperature of 45 degrees F before, during, and after grouting, until grout has set.

PART 2 PRODUCTS

2.1 PORTLAND CEMENT GROUT MATERIALS

- A. Portland Cement: ASTM C150, Type I and II.
- B. Water:
 - 1. Potable; containing no impurities, suspended particles, algae or dissolved natural salts in quantities capable of causing:
 - a. Corrosion of steel.
 - b. Volume change increasing shrinkage cracking.
 - c. Efflorescence.
 - d. Excess air entraining.
- C. Fine Aggregate:
 - 1. Washed natural sand.
 - 2. Gradation in accordance with ASTM C33 and represented by smooth granulometric curve within required limits.
 - 3. Free from injurious amounts of organic impurities as determined by ASTM C40.
- D. Mix:
 - 1. Portland cement, sand and water. Do not use ferrous aggregate or staining ingredients in grout mixes.

2.2 RAPID CURING EPOXY GROUT

- A. Manufacturers:
 - 1. Sika Model.
 - 2. L & M Construction Chemicals Inc.
 - 3. Substitutions: Section 01 60 00 - Product Requirements.
- B. Non-Shrink Cementitious Grout
 - 1. Pre-mixed ready for use formulation requiring only addition of water; non-shrink, non-corrosive, non-metallic, non-gas forming, no chlorides.
 - 2. Properties: Certified to maintain initial placement volume or expand after set and meet the following minimum properties when tested in accordance with CRD-C621, for Type D non-shrink grout:

Property	Test	Time	Result
Setting Time	ASTM C191	Initial	2 hours (Approx)
		Final	3 hours (Approx)
Expansion			0.10% - 0.4% Maximum
Compressive Strength	CRD-C621	1 day	4,000 psi
		7 days	7,000 psi
		28 days	10,000 psi to 10,800 psi

2.3 FORMWORK

- A. Refer to Section 03 10 00 for formwork requirements.

2.4 CURING

- A. Prevent rapid loss of water from grout during first 48 hours by use of approved membrane curing compound or with use of wet burlap method.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 - Execution: Verification of existing conditions before starting work.
- B. Verify areas to receive grout.

3.2 PREPARATION

- A. Remove defective concrete, laitance, dirt, oil, grease and other foreign material from concrete surfaces by brushing, hammering, chipping or other similar means until sound, clean concrete surface is achieved.
- B. Rough concrete lightly, but not enough to interfere with placement of grout.
- C. Remove foreign materials from metal surfaces in contact with grout.
- D. Align, level and maintain final positioning of components to be grouted.
- E. Saturate concrete surfaces with clean water; remove excess water, leave none standing.

3.3 INSTALLATION - FORMWORK

- A. Construct leak-proof forms anchored and shored to withstand grout pressures.
- B. Install formwork with clearances to permit proper placement of grout.

3.4 MIXING

- A. Mix and prepare non-shrink cementitious grout in accordance with manufacturer's instructions.
 - 1. Capable of developing minimum compressive strength of 2400 psi in 48 hours and 7000 psi in 28 days.
- B. Mix grout components in proximity to work area and transport mixture quickly and in manner not permitting segregation of materials.

3.5 PLACING GROUT

- A. Place grout material quickly and continuously.
- B. Do not use pneumatic-pressure or dry-packing methods.
- C. Apply grout from one side only to avoid entrapping air.
- D. Do not vibrate placed grout mixture, or permit placement when area is being vibrated by nearby equipment.
- E. Thoroughly compact final installation and eliminate air pockets.
- F. Do not remove leveling shims for at least 48 hours after grout has been placed.

3.6 CURING

- A. Immediately after placement, protect grout from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. After grout has attained its initial set, keep damp for minimum of 3 days.

3.7 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Field inspection and testing will be performed in accordance with ACI 301 ACI 318 and under provisions of Section 01 40 00 - Quality Requirements.
- C. Submit proposed mix design to testing firm for review prior to commencement of Work.

- D. Tests of grout components may be performed to ensure conformance with specified requirements.

END OF DIVISION

DIVISION 5 METALS

SECTION 05 50 00

METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes shop fabricated metal items.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete: Execution requirements for embedded anchors and attachments for metal fabrications specified by this section in concrete.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
 - 2. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - 3. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes.
 - 4. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
 - 5. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 - 6. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
 - 7. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
 - 8. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
 - 9. ASTM F436 - Standard Specification for Hardened Steel Washers.
 - 10. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.
- B. American Welding Society:
 - 1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
 - 2. AWS D1.1 - Structural Welding Code - Steel.
- C. National Ornamental & Miscellaneous Metals Association:
 - 1. NOMMA Guideline 1 - Joint Finishes.
- D. SSPC: The Society for Protective Coatings:
 - 1. SSPC - Steel Structures Painting Manual.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal requirements.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.
- C. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within previous 12 months.

1.4 QUALITY ASSURANCE

- A. Finish joints in accordance with NOMMA Guideline 1.

1.5 QUALIFICATIONS

- A. Design under direct supervision of Professional Engineer experienced in design of this Work and licensed at Project location.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Accept metal fabrications on site in labeled shipments. Inspect for damage.
- C. Protect metal fabrications from damage by exposure to weather.

1.7 FIELD MEASUREMENTS

- A. Verify field measurements are as indicated drawings.

PART 2 PRODUCTS

2.1 MATERIALS - STEEL

- A. Structural Shapes: STM A36/A36M.
- B. Steel Plate: ASTM A36/A36M.
- C. Hollow Structural Sections: ASTM A500/A500M, Grade B.
- D. Sheet Steel: ASTM A653/A653M, Grade 33 Structural Quality.
- E. Bolts: ASTM A325; Type 1.
 - 1. Finish: Mechanically galvanized.
- F. Nuts: ASTM A563 heavy hex type.
 - 1. Finish: Mechanically galvanized.
- G. Washers: ASTM F436; Type 1.
 - 1. Finish: Mechanically galvanized.
- H. Welding Materials: AWS D1.1; type required for materials being welded.
- I. Shop Primer: SSPC Paint 15, Type 1, red oxide.
- J. Touch-Up Primer: Match shop primer.

2.2 STRUCTURAL SUPPORTS

- A. Other Structural Supports: Steel sections, shape and size as indicated on Drawings ; prime paint, one coat .

2.3 DOOR FRAMES

- A. Door Frames: Steel channel sections, size indicated on Drawings, with jamb anchors suitable for building into masonry, attachment to concrete, and, minimum 4 anchors per jamb; prime paint, one coat

2.4 BOLLARDS

- A. Bollards: Steel pipe, concrete filled, crowned cap, 6 in diameter, length as indicated on Drawings; prime paint, one coat

- B. Concrete Fill: 3,000 psi as specified in Section 03 30 00 - Cast-in-Place Concrete
- C. Anchors: Concealed type as indicated on Drawings

2.5 LADDERS

- A. Ladder: ANSI A14.3, steel-welded construction.
 - 1. Side Rails: 1/2 x 2 inch side rails spaced at 24 inches apart.
 - 2. Rungs: 1 in diameter solid rod, spaced 12 in o.c.
 - 3. Mounting: Space rungs 7 in from wall surface; with steel mounting brackets and attachments
 - 4. Finish: Prime paint, one coat

2.6 FABRICATED ARCHITECTURAL TRIM

- A. Steel sections, size and configuration as indicated on Drawings
- B. Exterior Locations: Prime paint, one coat

2.7 ANCHORS

- A. Anchor Rods: ASTM A307; Grade A
 - 1. Shape: Hooked and Straight
 - 2. Furnish with nut and washer; unfinished
- B. Epoxy Adhesive Anchors:
 - 1. Manufacturer List:
 - a. Cobra Anchors
 - b. Hilti, Inc
 - c. Simpson Strong-Tie Co., Inc
 - d. Substitutions: Section 01 60 00 - Product Requirements
- C. Grout: According to Section 03 60 00 - Grouting
- D. Threaded Rod: As shown on the drawings or as approved by Architect

2.8 ANCHOR BOLTS

- A. Anchor Rods: ASTM F1554; Grade 55, weldable.
 - 1. Shape: Hooked.
 - 2. Furnish with nut and washer; unfinished.

2.9 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Continuously seal joined members by continuous welds.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.10 FACTORY APPLIED FINISHES - STEEL

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime paint items with two coats except where galvanizing is specified.
- D. Galvanizing: ASTM A123/A123M; hot dip galvanize after fabrication.
- E. Chrome Plating: ASTM B177, weight, nickel-chromium alloy, polished finish.

2.11 FABRICATION TOLERANCES

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 - Execution
- B. Verify field conditions are acceptable and are ready to receive Work.

3.2 PREPARATION

- A. Clean and strip primed steel items to bare metal and aluminum where site welding is required.
- B. Supply steel items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.

3.3 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Make provisions for erection stresses. Install temporary bracing to maintain alignment, until permanent bracing and attachments are installed.
- C. Field weld components indicated on Drawings.
- D. Perform field welding in accordance with AWS D1.1.
- E. Obtain approval of Architect/Engineer prior to site cutting or making adjustments not scheduled.
- F. After erection, touch up welds, abrasions, and damaged finishes with prime paint or galvanizing repair paint to match shop finishes.

3.4 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation From Plumb: 1/4 inch per story or for every 12 ft in height whichever is greater, non-cumulative.
- C. Maximum Offset From Alignment: 1/4 inch.
- D. Maximum Out-of-Position: 1/4 inch.

3.5 FIELD QUALITY CONTROL

- A. Welding: Inspect welds in accordance with AWS D1.1.

END OF DIVISION

DIVISION 6 WOOD, PLASTICS, AND COMPOSITES

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes structural wall and roof framing; built-up structural beams and columns; wall, and roof sheathing; sill gaskets; and miscellaneous framing and sheathing.
- B. Related Sections:
 - 1. Section 03 30 00: Cast-In-Place Concrete.
 - 2. Section 06 10 53: Miscellaneous Rough Carpentry.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A135.4 - Basic Hardboard.
 - 2. ANSI A208.1 - Mat-Formed Wood Particleboard.
- B. American Wood-Preservers' Association:
 - 1. AWPA M4 - Standard for the Care of Preservative-Treated Wood Products.
- C. AWPA ASTM International:
 - 1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 2. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- D. The Redwood Inspection Service:
 - 1. RIS - Standard Specifications for Grades of California Redwood Lumber.
- E. Southern Pine Inspection Bureau:
 - 1. SPIB - Standard Grading Rules for Southern Pine Lumber.
- F. U.S. Department of Commerce National Institute of Standards and Technology:
 - 1. DOC PS 1 - Construction and Industrial Plywood.
 - 2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
 - 3. DOC PS 20 - American Softwood Lumber Standard.
- G. West Coast Lumber Inspection Bureau:
 - 1. WCLIB - Standard Grading Rules for West Coast Lumber.
- H. Western Wood Products Association:
 - 1. WWPA G-5 - Western Lumber Grading Rules.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
 - 1. Lumber Grading Agency: Certified by DOC PS 20.
 - 2. Lumber: DOC PS 2 Apply label from agency approved by authority having jurisdiction to identify each preservative treated material.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Protect trusses from warping or other distortion by stacking in vertical position, braced to resist movement.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

- A. Lumber Grading Rules: NLGA RIS SPIB WCLIB WWPA or NELMA.
- B. Beam Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.
- C. Parallel Strand Lumber (PSL) – Weyerhaeuser 2.0E Parallam.
- D. Joist Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.
- E. Non-structural Light Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.
- F. Studding: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.
- G. Miscellaneous Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content, pressure preservative treat where required by code.

2.2 SHEATHING MATERIALS

- A. Wood Structural Panel Roof Sheathing: EWA Rated Sheathing; Plywood Oriented Strand Board Span Rating as noted on structural drawings; Exposure Durability 1 exterior; unsanded.
- B. Particleboard Roof Sheathing: ANSI A208.1 Waferboard Structural Particleboard; wood chips shavings flakes set with waterproof resin binder; grade as noted on structural drawings; unsanded faces.
- C. Wood Structural Panel Wall Sheathing: EWA Rated Sheathing, Plywood Oriented Strand Board; Span Rating as noted on structural drawings; Exposure Durability 1 Exterior; unsanded.
- D. Particleboard Wall Sheathing: ANSI A208.1 EWA Waferboard Structural Particleboard; wood chips, shavings, and flakes set with waterproof resin binder; grade as noted on structural drawings; unsanded faces.

2.3 SHEATHING AND UNDERLAYMENT LOCATIONS

- A. Sloped Roof Sheathing: 19/32 inches thick; Span Rating: 40/20; 48 x 96 inch sized sheets, square edges.
- B. Wall Sheathing: 7/16 inch thick, Span Rating 32/16, 48 x 96 inch sized sheets, square edges.
- C. Floor Sheathing: 3/4 inch thick, Span Rating 40/20, 48 x 96 inch sized sheets, square edges.
- D. Underlayment: 3/8 inch thick, type recommended by flooring manufacturer

2.4 FIREBLOCKING AND DRAFTSTOPPING

- A. Fireblocking: Solid lumber, structural wood panel, or particleboard.
 - 1. Solid lumber nominal 2 inches thick.
 - 2. Two layers of solid lumber nominal 1 inch thick with broken lapped joints.
 - 3. Structural wood panel 23/32 inch thick with joints backed by structural wood panel.
 - 4. Particleboard 3/4 inch thick with joints backed by particleboard.

2.5 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
 - 2. Nails and Staples: ASTM F1667.
 - 3. Drywall Screws: Bugle head, hardened steel, power driven type, length to achieve full penetration of sheathing substrate.
 - 4. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.
- B. Die Stamped Connectors: inch thick, hot dipped galvanized steel.
- C. Structural Framing Connectors: Hot dipped galvanized steel, sized to suit framing conditions.
- D. Sill Gasket on Top of Foundation Wall: 1/4 inch thick, plate width, glass fiber strip.
- E. Subfloor Glue: EWA AFG-01, waterproof of water base, air cure type, and cartridge dispensed.
- F. Building Paper: ASTM D226; Type I, No. 15 unperforated asphalt felt.

PART 3 EXECUTION

3.1 FRAMING

- A. Set structural members level and plumb, in correct position.
- B. Make provisions for erection loads, for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.
- C. Place horizontal members, crown side up.
- D. Construct load bearing framing and curb members full length without splices.
- E. Double members at openings over inches wide. Space short studs over and under opening to stud spacing.
- F. Construct double joist headers at floor and ceiling openings and under wall stud partitions parallel to floor joists. Frame rigidly into joists.
- G. Bridge joists at mid-span. Fit solid blocking at ends of members.
- H. Place sill gasket directly on cementitious foundation. Puncture gasket clean and fit tight to protruding foundation anchor bolts.
- I. Coordinate installation of glue laminated structural units, prefabricated wood trusses, and wood "I" joists.
- J. Coordinate curb installation with installation of roof sheathing roofing and vapor retardant.

3.2 SHEATHING

- A. Secure roof sheathing with longer edge (strength axis) perpendicular to framing members and with ends staggered and sheet ends over bearing.
- B. Use sheathing clips between sheets between roof framing members. Install solid edge blocking between sheets.

- C. Secure wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered. Place building air barrier over wall sheathing; weather lap edges and ends.
- D. Install plywood to simple span.

3.3 FIREBLOCKING AND DRAFTSTOPPING

- A. Install fireblocking to cut off concealed draft openings.
 - 1. Concealed Framed Wall and Furred Spaces: Install fireblocking vertically at floor and ceiling levels and horizontally at maximum 10 feet on center.
 - 2. Connections Between Horizontal and Vertical Spaces: Install fireblocking between vertical walls and partitions and the following:
 - a. Horizontal roof framing.
 - b. Soffits, dropped ceilings, cove ceilings and other horizontal concealed spaces.
 - 3. Exterior Combustible Architectural Trim: Install fireblocking at maximum 20 feet on center

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances
- B. Framing Members: 1/4 inch from indicated position, maximum.
- C. Surface Flatness of Floor: 1/4 inch in 10 feet maximum, and 1/2 inch in 30 feet maximum.

END OF SECTION

SECTION 06 10 53

MISCELLANEOUS ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes perimeter nailers; blocking in wall and mobile home skirting; wood furring and grounds; wall cabinets, wood trim; telephone and electrical panel back boards; and concealed wood blocking for support.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A208.1 - Mat-Formed Wood Particleboard.
- B. American Wood-Preservers' Association:
 - 1. AWPA M4 - Standard for the Care of Preservative-Treated Wood Products.
- C. ASTM International:
 - 1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 2. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- D. The Redwood Inspection Service:
 - 1. RIS - Standard Specifications for Grades of California Redwood Lumber.
- E. Southern Pine Inspection Bureau:
 - 1. SPIB - Standard Grading Rules for Southern Pine Lumber.
- F. U.S. Department of Commerce National Institute of Standards and Technology:
 - 1. DOC PS 1 - Construction and Industrial Plywood.
 - 2. DOC PS 20 - American Softwood Lumber Standard.
- G. West Coast Lumber Inspection Bureau:
 - 1. WCLIB - Standard Grading Rules for West Coast Lumber.
- H. Western Wood Products Association:
 - 1. WWPA G-5 - Western Lumber Grading Rules.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
 - 1. Lumber Grading Agency: Certified by DOC PS 20.
 - 2. Lumber: DOC PS 20.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Lumber Grading Rules: NLGA RIS SPIB WCLIB WWPA or NELMA.
- B. Miscellaneous Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.
- C. Plywood: EWA Rated Sheathing; Plywood Oriented Strand Board Span Rating as noted on structural drawings; Exposure Durability 1 exterior; unsanded.
- D. Particleboard: ANSI A208.1 Waferboard Structural Particleboard; wood chips shavings flakes set with waterproof resin binder; grade as noted on structural drawings; unsanded

faces.

2.2 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
 - 2. Nails and Staples: ASTM F1667.
 - 3. Drywall Screws: Bugle head, hardened steel, power driven type, length to achieve full penetration of sheathing substrate.
 - 4. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

2.3 FACTORY WOOD TREATMENT

- A. Wood Preservative (Pressure Treatment): AWWA U1, Commodity Specification A-Sawn Products or F-Wood Composites using water-borne preservative.
- B. Wood Preservative (Surface Application): Clear, Fire Retardant Treatment: Chemically treated and pressure impregnated, having flame spread of 25 or less when tested in accordance with ASTM E 84 and showing no evidence of significant progressive combustion when test is continued for an additional 20 minute period, Interior Type.
- C. Moisture Content after Treatment: Kiln dried (KDAT).
 - 1. Lumber: Maximum 19 percent.
 - 2. Structural Panels: Maximum 15 percent.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Verification of existing conditions before starting work.
- B. Verify substrate conditions are ready to receive blocking, curbing and framing.

3.2 PREPARATION

- A. Coordinate placement of blocking, curbing and framing items.

3.3 INSTALLATION

- A. Set members level and plumb, in correct position.
- B. Place horizontal members, crown side up.
- C. Construct curb members of solid wood sections.
- D. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.
- E. Coordinate curb installation with installation of decking and support of deck openings, and roofing vapor retardant.
- F. Space framing and furring 16 inches oc.
- G. Secure sheathing to framing members with ends over firm bearing and staggered.
- H. Install telephone and electrical panel back boards with plywood sheathing material where required. Size back boards 12 inches beyond size of electrical and telephone panel.

END OF DIVISION

SECTION 06 20 13

EXTERIOR CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Exterior canopy components.
 - 2. Exterior standing and running trim.
 - 3. Exterior board and batten siding.
 - 4. Canopy posts

1.2 DEFINITIONS

- A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. WWPA: Western Wood Products Association.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Protect materials against weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Provide for air circulation within and around stacks and under temporary coverings.

1.4 SUBMITTALS

- A. Product Data: For each type of factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1.5 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.
- B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
 - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1.6 MEASUREMENT AND PAYMENT

- A. There will be no separate measurement or payment for work in this section. Payment will be included at the contract unit price for items shown on the Schedule of Items.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Lumber: DOC PS 20 and applicable grading rules of inspection agencies certified by ALSC's Board of Review.

1. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.
2. For exposed lumber, mark grade stamp on end or back of each piece.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process:

1. Lumber: AWPA C2 except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX). Kiln dry after treatment to a maximum moisture content of 19 percent.
2. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
3. For exposed items indicated to receive transparent finish, do not use chemical formulations that contain colorants or that bleed through or otherwise adversely affect finishes.
4. Do not use material that is warped or does not comply with requirements for untreated material.
5. Mark lumber with treatment quality mark of an inspection agency approved by ALSC's Board of Review.
 - a. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
6. Application: All exterior lumber and plywood.

2.3 STANDING AND RUNNING TRIM

A. Lumber Trim and board and batten siding for Opaque Finish:

1. Species and Grade: Redwood, Grade B; RIS.
2. Species and Grade: Western red cedar, Grade B; WWPA.
3. Species and Grade: Douglas Fir #2
4. Maximum Moisture Content: 19 percent.
5. Finger Jointing: Allowed if made with wet-use adhesive complying with ASTM D 5572.
6. Face Surface: Saw textured.

2.4 CANOPY POSTS:

A. Doug fir # 2 and Lodgepole Pine.

2.5 GUARDS AND RAILINGS

- A. Posts, Railings and Balusters: Doug fir # 2 or Redwood, Grade B; RIS.
- B. Doug fir # 2 or Redwood, Grade B; RIS.

2.6 MISCELLANEOUS MATERIALS

- A. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches into wood substrate.
 1. Provide hot-dip galvanized steel fasteners.
 2. For prefinished items, provide matching prefinished aluminum fasteners where face fastening is required.
 3. For pressure-preservative-treated wood, provide hot-dip galvanized steel fasteners.
 4. For applications not otherwise indicated, provide hot-dip galvanized steel fasteners.

- B. Wood Glue: Waterproof resorcinol glue recommended by manufacturer for exterior carpentry use.
- C. Sealants: Latex, complying with ASTM C 834, and recommended by manufacturer of substrates for intended application.
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Bostik Findley; Chem-Calk 600.
 - b. Pecora Corporation; AC-20+.
 - c. Schnee-Morehead, Inc.; SM 8200.
 - d. Sonneborn, Division of ChemRex Inc.; Sonolac.
 - e. Tremco; Tremflex 834.

2.7 FABRICATION

- A. Back out or kerf backs of standing and running trim wider than 5 inches, except members with ends exposed in finished work.
- B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

3.3 INSTALLATION, GENERAL

- A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.
 - 1. Do not use manufactured units with defective surfaces, sizes, or patterns.
- B. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
 - 1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
 - 2. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
 - 3. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.

4. Coordinate exterior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

3.4 STANDING AND RUNNING TRIM INSTALLATION

- A. Examine the condition of the existing trim with the Historic Preservation Specialist. If trim cannot be repaired, provide materials in shape and profile of existing trim.
- B. Install flat grain lumber with bark side exposed to weather.
- C. Install trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long except where necessary.
 1. Use scarf joints for end-to-end joints.
 2. Stagger end joints in adjacent and related members.
- D. Fit exterior joints to exclude water. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.
- E. Unless otherwise indicated, countersink fasteners, fill surface flush, and sand where face fastening is unavoidable.

3.5 ADJUSTING

- A. Replace exterior finish carpentry that is damaged or does not comply with requirements. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

3.6 CLEANING

- A. Clean exterior finish carpentry on exposed and semiexposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

3.7 PROTECTION

- A. Protect installed products from damage from weather and other causes during construction.
- B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

DIVISION 07 THERMAL AND MOISTURE PROTECTION

SECTION 07 21 13

BOARD INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes rigid board insulation at perimeter foundation wall, exterior wall behind gypsum board wall finish, and horizontally under slab at foundation perimeter.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete: Board insulation at perimeter foundation wall
 - 2. Section 07 21 16 - Blanket Insulation

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
 - 2. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics
 - 3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- B. Scientific Certification Systems (SCS):
 - 1. SCS Recycled Content Certification.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures
- B. Product Data: Submit data on product characteristics, performance criteria, limitations and, adhesives

1.4 QUALITY ASSURANCE

- A. Insulation Installed in Concealed Locations Surface Burning Characteristics:
- B. Foam Plastic Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84
- C. Insulation Installed in Exposed Locations Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements
- B. Do not install adhesives when temperature or weather conditions are detrimental to successful installation

1.6 SEQUENCING

- A. Section 01 10 00 - Summary: Work sequence
- B. Sequence Work to ensure firestopping materials are in place before beginning Work of this section

1.7 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions
- B. Coordinate Work with Section 07 26 00 for installation of vapor retarder

PART 2 - PRODUCTS

2.1 BOARD INSULATION

- A. Manufacturers:
 - 1. ACH Foam Technologies, LLC
 - 2. DiversiFoam Products
 - 3. Dow Chemical Company
 - 4. Johns Manville
 - 5. Owens Corning
 - 6. Substitutions: Section 01 60 00 - Product Requirements

2.2 COMPONENTS

- A. Expanded Polystyrene Insulation (EPS): ASTM C578 Type, polystyrene board with the following characteristics:
 - 1. Board Density: 1.30lb/cu ft
 - 2. Board Size: 48 x 96 or 24 x 96 inch
 - 3. Board Thickness: 2 inches
 - 4. Thermal Resistance: R of 3.7 per inch
 - 5. Water Absorption: In accordance with ASTM D2842; 4 percent by volume maximum
 - 6. Compressive Strength: Minimum 40 psi
 - 7. Board Edges: Square edges
- B. Extruded Polystyrene Insulation (XPS): ASTM C578 Type VI; cellular type, conforming to the following:
 - 1. Board Size: 48 x 96 or 24 x 96 inch
 - 2. Board Thickness: 2 inches
 - 3. Thermal Resistance: R of 5.0 per inch
 - 4. Water Absorption: In accordance with ASTM D2842; 0.3 percent by volume maximum
 - 5. Compressive Strength: Minimum 25 psi
 - 6. Board Edges: Square edges

2.3 ACCESSORIES

- A. Adhesive: Type recommended by insulation manufacturer for application
- B. Tape: Type recommended by insulation manufacturer for application
- C. Insulation Fasteners: Impaling clip of galvanized steel with washer retainer and clips, to be mechanically fastened to surface to receive board insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions
- B. Verify substrate, adjacent materials, and insulation boards are dry and ready to receive insulation and adhesive
- C. Verify substrate surface is flat, free of honeycomb, fins, irregularities, materials or

substances affecting adhesive bond

3.2 INSTALLATION - FOUNDATION PERIMETER

- A. Apply adhesive in three continuous beads per board length to full bed 1/8 inch thick
- B. Install boards on foundation wall perimeter, vertically or horizontally
- C. Place boards in method to maximize contact bedding
- D. Stagger side and end joints
- E. Butt edges and ends tight to adjacent board and to protrusions
- F. Extend boards over control or expansion joints, unbonded to foundation 6 inches on one side of joint
- G. Cut and fit insulation tight to protrusions or interruptions to insulation plane
- H. Immediately following application of board insulation, place protective boards over exposed insulation surfaces, apply adhesive in five continuous beads per board length
- I. Install boards horizontally or vertically from base of foundation to top of insulation
- J. Butt board joints tight; stagger from insulation joints

3.3 INSTALLATION - EXTERIOR WALLS

- A. Secure boards to substrate by mechanical attachment to achieve continuous flush insulation surface
- B. Fastener: 6 per insulation board
- C. Apply adhesive in three continuous beads per board length to full bed 1/8 inch thick
 - 1. Daub adhesive tight to protrusions
- D. Install boards on wall surface, vertically or horizontally
- E. Place boards in method to maximize contact bedding
 - 1. Stagger end joints. Butt edges and ends tight to adjacent board and to protrusions
- F. Cut and fit insulation tight to protrusions or interruptions to insulation plane
- G. Tape insulation board joints

3.4 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Protecting installed construction
- B. Do not permit damage to insulation prior to covering

3.5 SCHEDULE

- A. Foundation and Under Slab: 2 inch; Extruded Polystyrene Insulation (XPS)
- B. Exterior Furred Walls Interior Face:
 - 1. Expanded Polystyrene Insulation (EPS) with metal furring
 - 2. Integrated Furring and Insulation System
- C. Exterior Walls, Interior Face:
 - 1. EPS with furring system.

END OF SECTION

SECTION 07 21 16

BLANKET INSULATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes batt insulation in exterior wall and roof construction and for filling perimeter window and door shim spaces, and crevices in exterior wall.
- B. Related Sections:
 - 1. Section 06 10 00 – Rough Carpentry; Wood stud framing
 - 2. Section 07 21 13 - Board Insulation.
 - 3. Section 07 25 00 - Weather Barriers: Air barrier materials adjacent to insulation.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - 2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 3. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.

1.3 SYSTEM DESCRIPTION

- A. Materials of This Section: Provide continuity of thermal barrier at building enclosure elements.

1.4 PERFORMANCE REQUIREMENTS

- A. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96/E96M.

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on product characteristics, performance criteria, limitations.

1.6 QUALITY ASSURANCE

- A. Insulation Installed in Concealed Locations Surface Burning Characteristics:
 - 1. Batt Insulation: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.7 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.

PART 2 PRODUCTS

2.1 BATT INSULATION

- A. Manufacturers:
 - 1. CertainTeed Insulation
 - 2. Johns Manville.

3. Knauf Fiber Glass.
4. Owens Corning Fiberglas.
5. U.S. Gypsum Co. Thermafiber LLC.
6. Substitutions: Section 01 60 00 - Product Requirements.

2.2 COMPONENTS

- A. Wall Insulation: Batt Insulation: ASTM C665; preformed glass mineral fiber batt, roll, or blanket; conforming to the following:
 1. Interior Walls 2 x 6:
 - a. Minimum Thermal Resistance: R of 19.
 - b. Roll Size: 16 inch.
 - c. Thickness: Full depth of the girts and studs
 - b. Facing: friction fit, unfaced
 2. Interior Walls 2 x 4:
 - a. Minimum Thermal Resistance: R of 13.
 - b. Roll Size: 16 inch.
 - c. Thickness: Full depth of studs
 - d. Facing: Friction fit, unfaced.
- B. Staples: Steel wire; type and size to suit application.
- C. Tape: Polyethylene self-adhering type, mesh reinforced, 2 inch wide.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Verify substrate, adjacent materials, and insulation are dry and ready to receive insulation.

3.2 INSTALLATION

- A. Install in interior and exterior walls and roof spaces without gaps or voids. Do not compress insulation.
- B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- C. Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within plane of insulation.
- D. Staple or nail facing flanges in place at maximum 6 inches oc.
- E. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.
- F. Wood Framing: Place vapor retarder on warm side of insulation by stapling at 6 inches oc. Lap and seal sheet retarder joints over member face.
- G. Coordinate Work of this section with construction of air barrier seal specified in Section 07 25 00.

END OF SECTION

SECTION 07 25 00

WEATHER BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Weather barrier membrane
 - 2. Seam Tape
 - 3. Flashing
 - 4. Fasteners
- B. Related Sections:
 - 1. Section 07 90 00 - Joint Protection: Sealant materials and installation techniques.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C920; Standard Specification for Elastomeric Joint Sealants
 - 2. ASTM C1193; Standard Guide for Use of Joint Sealants
 - 3. ASTM D882; Test Method for Tensile Properties of Thin Plastic Sheeting
 - 4. ASTM D1117; Standard Guide for Evaluating Non-woven Fabrics
 - 5. ASTM E84; Test Method for Surface Burning Characteristics of Building Materials
 - 6. ASTM E96; Test Method for Water Vapor Transmission of Materials
 - 7. ASTM E1677; Specification for Air Retarder Material or System for Framed Building Walls
 - 8. ASTM E2178; Test Method for Air Permeance of Building Materials
 - 9. ASTM E2357; Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
- B. AATCC – American Association of Textile Chemists and Colorists
 - 1. Test Method 127 Water Resistance: Hydrostatic Pressure Test
- C. TAPPI
 - 1. Test Method T-410; Grams of Paper and Paperboard (Weight per Unit Area)
 - 2. Test Method T-460; Air Resistance (Gurley Hill Method)

1.3 PERFORMANCE REQUIREMENTS

- A. Provide continuity of air seal materials and assemblies in conjunction with materials described in other Sections

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures
- B. Product Data: Submit data on material characteristics, performance criteria, and limitations
 - 1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with indicated requirements
- C. Weather Barrier Warranty: Manufacturer's executed warranty form with authorized signatures and endorsements indicating date of Substantial Completion

1.5 QUALIFICATIONS

- A. Fabricator: Company specializing in fabricating products specified in this Section with minimum five years' documented production experience similar to this Project

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products
- B. Deliver weather barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact
- C. Store weather barrier materials as recommended by weather barrier manufacturer

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements
- B. Maintain temperature and humidity recommended by materials manufacturers before, during and after installation

1.8 SEQUENCING

- A. Section 01 10 00 - Summary: Work sequence.
- B. Review requirements for sequencing of installation of weather barrier assembly with installation of windows, doors, louvers and flashings to provide a weather-tight barrier assembly
- C. Schedule installation of weather barrier materials and exterior cladding within nine months of weather barrier assembly installation

1.9 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions
- B. Coordinate the Work of this section with sections referencing this section

1.10 WARRANTY

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Requirements for warranties
- B. Furnish ten (10) years manufacturer warranty for weather barrier from date of final weather barrier installation

PART 2 - PRODUCTS

2.1 WEATHER BARRIERS

- A. Manufacturers:
 - 1. DuPont (Tyvek)
 - 2. Grace Construction Products
 - 3. Rubber Polymer Corporation, Inc
 - 4. Substitutions: Section 01 60 00 - Product Requirements

2.2 COMPONENTS

- A. Sheet: Spun-bonded polyolefin, non-woven, non-perforated
 - 1. Performance Characteristics:
 - a. Air Penetration:
 - 1) 0.001 cfm/ft² at 75 Pa, when tested in accordance with ASTM E2178
 - 2) Type I per ASTM E1677
 - 3) ≤0.04 cfm/ft² at 75 Pa, when tested in accordance with ASTM E2357

- b. Water Vapor Transmission: 28 perms, when tested in accordance with ASTM E96, Method B
- c. Water Penetration Resistance: Minimum 280 cm when tested in accordance with AATCC Test Method 127
- d. Basis Weight: Minimum 2.7 oz/yd², when tested in accordance with TAPPI Test Method T-410
- e. Air Resistance: Air infiltration at >1500 seconds, when tested in accordance with TAPPI Test Method T-460
- f. Tensile Strength: Minimum 38/35 lbs/in., when tested in accordance with ASTM D882, Method A
- g. Tear Resistance: 12/10 lbs., when tested in accordance with ASTM D1117
- h. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E84. Flame Spread: 10, Smoke Developed: 10

2.3 ACCESSORIES

- A. Seam Tape: As recommended by the weather barrier manufacturer
- B. Fasteners:
 - 1. 1-5/8 inch rust resistant screw with 2-inch diameter plastic cap or manufacturer approved 1-1/4" or 2" metal gasketed washer
- C. Sealants: Recommended by the weather barrier manufacturer
- D. Adhesives:
 - 1. Provide adhesive recommended by weather barrier manufacturer
 - 2. Products: Adhesives recommend by the weather barrier manufacturer
- E. Primers:
 - 1. Provide flashing manufacturer recommended primer to assist in adhesion between substrate and flashing
 - 2. Products: Primers recommended by the flashing manufacturer
- F. Flashing
 - 1. Flexible membrane flashing materials for window openings and penetrations recommended by manufacturer
 - 2. Straight flashing membrane materials for flashing windows and doors and sealing penetrations such as masonry ties, etc. recommended by manufacturer
 - 3. Thru-Wall flashing membrane materials for flashing at changes in direction or elevation (shelf angles, foundations, etc.) and at transitions between different assembly materials
 - 4. Preformed Inside and Outside Corners and End Dams: Preformed three-dimensional shapes to complete the flashing system used in conjunction with Thru-Wall Flashing

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions
- B. Verify substrate and surface conditions are in accordance with weather barrier manufacturer recommended tolerances prior to installation of weather barrier and accessories

3.2 INSTALLATION

- A. Weather Barrier
 - 1. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations

2. Install weather barrier prior to installation of windows and doors
 3. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap
 4. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface with subsequent layers installed in a shingling manner to overlap lower layers. Maintain weather barrier plumb and level
 5. Sill Plate Interface: Extend lower edge of weather barrier over sill plate interface 3-6 inches. Secure to foundation with elastomeric sealant as recommended by weather barrier manufacturer
 6. Window and Door Openings: Extend weather barrier completely over openings.
 7. Overlap weather barrier
 - a. Exterior corners: minimum 12 inches
 - b. Seams: minimum 6 inches
 8. Weather Barrier Attachment:
 - a. Attach weather barrier to studs through exterior sheathing.
 - 1) Secure using weather barrier manufacturer recommend fasteners, space 12-18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally
 9. Apply flashing to weather barrier membrane prior to installing cladding anchors
- B. Seaming
1. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams
 2. Seal any tears or cuts as recommended by weather barrier manufacturer
- C. Window Flashing
1. Preparation
 - a. Flush cut weather barrier at edge of sheathing around full perimeter of opening.
 - b. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing
 - 1) Temporarily secure weather barrier flap away from sheathing with tape
 2. Flashing
 - a. Cut flexible flashing a minimum of 12 inches longer than width of sill rough opening
 - b. Cover horizontal sill by aligning flexible flashing edge with inside edge of sill
 - 1) Adhere to rough opening across sill and up jambs a minimum of 6 inches
 - 2) Secure flashing tightly into corners by working in along the sill before adhering up the jambs
 - c. Fan flexible flashing at bottom corners onto face of wall
 - 1) Firmly press in place. Mechanically fasten fanned edges
 - d. Apply 9-inch wide strips of flashing at jambs. Align flashing with interior edge of jamb framing
 - 1) Start flashing at head of opening and lap sill flashing down to the sill
 - e. Spray-apply primer to top 6 inches of jambs and exposed sheathing
 - f. Install flexible flashing at opening head using same installation procedures used at sill
 - 1) Overlap jamb flashing a minimum of 2 inches
 - g. Coordinate flashing with window installation
 - h. On exterior, install backer-rod in joint between window frame and flashed rough framing
 - 1) Apply sealant at jambs and head, leaving sill unsealed
 - 2) Apply sealants in accordance with sealant manufacturer's instructions and ASTM C1193
 - i. Position weather barrier head flap across head flashing
 - 1) Adhere using flashing over the 45-degree seams
 - j. Tape top of window in accordance with manufacturer recommendations

- k. On interior, install backer rod in joint between frame of window and flashed rough framing
 - 1) Apply sealant around entire window to create air seal.
 - 2) Apply sealant in accordance with sealant manufacturer's instructions and ASTM C1193
- D. Thru – Wall Flashing at window head
 - 1. Cut flap in weather barrier at window head
 - 2. Prime exposed sheathing
 - 3. Install lintel as required. Verify end dams extend 4 inches minimum beyond opening
 - 4. Install end dams bedded in sealant
 - 5. Adhere 2 inches minimum thru-wall flashing to wall sheathing
 - a. Overlap lintel with thru-wall flashing and extend ¼ inch minimum beyond outside edge of lintel to form drip edge
 - 6. Apply sealant along thru-wall flashing edges
 - 7. Fold weather barrier flap back into place and tape bottom edge to thru-wall flashing
 - 8. Tape diagonal cuts of weather barrier
 - 9. Secure weather barrier flap with fasteners
- E. Thru – Wall Flashing
 - 1. Apply primer per manufacturer's written instructions
 - 2. Install preformed corners and end dams bedded in sealant in appropriate locations along wall
 - 3. Starting at a corner, remove release sheet and apply membrane to primed surfaces in lengths of 8 to 10 feet
 - 4. Extend membrane through wall and leave ¼ inch minimum exposed to form drip edge
 - 5. Roll flashing into place ensuring continuous and direct contact with substrate
 - 6. Lap ends and overlap preformed corners 4 inches minimum. Seal all laps with sealant
 - 7. Terminate membrane on vertical wall
 - 8. Apply sealant bead at each termination

3.3 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Protecting installed construction
- B. Do not permit adjacent work to damage work of this section

END OF SECTION

SECTION 07 26 00

VAPOR RETARDERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes sheet and sealant materials for controlling vapor diffusion
- B. Related Sections:
 - 1. Section 07 21 16 - Blanket Insulation: placement of insulation
 - 2. Section 07 42 13 - Wall Panels: Placement of wall panel and interior liner panels

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants
 - 2. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials
- B. Green Seal:
 - 1. GS-36 – October 19, 2000 – Aerosol Adhesives.
- C. Sealant, Waterproofing and Restoration Institute:
 - 1. SWRI - Sealant Specification

1.3 PERFORMANCE REQUIREMENTS

- A. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96/E96M, desiccant method or water method

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures
- B. Product Data: Submit data indicating material characteristics, performance criteria, and limitations

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with SWRI - Sealant and Caulking Guide Specification requirements for materials and installation

1.6 SEQUENCING

- A. Section 01 10 00 - Summary: Work sequence
- B. Sequence Work to permit installation of materials in conjunction with other retardant materials and seals
- C. Do not install vapor retarder until items penetrating vapor retarder are in place

PART 2 - PRODUCTS

2.1 VAPOR RETARDERS

- A. Manufacturers:
 - 1. Dow Chemical Company
 - 2. DuPont
 - 3. Reef Industries, Inc

4. Substitutions: Section 01 60 00 - Product Requirements

2.2 COMPONENTS

- A. Sheet Retarder: Clear polyethylene film for above grade application, 10 mil thick
- B. Sealant: Type recommend by manufacturer
- C. Primer and Backer Rods: Recommended by manufacturer to suit application
- D. Cleaner: Non-corrosive type; recommended by sealant manufacturer; compatible with adjacent materials
- E. Adhesive: Compatible with sheet retarder and substrate, permanently non-curing

2.3 ACCESSORIES

- A. Tape: Polyethylene self-adhering type, mesh reinforced, 2 inch wide, compatible with sheet material
- B. Attachments: Galvanized steel bars and anchors

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove loose or foreign matter capable of impairing adhesion
- B. Clean and prime substrate surfaces to receive adhesive and sealants

3.2 INSTALLATION

- A. Vapor Retarder For Stud Framed Walls:
 - 1. Secure sheet retarder to stud faces with adhesive
 - 2. Lap edges over stud faces, lap ends onto adjacent construction; calk ends with sealant to ensure complete seal
- B. Vapor Retarder For Wall/Roof Junction:
 - 1. Lap sheet retarder from wall retarder onto roof vapor retarder continuously
 - 2. Seal edges and ends with sealant
 - 3. Calk with sealant to ensure complete seal. Position laps over firm bearing
- C. Vapor Retarder Seal For Openings:
 - 1. Install sheet retarder between window and door frames and adjacent vapor retarder and seal with sealant
 - 2. Calk with sealant to ensure complete seal
 - 3. Position laps over firm bearing
- D. Apply sealant within recommended application temperature ranges
 - 1. Consult manufacturer when sealant cannot be applied within these temperature ranges or where compatibility with adjacent materials may be in doubt

END OF SECTION

SECTION 07 42 13

METAL WALL PANELS/SIDING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Preformed exposed fastener metal siding system for walls
 - 2. Related flashings and trim
 - 3. Accessories
- B. Related Sections:
 - 1. Section 07 21 16 - Blanket Insulation
 - 2. Section 07 26 00 - Vapor Retarders: Vapor Retarders
 - 3. Section 07 62 00 - Sheet Metal Flashing and Trim including metal coping
 - 4. Section 07 90 00 - Joint Protection: Sealant at perimeter, openings, and dissimilar materials
 - 5. Section 08 12 14 - Standard Steel Frames: Exterior Doors

1.2 REFERENCES

- A. American Society of Civil Engineers:
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures
- B. ASTM International:
 - 1. ASTM A755/A755M - Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Pre-painted by the Coil-Coating Process for Exterior Exposed Building Products
 - 2. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
 - 3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
 - 4. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials

1.3 SYSTEM DESCRIPTION

- A. System: Preformed and prefinished metal siding system of vertical and horizontal profile; site assembled; with sub-furring framing assembly

1.4 PERFORMANCE REQUIREMENTS

- A. Components: Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall as calculated in accordance with applicable code
 - 1. Design Pressure: Minimum 20 lb/sq ft
- B. Maximum Allowable Deflection of Panel: 1/180 of span
- C. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement within system; movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; deflection of structural support framing
- D. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system
- E. Products: Provide continuity of thermal barrier at building enclosure elements in

conjunction with thermal insulating materials

- F. Vapor Retarder: Provide continuity of vapor retarder at building enclosure elements in conjunction with vapor retarders specified in Section 07 26 00

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures
- B. Product Data: Submit data on panels
- C. Samples: Submit two samples of wall panels, 2x2 inch in size illustrating finish color, sheen, and texture

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience
- B. Installer: Company specializing in performing Work of this section with minimum three years documented experience

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements
- B. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap
- C. Store prefinished material off ground protected from weather, to prevent twisting, bending, or abrasion, and to provide ventilation
 - 1. Slope metal sheets to ensure drainage
- D. Prevent contact with materials capable of causing discoloration or staining

1.8 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions
- B. Coordinate Work for installation of vapor retarder and air barrier seals
- C. Coordinate Work with installation of windows, doors, louvers, and adjacent components or materials

1.9 WARRANTY

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Product warranties and product bonds
- B. Special Manufacturer's Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace metal panel assemblies that fail in materials and workmanship within one year from date of Substantial Completion
- C. Special Panel Finish Warranty: On Manufacturer's standard form, in which Manufacturer agrees to repair or replace metal panels that evidence deterioration of factory-applied finish within 25 years from date of Substantial Completion, including:
 - 1. Fluoropolymer Two-Coat System:
 - a. Color fading in excess of 5 Hunter units per ASTM D 2244
 - b. Chalking in excess of No. 8 rating per ASTM D 4214
 - c. Failure of adhesion, peeling, checking, or cracking
 - 2. Modified Silicone-Polyester Two-Coat System:
 - a. Color fading in excess of 5 Hunter units per ASTM D 2244, for vertical applications

- b. Color fading in excess of 7 Hunter units per ASTM D 2244, for non-vertical applications
- c. Chalking in excess of No. 8 rating per ASTM D 4214, for vertical applications
- d. Chalking in excess of No. 6 rating per ASTM D 4214, for non-vertical applications
- e. Failure of adhesion, peeling, checking, or cracking

PART 2 - PRODUCTS

2.1 METAL WALL PANELS

- A. Manufacturers:
 - 1. ATAS International, Inc.
 - 2. Berridge Manufacturing Company
 - 3. Bridger Steel
 - 4. MBCI
 - 5. Nucor Building Systems
 - 6. Substitutions: Section 01 60 00 - Product Requirements

2.2 COMPONENTS

- A. Exterior Pre-coated Panel and Other Sheet Materials:
 - Pre-coated Steel Panel and Other Sheet Materials: Minimum 22 gauge thick pre-coated steel stock.
 - a. Pre-coated Aluminum-Zinc Alloy Coated Steel: ASTM A755/A755M; AZ 50 aluminum-zinc alloy coating; shop pre-coated with manufacturer's standard thermosetting coating
 - b. Exposed Exterior Surfaces: Color as selected from manufacturer's standard range
- B. Exterior Vertical Metal Wall Panel/Siding:
 - 1. Manufacturer:
 - a. MBCI
 - b. Bridger Steel
 - c. ATAS International
 - d. Nucor
 - e. Berridge
 - f. Substitutions: Section 01 60 00 Product Requirements
 - 2. Profile: Belvedere Grand R or EQ
 - 3. Gauge: 24
 - 4. Color: Selected from manufacturer's standard colors: Solar White
 - 5. Width: 9 inches
- C. Miscellaneous Sheet Materials:
 - 1. Pre-coated Galvanized Steel: Minimum 24 gage thick steel stock.
 - a. Aluminum-Zinc Alloy Coated Steel: ASTM A792/A792M Commercial - CQ Quality, Coating Designation AZ 50 aluminum-zinc alloy coating
 - b. Pre-coated Surfaces: Color as selected from manufacturer's standard range
- D. Insulation:
 - 1. Type specified in Section 07 21 16
- E. Sub-girts: manufacturer's standard profile as indicated on Drawings; to attach panel system to structural frame
- F. Thickness as required to support specified loads within specified deflection limitations
- G. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; brake formed to required angles

- H. Expansion Joints:
 1. Same material, thickness and finish as exterior sheets; manufacturer's standard brake formed type, of profile to suit system
 2. Exposed fasteners same finish as panel system
- I. Trim, Closure Pieces, Caps, Flashings: Same material, thickness and finish as exterior sheets; brake formed to required profiles
- J. Anchors: Type – exposed fasteners as recommend by panel manufacturer

2.3 ACCESSORIES

- A. Sealants:
 1. Manufacturer's standard type suitable for use with installation of system
 2. Color as selected to match siding
- B. Fasteners:
 1. Manufacturer's standard type to suit application; with soft neoprene washers; fastener cap same color as exterior panel
 2. Exposed fasteners same finish as panel system
- C. Power Actuated Fasteners: Steel, hot dip galvanized; with soft neoprene washers, fastener cap same color as exterior panel
- D. Field Touch-up Paint: As recommended by panel manufacturer
- E. Bituminous Paint: Asphalt base

2.4 FABRICATION

- A. Form sections to shape indicated on Drawings, accurate in size, square, and free from distortion or defects
- B. Form pieces in longest practicable lengths
- C. Panel Profile: Manufacturer's standard profile for specified system
- D. Fabricate corners in one continuous piece with minimum 18 inch returns

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions
- B. Verify building framing members are ready to receive panel system

3.2 INSTALLATION

- A. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint
 1. Allow to dry prior to installation
- B. Fasten siding to structural supports; aligned, level, and plumb
- C. Locate joints over supports. Lap panel ends minimum 2 inches.
- D. Install expansion or control joints where indicated
- E. Use manufacturer recommend fasteners unless otherwise approved by Architect
- F. Seal to prevent weather penetration
 1. Maintain neat appearance

3.3 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances
- B. Maximum Offset From Indicated Alignment Between Adjacent Members Butting or In Line: 1/16 inch
- C. Maximum Variation from Plane or Location Indicated on Drawings: 1/8 inch

3.4 CLEANING

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Final cleaning
- B. Remove site cuttings from finish surfaces
- C. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water

END OF SECTION

SECTION 07 61 00

STANDING SEAM SHEET METAL ROOFING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes pre-finished galvanized sheet steel roofing, associated flashings
 1. Underlayment.
 2. Fascias and soffit panels.
 3. Counterflashings.

1.2 REFERENCES

- A. ASTM International:
 1. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 2. ASTM E 408- Standard Test Method for Total Normal Emittance of Surface Using Inspection – Meter Techniques.
 3. ASTM E 408- Standard Test Method for Solar Absorptance, Using Integrating Spheres.
 4. ASTM E 1514 - Standard Specification for Structural Standing Steel Roof Panel systems.
 5. ASTM E 1680-95 - Standard Test Method for Rate of Air Leakage through Exterior Roof Panel System.
 6. ASTM E 1646-95 - Standard Test Method for Water Penetration through Exterior Roof Panel System.
- B. Sheet Metal and Air Conditioning Contractors:
 1. SMACNA - Architectural Sheet Metal Manual.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Product Data: Submit data on metal types, finishes, and characteristics.
- D. Samples:
 1. Submit two samples 8 inch long in size illustrating metal roofing illustrating typical seam, material, and finish.
 2. Submit two samples 2 x 2 inch in size illustrating all metal finish colors.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with SMACNA Architectural Sheet Metal Manual, except as otherwise noted.

1.5 QUALIFICATIONS

- A. Installer: Company specializing in sheet metal roof installations with minimum three years documented experience and certified by manufacturer.

1.6 PRE-INSTALLATION MEETINGS

- A. Section 01 31 00 – Project Management and Coordination: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials causing discoloration or staining.

1.8 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.

1.9 WEATHERTIGHTNESS WARRANTY

- A. The Contractor shall provide to the Owner, a Standard warranty signed by the roofing manufacturer of the Standing Seam Roof System as outlined below:
- B. Single Source Warranty: Single Source Warranties require a certified install on site at all times.
 - 1. For a period of: twenty (20) years from the date of substantial completion, the roofing manufacturer WARRANTS to the Building Owner (“Owner”): to furnish roof panels, flashing and related items used to fasten the roof panels and flashing including roof jack and curb attachments to the roof structure, will not allow intrusion of water from the exterior of the roofing manufacturer’s Roof System into the building envelope when exposed to ordinary weather conditions and ordinary wear and usage. The Date of substantial completion is the date that is certified by the Architect, Owner, or Owner’s Representative, when the roofing manufacturer’s Roofing System is completed and accepted by or on behalf of the Owner.
 - 2. Manufacturer’s Field Service
 - a. During installation, provide for two on-site inspections of roof application by qualified technical representative of the manufacturer.
 - b. Upon completion of installation, provide final inspection by a technical representative of roofing manufacturer to confirm that roofing system has been installed in accordance with manufacturer’s requirements.
 - 3. The roofing manufacturer shall have the SOLE AND EXCLUSIVE obligation for all warranty work commencing on the date of substantial completion and under all circumstances terminates on the twenty (20) year anniversary of the date certified as Substantial Completion of the roofing manufacturer’s Roof System. During the period in which the roofing manufacturer has any warranty obligation, the roofing manufacturer shall take appropriate actions necessary to cause the non-performing portions of the Roof System to perform their proper functions.
 - 4. Roofing Manufacturer’s Liability:
 - a. The total liability of the roofing manufacturer under Single Source Warranty is:
 - 1) Single Source III, a no dollar limit of the manufactures Roof System as invoiced to the roofing manufacturer’s customer.

PART 2 PRODUCTS

2.1 ROOF PANEL

- A. Manufacturers
 - 1. ATAS International, Inc.
 - 2. Fabral
 - 3. Garland Co Inc.
 - 4. Butler Manufacturing Company
 - 5. MBCI – Battenlok Panel
 - 6. Metal Sales MFG. Co.
 - 7. Substitution: Section 01 60 00 Product Requirements
- B. Product Description:
 - 1. Panel profile: 2" high x 3/4" wide rib x 16"wide striated panel.
 - 2. System Style: Vertical leg, concealed fastener, standing seam, utilizing male and female rib configurations, with factory applied hot melt mastic in female rib, continuously locked together by electrically powered mechanical seaming device during installation.
 - 3. Gauge: 22 gauge.
 - 4. Substrate: Galvulume steel sheet, minimum yield of 50,000 PSI.
 - 5. Clips: One piece fixed clip, 22 gauge with factory applied mastic (UL- 90 rated – Underwriters Laboratories.
 - 6. Texture: Smooth with striations
 - 7. Finish: Signature 300 Premium fluorocarbon coating produced with Kynar 500 or Hylar 5000 resin.
 - 8. Color: Select from manufacturer full line of colors.

2.2 SOFFIT PANEL

- A. Manufacturers
 - 1. ATAS International, Inc.
 - 2. Butler Manufacturing Company
 - 3. MBCI
 - 4. Metal Sales MFG. Co.
 - 5. Fabral
 - 6. Garland Co Inc.
 - 7. Substitution: Section 01 60 00 Product Requirements
- B. Product Description:
 - 1. Panel profile: Perforated 12" exposure with grooves at 4" on center, 1-1/2" deep, with concealed fasteners and interlocking side lap
 - 2. Gauge: 22 gauge.
 - 3. Substrate: Galvulume steel sheet, minimum yield of 50,000 PSI.
 - 4. Texture: Smooth.
 - 5. Finish: Signature 300 Premium fluorocarbon coating produced with Kynar 500 or Hylar 5000 resin.
 - 6. Color: Select from manufacturer full line of colors.

2.3 FASCIA PANEL

- A. Manufacturers
 - 1. ATAS International, Inc.
 - 2. Butler Manufacturing Company
 - 3. MBCI
 - 4. Metal Sales MFG. Co.
 - 5. Fabral

6. Garland Co Inc.
7. Substitution: Section 01 60 00 Product Requirements

B. Product Description:

1. Panel profile: 12" exposure width, 1-1/2" deep, with concealed fasteners and interlocking side lap
2. Gauge: 22 gauge.
3. Substrate: Galvulume steel sheet, minimum yield of 50,000 PSI.
4. Texture: Smooth.
5. Finish: Signature 300 Premium fluorocarbon coating produced with Kynar 500 or Hylar 5000 resin.
6. Color: Select from manufacturer full line of colors.

2.4 FASCIA AND FLASHING

- A. Fascia, trim and flashing shall be 24 gauge pre finished Galvulume steel to match roof panel color, shape as shown on drawing.

2.5 ACCESSORIES

- A. Fasteners: Type recommended by roofing manufacturer.
- B. Underlayment: Type II No. 30 unperforated asphalt felt (Contractor's option).
- C. Ice & Water shield: Self-adhered, rubberized asphalt underlayment.
- D. Sealant: Type recommended by manufacturer.
- E. Plastic Cement: ASTM D4586, Type I.

2.6 FABRICATION

- A. Form sections shape as indicated on Drawings, accurate in size, square, and free from distortions or defects.
- B. Fabricate clips and cleats of same material as sheet, to interlock with sheet.
- C. Fabricate starter strips of same material as sheet, continuous, to interlock with sheet.
- D. Form pieces in single length sheets.
- E. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- F. Form material with standing batten seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- G. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- H. Fabricate vertical faces with bottom edge formed outward 1/2 inch and hemmed to form drip.
- I. Fabricate flashings to allow toe to extend 2 inches over roofing. Return and brake edges.
- J. With finish system, as recommended by finish system manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, and properly sloped eaves.
- C. Verify deck is dry and free of snow and ice. Verify joints in wood deck are solidly supported and fastened.
- D. Verify correct placement of wood nailers.
- E. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, and nailing strips located.
- F. Verify roofing termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

- A. Fill knot holes and surface cracks with latex filler at areas of bonded eave protection.
- B. Broom clean deck surfaces under eave protection and underlayment.
- C. Install starter and edge strips, and cleats before starting installation.
- D. Back paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to minimum dry film thickness of 15 mil.

3.3 INSTALLATION

- A. Ice Dam Membrane Installation:
 - 1. Place eave edge and gable edge metal flashings tight with fascia boards. Weather lap joints minimum 2 inches and seal with plastic cement. Secure flange with nails at maximum 12 inches on center.
 - 2. Install ice dam membrane parallel with eave edge, flush with face of eave edge flashing with edges lapped shingle style and ends lapped and staggered between rows.
 - 3. Extend ice dam membrane minimum 4 ft up-slope beyond interior face of exterior wall.
- B. General Roofing Installation Requirements:
 - 1. Apply underlayment over entire roof area in single layer laid perpendicular to slope; weather lap edges 2 inches and nail in place. Minimize nail quantity.
 - 2. Cleat and seam joints.
 - 3. Use plastic cement for joints between metal and bitumen and for joints between metal and felts.
 - 4. Provide formed metal pans for protrusions through roof. Fill pans watertight with plastic cement.
- C. Standing Seam Roofing Installation:
 - 1. Conform to SMACNA- Architectural Sheet Metal Manual drawing details.
 - 2. Lay sheets with long dimension perpendicular to eaves. Apply pans beginning at eaves.
 - 3. Lock cleats into seams.
 - 4. Align transverse joints of roofing sheets per manufacturer instructions.
 - 5. At eaves and gable ends, terminate roofing by hooking over edge strip.
 - 6. Finish standing seams 1 inch high on flat surfaces.
 - 7. Bend up one side edge 1-1/2 inches and other edge 1-3/4 inches.
 - 8. Make first fold 1/4 inch wide single fold and second fold 1/2 inch wide, providing locked portion of standing seam, 5 plies in thickness.

9. Fold lower ends of seams at eaves over at 45 degree angle.
10. Terminate standing seams at ridge and hips by turning down with tapered fold.
11. Form valleys of sheets not exceeding 10 feet in length. Lap joints 6 inches in direction of drainage.
12. Extend valley sheet minimum 6 inches under roofing sheets.
13. At valley, double fold valley and roofing sheets and secure with cleats spaced 18 inches OC.

D. Fascia and soffit panels

1. Conform to SMACNA - Architectural Sheet Metal Manual drawing details.
2. Install fascia and soffit according to manufacturer's instructions
3. Install soffit panels with joints perpendicular to the exterior wall
4. Coordinate installation with installation of roofing system and base flashings.
5. Coordinate installation of sealants ensure water tightness.
6. Coordinate installation of flashing flanges into reglets.

E. Flashing Installation:

1. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
2. Cleat and seam joints.
3. Apply plastic cement compound between metal flashings and felt flashings.
4. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
5. Seal metal joints watertight.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Protecting installed construction.
- B. Do not permit traffic over unprotected roof surface
- C. Do not allow panels or trim to come in contact with dissimilar metals such as copper, lead or graphite. Water run-off from these materials is also prohibited. This specifically includes condensate from roof top units.

3.5 CLEANING

- A. Dispose of excess materials and remove debris from site.
- B. Clean work in accordance with manufacturer's recommendations.
- C. Protect work against damage until final acceptance. Replace or repair to the satisfaction of the architect (owner), any work that becomes damaged prior to final acceptance.
- D. Touch up minor scratches and abrasions with touch up paint supplied by the metal roof system manufacturer.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Flashings and counterflashings
 - 2. Fabricated sheet metal items
 - 3. Reglets and accessories
- B. Related Sections:
 - 1. Section 07 90 00 - Joint Protection

1.2 REFERENCES

- A. American Architectural Manufacturers Association:
 - 1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum
 - 2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels
 - 3. AAMA 2604 - Voluntary specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
 - 4. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
- B. ASTM International:
 - 1. ASTM A625/A625M - Standard Specification for Tin Mill Products, Black Plate, Single Reduced
 - 2. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - 3. ASTM A755/A755M - Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Pre-painted by the Coil-Coating Process for Exterior Exposed Building Products
 - 4. ASTM B32 - Standard Specification for Solder Metal
 - 5. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
 - 6. ASTM B749 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products
 - 7. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
 - 8. ASTM D4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free
- C. FM Global:
 - 1. FM DS 1-28 - Wind Loads to Roof Systems and Roof Deck Securement.
 - 2. FM 4435 - Edge Systems Used with Low Slope Roofing Systems
 - 3. FM 4470 - Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied roof Assemblies for use in Class 1 and Noncombustible Roofs Deck Construction
- D. Federal Specification Unit:
 - 1. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant

- E. Sheet Metal and Air Conditioning Contractors:
 - 1. SMACNA - Architectural Sheet Metal Manual

1.3 DESIGN REQUIREMENTS

- A. Sheet Metal Flashings: Conform to the following criteria of SMACNA "Architectural Sheet Metal Manual"
- B. Gutter and Downspout Components: Conform to SMACNA Manual for sizing components for rainfall intensity determined by storm occurrence of 1 in 5 years

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details
- C. Product Data: Submit data on manufactured components metal types, finishes, and characteristics
- D. Samples:
 - 1. Submit two samples illustrating metal finish color

1.5 QUALIFICATIONS

- A. Fabricator and Installer: Company specializing in sheet metal work with minimum three years documented experience

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation
 - 1. Slope metal sheets to ensure drainage
- C. Prevent contact with materials causing discoloration or staining

1.7 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions

PART 2 - PRODUCTS

2.1 SHEET METAL FLASHING AND TRIM

- A. Galvanized Steel: ASTM A653/A653M; structural steel sheet, G90 zinc coating; 0.024 inch thick steel
- B. Pre-Finished Galvanized Steel Sheet: ASTM A755/A755M; structural steel sheet, G90 zinc coating; 0.024 inch thick core steel, shop pre-coated with silicone polyester or two coat fluoropolymer top coat; color as selected from manufacturer's standard color as selected

2.2 ACCESSORIES

- A. Fasteners: Same material and finish as flashing metal, with soft neoprene washers
- B. Primer: Zinc molybdate or type
- C. Protective Backing Paint: Zinc molybdate alkyd or FS TT-C-494, Bituminous

- D. Sealant: Compatible with flashing and metal trim materials
- E. Plastic Cement: ASTM D4586, Type I
- F. Reglets: Recessed type, galvanized steel or rigid extruded PVC; face and ends covered with plastic tape
- G. Solder: ASTM B32; type suitable for application and material being soldered

2.3 FABRICATION

- A. Form sections shape indicated on Drawings, accurate in size, square, and free from distortion or defects
- B. Fabricate cleats of same material as sheet metal, interlocking with sheet
- C. Form pieces in longest possible lengths
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners
- E. Form material with flat lock seams, except where otherwise indicated
 - 1. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams
- F. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant
- G. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip
- H. Fabricate flashings to allow toe to extend 2 inches over roofing
- I. Return and brake edges
- J. Seal metal joints

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions
- B. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located
- C. Verify roofing termination and base flashings are in place, sealed, and secure

3.2 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation
- B. Install surface mounted reglets to lines and levels indicated on Drawings
 - 1. Seal top of reglets with sealant
- C. Paint concealed metal surfaces with protective backing paint to minimum dry film thickness of 15 mil

3.3 INSTALLATION

- A. Insert flashings into reglets to form tight fit
 - 1. Secure in place with lead or plastic wedges
 - 2. Seal flashings into reglets with sealant
- B. Secure flashings in place using concealed fasteners

1. Use exposed fasteners only where permitted
- C. Apply plastic cement compound between metal flashings and felt flashings
- D. Fit flashings tight in place
 1. Make corners square, surfaces true and straight in planes, and lines accurate to profiles
- E. Seal metal joints watertight

3.4 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing
- B. Inspection will involve surveillance of Work during installation to ascertain compliance with specified requirements

END OF SECTION

SECTION 07 71 00

ROOF SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Attic vents and ridge vent.
 - 2. Snow guards for metal roofs and attachment system
- B. Related Sections:
 - 1. Section 07 61 00 - Sheet Metal Roofing: Roof system and flashings.
 - 2. Section 07 62 00 - Sheet Metal Flashing and Trim: Metal flashings.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM D4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- B. National Roofing Contractors Association:
 - 1. NRCA - The NRCA Roofing and Waterproofing Manual.
- C. Sheet Metal and Air Conditioning Contractors:
 - 1. SMACNA - Architectural Sheet Metal Manual.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.
- C. Product Data: Submit data on shape of components, materials and finishes, anchor types and locations.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with SMACNA or NRCA details.

1.5 WARRANTY

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Product warranties and product bonds.
- B. Furnish manufacturer standard warranty.

PART 2 PRODUCTS

2.1 RIDGE VENT

- A. Manufacturers:
 - 1. Air Vent, Inc
 - 2. COR-A-VENT, Inc. Model: V-400E
 - 3. Trimline Building Products.
 - 4. GAF Material Corp.
 - 5. Substitutions: Section 01 60 00 - Product Requirements.

- B. Components
 - 1. Ridge Vents: Linear type with enhanced snow screen; plastic, formed to permit installation with indicated roofing and shed water. Fabricate with 17 sq in minimum net free area of ventilation.
 - 2. Attic Vents: Dome type; aluminum color coated sheet metal, formed to permit installation with indicated roofing and shed water. Fabricate with 38 sq in minimum free area of ventilation.

2.2 SNOW GUARD

- A. Manufacturers:
 - 1. Metal Roof Innovations, Ltd., Model S-5! ColorGard
 - 2. Substitutions: Section 01 60 00 - Product Requirements.
- B. Components
 - 1. Clamps:
 - a. Manufactured from 6061-T6 aluminum extrusions conforming to ASTM B221 or aluminum castings conforming to ASTM B85 and to AA Aluminum Standards and Data.
 - b. Clamp model: compatible with roof style
 - c. Set screws: 300 Series stainless steel, 18-8 alloy, 3/8 inch diameter, with round nose point.
 - d. Attachment bolts: 300 Series stainless steel, 18-8 alloy, 10 mm diameter, with flat washers
 - 2. Cross Members:
 - a. Manufactured from 6061-T6 alloy and temper aluminum extrusions conforming to ASTM B221 and AA Aluminum Standards and Data.
 - b. Receptacle in face to receive color-matched metal strips.
 - c. Provide splice connectors ensuring alignment and structural continuity at end joints.
 - 3. Color Strips: Same material and finish as roof panels; obtained from roof panel manufacturer
 - 4. Snow and Ice Clips: Aluminum, with rubber foot, minimum 3 inches wide.

2.3 ACCESSORIES

- A. Sealant: Manufacturer's standard type suitable for use with installation of system.
- B. Roofing Cement: ASTM D4586, Fibrated cutback asphalt type, free of toxic solvents.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Verify deck, asphalt shingles, base flashing, and other items affecting Work of this section are in place and positioned correctly.
- C. Prior to beginning installation of snow guards, verify that:
 - 1. Panel seaming is complete.
 - 2. Panel attachment is sufficient to withstand loads applied by snow guard system.
 - 3. Installation will not impede roof drainage.

3.2 PREPARATION

- A. Clean areas to receive attachments; remove loose and foreign matter that could interfere with installation or performance.

3.3 INSTALLATION

- A. Coordinate installation of components of this section with installation of metal roofing and flashings.
- B. Coordinate installation of sealants and roofing cement with Work of this section to ensure water tightness.
- C. Snow guard:
 - 1. Install system in accordance with manufacturer's instructions and approved Shop Drawings.
 - 2. Place clamps at maximum 32 inches on center or as required by in-service loads.
 - 3. Place clamps in straight, aligned rows.
 - 4. Place both set screws on same side of clamp.
 - 5. Tighten set screws to manufacturer's recommended torque. Randomly test set screw torque using calibrated torque wrench.
 - 6. Insert color-matched metal strips into cross members, staggering strips to cover cross member joints.
 - 7. Attach cross members to clamps; tighten bolts to manufacturer's recommended torque.
 - 8. Install splice connectors at cross member end joints.
 - 9. Do not cantilever cross members more than 4 inches beyond last clamp at ends.
 - 10. Install two SnoClips per panel between panel seams.

END OF SECTION

SECTION 07 90 00

JOINT PROTECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes sealants and joint backing, precompressed foam sealers, hollow gaskets, and accessories.

1.2 REFERENCES

- A. ASTM International:
 1. ASTM C834 - Standard Specification for Latex Sealants.
 2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
 3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
 4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
 5. ASTM D1056 - Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
 6. ASTM D1667 - Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
 7. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Applicator: Company specializing in performing Work of this section with minimum three years experience.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements.
- B. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

1.6 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Coordinate Work with sections referencing this section.

PART 2 PRODUCTS

2.1 JOINT SEALERS

- A. Manufacturers:
 1. Dow Corning Corp.

2. GE Silicones.
 3. Pecora Corp.
 4. Sika Corp.
 5. Tremco Sealants & Waterproofing.
 6. Substitutions: Section 01 60 00 - Product Requirements Not Permitted.
- B. Products Description:
1. High Performance General Purpose Exterior (Non-traffic) Sealant: Silicone, Polyurethane, or Polysulfide; ASTM C920, Grade NS, Class 25, Uses M, G, and A; single or multi- component.
 - a. Color: Colors as selected.
 - b. Applications: Use for:
 - 1) Control, expansion, and soft joints in masonry.
 - 2) Joints between concrete and other materials.
 - 3) Joints between metal frames and other materials.
 - c. Other exterior non-traffic joints for which no other sealant is indicated.
 2. Exterior Foam Expansion Joint Sealer: Pre-compressed foam sealer; Polyurethane with water-repellent
 - a. Color: Face color as selected.
 - b. Size: As required to provide weathertight and watertight seal when installed.
 - c. Applications: Use for exterior wall expansion joints
 3. Exterior Compressible Gasket Expansion Joint Sealer: ASTM D2628, hollow neoprene (polychloroprene) compression gasket.
 - a. Color: Black color.
 - b. Size and Shape: As indicated on Drawings.
 - c. Applications: Use for exterior wall expansion joints.
 4. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, non-drying, non-skinning, non-curing.
 - a. Applications: Use for concealed sealant bead in sheet metal work and concealed sealant bead in siding overlaps.
 5. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
 - a. Color: Colors as selected.
 - b. Applications: Use for interior wall and ceiling control joints, joints between door and window frames and wall surfaces, and other interior joints for which no other type of sealant is indicated.
 - c. Interior Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.
 6. Bathtub/Tile Sealant: White silicone; ASTM C920, Uses M and A; single component, mildew resistant.
 - a. Applications: Use for joints between plumbing fixtures and floor and wall surfaces, and joints between kitchen and toilet room counter tops and wall surfaces.
 - b. Interior Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.

2.2 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
 1. Interior Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D1056, sponge or expanded rubber; oversized 30 to 50 percent larger than joint width.

- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Verify substrate surfaces and joint openings are ready to receive work.
- C. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C1193.
- D. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C1193.
- B. Perform acoustical sealant application work in accordance with ASTM C919.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.

3.4 CLEANING

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Final cleaning.
- B. Clean adjacent soiled surfaces.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Protecting installed construction.
- B. Protect sealants until cured.

END OF DIVISION



Idaho Department of Administration Division of Public Works

“Provide responsive, cost effective, and timely support services to Idaho’s policy makers, public agencies, and state employees as they serve Idaho citizens.”

BRAD LITTLE
Governor

KEITH REYNOLDS
Director

PAT DONALDSON
Administrator

5 YR ROOFING WARRANTY

WHEREAS _____

of (Address) _____

herein called the “Roofing Contractor”, has performed roofing and associated (“work”) on following project:

Owner: _____

DPW Project No. _____

Address: _____

Name and Type of Building: _____

Address: _____

Area of Work: _____ Date of Acceptance: _____

Warranty Period: **Five (5) years** Date of Expiration: _____

AND WHEREAS Roofing Contractor has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period.

NOW THEREFORE Roofing Contractor hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work, and as are necessary to maintain said work in watertight condition. In addition to making the work watertight, the Roofing Contractor shall remove and/or repair blisters, ridges, flashings, splits and other irregularities which in the opinion of the Roofing Manufacturer’s technical representative do not conform to acceptable roofing practices and conditions. These repairs shall be made prior to expiration of the five (5) year Warranty Period and to the satisfaction of the Roofing Manufacturer’s technical representative.

This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by: a) lightning, windstorm; b) fire; c) failure of roofing system substrate including cracking, settlement, excessive deflection, deterioration, and decomposition; d) faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work; and e) activity on roofing by others including construction contractors, maintenance personnel, other persons, and animals whether authorized or unauthorized by Owner.

When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Contractor, and until cost and expense thereof has been paid by Owner or by another responsible party so designated.

2. The Roofing Contractor is responsible for damage to work covered by this Warranty, but is not liable for consequential damages to building or building contents, resulting from leaks or faults or defects of work.

3. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Contractor, including cutting, patching and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void upon date of said alterations, but only to extent said alterations affect work covered by this Warranty. If Owner engages Roofing Contractor to perform said alterations, Warranty shall not become null and void, unless Roofing Contractor, prior to proceeding with said work, shall claim that said alterations would like damage or deteriorate work, thereby reasonably justifying a limitation or termination of this warranty.

4. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void upon date of said change, but only to extent said change affects work covered by this Warranty.

5. The Owner shall promptly notify Roofing Contractor of observed, known or suspected leaks, defect or deterioration, and shall afford reasonable opportunity for Roofing Contractor to inspect work, and to examine evidence of such leaks, defects or deterioration.

6. This Warranty is recognized to be the only Warranty of Roofing Contractor on said work, and is in addition to the Roofing Guarantee furnished by the Roofing Manufacturer, and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to him in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Contractor of responsibility for performance of

original work in accordance with requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

IN WITNESS THEREOF, this instrument has been duly executed this

_____ day of _____, 20_____

Cosigned by General Contractor by:

(General Contractor)

(Roofing Contractor)

(Business Address)

(Business Address)

(Signature)

(Signature)

(Title)

(Title)

DIVISION 08 OPENINGS

SECTION 08 12 14

STANDARD STEEL FRAMES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes fire rated non-rated steel frames.
- B. Related Sections:
 - 1. Section 08 13 14 - Standard Steel Doors.
 - 2. Section 08 71 00 - Door Hardware: Hardware, silencers, and weatherstripping.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
- B. ASTM International:
 - 1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. National Fire Protection Association:
 - 1. NFPA 80 - Standard for Fire Doors, Fire Windows.
 - 2. NFPA 105 - Standard for the Installation of Smoke Door Assemblies and other Opening Protectives.
 - 3. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.
- D. Underwriters Laboratories Inc.:
 - 1. UL 10B - Fire Tests of Door Assemblies.
 - 2. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
 - 3. UL 1784 - Air Leakage Tests of Door Assemblies.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate frame elevations, reinforcement, anchor types and spacing, location of cut-outs for hardware, and finish.
- C. Product Data: Submit frame configuration and finishes.

1.4 QUALITY ASSURANCE

- A. Conform to requirements of ANSI A250.8.
- B. Fire Rated Frame Construction: Conform to NFPA 252.
- C. Installed Fire Rated Frame Assembly: Conform to NFPA 80 for fire rated class same as fire door.
 - 1. Air Leakage: Maximum 3.0 cfm/sf of door opening with 0.10 inch water gage pressure differential.
- D. Attach label from agency approved by authority having jurisdiction to identify each fire rated door frame.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Accept frames on site in manufacturer's packaging. Inspect for damage.
- C. Break seal on-site to permit ventilation.

1.7 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Coordinate Work with frame opening construction, door, and hardware installation.
- C. Sequence installation to accommodate required door hardware electric wire connections.

PART 2 PRODUCTS

2.1 STANDARD STEEL FRAMES

- A. Manufacturers:
 - 1. Amweld Building Products, Inc.
 - 2. Ceco Door Products Model.
 - 3. Republic Builders Products.
 - 4. Steelcraft.
 - 5. Substitutions: Section 01 60 00 - Product Requirement.
- B. Product Description: Standard shop fabricated steel frames, fire rated and non-rated types.
 - 1. Frames: To suit ANSI A250.8 Grade and Model of door specified in Section 08 13 14 and 08 14 16.
 - 2. Exterior Frames:
 - a. Level 3 for Door Models 1, nominal 16 gage/0.053 inch thick material, base metal thickness.
 - 3. Interior Frames:
 - a. Level 3 for Door Models 1, nominal 16 gage/0.053 inch thick material, base metal thickness.

2.2 ACCESSORIES

- A. Bituminous Coating: Non-asbestos fibered asphalt emulsion.
- B. Primer: ANSI A250.10 rust inhibitive type.
- C. Silencers: Resilient rubber set in steel fitted into drilled hole.
- D. Weatherstripping: Specified in Section 08 71 00.

2.3 FABRICATION

- A. Fabricate frames as welded unit for gypsum board slip on type, except for exterior.
- B. Fabricate frames with hardware reinforcement plates welded in place.

- C. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.
- D. Prepare frames for silencers. Provide three single silencers for single doors on strike side. Provide two single silencers on frame head at double doors without mullions.
- E. Attach fire rated label to each fire rated frame.

2.4 SHOP FINISHING

- A. Steel Sheet: Galvanized to ASTM A653/A653M A60.
- B. Primer: Baked.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

- A. Install frames in accordance with ANSI A250.8.
- B. Coordinate with gypsum board wall construction for anchor placement.
- C. Coordinate installation of glass and glazing specified in Section 08 80 00.
- D. Coordinate installation of frames with installation of hardware specified in Section 08 71 00 and doors in Section 08 13 14.

3.3 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

3.4 SCHEDULE

- A. Refer to Door Schedule.

END OF SECTION

SECTION 08 13 14

STANDARD STEEL DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes non-rated, fire rated, and thermally insulated steel doors
- B. Related Sections:
 - 1. Section 08 12 14 - Standard Steel Frames
 - 2. Section 08 71 00 - Door Hardware

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A250.8 - Recommended Specifications for Standard Steel Doors and Frames
- B. ASTM International:
 - 1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - 2. ASTM C1363 - Standard Test Method for the Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus
 - 3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- C. Hollow Metal Manufacturers Association:
 - 1. HMMA 810 - Hollow Metal Doors
- D. National Fire Protection Association:
 - 1. NFPA 80 - Standard for Fire Doors, Fire Windows
 - 2. NFPA 105 - Standard for the Installation of Smoke Door Assemblies and other Opening Protectives
 - 3. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies
- E. Steel Door Institute:
 - 1. SDI 108 - Recommended Selection and Usage Guide for Standard Steel Doors
- F. Underwriters Laboratories Inc.:
 - 1. UL 10B - Fire Tests of Door Assemblies
 - 2. UL 10C - Positive Pressure Fire Tests of Door Assemblies
 - 3. UL 1784 - Air Leakage Tests of Door Assemblies

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals
- B. Shop Drawings: Indicate door elevations, internal reinforcement, closure method, and cut-outs for glazing, and finishes
- C. Product Data: Submit door configurations, location of cut-outs for hardware reinforcement

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ANSI A250.8
- B. Fire Rated Door Construction: Conform to NFPA 252

- C. Installed Fire Rated Door Assembly: Conform to NFPA 80 for fire rated class as indicated on Drawings
- D. Smoke and Draft Control Doors: Tested in accordance with UL 1784 and installed in accordance with NFPA 105
 - 1. Air Leakage: Maximum 3.0 cfm/sf of door opening with 0.10 inch water gage pressure differential
- E. Attach label from agency approved by authority having jurisdiction to identify each fire rated door
 - 1. Attach smoke label to smoke and draft control doors

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products
- B. Protect doors with resilient packaging sealed with heat shrunk plastic
- C. Accept doors on site and inspect for damage
- D. Break seal on site to permit ventilation

1.7 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Requirements for coordination
- B. Coordinate Work with door opening construction, door frame, and door hardware installation
- C. Coordinate installation to accommodate door hardware electric wire connections

PART 2 - PRODUCTS

2.1 STANDARD STEEL DOORS

- A. Manufacturers:
 - 1. Amweld International, LLC
 - 2. Ceco Door
 - 3. Curries Company
 - 4. Republic Doors and Frames
 - 5. Steelcraft
 - 6. Substitutions: Section 01 60 00 - Product Requirements
- B. Product Description:
 - 1. Exterior Doors (Insulated): ANSI A250.8, SDI 108, 1-3/4 inch thick
 - a. Level 3 - Extra heavy Duty, Model 1, full flush design
 - 2. Interior Doors (Non-Rated): ANSI A250.8, SDI 108, 1-3/4 inch thick
 - a. Level 3 - Extra heavy Duty, Model 1, full flush design
 - 3. Interior Doors (Fire Rated): ANSI A250.8, SDI 108, 1-3/4 inch thick
 - a. Level 3 - Extra heavy Duty, Model 1, full flush design

2.2 COMPONENTS

- A. Face: Steel sheet in accordance with ANSI A250. SDI 108

- B. End Closure: Channel, 0.04 inches thick, flush
- C. Core:
 - 1. Exterior doors: polyurethane and vertical steel stiffeners
 - 2. Interior doors: steel channel grid and vertical steel stiffeners
- D. Thermal Insulated Door: Total insulation R-Value of 14, measured in accordance with ASTM C1363

2.3 ACCESSORIES

- A. Removable Stops: Rolled steel, channel shape, mitered corners; prepared for countersink style tamper proof screws
- B. Astragals for Double Doors: Steel, T shaped, specifically for double doors
- C. Primer: ANSI A250.10 rust inhibitive type

2.4 FABRICATION

- A. Fabricate doors with hardware reinforcement welded in place
- B. Attach astragal to one leaf of pairs of fire rated doors

2.5 SHOP FINISHING

- A. Steel Sheet: Galvanized to ASTM A653/A653M A60
- B. Primer: Baked

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Verification of existing conditions before starting work
- B. Verify opening sizes and tolerances are acceptable

3.2 INSTALLATION

- A. Install doors in accordance with ANSI A250.8
- B. Install door louvers, plumb and level
- C. Coordinate installation of doors with installation of frames specified in Section 08 12 14 and hardware specified in Section 08 71 00
- D. Touch-up damaged shop finishes

3.3 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner

3.4 ADJUSTING

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Requirements for adjusting
- B. Adjust door for smooth and balanced door movement

3.5 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes hardware for wood and steel doors.
 - 1. Provide door gaskets, including weatherstripping and seals, and thresholds.
- B. Related Sections:
 - 1. Section 08 13 14 - Standard Steel Doors.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A156.1 - Butts and Hinges.
 - 2. ANSI A156.2 - Bored and Preassembled Locks and Latches.
 - 3. ANSI A156.3 - Exit Devices.
 - 4. ANSI A156.4 - Door Controls - Closures.
 - 5. ANSI A156.5 - Auxiliary Locks and Associated Products.
 - 6. ANSI A156.6 - Architectural Door Trim.
 - 7. ANSI A156.7 - Template Hinge Dimensions.
 - 8. ANSI A156.12 - Interconnected Locks and Latches.
 - 9. ANSI A156.16 - Auxiliary Hardware.
 - 10. ANSI A156.18 - Materials and Finishes.
- B. Builders Hardware Manufacturers Association:
 - 1. BHMA Directory of Certified Products.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings:
 - 1. Indicate locations and mounting heights of each type of hardware, schedules, and catalog cuts.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Closeout procedures.
- B. Project Record Documents: Record actual locations of installed cylinders and their master key code.
- C. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- D. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with the following requirements:
 - 1. ANSI A156 series.
 - 2. NFPA 80.
 - 3. UL 305.
- B. Furnish hardware marked and listed in BHMA Directory of Certified Products.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Hardware Supplier: Company specializing in supplying commercial door hardware with minimum three years documented experience. Approved by primary hardware manufacturer Hardware Supplier Personnel: Employ Architectural Hardware Consultant (AHC) qualified person to assist in work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Package hardware items individually with necessary fasteners, instructions, and installation templates, when necessary; label and identify each package with door opening code to match hardware schedule.

1.8 COORDINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
 - 1. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.

1.9 WARRANTY

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Product warranties and product bonds.
- B. Furnish five year manufacturer warranty for locksets and door closers.

1.10 MAINTENANCE MATERIALS

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Maintenance materials.
- B. Furnish special wrenches and tools applicable for each different and for each special hardware component.
- C. Furnish maintenance tools and accessories supplied by hardware component manufacturer.

1.11 EXTRA MATERIALS

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Spare parts and maintenance products.
- B. Furnish two extra key for each master keyed group.

PART 2 PRODUCTS

2.1 DOOR HARDWARE

- A. Hinge Manufacturers:
 - 1. Hager Companies.
 - 2. McKenney.
 - 3. Stanley Hardware.
 - 4. Substitutions: Section 01 60 00 - Product Requirements.
- B. Lockset , Latch Set , and Cylinder Manufacturers:

1. Best Access Systems.
 2. Substitutions: Section 01 60 00 - Product Requirements.
- C. Exit Device Manufacturers:
1. Hager Companies.
 2. Sargent Manufacturing Company.
 3. Von Duprin, Inc.
 4. Yale Commercial Locks and Hardware.
 5. Substitutions: Section 01 60 00 - Product Requirements.
- D. Cylinder Manufacturers:
1. Best Access Systems.
 2. Substitutions: Section 01 60 00 - Product Requirements.
- E. Controlled Access
1. As called out on drawings.
 2. No substitutions permitted
- F. Closers Manufacturers:
1. Corbin Russwin Architectural Hardware, Inc.
 2. Hager Companies
 3. LCN Closers.
 4. Norton Door Control.
 5. Substitutions: Section 01 60 00 - Product Requirements.
- G. Push/Pulls, Manual and Automatic Bolts, Protection Plates, Gaskets, Thresholds, and Trim Manufacturers:
1. Hager Companies.
 2. Ives Commercial Hardware.
 3. National Guard Products.
 4. Pemko Manufacturing Co.
 5. Zero International, Inc.
 6. Substitutions: Section 01 60 00 - Product Requirements.

2.2 COMPONENTS

- A. General Hardware Requirements: Where not specifically indicated, comply with applicable ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
 2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
 3. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
 - a. Finish: Match hardware item being fastened.
- B. Hinges: ANSI A156.1, full mortise type complying with following general requirements unless otherwise scheduled.
1. Widths: Sufficient to clear trim projection when door swings 180 degrees.
 2. Number: Furnish minimum three hinges to 90 inches high, four hinges to 120 inches high for each door leaf.
 - a. Fire Rated Doors to 86 inches High: Minimum three hinges.
 - b. Doors over 40 inches Wide: Extra heavy weight ball or oilite bearing hinges.
 - c. Doors 1-3/4 inch Thick: 4 inch size.
 - d. Doors 2 inch Thick: 5 inch extra heavy weight ball or oilite bearing.

- e. Doors over 48 inches Wide: 5 inch extra heavy weight ball or oilite bearing.
- 3. Pins: Furnish nonferrous hinges with non-removable pins (NRP) at exterior and locked out swinging doors, non-rising pins at interior doors.
- 4. Tips: Flat button tips with matching plug.
- C. Locksets: Furnish locksets compatible with specified cylinders. Typical 2-3/4 inch backset. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames.
 - 1. Cores: 7 pin IC
- D. Key Pad Access Control Devices: Furnish fully operational exit rim and cylindrical key pad locks.
 - 1. Best Access: EZ Series
 - a. Variable pin length 3-6 digits
 - b. Keying 7 pin IC
 - c. Maximum 50 users
 - d. Programming performed through key pad
- E. Latch Sets: Match locksets. Typical 2-3/4 inch backset. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames.
- F. Exit Devices: ANSI A156.3, Grade 1 rim type, with cross bar, unless otherwise indicated. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames,
 - 1. Types: Suitable for doors requiring exit devices.
- G. Cylinders: ANSI A156.5, Grade 1, interchangeable core type cylinders.
 - 1. Keying: 7 Pin IC.
 - 2. Include construction keying.
 - 3. Keys: Nickel silver. Stamp keys with "DO NOT DUPLICATE".
 - 4. Supply keys in the following minimum quantities:
 - a. 5 master keys.
 - b. 3 grand master keys.
 - c. 3 great grand master keys.
 - d. 3 construction keys.
 - e. 3 control keys and 3 extra cylinder cores.
 - f. 2 change keys for each lock.
- H. Closers: ANSI A156.4 modern type with cover, surface mounted closers; full rack and pinion type with steel spring and non-freezing hydraulic fluid; closers required for fire rated doors unless otherwise indicated.
 - 1. Adjustability: Furnish controls for regulating closing, latching, speeds, and back checking.
 - 2. Arms: Type to suit individual condition; parallel-arm closers at reverse bevel doors and where doors swing full 180 degrees.
 - 3. Location: Mount closers on inside of exterior doors, room side of interior doors typical; mount on pull side of other doors.
 - 4. Operating Pressure: Maximum operating pressure as follows.
 - a. Interior Doors: Maximum 5 pounds.
 - b. Exterior Doors: Maximum 8.5 pound.
 - c. Fire Rated Doors: As required for fire rating, maximum 15 pounds.
- I. Push/Pulls, Manual Bolts, Protection Plates, Gaskets, Thresholds, and Trim: Furnish as indicated in Schedule, with accessories as required for complete operational door installations.

1. Push/Pulls: ANSI A156.6; push plates minimum 0.050 inch thick. Furnish straight push-pull type pulls with bolts to secure from opposite door face; furnish with minimum 0.050 inch pull plates unless otherwise indicated.
2. Manual Bolts: ANSI A156.16 Grade 1 top and bottom surface bolts, with dust-proof floor strike, unless otherwise indicated.
3. Kickplates: ANSI A156.6, metal; height indicated in Schedule by 2 inch less than door width; minimum 0.050 inch thick stainless steel.
4. Weatherstripping: Furnish continuous weatherstripping at top and sides of exterior doors.
5. Thresholds: Maximum 1/2 inch height.
6. Wall Stops: ANSI A156.1, Grade 1, concave pad wall stop with no visible screws.

2.3 ACCESSORIES

- A. Lock Trim: Furnish levers with as selected from manufacturer's full range of levers and roses.
 1. Do not permit through bolts on solid wood core doors.
- B. Through Bolts: Do not permit through bolts and grommet nuts on door faces in occupied areas unless no alternative is possible.
 1. Do not use through bolts on solid wood core doors.

2.4 FINISHING

- A. Finishes: ANSI A156.18; furnish following finishes except where otherwise indicated in Schedule at end of section.
 1. Hinges:
 - a. As indicated on Drawings
 2. Typical Exterior Exposed and High Use Interior Door Hardware:
 - a. As indicated on Drawings
 3. Typical Interior Door Hardware:
 4. Match Existing Hardware Closers: Finish appearance to match door hardware on same face of door.
 - a. As indicated on Drawings
 5. Thresholds: Finish appearance to match door hardware on exterior face of door.
 - a. As indicated on Drawings
 6. Other Items: Furnish manufacturer's standard finishes to match similar hardware types on same door, and maintain acceptable finish considering anticipated use and BHMA category of finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.
- B. Verify doors and frames are ready to receive door hardware and dimensions are as indicated on shop drawings.

3.2 INSTALLATION

- A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.
- B. Mounting Heights from Finished Floor to Center Line of Hardware Item: Comply with manufacturer recommendations and applicable codes where not otherwise indicated.
 1. Locksets: 38 inch.
 2. Push/Pulls: 42 inch.
 3. Dead Locks: 48 inch.

4. Cross Bar Type Exit Devices: 38 inch.
5. Top Hinge: Jamb manufacturer's standard, but not greater than 10 inches from head of frame to center line of hinge.
6. Bottom Hinge: Jamb manufacturer's standard, but not greater than 12-1/2 inches from floor to center line of hinge.
7. Intermediate Hinges: Equally spaced between top and bottom hinges and from each other.

3.3 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

3.4 ADJUSTING

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Testing, adjusting, and balancing.
- B. Adjust hardware for smooth operation.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 73 00 - Execution and Section 01 77 00 - Closeout Procedures: Protecting installed construction.
- B. Do not permit adjacent work to damage hardware or hardware finish.

3.6 SCHEDULES

- A. Refer to Door Schedule in Drawings

END OF SECTION

Site and Infrastructure

DIVISION 31 EARTHWORK

SECTION 31 10 00

CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide removal of trees, stumps, shrubs, grass and other vegetation within the construction limits to permit construction of the new facilities.
- B. Protect the adjoining properties from damage during clearing and grubbing operations.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

- A. Clearing and grubbing shall extend to no more than 3 feet outside of the construction limits. The clearing and grubbing operation shall be conducted in a manner which will not damage any vegetation outside of the clearing and grubbing limits. All brush, roots, and other debris within the grubbing limits shall be removed to a depth of 6". Completely remove stumps and other debris protruding through the subgrade surface. The Contractor shall chop all brush and debris resulting from the Clearing and Grubbing operation and haul to a disposal site located by the Contractor off-site. Burning of debris on-site will not be allowed.

3.2 STRIPPING

- A. Areas within the limits of the project shall be stripped to remove topsoil containing organic material before construction begins over such areas. The topsoil shall not be used in construction of onsite fills or trench backfills. The topsoil shall be hauled to a disposal site located by the Contractor off-site.

END OF SECTION

SECTION 31 20 00

EARTHWORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide all labor, materials, and equipment as required for all excavation, grading, providing borrow materials, hauling, placing and compacting earthwork materials to construct the site to the grades shown on the plans. This only includes earthwork for the site/civil portion of the project, not construction of the building.
- B. Prior to commencement of any earthwork, the Contractor shall review the geotechnical reports. The geotechnical report will be available from the architect prior to commencement of work for information only and the Contractor is responsible for making any interpretations there from.
- C. Submit to the Engineer's Field Representative load tickets on all materials delivered to the site.

1.2 REFERENCE STANDARDS

- A. ASTM D 136 Sieve Analysis of Fine and Coarse Aggregates
- B. ASTM D 422 Method for Particle - Size Analysis of Soils
- C. ASTM D 698 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregated Mixtures, Using 5.5-lb Rammer and 12 inch Drop
- D. ASTM D 1556 Density of Soil by the Sand-Cone Method
- E. ASTM D 1557 Test Methods for Moisture-Density Relations of Soils and Soil Aggregate Mixtures, Using 10 lb. Rammer and 10 inch Drop
- F. ASTM D 1633 Test Method for Compressive Strength of Molded Soil-Cement Cylinders
- G. ASTM D 2419 Test Method for Sand Equivalent Value of Soils and Fine Aggregate
- H. ASTM D 2487 Classification of Soils for Engineering Purposes
- I. ASTM D 2901 Test Method for Cement Control of Freshly-Mixed Soil Cement
- J. ASTM D 2922 Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).

- K. ASTM D 4254 Test Methods for Minimum Index Density of Soils and Calculative of Relative Density
- L. OSHA - 1926.650-651 and other applicable sections.

1.3 SUBMITTALS

- A. The Contractor shall submit test results of all materials proposed to be used in work in accordance with the requirements of Section 01 33 00 – Submittal Procedures.
- B. Submit sieve analysis, moisture density relationship test for both ASTM D698 and D1557, and sand equivalency. The sieve analysis and moisture density relationship tests must have been completed within 12 calendar months from the date of submittal.

1.4 DEFINITIONS

- A. Backfill or Fill:(a) Material used to replace material removed during construction or (b) The act of replacing or placing material during construction.
- B. Backfill Operation or Fill Operation: The method and the activity required to fill surface depressions and excavations, or to construct fills to required grades.
- C. Common Fill: Fill or borrow materials which are naturally occurring and not meeting a specific gradation or classification.
- D. Structural Fill: The act of placing common or imported fill material under controlled operation to a certain density.

PART 2 - PRODUCTS

2.1 SUITABLE FILL AND BACKFILL MATERIAL REQUIREMENTS

- A. The following types of suitable materials are defined (see Execution for the location where the materials are approved for use or where identified in other specifications and drawings):
 - 1. Common Fill: Fill or borrow materials which are naturally occurring, not meeting a specific gradation or classification, are not Unsuitable Materials, and can be placed in a controlled operation to a certain density.
 - 2. Sand Backfill (Bedding Sand): Sand with 100 percent passing a 3/8 inch sieve, at least 90 percent passing a Number 4 sieve and less than 3% passing the No. 200 sieve.
 - 3. Crushed Stone Backfill (Bedding Chips): Manufactured angular, crushed stone, crushed rock, or crushed slag with the following gradation requirements:

Sieve Size	Percent Passing By Weight
1"	100

Sieve Size	Percent Passing By Weight
3/4"	80 - 100
3/8"	20 - 70
No. 4	5 - 20
No. 200	0 - 3

4. Foundation Stabilization Backfill: Uncrushed gravel, and sand with the gradation requirements below. The material shall have a minimum sand equivalent value of 28, sand equivalent not required if less than 5% passing the No. 200 sieve.

Sieve Size	Percent Passing By Weight
3"	100
No. 4	25 - 60
No. 200	0 - 12

5. Fine Gravel Drain Rock: Clean crushed rock or gravel which is free of shale, clay, friable materials, and or debris that conforms to the gradation below.

Sieve Size	Percent Passing By Weight
1 1/2"	100
1"	25 - 70
3/4"	5 - 15
3/8"	0 - 4
200	0 - 2

6. Coarse Gravel Drain Rock: Crushed rock or gravel which is free of shale, clay, friable materials, and or debris that conforms to the gradation below. Drain Rock shall have a minimum of 35% Air Voids as determined by ASTM C 29 Standard Test Method for Unit Weight and Voids in aggregate, Jigging Procedure.

Sieve Size	Percent Passing By Weight
3"	100
1"	25 - 60
3/8"	0 - 4
200	0 - 2

7. Aggregate Base (3/4" Road Mix): Crushed aggregate base material of such nature that it can be compacted readily by watering and rolling to form a firm, stable base. The material shall meet the following gradation requirements:

Sieve Size	Percent Passing By Weight
------------	---------------------------

Sieve Size	Percent Passing By Weight
1"	100
3/4"	90 - 100
No. 4	40 - 65
No. 8	30 - 50
No. 200	3 - 9

- a. The sand equivalent value shall be not less than 30, sand equivalent not required if less than 5% passing the No. 200 sieve
- b. The material shall have a Los Angeles Abrasion of 35% or less.

8. Aggregate Subbase (Pit Run): Uncrushed rock aggregate subbase material that can be compacted readily by watering and rolling to form a firm stable subbase. The material shall meet the following requirements:

Sieve Size	Percent Passing By Weight
4"	100
3"	90-100
No. 4	30-75
No. 200	0 – 15.0

- a. The sand equivalent value shall be not less than 30, sand equivalent not required if less than 5% passing the No. 200 sieve.
- b. The material shall have a Los Angeles Abrasion of 40% or less.

9. Imported Trench Backfill (8" Pit Run): Uncrushed rock aggregate material that can be compacted readily by watering and rolling to form a firm stable trench. The sand equivalent value shall be not less than 25, sand equivalent not required if less than 5% passing the No. 200 sieve, and the material shall meet the following requirements:

Sieve Size	Percent Passing By Weight
8"	100
No. 4	15 - 60
No. 200	0 - 12

- 10. Granular Borrow: Provide sand, sand and gravel, or sand and rock mixtures with a sand equivalent greater than 30. Sand equivalent is not required if the material has less than 5 percent passing the No. 200 sieve.
- 11. Trench Plug Material: Low permeable fill material, a non-dispersible clay material having a minimum plasticity index of 10.
- 12. Top Soil: Excavated material, up to 18 inches below stripped surface, free of rocks larger than 3 inches, organics, roots, refuse, brush or other debris.

13. Rip Rap: Riprap material shall be hard, durable, angular in shape and free from overburden and organic material. The breadth or thickness of any stone shall not be less than one-third of its length. The minimum unit weight of the stone shall be 165 pounds per cubic foot. Riprap material shall have less than 10 percent loss after five cycles in the sulfate soundness tests and shall conform to the following gradation:

Weight of Stones	Percent of Total Weight Less than the Stone Weight
200 lbs	100
130 lbs	80
90 lbs	50
25 lbs	10 max.

14. Gravel Surfacing: Meet the following requirements for gravel surfacing, including added binder or blending material:

Sieve Size	Percent Passing By Weight
3/4"	100
No. 4	40-80
No. 10	25-60
No. 200	8-20

- a. Dust Ratio: the portion passing the No. 200 (0.075 mm) sieve cannot exceed two-thirds of the portion passing the No. 40 (0.425 mm) sieve.
 - b. For material passing the No. 40 (0.425 mm) sieve, the liquid limit must not exceed 35 and the plasticity index must not be below 6 or above 12.
 - c. A wear factor not exceeding 40% at 500 revolutions.
 - d. At least 35% by weight of the aggregate retained on the No. 4 (4.75 mm) sieve must have one fractured face.
15. RAP Surfacing: Unprocessed Recycled Asphalt Pavement (RAP) that has not been processed for gradation and binder content uniformity. RAP stockpile may be from different sources of unprocessed RAP together provided it is generally free of contamination from dirt, debris, clean stone, concrete, etc. Provide unprocessed RAP that has 100 percent passing the 5/8-inch sieve.
16. Filter Sand: Aggregate of natural sand or other approved inert materials composed of hard, strong, and durable particles conforming to the requirements of ASTM C-33 except as modified herein.

- a. Use only aggregates that include deleterious substances not exceeding the following:

Type	Percent Passing By Weight
Clay Lumps	0.50
Coal and Lignite	0.30
Other Deleterious Substances	2.00
Deleterious Material passing No. 200	1.75

- b. Moisture content of fine aggregate shall not exceed 8 percent.
- c. Aggregate that is uniformly graded from coarse to fine within the following gradation as follows:

Sieve Size	Percent Passing By Weight
3/8"	100
No. 4	95 - 100
No. 16	45 - 80
No. 50	10 - 30
No. 100	2 - 10
No. 200	0 - 4

2.2 UNSUITABLE MATERIALS

A. Unsuitable material include the materials listed below:

1. Soils which, when classified under ASTM D 2487 – Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System), fall in the classification of Pt, OH, CH, MH, or OL.
2. Soils which cannot be compacted sufficiently to achieve the density specified for the intended use.
3. Materials that contain hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable regulations.
4. Soils that contain greater concentrations of chloride or sulfate ions, or have a soil resistivity or pH less than the existing on-site soils.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Notify Engineer prior to starting any grading operations.
- B. Identify required lines, levels, contours and datum.
- C. Identify and flag surface and aerial utilities, known underground utilities locations.
- D. Maintain and protect existing utilities which pass through the work area.

3.2 SITE CONTROL

- A. Unfavorable Weather: Do not place, spread, or roll any fill material during unfavorable weather conditions. Do not resume operations until moisture content of material is satisfactory.
- B. Flooding: Provide berms or channels to prevent flooding or saturation of subgrade. Promptly remove all water collecting in depressions.
- C. Softened Subgrade: Where soil has been softened or eroded by flooding or placement during unfavorable weather, remove all damaged areas and recompact as specified for fill.
- D. Dust Control: Use all means necessary to control dust on and near the work and on and near all off-site borrow areas. Thoroughly moisten all surfaces as required to prevent dust from being a nuisance to the public, neighbors, residents, properties, and concurrent performance of other work on the site.
- E. Noise Control: Use equipment that is equipped with adequate noise attenuation devices.

3.3 OFF-SITE IMPACTS

- A. Comply with all traffic and hauling requirements of the State and County.
- B. Provide all signing, flagmen, or other special traffic control required to provide for the safety of the public.
- C. Use only vehicles approved for highway use and comply with all load requirements.
- D. Provide wheel cleaning as required to minimize the tracking of materials onto public roadways.

3.4 PROTECTION

- A. Protect trees and other features to remain as a portion of the final landscaping or project.
- B. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from equipment and vehicular traffic.

- C. Protect above and below grade utilities which are to remain.
- D. Notify Engineer of unexpected subsurface conditions and discontinue affected work in the area until notified to resume work.
- E. Protect bottom of excavations and soil adjacent to and beneath foundation from frost.
- F. Grade excavation top perimeter to prevent surface water runoff into excavation.

3.5 EXCAVATION

- A. Excavate all cut areas to the grades shown on the plans.
- B. Excavate all areas that have excessive moisture content and cannot be compacted to the required densities.
- C. Correct unauthorized excavation at no cost to the Owner.
- D. Excavate or scarify and aerate soils with excessive moisture content, and allow to dry.

3.6 SUBGRADE PREPARATION

- A. Pavement & Concrete
 - 1. Excavate to expose competent native soils or to a minimum of 2 ft below finished subgrade. If fill materials remain after over-excavation, the exposed subgrade must be compacted.

3.7 PREPARATION OF FOUNDATIONS

- A. Retaining Wall Footings:
 - 1. Per Geotechnical Report.

3.8 CONSTRUCTION OF EMBANKMENTS

- A. Fill areas to contours and elevations as shown on the plans. Do not use frozen materials.
- B. Place and compact fill materials in continuous lifts not exceeding six (6) inches in depth for silty soils or twelve (12) inches for granular structural fill materials, unless specifically allowed.
- C. Employ a placement method so as not to disturb or damage utilities in trenches.
- D. Maintain optimum moisture content of materials to attain required compaction density.
- E. Make smooth changes in grade. Blend slopes into level areas.

3.9 IMPORTED STRUCTURAL FILL

- A. Aggregate Subbase and Base, granular borrow, and common fill material under parking areas, drive lanes, and vehicle traffic areas, shall be compacted to at least 95% of the maximum dry density as determined in accordance with ASTM D698. Maximum loose lift thickness for aggregate base shall not exceed 8 inches. Maximum loose lift thickness for aggregate subbase, granular borrow, and common fill shall not exceed 10 inches.
- B. Granular material with more than 30% by weight retained on the 3/4-inch sieve shall be compacted to a minimum 75% of maximum index density as determined by ASTM D4253 and D4254. Drain rock and crushed stone backfill material does not require compaction.

3.10 DISPOSAL OF WASTE SOIL

- A. Contractor shall dispose of waste material at an off-site location determined by the Contractor.

3.11 QUALITY CONTROL

- A. Material & Compaction Testing: All soils testing of samples will be done by an independent testing laboratory mutually agreed upon by Contractor and Owner at the Owner's expense. If tests indicate work does not meet specific compaction requirements, remove work, replace, and retest at the Contractor's expense.
 - 1. Qualifications of testing company
 - a. Basic requirements of ASTM E 329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials as Used in Construction" and ASTM D 3666, "Standard Specification for Minimum Requirements for Agency Testing and Inspecting Bituminous Paving Materials", as applicable.
 - b. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards or accepted values of natural physical constants.
 - 2. Frequency of Compaction Tests
 - a. Curbs and sidewalks: In horizontal plane, test at start with subsequent tests a maximum of every 250 feet. At landscape islands test each island at one location. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change. Perform a minimum of two (2) tests at finished grade.
 - b. Parking and vehicle areas, roadways: In horizontal plane, test each backfill area with subsequent test for every 2,500 square feet of backfill surface area. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.

- c. Concrete slabs for patios, concrete plaza, and entry slabs: In horizontal plane, test each backfill area with subsequent test for every 1,000 square feet of backfill surface area. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.
- d. Linear foundations and footings for retaining walls: In horizontal plane, test at start with subsequent tests a maximum of every 100 feet, and where elevation changes between adjacent footings. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change. Perform a minimum of two (2) tests at finished grade.
- e. Along retaining walls: In horizontal plane, test each backfill area with subsequent test for every 100 lineal feet of wall, a minimum of two test per exterior wall side. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.

3.12 TOLERANCES

- A. Finished grade of graded areas shall meet the following requirements:
 - 1. In paved areas including roadways, sidewalks, parking lots, etc., plus or minus 0.10 feet from the grade shown on the plans.
 - 2. Concrete pads, plus or minus 0.05 feet from the grade shown on the plans.
 - 3. In landscaped areas or similar areas, plus or minus two (2) inches.
 - 4. Differential grades between walking surfaces shall not exceed 1/4-inch.
 - 5. Landscape finish grade adjacent to concrete walks shall be minus 1-inch from walking surface elevation.

END OF SECTION

SECTION 31 20 15

TRENCHING AND BACKFILL

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide all excavation of trenches, bedding, and backfilling work for construction of piping.
- B. Excavation of trenches shall include all material excavated or removed regardless of type, character, composition or condition of the material.

1.2 SUBMITTALS

- A. The Contractor shall submit samples of all materials proposed to be used in work. Sample sizes shall be determined by the testing laboratory.

1.3 DEFINITIONS

- A. Pipe Zone: That portion of the vertical trench cross-section lying between a plane below the bottom surface of the pipe and a plane 6 inches above the top of the pipe.
- B. Trench Zone: The portion of the vertical trench cross-section lying between the Pipe Zone and a point 18 inches below the finished grade.
- C. Final Backfill: The portion of the vertical trench cross-section within 18 inches of finished grade.
- D. Pipe Bedding: Material placed below the pipe and in the Pipe Zone.
- E. Springline: The center axis of the pipe.
- F. Trench Backfill: Material placed from the top of the Pipe Zone to finished grade.
- G. Trench Foundation Material: Material placed below the Pipe Bedding.

PART 2 - PRODUCTS

2.1 PIPE BEDDING MATERIAL

- A. Pipe bedding shall consist of crushed stone backfill (bedding chips) material per Section 31 20 00 – Earthwork.

2.2 TRENCH BACKFILL MATERIAL

- A. Excavated trench material may be used as follows:

1. Excavated trench material shall be free from cinders, ashes, refuse, organic and frozen material, boulders with any dimension exceeding 8 inches, or other unsuitable material per Section 31 20 00 – Earthwork.
2. Material with excessive or deficient moisture content will not be considered as unsuitable if the moisture content can be adjusted to a level that allows obtaining compaction.
3. Imported backfill material shall conform to imported trench backfill (8" Pit Run) per Section 31 20 00 – Earthwork.

2.3 FOUNDATION STABILIZATION

- A. Trench foundation material shall consist of foundation stabilization backfill material per Section 31 20 00 – Earthwork.

2.4 IDENTIFICATION TAPE AND LOCATING WIRE

- A. Locating wire shall be No. 12 AWG insulated cooper locating wire with 1/64" PVC insulation.
- B. Identification tape shall be 3-inches wide, 4 mil polyethylene vinyl. Tape text and color shall meet the following requirements

Pipe Contents	Text	Color
Potable Water	"CAUTION – WATER LINE BURIED BELOW"	Blue
Pressure Sewer	"CAUTION – SEWER LINE BURIED BELOW"	Green
Reclaimed Water	"CAUTION – RECLAIMED WATER LINE BURIED BELOW"	Purple
Pressure Irrigation	"CAUTION – IRRIGATION LINE BURIED BELOW"	Purple
Gas	"CAUTION – GAS LINE BURIED BELOW"	Yellow
Telephone	"CAUTION – PIPE LINE BURIED BELOW"	Yellow
Cable TV	"CAUTION – PIPE LINE BURIED BELOW"	Yellow
Electric	"CAUTION – ELECTRICAL LINE BURIED BELOW"	Red

PART 3 - EXECUTION

3.1 EXISTING UTILITIES:

- A. The Contractor shall be fully responsible for any and all damage to existing or constructed utilities, and shall repair damages in accordance with utility owner's requirements at no additional cost to the Owner. It shall be the Contractor's responsibility to coordinate and notify all affected utility owners. Call 811 Dig-Line before commencing construction.

1. Parallel Utility Support: Work associated with parallel utility support and utility crossings shall be incidental to the work unless a specific bid items is provided for parallel utility support.
2. Utility Crossing Support: All utilities that interfere with the construction of the trenching and pipe installation shall be temporarily supported in accordance with the utility owner's requirements. Work associated with utility crossings support shall be incidental to the work unless a specific bid items is provided for utility crossing support.
3. All crossing utilities shown on the plans and marked by Dig-Line shall be vertical and horizontally located, in a non-destructive manner, prior to construction to verify pipe elevation, materials, and diameter. This information shall be provided to the Engineer for evaluation of conflicts prior to construction. All potholes shall be backfilled immediately after obtaining information.

3.2 TRENCH EXCAVATION

- A. Trenches shall be excavated to lines and grades shown on the drawings, with a minimum width at the top or crown of the pipe not to exceed the outside diameter of the pipe plus 2'. In the event the Contractor should over excavate in width or depth without the Engineer's approval, he shall provide pipe bedding for the full length of the over excavation. No special payment will be made for work caused by over excavation.
- B. Trench shall be kept free from water at all times to facilitate fine grading, proper laying and joining of pipe, and prevention of damage to completed joints.
- C. If the trench bottom is disturbed during excavation, compact trench bottom to 95% maximum density of the standard proctor, ASTM D698.
- D. The Contractor shall conduct trench operations in such a manner as to provide adequate safety precautions for workmen, adjacent property, or the public at all times by use of adequate sheeting, shoring, or bracing to sustain stability of the trench floor and walls. The Contractor shall furnish, place, and maintain such shoring as may be required to support sides of the trench. Costs of shoring and bracing shall be considered incidental to trench excavation and backfill.
- E. The Contractor shall conduct trench operations in such a manner as to provide adequate safety precautions for workmen, adjacent property, or the public at all times by use of adequate sheeting, shoring, or bracing to sustain stability of the trench floor and walls. The Contractor shall furnish, place, and maintain such shoring as may be required to support sides of the trench.

3.3 PIPE BEDDING

- A. Place bedding in layers no thicker than 6 inches. Allow for bedding depth around pipe bells. Place bedding at least 4 inches below the pipe and 6 inches above the pipe.
- B. Shovel slice and tamp to ensure that the bedding material is firmly placed.

- C. Following placement of pipe, place additional bedding material up to the springline of the pipe. Shovel slice and tamp to ensure that the bedding material fills in and supports the pipe haunch area.
- D. In 6 inch lifts, place additional bedding layers from the pipe springline to 6 inches above the pipe.

3.4 TRENCH BACKFILL

- A. All backfill material shall be placed in layers not to exceed 6-inch maximum loose lift thickness for native silty material and 12-inch maximum loose lift thickness for imported aggregate backfill.
- B. The entire trench shall be compacted to 95% maximum density of the standard proctor as determined by ASTM D-698.
- C. Trenches under buildings and structures shall be compacted, the entire depth, to 95% maximum density of the modified proctor determined by ASTM D1557.

3.5 IDENTIFICATION TAPE AND LOCATING WIRE PLACEMENT

- A. Unless indicated otherwise, attach locating wire to the crown of all buried pipelines using electrical tape, except gravity irrigation, sanitary sewer, or storm sewer mains having visible manholes or clean-out structures at all angle points. Provide 12" of slack wire above ground at each location of valve or wire box.
- B. Unless indicated otherwise, identification tape shall be placed above all buried pipelines, 18" - 24" above the crown of the pipe, except gravity irrigation, sanitary sewer, or storm sewer mains having visible manholes or clean-out structures at all angle points.
- C. Unless indicated otherwise, identification tape shall be placed above all buried pipelines that are installed with locating wire. Identification tape shall be placed 18" - 24" above the crown of the pipe.

3.6 QUALITY CONTROL

- A. Material & Compaction Testing: All soils testing of samples will be done by a testing laboratory mutually agreed upon by Contractor and Owner at the Owner's expense. If tests indicate work does not meet specific compaction requirements, remove work, replace, and retest at the Contractor's expense.
 - 1. Qualifications of testing company
 - a. Basic requirements of ASTM E 329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials as Used in Construction" and ASTM D 3666, "Standard Specification for Minimum Requirements for Agency Testing and Inspecting Bituminous Paving Materials", as applicable.
 - b. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards or accepted values of natural physical constants.

2. Frequency of Compaction Tests

- a. Test Section shall be a test at 2-feet above top of pipe and every 1-foot lift thereafter and at the top of the trench backfill.
- b. Two (2) test sections, at different locations for every trench less than 300 feet in length, but not less than once per day.
- c. One (1) test section per every 300 feet of additional trench and at locations where materials or construction procedures change, but not less than once per day.

3.7 CLEANUP

- A. Surplus excavated material or stripped material not salvaged as topsoil and excavated material not meeting the requirements for backfill shall become waste. All waste material shall be disposed of by the Contractor.

END OF DIVISION

DIVISION 32 EXTERIOR IMPROVEMENTS

SECTION 32 13 13

SITE CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Walks.
 - 2. Curbs, Gutters, Valley Gutters.
 - 3. Site Concrete Pavement.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 2. Samples for initial selection for admixture requiring color selection.

1.3 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301 requirements and State of Idaho Public Works Standards, Section 700.
- B. Obtain cementitious materials from same source throughout.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150, AASHTO M 85, Type I or II Portland cement.
 - a. Fly Ash: Per ITD standard Specifications for highway construction, Section 714.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Fine and Coarse Mix Aggregates: ASTM C 33
 - 1. Maximum size aggregate shall be 3/4 inch for slabs-on-grade, sidewalks, curbs, gutters, and catch basins.

2. Fine aggregate shall be clean, hard, strong, durable natural mineral particles free of chemicals or other coatings that would affect bonding of the cement paste.

C. Water: Potable and complying with ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. ASTM C 494, Type A - Water Reducing.

2.2 CURING MATERIALS

A. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class A, dissipating.

2.3 RELATED MATERIALS

A. Joint Fillers:

1. Type "A" ASTM D1751 type; 1/2 thick. Fiber Joint Filler. Provide resilient and non-extruding type premolded bituminous-impregnated fiberboard units complying with ASTM D175.

2. Type "B" - Equal to "Strip Joint" as manufactured by A.C. Horn, Inc., 12116 Conway Rd., Beltsville, MD 20705 (800) 654-0402. Reference Section 07 90 00 for sealant type.

2.4 CONCRETE MIXTURES - BY PERFORMANCE CRITERIA

A. Select proportions for normal weight concrete in accordance with ACI 301 Method 1.

B. Provide concrete to the following criteria:

1. Compressive Strength: 2000 psi @ 7 days.
2. Compressive Strength: 4000 psi @ 28 days.
3. Slump: 1 to 3 inches in accordance with UBC Standard 19-7.
4. Entrained Air: 6% plus or minus 1 1/2%.
5. Portland Cement: Type I or II.

C. Use accelerating admixtures in cold weather only when approved by Architect. Use of admixtures will not relax cold weather placement requirements.

D. Do not use calcium chloride.

E. Use set retarding admixtures during hot weather only when approved by Architect.

2.5 CONCRETE MIXING

A. Ready-Mixed Concrete: Mix concrete in accordance with ACI 304.

B. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify compacted, granular base is acceptable and ready to support paving and imposed loads.
- B. Section 31 20 00 – Earthwork forms the base construction for work of this Section
- C. Verify gradients and elevations of base are correct.
- D. Moisten base to minimize absorption of water from fresh concrete.
- E. Coat surfaces catch basin frames with oil to prevent bond with concrete pavement.
- F. Notify Architect a minimum of 24 hours prior to commencement of concreting operations.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Place joint filler vertical in position, in straight lines. Secure to form work during concrete placement.
- C. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.3 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Place contraction joints on sidewalk, mow strips and curbs at curves, tangents and corners, unless shown differently on drawings. Align curb, gutter, and sidewalk joints.
- C. Place isolation / expansion joints at locations where concrete pavement and sidewalk interface a foundation or other structure. Joints shall be sealed using polyurethane sealant FS-TT-S-00227, Type II non-sag, Class A sealant.
- D. Provide scored joints at 6 feet intervals unless shown differently on drawing. Align curb, gutter and sidewalks joints.
- E. Scored joints shall be 1/3 (one-quarter) the depth of the slab.
- F. Edging:
 - 1. After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/2-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.4 CONCRETE PLACEMENT

- A. Moisten subbase to provide a uniform dampened condition at time concrete is placed.
- B. Comply with ACI 301 requirements for measuring, mixing, transporting, placing, and consolidating concrete.
- C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- D. Screed paving surface with a straightedge and strike off.
- E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.5 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared, and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3.6 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection. Use of accelerating admixtures allowed in cold weather only when approved by Architect.
- C. Evaporation Retarder: Apply evaporation retarder (only when approved by Architect) to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by curing compound on exposed concrete surfaces immediately after finishing.

3.7 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows – The more restrictive tolerance shall control in event that the specification tolerances conflict with tolerances noted on the plans:

1. Elevation: 1/8 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-foot- long, unlevelled straightedge not to exceed 1/4 inch.
4. Joint Spacing: 3 inches.
5. Contraction Joint Depth: Plus 1/4 inch, no minus.
6. Joint Width: Plus 1/16 inch, no minus.
7. See plans for concrete horizontal and vertical tolerances.

3.8 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor shall engage a qualified testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement.
- B. Testing Services: Testing shall be performed according to the following requirements of as modified by the project geotechnical engineer:
 1. Sampling Fresh Concrete: Representative samples of fresh concrete shall be obtained according to ASTM C 172, except modified for slump to comply with ASTM C 94.
 2. Slump: ASTM C 143; one test at point of placement for each compressive-strength test, but not less than one test for every 20 c.y. of each type of concrete. Additional tests will be required when concrete consistency changes.
 3. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test, but not less than one test for each day's pour of each type of air-entrained concrete.
 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each set of compressive-strength specimens.
 5. Compression Test Specimens: ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test, unless otherwise indicated. Cylinders shall be molded and stored for laboratory-cured test specimens unless field-cured test specimens are required.
 6. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd., but less than 20 cu. yd., plus one set for each additional 20 cu. yd. One specimen shall be tested at 7 days and two specimens at 28 days; one specimen shall be retained in reserve for later testing if required.
 7. When frequency of testing will provide fewer than five compressive-strength tests for a given class of concrete, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 8. When total quantity of a given class of concrete is less than 20 cu. yd., Architect may waive compressive-strength testing if adequate evidence of satisfactory strength is provided.

9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, current operations shall be evaluated and corrective procedures shall be provided for protecting and curing in-place concrete.
 10. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive compressive-strength test results equal or exceed specified compressive strength and no individual compressive-strength test result falls below specified compressive strength by more than 500 psi.
- C. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as the sole basis for approval or rejection.
- E. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

END OF DIVISION